DEFT ERE Annotation Guidelines: Relations V1.4

Linguistic Data Consortium

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Changes from V1.3

- 2.4: Adjusted explanation for Relations among Plural/Multiple Entities under "the banks in Boston and New York" example.
- 2.6: Cleaned up examples on pg. 9 under "Contrast the following examples" heading.
- 3.1, 3.2, 3.3, 3.4: Added triggers to all Relation Subtypes examples as well as more explanatory examples of relations.
- 3.1.1: Expanded note to include "students" (students/alumni and their universities should not be annotated as an Employment/Membership relation).
- 3.3.2: Added note about choosing appropriate LOC examples in Physical.Origin relations. Facility-type LOCs are off limits for these relations.
- 3.3.2: Copied the note from Part-Whole.Subsidiary as a reference in Physical.Origin relations (default to Origin relations between ORGs and GPEs when it's too ambiguous to select a Subsidiary relation).
- 3.4.5: Added note on Social.Role triggers to include forms of "to be".

Changes from V1.2

- Reorganized sections overall.
- Rewrote and expanded section 4 to explain the handling of various discussion forum phenomena.
- 3.1.1: Added the rule that attendance at a school is not considered Affiliation.Employment/Membership.

Changes from V1.1

- 2.5: Added a note below the third example in this section (ORG-GPE, "New York police"). Specified that annotators should capture a Physical.Origin relation if a Part-Whole.Subsidiary relation between an ORG and a GPE doesn't seem clear enough

Changes from V1.0

- Replaced 2.2.4 "Distributed Relations" section with section on "Relations Among Plural Entities and Multiple Entities" noting occasions when Relations among plural entities and/or multiple coordinated (listed) entities cannot be tagged because doing so may register multiple or illogical possible relationships which are not actually indicated in the text.
- 2.2.6: Stipulated that for present purposes, "no trigger" cases will be limited to occurrences of entity+entity constructions where an entity which is a head noun is being modified by another noun whose complete string is tagged as an entity itself. Also indicated that the most common cases of such entity+entity constructions occur in Physical, Part-whole.Subsidiary, and Social.Role relations.
- 2.4.1: Specified that Employment/Membership also covers the relationship between an agent and the organization or GPE with which the agent has a contractual business or service agreement.

- 2.5, 2.6.2: Specified that for a relationship between an ORG and its parent GPE (e.g., “US Supreme Court”, “the Indian navy”) to use Part-whole.Subsidiary, and not Physical.Origin.
- 2.6.1: Specified the use of Physical.Located for two locations which are asserted to be the same/contiguous with each other.
- 2.6.1, 2.6.2: Noted that Physical.Origin must be used for all locations of ORG activities: that given present annotation tool limitations, this includes all organizational operations, understood as all of an organization’s formal activities anywhere.
- Revised annotation brackets in examples to accurately indicate nominal mention extents.

Table of Contents

1. Introduction

The purpose of this annotation project is to mark up texts for entities, coreference, events and relations. The primary purpose is for the annotations to describe the meaning of the text, as opposed to its syntactic or lexical aspects. The annotation is carried out level by level. This document describes the level of relation annotation.

The goal of the Relation Task is to detect and characterize relations between labeled entities that are explicitly mentioned in the document. Relations are between ordered pairs of entities. The entities that participate in a relation are called arguments.

In the present task, we will annotate four **relation types** – Affiliation, Part-whole, Physical, and Social – which comprise ten subtypes among them (detailed in sec. 3):

- Affiliation.Employment/Membership, and Affiliation.Leadership
- Part-Whole.Subsidiary
- Physical.Located, and Physical.Origin
- Social.Business, Social.Family, Social.Membership, Social.Unspecified, and Social.Role

For each relation we label the two argument entities which are in relation, the relation type and subtype, and possibly a textual "trigger" word as well. (Unlike entities and events, relations may have no "triggering" anchor in the text.)

2. General Rules

We will exhaustively annotate taggable relations. That is, if the same relation is mentioned multiple times within the same document, it should be labeled each time.

For purposes of this annotation task, we limit ourselves to asserted, positive relations that are explicitly referenced within a single sentence.

2.1 Tag for Explicit Mention

As well as limiting relation mention scope to within a single sentence, we operate according to a "tag for explicit mention" guideline. Even if there is a relationship between two entities in the real world (or elsewhere in the document), there must be explicit evidence for that relationship within that particular sentence for that relation to be taggable. For example:

- Frank and his brother worked for Comcast.

In this sentence, there is explicit evidence of a familial relationship between *his* and *brother*. Contrast this with the following sentence:

- Frank and James worked for Comcast.

