ACE (Automatic Content Extraction) Arabic Annotation Guidelines for Relations

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Linguistic Data Consortium

http://www.ldc.upenn.edu/Projects/ACE/

1 Introduction

The goal of the Relation task is to detect and characterize Relations of the targeted Types between entities. Relations are ordered pairs of entities. 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

George Bush traveled to France on Thursday for a summit.

There is a Physical.Located Relation between *George Bush* and *France*. In Physical.Located 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.

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. For a complete description of the types and subtypes we will identify, please see Section 3 below.

We will tag the Syntactic Extent for every Relation identified and characterize the Relation by assigning one of the eight Syntactic Class types. The Syntactic Extent of the example above is the entire sentence. The Syntactic Class is Verbal. For a complete discussion of the rules for identifying Syntactic Classes and Relation Extents please see Section 2.3 below.

We will assign a Modality and Tense attribute to each Relation identified. For a complete discussion of the rules for identifying Modality and Tense, please see Section 2.2 below.

We will timestamp only Relations that contain temporal expressions within their extent. In the example above, the time *Thursday* would be associated with the Physical.Located Relation. Please see Section 2.4 for a complete discussion of timestamping Relations.

The complete annotation for the example above is represented below.

[George Bush traveled to France on Thursday for a summit.]				
Class	*Type*	*Argument1*	*Argument2*	*Timestamp: Within*
Verbal Asserted Past	*PHYS.Located*	***George Bush***	***France***	*Thursday*

2 Taggability

2.1. Preliminary Definitions

Unlike Entities and Events, Relations have no actual anchor in the text. We will limit Relations to only those that are expressed within a single sentence.

Tagging for Meaning

We will only tag Relations between entity mentions when the relationship is explicitly referenced in the sentence that contains the two mentions. Even if there is a relationship between two entities in the real world (or elsewhere in the document), there must be evidence for that relationship in the local context where it is tagged. For example:

He and his brother worked for Comcast.

In this sentence, there is explicit evidence of a familial relationship between *his* and *brother*.

Frank and James worked for Comcast.

Even if we know that *Frank* and *James* are brothers from elsewhere in the document, we will not tag a familial relation between them in these situations.

Reasonable Reader Rule

For all potential Relations, we will only annotate those Relations for which there is no reasonable interpretation of the sentence in which the Relation does not hold. In other words, we will tag a Relation only in case there is no reasonable interpretation of the sentence under which the Relation does not hold.

To understand the application of the reasonable reader rule, we must also consider Relation Modality. A complete definition of Relation Modality is provided in Section 2.1.1 below.
The two Modality attributes are *ASSERTED* and *OTHER*. If we think of the situations described by sentences as pertaining to possible descriptions of the world (or as 'possible worlds') then we can think of *ASSERTED* Relations as pertaining to situations in 'the real world' and we can think of *OTHER* Relations as pertaining to situations in 'some other world defined by counterfactual constraints elsewhere in the context'.

For example, in the sentence:

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

The presence of Al-Qaeda terrorists in Baghdad is a situation being described as holding in the counterfactual world defined by 'our' fears. And in:

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

The inspectors (*they*) are in Baghdad only in the worlds where they get plane tickets today.

Relation Chains and Entities as 'Blocking Categories'

Promotion through Taggable Entities is illegal.   In other words, if a potential Relation satisfies the Reasonable Reader Rule (and is expressed in a single sentence), but one of the Entity Mentions to be used as an argument is embedded in some other (Simple) Entity Mention, then that Entity Mention is not accessible and the potential Relation is not taggable.
So, in the sentence:

Smith went to a hotel in Brazil

(*Smith*, *hotel*) is a taggable PHYS Relation but (*Smith*, *Brazil*) is not, because to get the second relationship, one would have to "promote" *Brazil* through *hotel*.
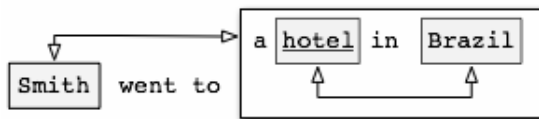
On the other hand, in:

