DEFT Chinese Rich ERE Annotation Guidelines: Relations V1.0

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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 of the targeted Types and Subtypes between tagged entities and argument fillers that are explicitly mentioned in the document. This means that the order of the arguments is important in the identification of Relations. To capture this idea, two different Argument slots (arg1 and arg2) are provided for each Relation. For example, in the sentence

［习近平］主席抵达［法国］参加星期四举行的峰会。

There is a Physical.Located-Near Relation between习近平and法国. In Physical.Located-Near Relations, the Person that is located somewhere will always be assigned to arg1 and the place that the Person is located will always be assigned to arg2.

We will tag the trigger word/phrase that indicate the Relation Type and Subtype. Relations are not always introduced explicitly by linguistic forms, so trigger words are not always present. Details of how and when to tag trigger words are discussed in Section 3.

We will assign a realis attribute to each Relation identified by a two-way distinction: ASSERTED or OTHER. . For a complete discussion of the rules for identifying realis attribute of a relation, please see Section 3 below.

Types and Subtypes will be assigned to every Relation. For each Type, there is a set of possible Subtypes. Types and Subtypes are intended to categorize the Relations on the basis of their meaning. In the example above, the Type of the Relation is Physical and the Subtype is Located-Near. For a complete description of the types and subtypes and allowable entity/argument fillers as the arguments of each relation type and subtype, please see Section 6 below.

The complete annotation for the example above is represented below.

Trigger	Realis	Type.Subtype	Arg1	Arg2
抵达	ASSERTED	Physical.Located-Near	习近平	法国

2. Taggability

2.1. 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 relations that are explicitly referenced within a **single sentence**.

2.2 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:

> 王军和王亮都移居国外了。

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

> 王军和王亮都移居国外了

Even if we learn that *王军*and *王亮*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.

2.3 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.:

> [[信息部]，[外交部]和[安全部]的部长们]今天碰头讨论…

Although the individual "heads" are clearly in ORG-Affiliation.Leadership relations with the ORG entities respectively, in tagging 3 such relations between the leader-argument [部长们] and the 3 ORGs, these relations could be taken as indicating that the entity [部长们] is leader of *all 3* of the ORGs, or that the [heads] are all leaders of all 3 ORGs.

…[[波士顿]和[纽约]的银行]…

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.

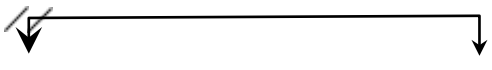
2.4 Relation Argument Proximity and "Nested Relations"

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'.

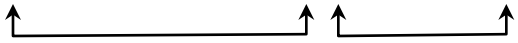
In addition, we do not consider "nested relations" taggable. That is, if entity A is contained within entity B, and entity B is contained within entity C, we annotate a Physical.Located-Near relation between entity A and entity B, and between entity B and entity C. However, we do not annotate a Physical.Located-Near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



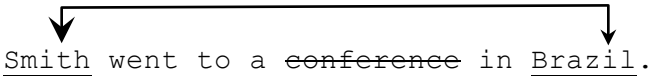
Smith went to a hotel in Brazil.



On the other hand, in the following example:

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

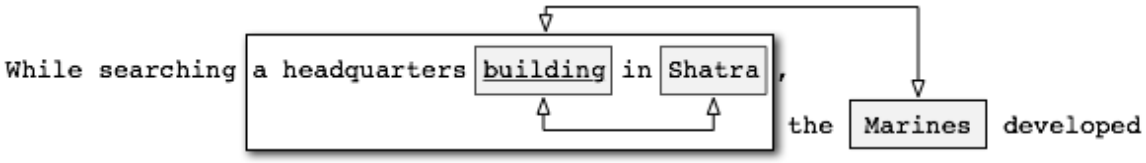
(Smith, Brazil) is a taggable physical relation, since conference is not a taggable entity type, and there are no other Physical.Located-Near relations annotated that would implicitly establish a Physical.Located-Near relation between (Smith, Brazil).



This principle holds even in "long-distance constructions" (i.e. sentences where the entities in the lowest-level Physical.Located-Near 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-Near 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-Near 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).