Even if we learn that *Frank* and *James* are brothers elsewhere in the document, we cannot tag a familial relation between them, because there is no evidence for the relation within this sentence.

2.2 Assertion and Modality

We only tag asserted, positive relations – in other words, relations that are asserted to be true in the document:

- YouTube now operates as a subsidiary of Google Inc.

In this example we would tag a Part-Whole.Subsidiary relation between YouTube and Google.

NOTE: If a relation is asserted to be true by a source other than the author of the document, we still consider the relation to be taggable:

- According to the New York Times, he then worked for four years in the Hungarian finance ministry.
- Diplomatic officials have arrived in Moscow, NTV independent television reported.

We do not tag hypothetical relations[1]. For example, in the sentence:

- We are afraid Al-Qaeda terrorists will be in Baghdad.

The presence of Al-Qaeda terrorists in Baghdad is expressed as a fear, rather than being asserted as an existing relation. Therefore, we do not tag a relation between the 'terrorists' and 'Baghdad'.

We do not tag conditional relations, as in:

- If the inspectors can get plane tickets today, then they will be in Baghdad on Tuesday

The presence of inspectors in Baghdad is a future possibility but it is not an asserted relation, and is therefore not taggable.

We do not tag negative relations (whether asserted or hypothetical). For instance, in the following sentence, we do not tag a relation between Coca-Cola and San Antonio.

[1] At a later annotation stage we may annotate hypothetical, conditional, future, etc., relations, but for now we will not consider them taggable.

- Coca-Cola is not based in San Antonio.
- He may not have joined the Whig Party at that time.

However, we do tag past and former relations, as in:

- The former CEO of Microsoft
- She left eBay to work at Amazon in 2008.

In these examples we label the relationship between 'the former CEO' and 'Microsoft', and 'she' and 'eBay'. [2]

2.3 Argument Numbering

The numerical ordering of arguments is important in the identification of relations. To capture this idea we use "templates" for each relation type/subtype. These templates specify the roles for each numbered argument.[3] For example, consider the sentence:

- George Bush traveled to France on Thursday for a summit.

This sentence expresses a Physical.Located relation between 'George Bush' and 'France'. In Physical.Located relations, the person that is located somewhere will always be assigned to the first argument role (arg1), while the place where the person is located will always be assigned to the second argument role (arg2). We sometimes indicate a relationship between two arguments with the following shorthand: (arg1, arg2).

2.4 Relations among Plural Entities and Multiple Entities

There are occasions when certain (otherwise taggable) Relations among plural entities and/or multiple coordinated (listed) entities cannot be tagged because doing so may register multiple or illogical possible relationships which are not actually indicated in the text. E.g.:

- "the [heads]$_{\text{PER}}$ of the [NSA]$_{\text{ORG}}$, [CIA]$_{\text{ORG}}$, and [FBI]$_{\text{ORG}}$ met today...."

Although the individual "heads" are clearly in Affiliation.Leadership relations with the ORG entities respectively, in tagging 3 such relations between the leader-argument [heads] and the 3 ORGs, these relations could be taken as indicating that

[2] A later annotation stage may assign more sophisticated temporal attributes to relations, distinguishing current from prior relations.

[3] Definitions of Relations, arg1 and arg2 are specific to this DEFT project task and not related to similar designations in Treebank, PropBank, etc., which refer to argument structure.

the entity [heads] is leader of *all 3* of the ORGs, or that the [heads] are all leaders of all 3 ORGs.

- … [the banks in [Boston] and [New York]] …

Although there appear to be two Physical.Origin Relations here, we cannot annotate that "the banks" are located both in Boston and New York. The two locations are nested within the nominal phrase, which points to the fact that some banks are in one location and some are in another location. If we tagged two Relations, we'd be saying that all of the banks are located in both cities, which is incorrect.

2.5 Relation Argument Proximity and "Nested Relations"

When selecting relation arguments, you must choose the two arguments that are in closest proximity to one another that express the relation. For instance, in 'Elizabeth and her sister' we would select 'her' as arg1, and 'sister' as arg2. We would not select 'Elizabeth' as arg1 since it is more distant from arg2 than 'her'.

In addition, we do not consider "nested relations" taggable. That is, if entity A is contained within entity B, and entity B is contained within entity C, we annotate a Physical.Located relation between entity A and entity B, and between entity B and entity C. However, we do not annotate a Physical.Located relation between entity A and entity C. This is because the Physical.Located relation between A and C is implicit from the containment of A within B, and B within C. For instance, consider:

- [Smith] went to [a hotel in [Brazil]].