Smith went to a conference in Brazil

(*Smith*, *Brazil*) is a taggable PHYS Relation, since it is acceptable to promote through a non-taggable entity (*conference*).
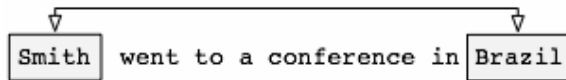
This principle holds even for "long distance" constructions. For instance, in

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

(*the Marines*, *building*) is taggable, but not (*the Marines*, *Shatra*).
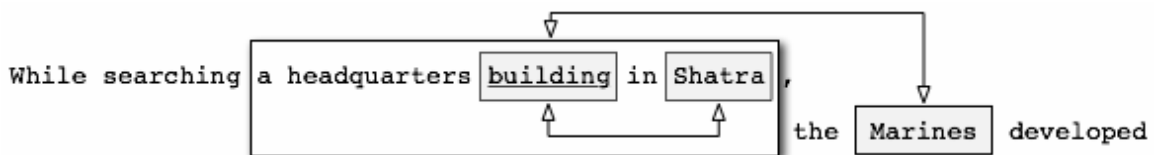
Likewise in:

> *They attacked the historic Red Fort in the Indian capital of New Delhi on Saturday killing three people*

(Red Fort, people) is taggable, but not (capital, people).
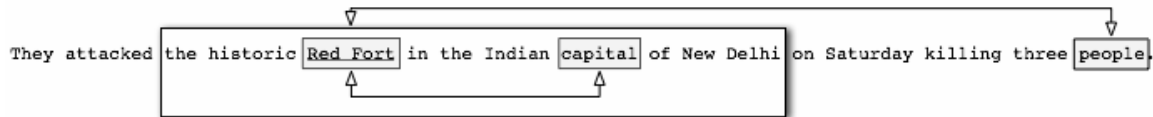
Similarly, in *US Secretary of State*, we will tag (*US, Secretary*) and (*Secretary, State*) but not (*US, State*).

Note that relationships can distribute over conjunctions. So in:

> *… banks in Boston and New York …*

There are two Relations: (*banks*, *Boston*) and (*banks*, *New York*).
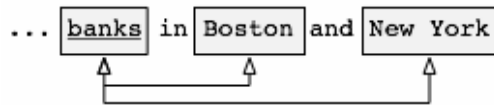
When the second half of a partitive-style construction is modified (e.g. *one of the top suppliers of Chicago gangs*), we will tag the relationship between the modifier and both halves of the partitive (e.g. (one, gangs) and (suppliers, gangs)).

Finally, it should be remembered that we operate according to a "tag for meaning" guideline. Even if there is a relationship between two entities in the real world (or elsewhere in the document), there must be evidence for that relationship in the sentence where it is tagged. So, there is no taggable Soc.Family relationship in the phrase "*a woman* who demanded hush money from *a popular entertainer*," despite the fact that it is later revealed that the woman is allegedly the entertainer's daughter. This is a common source of error.

2.2. Modality and Tense

2.1.1 Modality

The Modality attribute of Relations will be defined as:

> *Asserted* --- when the Reasonable Reader Rule is interpreted relative to the 'Real' world;

Other --- when the Reasonable Reader Rule is taken to hold in a particular counterfactual world.

Negatively defined Relations (e.g. "John is not in the house") will not be annotated.

When the entities constituting the arguments of a Relation are hypothetical, then the Relation is understood as *Asserted*. But if the Relation itself is hypothetical, then it is annotated as *Other*. For example:

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

gives two Relations. The ORG-Aff.Membership Relation between *terrorists* and *Al-Qaeda* will be annotated as *Asserted*. The Physical.Located Relation between *terrorists* and *Baghdad* will be annotated as *Other.*

2.1.2 Tense

TENSE will be defined relative to the time of speech.