Following this, for the embedded entities below:

中共中央政治局常委

中共modifies中央which modifies 政治局 which modifies 常委. We can't promote the relation between(中共or中央, 常委).

In the sentence:

张三暂时住在上海的一家宾馆里。

(张三，宾馆)) is a taggable PHYS relation but (张三，上海) is not, because to get the second relationship, one would have to"promote"上海 through宾馆.

On the other hand, in:

张三出席了上海的一个国际会议

(张三，宾馆) is a taggable PHYS relation, since it is acceptable to promote through a non-taggable entity (conference).

This principle holds even for "long distance" constructions. For instance, in

星期六，[武装分子]袭击了[[[印度]首都][新德里]的历史古迹][红堡]，杀死了[3个平民]。

(三个平民, 红堡) is taggable, but not (平民, 首都).

3 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-Near relations, as in the example below:

张三在上海.
Rel: Physical.Located
Entity: 张三
Loc: '上海'
Trigger: '在'

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:

我老婆在家.
Rel: Social.Family
Entity: '我'
Entity: '我老婆'
Trigger: '老婆'

该公司的负责人
Rel: Affiliation.Leadership
Leader: '该公司的负责人'
Entity: '该公司'
Trigger: '负责人'

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:

[[美国］公司］(**no trigger**: '**美国**' is a noun already tagged as a GPE entity)
[[美国]的公司] (**trigger** = 的 " 的" indicating a Physical.Origin relation)
[[IBM] 研发部门] (**no trigger**: 'IBM' is a noun already tagged as an ORG entity)
[[IBM]的 研发部门] (**trigger** = 的" 的" indicating a Part-whole.Subsidiary relation)

The most common cases of noun-noun entity+entity constructions occur for Physical (both subtypes), Part-whole.Subsidiary, and Personal-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:

奥巴马总统
Rel: Social.Role
Role: '总统'
Per: '奥巴马'
Trigger: (N/A)

美国众议院
Rel: Part-whole.Subsidiary
Parent: '美国'
Suborg: '众议院'
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.

4 Relation Attributes

In Rich ERE Relation annotation, all taggable relations will be assigned with one of the two attributes: Asserted and Other.

Asserted relations are those that are positively expressed and is true in the past or at present in a document:

> 脸书昨天收购了whatsapp！

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

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:

> 据纽约时报报道，他后来在匈牙利财政部工作了四年。
> 独立电视新闻网报导，外交官员已经抵达莫斯科。

We tag irrealis relations as Other. Irrealis relation include relation in modal, future, conditional, hypothetical, uncertain, question contexts. For example, in the sentence:

> 大家都在担心这群基地组织的恐怖分子会渗进巴格达。

The presence of Al-Qaeda terrorists in Baghdad is expressed as a fear, rather than being asserted as an existing relation. Therefore, we tag a relation between the '这群基地组织的恐怖分子' and '巴格达, but we mark the relation as Other rather than Asserted.

We also tag conditional relations as Other, as in:

> 如果观察员今天能买到机票的话，他们星期二就能抵达巴格达。

The presence of 观察员in 巴格达is a future possibility but it is not an asserted relation, and is therefore it is tagged as Other.

We do not tag negative relations (whether asserted or hypothetical). For instance, in the following sentences, we do not tag relations between 可口可乐公司and 圣安东尼奥; 他 and 辉格党.

可口可乐公司本部不在圣安东尼奥。
他在那个时候是不可能参加辉格党的。

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

微软公司前总裁

她2008年离开eBay去了亚马逊公司。

In these examples we label the relationship between '微软公司前总裁 and '微软, and '她 and 'eBay'. [1]

5 Relation Arguments

Each relation mention has two arguments, which we call Arg1 and Arg2. Arguments are mostly entities that have been annotated during the entity annotation task and occasionally are Argument Fillers that need to be annotated during Relation annotation. For more information on argument fillers, see *Rich ERE Chinese Annotation Guidelines for Argument Fillers*. The argument fillers that are relevant to Relation annotation are: AGE, URL, and TITLE. Because these are not annotated during the entity annotation stage, argument fillers for relations are annotated for the first time during relation annotation and are assigned with designated types.