Using the above logic (Smith, a hotel in Brazil) is a taggable Physical.Located relation, as is (a hotel in Brazil, Brazil), but (Smith, Brazil) is not considered taggable, because the relation between (Smith, Brazil) is implicit from the nesting of the relations we have already annotated:

On the other hand, in the following example:

- [Smith] went to a conference in [Brazil].

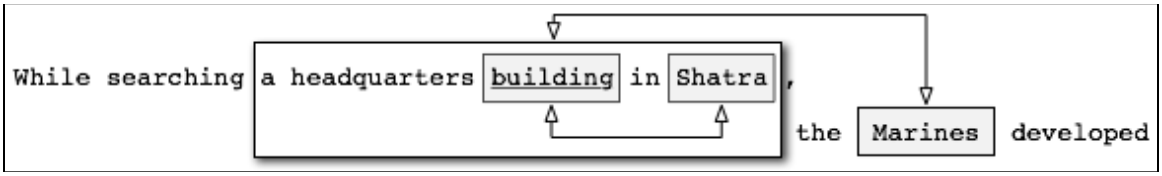
(Smith, Brazil) is a taggable physical relation, since conference is not a taggable entity type, and there are no other Physical.Located relations annotated that would implicitly establish a Physical.Located relation between (Smith, Brazil).

Smith went to a ~~conference~~ in Brazil.

This principle holds even in "long-distance constructions" (i.e. sentences where the entities in the lowest-level Physical.Located relation are not adjacent to each other). For instance, in the following sample

- While searching [a headquarters building in [Shatra]], [the Marines] developed...

There are taggable Physical.Located relations between the lower level of containment (the Marines, a headquarters building in Shatra) is taggable, and between the upper level of containment (a headquarters building in Shatra, Shatra), but not between the (the Marines, Shatra), since this level of containment is implicit from the former two relations.



NOTE: The annotation of a Physical.Located relation between (the Marines, a headquarters building in Shatra) might seem to go against the proximity guideline discussed earlier in this section, but in these cases, annotating based on nested levels of containment is preferred over annotating based on relation argument proximity:

- Smith went to a hotel in Brazil.
- ...a hotel in Brazil that Smith went to.

In accordance with this principle of "containment over proximity", both of the above examples would have the same set of physical relations tagged: (Smith, a hotel in Brazil) and (a hotel in Brazil, Brazil), despite the second example's lack of direct argument proximity for (Smith, a hotel in Brazil).

2.6 Triggers

A trigger is the smallest extent of text that indicates a relation type and subtype. Triggers can be phrases or a single word, whatever annotators judge to be the extent of text that indicates a particular relation type-subtype is present. For example, prepositions are often triggers for Physical.Located relations, as in the example below:

- John is in Chicago.
    a. Rel: Physical.Located
    b. Entity: 'John'

c. Loc: ‘Chicago’
d. Trigger: ‘in’

NOTE: An extent of text that has been annotated within a relation argument can also function and be annotated as a as a relation trigger, even when it is the head noun of a nominal phrase. For example:

- My wife is at home.
    a. Rel: Social.Family
    b. Entity: ‘My’
    c. Entity: ‘my wife’
    d. Trigger: ‘wife’

- the president of the American League
    a. Rel: Affiliation.Leadership
    b. Leader: ‘the president of the American League’
    c. Entity: ‘American League’
    d. Trigger: ‘president’

NOTE: It will sometimes be the case that there is no trigger text for a relation. Rather, only the syntax or configuration of the words in the sentence indicates the presence of a particular relation type/subtype, without any explicit indication of a relationship from the words themselves. “No trigger” cases are mainly limited to occurrences of entity+entity noun phrases with noun-noun constructions where an entity which is a head noun is being modified by another noun whose complete string is tagged as an entity itself. For entity+entity configurations where the modifying word (typically the first word) is not a noun, the modifying word may be tagged as a trigger.

Contrast the following examples:

- [[US] companies] (**Physical.Origin: no trigger**: ‘US’ is a noun)
- [[American] companies] (**Physical.Origin: trigger** = American: ‘American’ is an adjective indicating an Origin relation)

- the [[IBM] R&D Department] (**Part-Whole.Subsidiary: no trigger**: ‘IBM’ is a noun)
- [[IBM]’s R&D Department] (**Part-Whole.Subsidiary: trigger** = ‘IBM’s’ is a possessive noun indicating a Subsidiary relation)

- [Deputy Secretary] [William Burns] (**Social.Role: no trigger**: ‘Deputy Secretary’ is a noun-phrase and the side-by-side construction doesn’t contain a trigger)

The most common cases of noun-noun entity+entity constructions occur for

Physical (both subtypes), Part-whole.Subsidiary, and Social.Role relations, where there is often no extent of text explicitly indicating the relations. Rather, the relevant entity mention extents are simply juxtaposed, with no other syntactic or morphological indicators of connection. In these cases, the trigger slot is left empty, and the "no trigger" checkbox checked:

- President Obama
    a. Rel: Social.Role
    b. Role: 'President'
    c. Per: 'Obama'
    d. Trigger: (N/A)

- US Congress
    a. Rel: Part-whole.Subsidiary
    b. Parent: 'US'
    c. Suborg: 'Congress'
    d. Trigger: : (N/A)

NOTE: In annotation, the tagging of some relation subtypes may take precedence over that of others – when the trigger and arguments are the same for more than one possible relation subtype, one will 'trump' the other(s) in order to avoid double-tagging. If one subtype 'trumps' another, the pertinent subsections will specify this.

However, it is possible that one text string may serve as the trigger for more than one relation, each with a different constellation of arguments – in these cases, we may tag each relation separately.

3. Relation Types and Subtypes

We will tag only a limited inventory of relation types and subtypes, described in detail below. For each relation type-subtype we also describe the restrictions on the entities that can hold the arg1 and arg2 roles.

A Master List of relations and their permissible arguments is below:

Relation Type	Relation Subtype	ARG1 Name	ARG1 Type	ARG2 Name	ARG2 Type
Affiliation	Employment/Membership	Employee/Member-Arg	PER, ORG, GPE	Employer-Arg	ORG, GPE
Affiliation	Leadership	Leader-Arg	PER	Entity-Arg	ORG, GPE
Part-	Subsidiary	Suborg-Arg	ORG	Parent-Arg	ORG,GP

Whole					E
Physical	Located	Entity-Arg	PER, GPE, LOC	Loc-Arg	GPE, LOC
Physical	Origin	Entity-Arg	PER, ORG	Loc-Arg	GPE, LOC
Social	Business	Per-Arg	PER	Per-Arg	PER
Social	Family	Per-Arg	PER	Per-Arg	PER
Social	Membership	Member-Arg	PER	Group-Arg	PER
Social	Role	Role-Arg	TTL	Per-Arg	PER
Social	Unspecified	Per-Arg	PER	Per-Arg	PER

3.1 Affiliation Relations

Affiliation relations capture the relationship between a Person and an Organization or GPE. For relations between two PER entities, use the Social relation subtypes. There are two subtypes of Affiliation relationships: Employment/Membership and Leadership. If it is not clear which relation is present, annotate Affiliation.Employment/Membership as the default.

3.1.1. Affiliation.Employment/Membership

Employment/Membership captures the relationship between an agent and the organization or GPE of which the agent is an employee/member, or with which the agent has a contractual business or service agreement. Persons, Organizations, GPEs can be tagged as the agents (employees, members, or contractual partners) affiliated with the Organizations or GPEs.

Instances where a person is a member of an elected government body (the Senate, the Knesset, the Supreme Court, etc.) will be tagged as Employment/Membership, even when the word "member" is not present (e.g. Supreme Court justice). This includes the relationship between an elected representative and the GPE they represent, for example, 'John Kerry (D-Massachusetts).'

NOTE: We will tag the relation between members of terrorist organizations and those organizations as Affiliation.Employment/Membership.

NOTE: For a relationship between a person and a group of persons of type PER, even when such affiliation is with an established organization (i.e. "Catholic parishioners...") use the Social.Membership Relation instead of Affiliation.Membership.

NOTE: This relation trumps ethnicity or citizenship: 'American troops' should be annotated with an Affiliation.Employment/Membership relation rather than a Physical.Origin relation.

NOTE: An entity being a student or an alumnus of a school or university is **not** annotated as an Affiliation.Employment/Membership relation.

Permitted Relation Arguments

Relation Type-Subtype	**Argument 1 (the employee/member)**	**Argument 2 (the ORG or GPE with which the employee/member is affiliated)**
Affiliation.Employment/Membership	PER, ORG, GPE	ORG, GPE

Examples

PER-GPE

John Kerry (D-Massachusetts)		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*John Kerry*	*D-Massachusetts*

TRIGGER: *N/A (Note "Massachusetts" cannot be separated from "D" per tokenization rules)*

PER-GPE

Florida Secretary of State Katherine Harris		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*Katherine Harris*	*State*

TRIGGER: *Secretary*

PER-ORG

an interviewer from The Patriot Ledger		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*an interviewer*	*Patriot Ledger*

	from The Patriot Ledger	

TRIGGER: *interviewer*

PER-ORG

He had previously worked at NBC Entertainment		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*He*	*NBC Entertainment*

TRIGGER: *worked at*

PER-ORG

an activist for Peace Now		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*an activist for Peace Now*	*Peace Now*