The potential values for this attribute will be defined as follows:

> *Past* --- the Relation is taken to hold only for some span prior to the time of speech;

> *Future* --- the Relation is taken to hold only for some span after the time of speech;

> *Present* --- the Relation is taken to hold for a limited time overlapping with the time of speech;

> *Unspecified* --- the Relation is 'static' or the span of time for which it holds cannot be determined with certainty;

> TENSE will only be taggable for Relations when evidence for it can be found within the extent of the Relation mention. For the majority of Relation mentions with NP extent, this will mean that their TENSE is 'Unspecified.'

Note: Many of the Relations we will annotate will be expressed by noun phrases. Most of the time it will be difficult to determine the TENSE of the Relation expressed. For all such cases, we will use the value *Unspecified*. Some notable exceptions might be:

> *The president-elect of the US*   (*Future*)
> *The former US President*   (*Past*)

Formulaic Relations

"Wolf Blitzer, CNN, Baghdad."

   will be annotated with TENSE="Present" by fiat.

   R1: "Wolf Blitzer" "CNN"   (ORG-Aff.Employment Asserted Present)
   R2: "Wolf Blitzer" "Baghdad" (PHYS.Located Asserted Present)

2.3. Relation Extent and Syntactic Classes

It is important to note that the accurate identification of the Syntactic Class and the Relation Extent for each Relation will have significant effects on other decisions, such as taggability and timestamp accessibility.

Note: For the ACE Relations task, Syntactic Class is used synonymously with LEXICALCONDITION. The latter is the official property name in APF format, the former a more descriptive nomenclature intended to make the task more accessible to annotators.

The eight Syntactic Classes are intended to provide justification for the tagging of each Relation. Recall that the Reasonable Reader Rule and the restriction of taggable Relations to those that occur within a single sentence do the majority of work in constraining Relation Taggability. The Syntactic Classes are used to provide an additional sanity check on taggabilty. Relation Extent also constrains the accessibility of TIMEX2 objects for use in Relation timestamping.

The accessibility of Arguments and Timestamps to Relations will both be constrained by the extent of the Relation Mention under consideration. For Timestamps, this constraint is definitive to the issue of accessibility: if the TIMEX2 object does not fall within the extent of the Relation Mention, then the object cannot be indicated as a Timestamp of the Relation in question.

For Arguments, the decision will usually run the other way: the Relation will be justified by the Reasonable Reader Rule and the Syntactic Class and Relation Extent will be defined in such a way: that both arg1 and arg2 are included in the Relation Extent; and that the Syntactic Class felicitously describes that extent (and the syntactic connection between the two arguments).

One direct implication of this approach is that many potential Relations will satisfy the Reasonable Reader Rule but will not fit into one of the 7 explicitly defined Syntactic Classes (all but the *Other* class).   These cases should be considered more carefully than the others, and their identification as *Other* should motivate this attention.

Relation Extent is defined relative to each of the proposed Syntactic Classes.

2.3.1 Possessive

Possessive indicates the syntactic structure where the first noun or pronoun is in the possessive case.

Class	Type	Argument 1	Argument 2
America's Department of Defense			
وزار دفاع امريكا			
Possessive	*Part-Whole.Subsidiary*	*America's **Department of Defense***	***America***
Possessive	*Part-Whole.Subsidiary*	**وزارة** دفاع امريكا	**الامريكيـة**

2.3.2 Preposition

Class	Type	Argument 1	Argument 2
[Officials in California] are warning residents.			
حذر المسئولين في كاليفورنيا السكان من فيضان مرتقب			
Preposition	*Physical.Located*	***Officials** in California*	***California***
Preposition	*Physical.Located*	المسئولين	كاليفورنيا

2.3.3 PreMod

PreMod relations are those motivated by the construction of a proper adjective or proper noun premodifier and the head noun it modifies.

Relations involving nominal pre-modifiers are taggable, even when the nominal pre-modifier is generic. **These are easy to miss and require special attention**.