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.[2] For example, consider the sentence:

[习近平]主席抵达[法国]参加星期四举行的峰会。

This sentence expresses a Physical.Located-Near relation between习近平and 法国. In Physical.Located-Near relations, the person that is located somewhere will always be assigned to the first argument role (arg1), while the place where the person is

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

[2] 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.

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).

6 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. Note that two of the classes that can make up and argument (AGE and URL) are not otherwise annotated entities. Rather, they are Argument Fillers that are newly annotated during Relations annotation.

Type	Subtype	Read	ARG1 Name	ARG1	ARG2 Name	ARG2
Physical	located-near	1 is located at or near 2	entity	PER, GPE, LOC, FAC	place	GPE, LOC, FAC
	resident	1 resides in 2	per	PER	place	GPE, LOC, FAC
	org-headquarter	1's headquarter is at 2	org	ORG	place	GPE, LOC, FAC
	org-location-origin	1 has an origin of 2	org	ORG	place	GPE, LOC
Part-Whole	subsidiary	1 is a subsidiary of 2	suborg	ORG	parent	GPE, ORG
	membership	1 is a member of 2	member	GPE, ORG	org	ORG
Personal-Social	business	1 and 2 has a business relationship	person	PER	person	PER
	family	1 and 3 has a family relationship	person	PER	person	PER
	unspecified	1 and 2 has an unspecified	person	PER	person	PER

		social relationship				
	role	1 has a role of 2	person	PER	role	TTL
ORG-Affiliation	employment-membership	1 is employed or a member of 2	employee/ member	PER	employer	GPE, ORG
	leadership	1 is leader of 2	leader	PER	entity	GPE, ORG
	invest-shareholder	1 is investor or shareholder of 2	investor/ shareholder	PER, ORG, GPE	org	ORG
	student-alum	1 is student or alumni of 2	student/ alumni	PER	org	ORG
	ownership	1 is owner of 2	owner	PER	org	ORG
	founder	1 is founder of 2	founder	PER	org	ORG
General-Affiliation	member-origin-religion-ethnicity	1 has an origin or religion or ethnicity of 2	per	PER	entity	PER, GPE, LOC
	person-age	1 is of 2 old	per	PER	age	AGE
	org-website	1's website is 2	org	ORG	URL	URL
	org-political-religious-affiliation	1 is affiliated with 2	org	ORG	entity	PER, ORG

6.1 Physical Relations

The Physical relations captures the relationship between an entity and a place and have four subtype: Located-Near, Resident, Org-Headquarter and Org-Location-Origin.

6.1.1

6.1.2 Physical.Located-Near

The Physical.Located-Near 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-Near as well. As far as possible, when entering annotations for the two entities, make the "original" LOC/GPE the "Place" ARG and the corresponding (often ad hoc) LOC/GPE/FAC the "Entity" ARG. E.g.:

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

> Regions under the control of some larger political entity: '印度控制的地区'
> Areas centered on or otherwise surrounding a geo-political entity: '费城地区，'上海地区' (note that for these situations, the physically larger surrounding region is the "Entity" ARG, while the GPE on which it focuses is the "Place" ARG)
>
> The relationship between a geo-political entity and its border: '以色列边境'

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

Permitted Relation Arguments

Type	Argument 1 ("Entity" – the entity that's located somewhere)	Argument 2 "Place"
Physical.Located-Near	PER, ORG, GPE, LOC, FAC	GPE, LOC, FAC

Examples

PER-FAC

thousands of Palestinians rushed the Israeli checkpoint *上千个巴基斯坦人突袭了以色列的检查站*	***Trigger**: 突袭了*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Physical.Located-Near	*上千个巴基斯坦人*	以色列的检查站

PER-LOC

在土耳其南部的一个美国空军基地的美国军队	***Trigger**: 在*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Physical.Located-Near	*在土耳其南部的一个美国空军基地的美国军队*	*土耳其南部的一个美国空军基地*