TRIGGER: *activist*

PER-ORG

a member of the Supreme Court		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*a member of the Supreme Court*	*Supreme Court*

TRIGGER: *member*

PER-ORG

John Jacob Jingleheimer-Schmidt of the Supreme Court		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*John Jacob Jingleheimer-Schmidt*	*Supreme Court*

TRIGGER: *of*

PER-ORG

Supreme Court Justice		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*Supreme Court Justice*	*Supreme Court*

TRIGGER: *Justice*

PER-ORG

GOP vice presidential nominee		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*GOP vice presidential nominee*	*GOP*

TRIGGER: *nominee*

PER-ORG

a popular Republican governor		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*a popular Republican governor*	*Republican*

TRIGGER: *Republican*

PER-ORG

Republican voters		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*Republican voters*	*Republican*

TRIGGER: *Republican*

GPE-ORG

three permanent UN member countries		
Type	***Argument 1***	***Argument 2***

Affiliation.Employment/Membership	*three permanent UN member countries*	*UN*

TRIGGER: *member*

ORG-ORG

Wind Currents, Inc. is a member of the Chamber of Commerce of Ulster County		
Type	***Argument 1***	***Argument 2***
Affiliation.Employment/Membership	*Wind Currents, Inc.*	*Chamber of Commerce of Ulster County*

TRIGGER: *member*

3.1.2. Affiliation.Leadership

Leadership captures the relationship between a Person and an Organization or GPE led by that Person. If the leadership role is not explicit, use Affiliation.Employment/Membership instead.

NOTE:

Permitted Relation Arguments

Relation Type-Subtype	Argument 1 (the leader)	Argument 2 (the organization)
Affiliation.Leadership	PER	ORG, GPE

Examples

PER-GPE

the US president		
Type	***Argument 1***	***Argument 2***
Affiliation.Leadership	*the US president*	*US*

TRIGGER: *President*

PER-ORG

the CEO of Microsoft		
Type	***Argument 1***	***Argument 2***
Affiliation.Leadership	*the CEO of Microsoft*	*Microsoft*

TRIGGER: *CEO*

PER-ORG

Senate Leaders		
Type	***Argument 1***	***Argument 2***
Affiliation.Leadership	*Senate Leaders*	*Senate*

TRIGGER: *Leaders*

3.2 Part-Whole.Subsidiary Relation

Part-Whole.Subsidiary captures the ownership, administrative, and other hierarchical relationships between organizations and/or GPEs. This includes relationships between a department within an organization and the organization itself, between a company and its parent company, as well as between governmental organizations and their parent GPE.

Permitted Relation Arguments

Type	**Argument 1 (the part)**	**Argument 2 (the whole)**
Part-Whole.Subsidiary	ORG	ORG, GPE

Examples

ORG-ORG

parent company of ABC		
Type	***Argument 1***	***Argument 2***
Part-Whole.Subsidiary	*ABC*	*parent company of ABC*

TRIGGER: *parent*

ORG-ORG

Microsoft's accounting department		
Type	***Argument 1***	***Argument 2***
Part-Whole.Subsidiary	*Microsoft's accounting department*	*Microsoft*

TRIGGER: *Microsoft's*

ORG-GPE

New York police		
Type	***Argument 1***	***Argument 2***
Part-Whole.Subsidiary	*New York police*	*New York*

TRIGGER: *N/A*

NOTE: If there's some level of ambiguity in the text, annotators should default to the more general annotation of Physical.Origin instead of Part-Whole.Subsidiary relations between ORGs and GPEs

ORG-GPE

The U.S. Congress decided to veto the ecology bill.		
Type	***Argument 1***	***Argument 2***
Part-Whole.Subsidiary	*U.S. Congress*	*U.S.*

TRIGGER: *N/A*

3.3 Physical Relations

The Physical relations have two subtypes: Located and Origin.

3.3.1. Physical.Located

The Physical.Located relation captures the physical location of an entity. This can include persons being located somewhere, as well as the location of one geographical location as being part of another geographical location. These are typically permanent relationships, though there are obviously exceptions (a person might visit Madrid and then leave, a tent might be put up in a certain location for a special event, for example).

If two locations or a GPE and LOC are asserted to be the same or exactly contiguous

with each other, we will use Physical.Located as well. As far as possible, when entering annotations for the two entities, make the "original" LOC/GPE the "Loc" ARG and the corresponding (often ad hoc) LOC/GPE the "Entity" ARG. E.g.:

- [Springfield County] is [the area of worst contamination].
  = "Loc" ARG = "Entity" ARG
- [The fifth voting district] corresponds to [Cheyenne County].
  = "Entity" ARG = "Loc" ARG

NOTE: If an entity is explicitly stated to be next to or near another entity, we may also use the second entity as an argument for a Physical.Located relation, absent a more exact containing location. For this task, we do not necessarily distinguish between being "located near" and being "located in".