Examples: city officials, methamphetamine labs, passenger jet, army headquarters, railway station, industry officials, union employees, waste site, weapons complex.

Class	Type	Argument 1	Argument 2
[The American envoy] left the talks early.			
المبعوث الامريكى غـادر الاجتماع مبكرا			
PreMod	*Org-Aff.Employment*	*The American **envoy***	***American***
PreMod	*Org-Aff.Employment*	**المبعوث** الامريكى	**الامـريكى**

Class	Type	Argument 1	Argument 2
Palestinian leaders			
القـادة الفلسطينيون			
PreMod	*Org-Aff.Employment*	*Palestinian **leaders***	***Palestinian***
PreMod	*Org-Aff.Employment*	**القـادة** الفلسطينيون	**الفـلسطينيون**

Class	Type	Argument 1	Argument 2
New York police			
بـوليس نيويورك			
Class	*Type*	*Argument 1*	*Argument 2*

PreMod	Part-Whole.Subsidiary	New York **police**	**New York**
PreMod	Part-Whole.Subsidiary	**بـوليس** نيويورك	**نيويورك**

2.3.4 Coordination

Coordination relations are found in noun phrases containing the coordinating conjunction 'and'.

he and a hunting partner			
هو وزميله الصيـاد			
Class	**Type**	**Argument 1**	**Argument 2**
Coordination	Per-Social.Lasting	**He**	a hunting **partner**
Coordination	Per-Social.Lasting	**ه**	**زميله**

Exception: This construction is not preferred and should not be used in cases where there is a possessive relation found in the close context. For example, in "*He and his wife*", we will tag only the possessive relation "*his wife*" as that construction holds the meaningful relation.

2.3.5 Formulaic

For these standard constructions, we will capture the following relations.

Reporter sign-off

Jane Clayson, ABC News, South Lake Tahoe.			
حمـدى قنديل , اذاعة القاهرة, مصـر			
Class	**Type**	**Argument 1**	**Argument 2**
Formulaic	Physical.Located	**Jane Clayson**	**South Lake Tahoe**
Formulaic	Org-Aff.Employment	**Jane Clayson**	**ABC News**
Formulaic	Physical.Located	**حمـدى قـنديل**	**مصـر**
Formulaic	Org-Aff.Employment	**حمـدى قـنديل**	**اذاعة القاهرة**

Addresses

Mary Smith, Medford, Mass.			
حمـدى قنديل, القاهرة, مصـر			
Class	**Type**	**Argument 1**	**Argument 2**
Formulaic	GPE-Aff.CRE	**Mary Smith**	**Medford**, Mass
Formulaic	GPE-Aff.CRE	**حمـدى قـنديل**	**القاهرة**, مصـر

Elected officials

Senate Majority Leader Trent Lott (R-Miss.)			
عضـو مجلس الشـعب زعيم المعـا رضة خـالد محيى الدين عن القليو بية			
Class	**Type**	**Argument 1**	**Argument 2**
Formulaic	Org-Aff.Membership	Senate Majority Leader **Trent Lott**	**R**
Formulaic	Org-Aff.Employment	Senate Majority Leader **Trent Lott**	**Miss**.
Formulaic	Org-Aff.Membership	**عضـو** مجلس الشـعب زعيم	عضـو **مجلس**

		المعــا رضة خـالد محيى الدين – القليو بية	الشـعب
Formulaic	Org-Aff.Employment	عضـو مجلس الشـعب زعيـم المعــارضة **خـالد محيى الدين** – القليو بية	زعيـم

2.3.6 Participial

Participial relations are those motivated by a taggable relation between a head noun and a noun contained within a participial phrase that modifies it.

the crowd trapped inside the compartment			
الجمــوع المنحشرة بداخل الغرفة			
Class	**Type**	**Argument 1**	**Argument 2**
Participial	Physical.Located	the **crowd** trapped inside the compartment	the **compartment**
Participial	Physical.Located	**الجمــوع** المنحشرة بداخل الغرفة	**الغرفة**

2.3.7 Verbal

The Verbal Class of relations are those motivated by a taggable mention of a relation between two entities where the relation is directly expressed by a verb tying the two together into the entire sentence.