PER-GPE

在美国旅游的中国游客	***Trigger**: 在*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Physical.Located-Near	*在美国旅游的中国游客*	*美国*

LOC-LOC

青海省南部的一个湖泊	***Trigger**: 的*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Physical.Located-Near	*青海省南部的一个湖泊*	*青海省南部*

第五个投票区将设在夏延县。	***Trigger**: 在*	***Realis**: Other*
Type	***Argument 1***	***Argument 2***
Physical.Located-Near	*第五个投票区*	*夏延县*

FAC-FAC

圣外长亚美尼亚教堂在第二大道上	***Trigger**: 在*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Physical.Located-Near	*圣外长亚美尼亚教堂*	*第二大道*

LOC-GPE

以色列控制的区域	***Trigger**: 的*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Physical.Located-Near	*以色列控制的区域*	*以色列*

GPE-GPE

莫斯科，俄罗斯	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Physical.Located-Near	*莫斯科*	*俄罗斯*

LOC-GPE

泰国边境	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Physical.Located-Near	*泰国边境*	*泰国*

6.1.3 Physical.Resident

NOTE: This relation only exists between a PER and a GPE or LOC.

All GPE, LOC or FAC entities in which a person entity has lived.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Physical.Resident	PER	GPE, LOC

Examples

PER-LOC

她一直住在中西部	***Trigger:*** *住*	***Realis:*** *Asserted*
Type	***Argument 1***	***Argument 2***
Physical.Resident	*她*	*中西部*

PER-GPE

Titi 永远不会离开布法罗 - 他是终身居民!	***Trigger:*** *居民*	***Realis:*** *Asserted*
Type	***Argument 1***	***Argument 2***
Physical.Resident	*Titi*	*布法罗*

6.1.4 Physical.Org-Headquarters

NOTE: This relation only exists between an ORG and a GPE, LOC, or FAC

This relation captures the GPE/LOC/FAC in which the headquarters of an organization are located.

Permitted Relation Arguments

Type	**Argument 1**	**Argument 2**
Physical.Org-Headquarters	ORG	GPE, LOC, FAC

Examples

Zeno Records 的总部会搬到西北部	***Trigger****:* *到*	***Realis:*** *Other*
Type	***Argument 1***	***Argument 2***
Physical.Org-Headquarters	*Zeno Records*	*西北部*

ORG-GPE

三州公司总部一直在费城	***Trigger****: 在*	***Realis:*** *Asserted*
Type	***Argument 1***	***Argument 2***
Physical.Org-Headquarters	*三州公司*	*费城*

6.1.5 Physical.Org-Location-Origin

Physical.Org-Location-Origin captures the relationship between an organization and the LOC or GPE where it is located, based, or does business.

Note: Subsidiary trumps this Relation for government organizations. For instance, "the U.S. Army" should be marked as Subsidiary rather than Org-Location-Origin.

We will also tag the Relation between a GPE and the industries (ORGs) that they control as Part-Whole.Subsidiary:

> … *state-controlled banks …*
>
> Part-Whole.Subsidiary (*banks*, *state*)

Permitted Relation Arguments

Type	**Argument 1**	**Argument 2**
Physical.Org-Loc-Origin	ORG	LOC, GPE, FAC

Examples:

ORG-GPE

费城的一个小公司	***Trigger**: 的*	***Realis:** Asserted*
Type	***Argument 1***	***Argument 2***
***Physical**.Org-Loc-Origin*	*费城的一个小公司*	*费城*

ORG-LOC

该地区最大的公司	***Trigger** N/A*	***Realis:** Asserted*
Type	***Argument 1***	***Argument 2***
***Physical**.Org-Loc-Origin*	*该地区最大的公司*	*该地区*

位于中国首位的制药公司	***Trigger:** N/A*	***Realis:** Asserted*
Type	***Argument 1***	***Argument 2***
***Physical**.Org-Loc-Origin*	*位于中国首位的制药公司*	*中国*

6.2 Part-Whole

6.2.1 Part-Whole.Subsidiary

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

中国银行的省级分行	***Trigger**: 的*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Part-Whole.Subsidiary	*中国银行的省级分行*	*中国银行*

ORG-ORG

县政府的纪检部门	***Trigger**: 的*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Part-Whole.Subsidiary	*县政府的纪检部门*	*县政府*

ORG-GPE

上海市公安局	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Part-Whole.Subsidiary	*上海市公安局*	*上海市*

ORG-GPE

中国驻美大使馆	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***

Part-Whole.Subsidiary	*中国驻美大使馆*	*中国*

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

6.2.2 Part-Whole.Membership

NOTE: This relation only exists between a GPE/ORG and an ORG.