The following will also be tagged as Physical.Located:

- Regions under the control of some larger political entity: 'the Indian controlled region'
- Areas centered on or otherwise surrounding a geo-political entity: 'the Los Angeles region', 'the Atlanta area' (note that for these situations, the physically larger surrounding region is the "Entity" ARG, while the GPE on which it focuses is the "Loc" ARG)
- The relationship between a geo-political entity and its border: 'the Israeli border'

NOTE: For all locations for formal operations of organizations (including all official business activities), for present purposes do not use Physical.Located but Physical.Origin instead.

NOTE: The default category for a Relation indicated by a GPE premodifier is Physical.Origin (e.g. "Chicago gangs"), not Physical.Located

Permitted Relation Arguments

Type	**Argument 1 ("Entity" – the entity that's located somewhere)**	**Argument 2 ("Loc" – the place)**
Physical.Located	PER, GPE, LOC	GPE, LOC

Examples

PER-LOC

thousands of Palestinians rushed the Israeli checkpoint		
Type	***Argument 1***	***Argument 2***
Physical.Located	*thousands of Palestinians*	*the Israeli checkpoint*

TRIGGER: *rushed*

PER-LOC

the Calgary area		
Type	***Argument 1***	***Argument 2***
Physical.Located	*the Calgary area*	*Calgary*

TRIGGER: *N/A*

PER-GPE

He was campaigning in his home state of Tennessee		
Type	***Argument 1***	***Argument 2***
Physical.Located	*his*	*his home state*

TRIGGER: *in*

PER-LOC

in the West Bank, a passenger was wounded when an Israeli bus came under fire		
Type	***Argument 1***	***Argument 2***
Physical.Located	*a passenger*	*West Bank*

TRIGGER: *in*

LOC-GPE

The fifth voting district corresponds to Cheyenne		

County		
Type	***Argument 1***	***Argument 2***
Physical.Located	*The fifth voting district*	*Cheyenne County*

TRIGGER: *corresponds to*

LOC-LOC

St. Vartan's Cathedral, on Second Avenue		
Type	***Argument 1***	***Argument 2***
Physical.Located	*St. Vartan's Cathedral*	*Second Avenue*

TRIGGER: *on*

LOC-LOC

the region under Israeli control		
Type	***Argument 1***	***Argument 2***
Physical.Located	*the region under Israeli control*	*Israeli*

TRIGGER: *Israeli*

GPE-GPE

Moscow, Russia		
Type	***Argument 1***	***Argument 2***
Physical.Located	*Moscow*	*Russia*

TRIGGER: *N/A*

LOC-GPE

the Thai border		
Type	***Argument 1***	***Argument 2***
Physical.Located	*the Thai border*	*Thai*

TRIGGER: *Thai*

3.3.2. Physical.Origin

Physical.Origin describes the Relation between a PER or ORG entity and:

- the GPE in which they have citizenship
- the GPE or LOC in which they live
- the GPE or LOC in which they were founded
- the GPE or LOC in which they operate – for present purposes, this will include all of an organization's formal activities anywhere.
- a GPE or LOC entity that indicates their ethnicity
- the GPE or LOC which is a person's birthplace
- The default category for a Relation indicated by a GPE premodifier is Physical.Origin (e.g. "Chicago gangs"), not Physical.Located.

NOTE: Facility-type LOCs do not evoke Physical.Origin relations. For instance, "he's been in [[his] house] since 2PM" should not contain a Physical.Origin relation between [his] and [his house] because the LOC is a structure. Instead, annotators should select a Physical.Located relation in this case. The LOCs in the above examples refer to regions or areas (such as "the eastern part of the state") versus facility-like LOCs.

We also tag the Relation between a GPE and the industries or enterprises (ORGs) that they control (e.g., "state-controlled banks") as Physical.Origin.

NOTE: Don't tag the following cases as Physical.Origin:

- For a relationship between a PER and a religious ORG, use Social.Membership.
- The relationship between a person and a GPE they represent (e.g. John Kerry, MA) is Affiliation.Employment/Membership
- For a relationship between an ORG and its parent GPE (e.g., "US Supreme Court", "the UK navy"), use Part-whole.Subsidiary.

NOTE: If there's some level of ambiguity in the text, annotators should default to the more general annotation of Physical.Origin instead of Part-Whole.Subsidiary relations between ORGs and GPEs.