Stative or Habitual Constructions

Death Valley is in the Mojave Desert.			
وادى الموت يقع فى صحراء موجاف			
Class	**Type**	**Argument 1**	**Argument 2**
Verbal	Part-Whole.Geo	**Death Valley**	the **Mojave Desert**
Verbal	Part-Whole.Geo	**وادى الموت**	**صحراء موجاف**

Coca Cola Co. is based in Atlanta.			
شركــة الكوكاكولا تقع في اطلنتـا			
Class	**Type**	**Argument 1**	**Argument 2**
Verbal	GPE-Aff.Loc-Origin	**Coca Cola Co**	**Atlanta**
Verbal	GPE-Aff.Loc-Origin	**شركــة الكوكاكولا**	**اطلنتـا**

Relations Expressed by Verbs

He had previously worked at NBC Entertainment
هو عمل من قبل لصــالح شركة ان بي سي

Class	Type	Argument 1	Argument 2
Verbal	*Org-Aff.Employment*	**He**	**NBC Entertainment**
Verbal	*Org-Aff.Employment*	**هو**	**شركة ان بي سي**

[British Airways bought seven [Boeing 777s]].			
شركة الخطوط الجوية البريطانية اشترت سبعة طائرات بوينج 777			
Class	Type	Argument 1	Argument 2
Verbal	*Agent-Artifact.UOIM*	**British Airways**	*Boeing **777s***
Verbal	*Agent-Artifact.UOIM*	**شركة الخطوط الجوية البريطانية**	**بوينج777**

2.3.8 Other

The Other Class of relations is reserved for those that do not strictly satisfy the syntactic requirements of one of the other classes, but still satisfies the 'beyond a reasonable doubt' standard for relation taggability. The relation mention extent should be the entire sentence.

in the West Bank, a passenger was wounded when an Israeli bus came under fire			
في الضفة الغربية اصيب راكب عندما فتحت النيران علي حافلة اسرائيلية			
Class	Type	Argument 1	Argument 2
Other	*Physical.Located*	*a **passenger***	*the **West Bank***
Other	*Physical.Located*	*An Israeli **bus***	*the **West Bank***
Other	*Physical.Located*	**راكب**	**الضفة الغربية**
Other	*Physical.Located*	**حافلة اسرائيلية**	**الضفة الغربية**

2.4 Relation Timestamping

In addition to the two entity arguments, we will also associate temporal expressions with Relations. For a discussion of taggable temporal expressions, refer to "TIDES 2003 Standard for the Annotation of Temporal Expressions". For detailed discussion on timestamping, refer to "Timestamping of ACE Relations and Events".

Here are some examples of Relations that contain timestamps:

*He was the American envoy in **the 1960s.***

*He is **currently** VP of marketing for the Iowa-based company*

*He **once** lived in Paris.*

*They always hang out in a bar **all night.***

*We camped there over **the summer**.*

*The journalists left the city before the bombing commenced **the night of April 13***.

In many examples, there are time expressions in the extent of a Relation, but the time is not a direct adjunct of the Relation mention, but rather implicitly related to the Relation mention. We should only assign temporal expressions to Relations if there is reasonable interpretation of the sentence in which the Relation holds referring to the temporal expression.

In cases of confusion, we will apply the decision rule:

Decision Rule

> Whenever the TIMESTAMP might apply to several Relations equally well, we will assume that the TIMEX2 mention attaches only to the most syntactically local Relation, unless there is clear evidence to the contrary from the context.

3 Types and Subtypes

In addition to the constraints discussed above, there will be one additional constraint on the taggability of Relations. Namely, a potential Relation Mention will only be taggable in case it expresses a taggable Relation Type and Subtype.

We will tag only a limited inventory of Types and Subtypes. The following subsections define these Types and Subtypes and describe the Entity Type constraints on their possible Arguments.