Organizations or geopolitical entities that are members of the assigned organization. While similar to *Part-Whole.Subsidiary*, *Part-Whole.Membership* is different because correct arguments are distinct entities that are generally capable of autonomously ending their membership with the assigned organization.

Relation Type-Subtype	Argument 1 (the member)	Argument 2 (the org)
Part-Whole.Membership	GPE, ORG	ORG

Examples

GPE-ORG

三个联合国常任理事国	***Trigger**: 理事国*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Part-Whole.Membership	*三个联合国常任理事国*	*联合国*

ORG-ORG

Wind Currents公司是阿尔斯特县商会的成员之一。	***Trigger**: 成员*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Part-Whole.Membership	*Wind Currents公司*	*阿尔斯特县商会*

6.3 Personal-Social Relations

Personal social relations describe the relationship between people. There are four

primary subtypes for personal social relations: Business, Family, Unspecified and Role. For these relations, both arguments must be entities of type PER, except for Personal-Social.Role. Arguments of Social relations are NOT ordered: these relations are symmetric, with one exception: Personal-Social.Role, the arguments of which are asymmetric: arg1 is a Title while arg2 is a Person. See 6.3.4 for details.

6.3.1 Personal-Social.Business

The Personal-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**
Personal-Social.Business	PER	PER

Examples

PER-PER

英国外交大臣库克的发言人	***Trigger**: 的*	***Realis**: Other*
Type	***Argument 1***	***Argument 2***
Personal-Social.Business	*库克的发言人*	*库克*

PER-PER

他的律师	***Trigger**: 的*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Personal-Social.Business	*他的律师*	*他*

PER-PER

我的医生给我开了很多好药	***Trigger**: 的*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Personal-Social.Business	*我*	*我的医生*

PER-PER

他和合作伙伴之间产生了一些误会	***Trigger**: 合作*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Personal-Social.Business	*他*	*合作伙伴*

6.3.2 Personal-Social.Family

The Personal-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**
Personal-Social.Family	PER	PER

Examples

PER-PER

张三的家人	***Trigger**: 家人*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Personal-Social.Family	*张三*	*张三的家人*

6.3.3 Personal-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 "戈尔的支持者," " 她的对手," or " 搞笑全国人民的人," 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 “同学” or “邻居”) – these will be allowed in general, as long as their commonplace usage would tend to imply personal contact.

The second condition excludes relationships like “她的客人,” “his victims,” or “我的继承者” 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**
Personal-Social.Unspecified	PER	PER

Examples

PER-PER

他的邻居	***Trigger**: 的*	**Realis**: Asserted
Type	***Argument 1***	***Argument 2***
Personal-Social.Unspecified	*他*	*他的邻居*

PER-PER

张三的同班同学	***Trigger**: 的*	**Realis**: Asserted
Type	***Argument 1***	***Argument 2***
Personal-Social.Unspecified	*张三的同班同学*	*张三*

PER-PER

他是王武的同事	***Trigger**: 是*	**Realis**: Asserted
Type	***Argument 1***	***Argument 2***
Personal-Social.Unspecified	*王武的同事*	*王武*

PER-PER

张副市长的情人今天也被纪委约谈了。	***Trigger**: 情人*	**Realis**: Asserted
Type	***Argument 1***	***Argument 2***

Personal-Social.Unspecified	*张副市长的情人*	*副市长*

6.3.4 Personal-Social.Role

Use Personal-Social.Role for relationships between a person and their title, honorific, position, or occupation. Titles are not annotated as entity, but rather should be annotated as Argument Filler whenever there is a Personal-Social.Role relation and it needs to be labelled as a TTL type. Refer to Argument Filler guidelines for more detail.