Permitted Relation Arguments

Type	**Argument 1 (the person or org)**	**Argument 2 (their GPE of origin)**
Physical.Origin	PER, ORG	GPE, LOC

Examples

PER-GPE

U.S. businessman Edmond Pope		
Type	***Argument 1***	***Argument 2***
Physical.Origin	*U.S. businessman Edmond Pope*	*U.S.*

TRIGGER: *N/A*

PER-GPE

their hometown of Arusha, Tanzania		
Type	***Argument 1***	***Argument 2***
Physical.Origin	*their*	*their hometown*

TRIGGER: *hometown*

PER-GPE

Some Missouri voters		
Type	***Argument 1***	***Argument 2***
Physical.Origin	*Some Missouri voters*	*Missouri*

TRIGGER: *N/A*

ORG-LOC

a small robotics company in a St. Louis suburb		
Type	***Argument 1***	***Argument 2***
Physical.Origin	*a small robotics company in a St. Louis suburb*	*a St. Louis suburb*

TRIGGER: *in*

ORG-LOC

the area's third-largest employer		
Type	***Argument 1***	***Argument 2***

Physical.Origin	*the area's third-largest employer*	*the area*

TRIGGER: *area's*

3.4 Social Relations

Social relations describe the relationship between people. There are four primary subtypes for personal relations: Business, Family, Membership and Unspecified. For these relations, both arguments must be entities of type PER, except for Social.Role. Arguments of Social relations are NOT ordered: these relations are symmetric.

There is also one additional subtype in Social relations, Social.Role, whose arguments are asymmetric: arg1 is a Title while arg2 is a Person.

3.4.1. Social.Business

The Social.Business relation captures the connection between two entities in any professional relationship. This includes boss-employee, lawyer-client, student-teacher, co-workers, etc.

NOTE: This relation should not be used to capture relationships implied from interaction between two entities (e.g. "President Clinton met with Yasser Arafat last week").

Permitted Relation Arguments

Type	**Argument 1**	**Argument 2**
Social.Business	PER	PER

Examples

PER-PER

their colleagues		
Type	***Argument 1***	***Argument 2***
Social.Business	*their*	*their colleagues*

TRIGGER: *colleagues*

PER-PER

a spokesman for the senator		

Type	***Argument 1***	***Argument 2***
Social.Business	*a spokesman for the senator*	*the senator*

TRIGGER: *for*

PER-PER

My doctor prescribed some great stuff		
Type	***Argument 1***	***Argument 2***
Social.Business	*My*	*My doctor*

TRIGGER: *doctor*

3.4.2. Social.Family

The Social.Family relation captures the connection between one entity and another with which it is in any familial relationship.

Permitted Relation Arguments

Type	**Argument 1**	**Argument 2**
Social.Family	PER	PER

Examples

PER-PER

relatives of the dead		
Type	***Argument 1***	***Argument 2***
Social.Family	*relatives of the dead*	*the dead*

TRIGGER: *relatives*

PER-PER

His sister was in attendance		
Type	***Argument 1***	***Argument 2***
Social.Family	*His*	*His sister*

TRIGGER: *sister*

PER-PER

Jill's husband, Jack		
Type	***Argument 1***	***Argument 2***
Social.Family	*Jill*	*Jill's husband*

TRIGGER: *husband*

3.4.3. Social.Membership

Use Social.Membership for relationships between a person and a group of type PER (e.g., ethnic or religious groups) of which that person is a member.

Permitted Relation Arguments

Type	**Argument 1**	**Argument 2**
Social.Membership	PER	PER

Examples

PER-PER

two Kurdish settlers		
Type	***Argument 1***	***Argument 2***
Social.Membership	*two Kurdish settlers*	*Kurdish*

TRIGGER: *Kurdish*

PER-PER

20,000 illiterate Catholic workers		
Type	***Argument 1***	***Argument 2***
Social.Membership	*20,000 illiterate Catholic workers*	*Catholic*

TRIGGER: *Catholic*

3.4.4. Social.Unspecified

Unspecified captures relationships between two person entities that meet the

following conditions:

1. The relationship must involve personal contact (or a reasonable assumption thereof).
2. There must be some indication or expectation that the relationship exists outside of a particular cited interaction.
3. There is no evidence of a business or family relationship.

The first condition excludes relationships like "Gore's supporters," "her opponents," or "people who help Americans laugh," where there is no expectation that one party will have interacted personally with the other party (or, put another way, spent time with the other party). A reasonable expectation of personal interaction is sufficient: there are relationships that often but not always involve personal contact (like "classmate" or "neighbor") – these will be allowed in general, as long as their commonplace usage would tend to imply personal contact.