In each subsection, the potential types of the arguments will be expressed as:

Permitted Relation Arguments:

Type	Argument 1	Argument 2
TYPE.SUBTYPE	*ENTITY TYPES*	*ENTITY TYPES*

This definition will be followed by a set of examples of the form:

Examples:

ARG1_TYPE-ARG2_TYPE

EXAMPLE TEXT			
Class	*Type*	*Argument 1*	*Argument 2*
SYNTACTIC CLASS MODALITY TENSE	*TYPE.SUBTYPE*	*MENTION **HEAD***	*MENTION **HEAD***

3.1. Physical

3.1.1 Located

The Location relation captures the physical location of an entity. This relation is restricted to entities whose location can theoretically vary. Persons, Vehicles and Weapons can and do tend to move around (or be moved around) frequently.

For locations of Facilities, Locations, and GPEs, use Part-Whole.Geographical instead.
We **do not** tag a PHYS.Located relation when someone is *sentenced to prison* or *handed a jail sentence*. There is no taggable PHYS relation in these constructions.

We will tag the relation between a passenger (or a pilot or a driver) and the vehicle that they are using as PHYS.Located, rather than as ART.User-Owner-Inventer-Manufacturer.

The default category for a relation indicated by a GPE premodifier is GEN-AFF.Citizen-Resident-Ethnicity (e.g. "Chicago gangs"), not PHYS.Located. [This follows the same reasoning that dictates GPE premodifiers defaulting to role GPE.]

Permitted Relation Arguments

Type	Argument 1	Argument 2
Physical.Located	PER, VEH, WEA	VEH, FAC, LOC, GPE

Examples

PER-FAC

thousands of Palestinians rushed the Israeli checkpoint			
الالاف من الفلسطينيين هرعوا الي نقاط التفتيش الاسرائيلية			
Class	*Type*	*Argument 1*	*Argument 2*
Other	*Physical.Located*	***thousands** of Palestinians*	*the Israeli **checkpoint***
Other	*Physical.Located*	**الالاف** من الفلسطينيين	نقاط **التفتيش** الاسرائيلية

PER-GPE

he was campaigning in his home state of Tennessee			
هو نشــأ وترعرع في وطنه لبنان			
Class	*Type*	*Argument 1*	*Argument 2*
Other	*Physical.Located*	***He***	*his home **state** of Tennessee*
Other	*Physical.Located*	**هو**	**وطنه** لبنان

PER-GPE, VEH-GPE

in the West Bank, a passenger was wounded when an Israeli bus came under fire			
في الضفة الغربية اصيب راكب عندما فتحت النيران علي حافلة اسرائيلية			
Class	***Type***	***Argument 1***	***Argument 2***
Other	*Physical.Located*	*a **passenger***	*the **West Bank***
Other	*Physical.Located*	*an Israeli **bus***	*the **West Bank***
Other	*Physical.Located*	**راكب**	**الضفة الغربية**
Other	*Physical.Located*	**حافلة اسرائيلية**	**الضفة الغربية**

3.1.2 Near

Near indicates that an entity is explicitly near another entity, but neither entity is a part of the other or located in/at the other.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Physical.Near	Any Entity Type	Any Entity Type

Examples

GPE-GPE

a town some 50 miles south of Salzburg in the central Austrian Alps			
مدينة علي بعد حوالي خمسين ميلا جنوب ســالسبرج في وسط جبال الالب الاسترالية			
Class	***Type***	***Argument 1***	***Argument 2***
Preposition	*Physical.Near*	*a **town** some 50 miles south of Salzburg in the central Austrian Alps*	***Salzburg***
Preposition	*Physical.Near*	**مدينة** علي بعد حوالي خمسين ميلا جنوب ســالسبرج في وسط جبال الالب الاسترالية	**ســالسبرج**