NOTE: Oftentimes there are no triggers for Personal-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 Personal-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)**
Personal-Social.Role	TTL	PER

Examples

TTL-PER

国务院总理李克强	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Personal-Social.Role	*总理*	*李克强*

TTL-PER

外交部发言人秦刚	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Personal-Social.Role	*发言人*	*秦刚*

The Personal-Social.Role relationship also includes appositives:

TTL-PER

第一夫人米歇尔	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Personal-Social.Role	*第一夫人*	*米歇尔*

TTL-PER

敬爱的周总理	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Personal-Social.Role	*总理*	*周*

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

TTL-PER

两国领导人默克尔和普京商讨…	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Personal-Social.Role (1)	*领导人*	*默克尔*
Personal-Social.Role (2)	*领导人*	*普京*

6.4 Organization Affiliation Relations

Organization affiliation relations describe the relationship between people and organization. There are five primary subtypes for organization affiliation relations: employment-membership, leadership, investor-shareholder, student-alumni, and founder. For these relations, ARG1 must be entities of type PER, except for investor-shareholder, which can also be ORG or GPE; ARG2 must be entities of type ORG, except for employment-membership and leadership, which can also be GPE.

6.4.1 ORG-Affiliation.Employment-Membership

Employment-Membership captures the relationship between an person 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.

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 ORG-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 General-Afflication.Member-origin-religion-ethnicity Relation instead of ORG-Affiliation.Employment-Membership.

NOTE: This relation trumps ethnicity or citizenship: 'American troops' should be annotated with an ORG-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 ORG-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)**
ORG-Affiliation.Employment-Membership	PER	ORG, GPE

Examples

PER-ORG

他现在任职于一个国际公司	***Trigger**: 任职*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Employment-Membership	*他*	*一个国际公司*

PER-GPE

佛罗里达州州务卿凯瑟琳哈里斯	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Employment-Membership	*凯瑟琳哈里斯*	*佛罗里达州*

PER-ORG

一名爱国者纪事报的面试官	***Trigger***:*面试者*	***Realis***: *Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Employment-Membership	*一名爱国者纪事报的面试官*	爱国者纪事报

PER-ORG

他以前在环球娱乐工作。	***Trigger***: *工作*	***Realis***: *Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Employment-Membership	*他*	环球娱乐

PER-ORG

Peace Now 的积极分子	***Trigger***: *积极分子*	***Realis***: *Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Employment-Membership	*Peace Now 的积极分子*	*Peace Now*

PER-ORG

最高法院的员工	***Trigger***: *员工*	***Realis***: *Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Employment-Membership	*最高法院的员工*	*最高法院*

PER-ORG

最高法院的约翰. 斯密特	***Trigger***: *的*	**Realis**: Asserted
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Employment-Membership	*约翰杰. 斯密特*	*最高法院*

PER-ORG

GOP副主席候选人	***Trigger***: *候选人*	***Realis***: *Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Employment-Membership	*GOP副主席候选人*	*GOP*

PER-ORG

一位很受欢迎的共和党人	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Employment-Membership	*一位很受欢迎的共和党人*	*共和党*

PER-ORG

共和党选民	***Trigger**: N/A*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Employment-Membership	*共和党选民*	*共和党*

6.4.2 ORG-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 ORG-Affiliation.Employment-Membership instead.

Permitted Relation Arguments

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

Examples

PER-GPE

美国总统	***Trigger**: 总统*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Leadership	*美国总统*	*美国*

PER-ORG

微软公司执行总裁	***Trigger**: 执行总裁*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Leadership	*微软公司执行总裁*	*微软公司*

***TRIGGER:** CEO*

PER-ORG

参议院领袖	***Trigger**: 领袖*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
ORG-Affiliation.Leadership	*参议院领袖*	*参议院*

6.4.3 Org-Affiliation.Invest-Shareholder

NOTE: This relation only exists between a GPE/ORG and an ORG.

Any organization, person, or geopolitical entity that holds shares (whether majority or not) of the organization in the past, at present or in the future.