The second condition excludes relationships like "her visitors," "his victims," or "my successor," where there is no indication from the text that the relationship exists outside of the specific event being discussed (a visit, a crime, or a succession, here). In the same way, this excludes cases where one might try to infer a relationship from a description of an event involving both entities (e.g. "He visited her in the hospital."). Relationships must be explicitly mentioned in the text.

Type	**Argument 1**	**Argument 2**
Social.Unspecified	PER	PER

Examples

PER-PER

She began an affair in late 1995 with one of the hospital's security police		
Type	***Argument 1***	***Argument 2***
Social.Unspecified	*she*	*one of the hospital's security police*

TRIGGER: *affair*

PER-PER

his friendship with some right-wing mayors		

Type	*Argument 1*	*Argument 2*
Social.Unspecified	*his*	*some right-wing mayors*

TRIGGER: *friendship*

PER-PER

those close to Princess Diana		
Type	***Argument 1***	***Argument 2***
Social.Unspecified	*those*	*Diana*

TRIGGER: *close to*

3.4.5. Social.Role

Use Social.Role for relationships between a person and their title, honorific, position, or occupation (TTL entity).

NOTE: Oftentimes there are no triggers for Social.Role relations. However, in copular "to be" constructions, the verb conjugation can serve as the trigger. For example, "she is the CEO", contains a Social.Role relation between "she" and the TTL "CEO" with "is" as the trigger. This goes for all forms of present constructions (am, are, is, become) as well as past (was, were, became) and perfect constructions (been).

Permitted Relation Arguments

Type	**Argument 1 (the title)**	**Argument 2 (the person who holds the role)**
Social.Role	TTL	PER

Examples

TTL-PER

U.S. Treasury Secretary Timothy Geithner called for forceful, coordinated action.		
Type	***Argument 1***	***Argument 2***
Social.Role	*Treasury*	*Timothy Geithner*

	Secretary	

TRIGGER: *N/A*

TTL-PER

Russian Mission Control chief Vladimir Solovyov said		
Type	***Argument 1***	***Argument 2***
Social.Role	*chief*	*Vladimir Solovyov*

TRIGGER: *N/A*

The Social.Role relationship also includes appositives:

TTL-PER

Michelle Obama, First Lady of the US, said		
Type	***Argument 1***	***Argument 2***
Social.Role	*First Lady*	*Michelle Obama*

TRIGGER: *N/A*

Number agreement is not essential and a plural title may be associated with a singular PER where necessary:

TTL-PER

Leaders Ayrault and Merkel met in Berlin.		
Type	***Argument 1***	***Argument 2***
Social.Role (1)	*Leaders*	*Ayrault*
Social.Role (2)	*Leaders*	*Merkel*

TRIGGER: *N/A*

They were plumbers before they won the lottery		
Type	***Argument 1***	***Argument 2***
Social.Role	*plumbers*	*They*

TRIGGER: *were*

4. Discussion Forums

When annotating discussion forum documents, you should expect to find more colloquial language, including spelling errors, interruptions, unclear expressions and missing punctuation. Annotate each document to the best of your understanding, trying to focus on the author's presumed intent.

4.1 Sentence Boundaries and Relations

Discussion Forum documents contain dialog text from multiple participants. When annotating these documents, you should expect to find more colloquial language, including spelling errors, interruptions, unclear expressions and missing punctuation. Annotate each document to the best of your understanding, trying to focus on the author's presumed intent. In conversational text it is often hard to determine sentence boundaries, especially when end-of-sentence punctuation is missing. Relations should only be tagged within a single sentence so in the case of missing or incorrect punctuation use syntactic information to determine sentence boundaries. In the example below, the Phys.Location relation between "family" and "ecuador" would not be taggable as the phrase "I saw a whole family on a bike" is a complete syntactic unit.

- … in ecuador like three people get on the back of a bike.. pretty crazy … I saw a whole family on a bike

4.2 Misspellings and Incorrect Punctuation

Annotate misspellings according to the intended meaning, as far as that can be deciphered. In the example below, "wroks" is a typo and we can assume that the author intended to write "works". We can therefore tag "wroks" as the trigger of an Affiliation.Employment/Membership relation.

- She wroks for Google.

Similarly, incorrect punctuation should be ignored and the text marked according to the author's presumed intent. Therefore, "work's" can be marked as a trigger in the following example:

- She work's for Google.

In the case of missing apostrophes, annotate the entire word, even if you would normally exclude the apostrophe from the trigger span. In the following, "husbands" would be marked as the trigger of a Social.Family relation.

- my husbands going on a trip to bermuda

In the case of missing spaces, annotate the entire span even if it includes text that you would normally not annotate. For example, in the following, “becameCEO” would be marked as the trigger of an Affiliation.Leadership relation.

- John becameCEO of the company in 2006