PER-FAC

Muslim youths recently staged a half dozen rallies in front of the embassy			
الشباب المسلم نظم ستة مظاهرات امام السفارة			
Class	***Type***	***Argument 1***	***Argument 2***
Other	*Physical.Near*	*Muslim **youths***	*the **embassy***
Other	*Physical.Near*	**الشباب** المسلم	**السفارة**

PER-PER

the person sitting next to you			
الشخص الجالس بجوارك			
Class	***Type***	***Argument 1***	***Argument 2***
Participial	*Physical.Near*	*the **person** sitting next to you*	***you***
Participial	*Physical.Near*	**الشخص** الجالس بجوارك	**ك**

3.2. Part-whole

3.2.1 Geographical

The Geographical relation captures the location of a Facility, Location, or GPE in or at or as a part of another Facility, Location, or GPE. Geographical relationships are the sorts of things one might find in a gazetteer or on a map or building plan, though this is not a requirement per se. Similarly, these are typically permanent relationships, though there are obviously exceptions (a tent might be put up in a certain location for a special event, for example).

The following two types of constructions will also be tagged as Part-Whole.Geographical:

1. GPEs and Regions under the control of some larger GPE:

   .. the Indian controlled region …

   Part-Whole.Geographical (*region*, *India*)

2. Areas defined by a central GPE:

   … the Atlanta area ..
   … the Los Angeles region …

   Part-Whole.Geographical (*Atlanta*, area)
   Part-Whole.Geographical (*Los Angeles*, *region*)

Permitted Relation Arguments

Type	Argument 1	Argument 2
Part-Whole.Geo	FAC, LOC, GPE	FAC, LOC, GPE

Examples

FAC-GPE

a military base in Germany			
قاعدة عسكرية في المانيا			
Class	*Type*	*Argument 1*	*Argument 2*
Preposition	*Part-Whole.Geo*	*a military **base** in Germany*	***Germany***
Preposition	*Part-Whole.Geo*	**قاعدة** عسكرية في المانيا	**المانيا**

FAC-FAC

St. Vartan's Cathedral, on Second Avenue			
كاتدرائية القديس بطرس في شارع رقم 2			
Class	*Type*	*Argument 1*	*Argument 2*
Preposition	*Part-Whole.Geo*	***St. Vartan's Cathedral**, on*	***Second***

		Second Avenue	*Avenue*
Preposition	*Part-Whole.Geo*	كاتدرائية القديس بطرس في شارع رقم 2	**في شارع رقم 2**

FAC-FAC

the lobby of the hotel			
بهو الفندق			
Class	**Type**	**Argument 1**	**Argument 2**
Preposition	*Part-Whole.Geo*	*the **lobby** of the hotel*	*the **hotel***
Premod in Arabic	*Part-Whole.Geo*	**بهو** الفندق	**الفندق**

FAC-FAC

the basketball arena at Michigan State University			
ملعب الكرة في جامعة بيروت			
Class	**Type**	**Argument 1**	**Argument 2**
Preposition	*Part-Whole.Geo*	*the basketball **arena** at Michigan State University*	***Michigan State University***
Preposition	*Part-Whole.Geo*	**ملعب** الكرة في جامعة بيروت	**جامعة بيروت**

GPE-GPE

Moscow, Russia			
موسكو، روسيا			
Class	**Type**	**Argument 1**	**Argument 2**
Formulaic	*Part-Whole.Geo*	***Moscow**, Russia*	***Russia***
Formulaic	*Part-Whole.Geo*	**موسكو**، روسيا	**روسيا**

LOC-GPE

the Thai border			
الحدود التايلاندية			
Class	**Type**	**Argument 1**	**Argument 2**
PreMod	*Part-Whole.Geo*	*the Thai **border***	***Thai***
PreMod	*Part-Whole.Geo*	**الحدود** التايلاندية	**التايلاندية**

LOC-LOC

the top of the mountain			
قمة الجبل			
Class	**Type**	**Argument 1**	**Argument 2**
Preposition	*Part-Whole.Geo*	*the **top** of the mountain*	*the **mountain***
Premod In Arabic	*Part-Whole.Geo*	**قمة** الجبل	**الجبل**

3.2.2 Subsidiary

Subsidiary captures the ownership, administrative, and other hierarchical relationships between organizations and between organizations and GPEs. This includes relationships between a company and its parent company, as well as

between a department of an organization and that organization. It also includes the relationship between organizations and the GPE's government of which they are a part.