Permitted Relation Arguments

Type	**Argument 1**	**Argument 2**
Org-Affiliation.Invest-Shareholder	GPE, ORG	ORG

Examples

沃尔玛持有麦当劳50％的股份	***Trigger:** 股份*	***Realis**: Asserted*
Type	***Argument 1***	***Argument 2***
Org-Affiliation.Invest-Shareholder	*沃尔玛*	*麦当劳*

6.4.4 Org-Affiliation.Student-Alum

NOTE: This relation only exists between a PER and an ORG.

Any school (college, high school, university, etc.) that the assigned person has attended, is attending or will attend. There must be evidence in the document to indicate such relation.

Permitted Relation Arguments

Type	**Argument 1**	**Argument 2**
Org-Affiliation.Student-Alum	PER	ORG

Examples

PER-ORG

他今天参观了他的母校。	***Trigger：*** *毕业*	***Realis:*** *Asserted*
Type	***Argument 1***	***Argument 2***
Org-Affiliation.Student-Alum	*他*	*他的母校*

6.4.5

PER-ORG

卡罗琳2008年毕业于天普大学。	***Trigger：*** *毕业*	***Realis:*** *Asserted*
Type	***Argument 1***	***Argument 2***
Org-Affiliation.Student-Alum	*卡罗琳*	*天普大学*

6.4.6 Org-Affiliation.Ownership

NOTE: This relation only exists between a PER and an ORG

Organizations that are owned by a specific Person entity. An organization's founder should not automatically be considered that ORG's owner.

Permitted Relation Arguments

Type	**Argument 1**	**Argument 2**
Org-Affiliation.Ownership	PER	ORG

Examples

施瓦岑巴赫拥有Jawbreaker公司10年了。	***Trigger:*** *拥有*	***Realis:*** *Asserted*
Type	***Argument 1***	***Argument 2***
Org-Affiliation.Ownership	*施瓦岑巴赫*	*Jawbreaker公司*

6.4.7 Org-Affiliation.Founder

NOTE: This relation only exists between a PER and an ORG

This relation captures a person entity and the organization founded by that person.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Org-Affiliation.Founder	PER	ORG

Example

史蒂夫乔布斯在车库里创建了苹果公司	***Trigger:*** *创建*	***Realis****: Asserted*
Type	***Argument 1***	***Argument 2***
Org-Affiliation.Founder	*史蒂夫乔布斯*	*苹果公司*

6.5 General-Affiliation Relations

General Affiliation relations are used to capture a somewhat wide range of

As the name suggests, it contrasts with Org-Affiliation in that the first argument can be of a variety of entity types.

6.5.1 General-Affiliation.MORE (Member-Origin-Religion-Ethnicity)

This relation captures a person entity's membership in a ethnic or religious group. This relation only exists between a PER and a PER, GPE, or LOC.

Permitted Relation Arguments

Type	Argument 1	Argument 2
General-Affiliation.MORE	PER	PER, GPE, LOC

Examples

PER-GPE

罗伯斯庇尔确定是法国人	***Trigger:*** *是*	***Realis****: Asserted*
Type	***Argument 1***	***Argument 2***

General-Affiliation.MORE	*罗伯斯庇尔*	*法国人*

PER-PER

王军，男，汉族	***Trigger:*** *N/A*	***Realis****: Asserted*
Type	***Argument 1***	***Argument 2***
General-Affiliation.MORE	*王军*	*汉族*

PER-PER

两个库尔德决策者	***Trigger:*** *N/A*	***Realis****: Asserted*
Type	***Argument 1***	***Argument 2***
General-Affiliation.MORE	*两个库尔德决策者*	*库尔德*

PER-PER

20, 000个目不识丁的天主教员工	***Trigger:*** *N/A*	***Realis****: Asserted*
Type	***Argument 1***	***Argument 2***
General-Affiliation.MORE	*20, 000个目不识丁的天主教员工*	*天主教*

PER-LOC

布什从德州来	Trigger: *从*	**Realis**: Asserted
Type	***Argument 1***	***Argument 2***
General-Affiliation.MORE	*布什*	*德州*

6.5.2 General-Affiliation.Per-Age

NOTE: AGE is not an Entity type. It must be annotated as an Argument Filler during Relation annotation. Please see Argument Filler guidelines for more information.

This relation captures a person entity's reported age. Age of the person at death is an acceptable answer, as are previous and approximate ages. For example, if a

source document states that the assigned person was “about 50”, then “50” would be a valid filler.

Permitted Relation Arguments

Type	**Argument 1**	**Argument 2**
General-Affiliation.Per-Age	PER	AGE

Examples

PER-AGE

武宁瑞，男，现年34岁	***Trigger:*** *N/A*	***Realis:*** *Asserted*
Type	***Argument 1***	***Argument 2***
General-Affiliation.Per-Age	*武宁瑞*	*34*

PER-AGE

他被抓的时候19岁。	***Trigger:*** *N/A*	***Realis:*** *Asserted*
Type	***Argument 1***	***Argument 2***
General-Affiliation.Per-Age	*他*	*19*

6.5.3 General-Affiliation.Org-Website

NOTE: URL is not an Entity type. It must be annotated as an Argument Filler during Relation annotation. Please see Argument Filler guidelines for more information

This relation captures an official top level URL for an ORG entity’s website.

Permitted Relation Arguments

Type	**Argument 1**	**Argument 2**
General-Affiliation.Org-Website	ORG	URL

Examples

ORG-URL

Spuds 公司的网址是 Mashedpotatoes.com	***Trigger:*** *是*	***Realis****: Asserted*
Type	***Argument 1***	***Argument 2***
General-Affiliation.Org-Website	*Spuds公司*	*Mashedpotatoes.com*

ORG-URL

下载苹果产品相关软件请登陆：www.apple.com	***Trigger:*** *N/A*	***Realis****: Asserted*
Type	***Argument 1***	***Argument 2***
General-Affiliation.Org-Website	*苹果*	*www.apple.com*

NOTE: This relation only exists between an ORG and a PER or ORG.

Ideological groups with which an organization entity is associated. If an organization is clearly a member of another political or religious organization, it is an appropriate answer for a *Part.Whole-Membership* relation and should not be used for *Org-political-religious-affiliation*.

However, religions generally do not have an official central organization associated with them and so are usually appropriate for *Org-political-religious-affiliation* and not *Part-Whole.Membership*. A relationship consisting solely of the two groups interacting in a specific event context is not enough evidence to constitute a religious/political affiliation. Former political or religious affiliations are correct responses for this slot.

Permitted Relation Arguments

Type	**Argument 1**	**Argument 2**
General-Affiliation.Org-Political-Religious-Affiliation	ORG	PER, ORG

Examples

ORG-PER

趣味堂引用其基督教信条，要求从医疗保健法中获得宗教豁免。	***Trigger:*** *信条*	***Realis****: Asserted*
Type	***Argument 1***	***Argument 2***
General-Affiliation.Org-Political-Religious-Affiliation	*其*	*基督教*

ORG-ORG

她一直强调福来鸡是坚定的共和党快餐连锁。	***Trigger:*** *N/A*	***Realis****: Asserted*
Type	***Argument 1***	***Argument 2***
General-Affiliation.Org-Political-Religious-Affiliation	*福来鸡*	*共和党*

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.

6.6 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 Physical.Located-Near relation relation between "一家人" and "印度" would not be taggable as the phrase "我还见过一家人都

在一辆自行车上” is a complete syntactic unit.

> … 在印度我见过三个人在同一辆自行车上…很恐怖…我还见过一家人都在一辆自行车上

6.7 Misspellings and Incorrect Punctuation

Annotate misspellings according to the intended meaning, as far as that can be deciphered. In the example below, “上板” is a typo and we can assume that the author intended to write “上班”. We can therefore tag “上板” as the trigger of an ORG-Affiliation.Employment-Membership relation.

> 她在谷歌上板

Similarly, incorrect punctuation should be ignored and the text marked according to the author’s presumed intent. Therefore, “上。班” can be marked as a trigger in the following example:

> 她在谷歌上。班