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.Geographical (*banks, state*)

Permitted Relation Arguments

Type	Argument 1	Argument 2
Part-Whole.Subsidiary	ORG	ORG, GPE

Examples

ORG-ORG

parent company of ABC			
الشركة الام لشركة ايه بي سي			
Class	***Type***	***Argument 1***	***Argument 2***
Preposition	*Part-Whole.Subsidiary*	***ABC***	*parent company of **ABC***
Preposition	*Part-Whole.Subsidiary*	الشركة الام لشركة ايه بي سي	**لشركة ايه بي سي**

ORG-ORG

New York police			
بوليس نيويورك			
Class	***Type***	***Argument 1***	***Argument 2***
PreMod	*Part-Whole.Subsidiary*	*New York **police***	***New York***
PreMod	*Part-Whole.Subsidiary*	**بوليس نيويورك**	**نيويورك**

ORG-ORG

Microsoft's accounting department			
قسم الحسابات بشركة مايكروسوفت			
Class	***Type***	***Argument 1***	***Argument 2***
Possessive	*Part-Whole.Subsidiary*	*Microsoft's accounting **department***	***Microsoft***
Preposition in Arabic	*Part-Whole.Subsidiary*	قسم الحسابات بشركة مايكروسوفت	**بشركة مايكروسوفت**

ORG-GPE

3.2.3 Artifact

Concrete-Object characterizes physical relationships between concrete physical objects and their parts. Both arguments must have the same entity type (though not subtype). This relation is restricted to Vehicles and Weapons.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Part-Whole.Artifact	VEH	VEH
Part-Whole.Artifact	WEA	WEA

Examples

VEH-VEH

the backseat of a car			
المقعد الخلفي للسيارة			
Class	*Type*	*Argument 1*	*Argument 2*
Preposition	*Part-Whole.Artifact*	the ***backseat*** of a car	a ***car***
Preposition	*Part-Whole.Artifact*	**المقعد** الخلفي للسيارة	**للسيارة**

3.3. Personal-Social

Personal-Social relations describe the relationship between people. Both arguments must be entities of type PER.

Please note: The arguments of these relations are not ordered. The relations are symmetric.

3.3.1 Business

The Business relation captures the connection between two entities in any professional relationship. This includes boss-employee, lawyer-client, student-teacher, co-workers, political relationships on a personal level, etc. This does not include relationships implied from interaction between two entities (e.g. "President Clinton met with Yasser Arafat last week").

The PER-SOC.Business relation will be used whenever a reporter is embedded with a military unit (which is annotated as a PERSON entity).

Permitted Relation Arguments

Type	Argument 1	Argument 2
Per-Social.Business	PER	PER

Examples

PER-PER

their colleagues

زملائهم			
Class	**Type**	**Argument 1**	**Argument 2**
Possessive	*Per-Social.Business*	**their**	their **colleagues**
Possessive	*Per-Social.Business*	**هم**	**زملائهم**

PER-PER

his lawyer			
محاميه			
Class	**Type**	**Argument 1**	**Argument 2**
Possessive	*Per-Social.Business*	**his**	his **lawyer**
Possessive	*Per-Social.Business*	**ه**	**محاميه**

PER-PER

a spokesman for the senator			
المتحدث الرسمي للسيناتور			
Class	**Type**	**Argument 1**	**Argument 2**
Preposition	*Per-Social.Business*	a **spokesman** for the senator	the **senator**
Preposition	*Per-Social.Business*	**المتحدث** الرسمي للسيناتور	**للسيناتور**

3.3.2 Family

The 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
Per-Social.Family	PER	PER

Examples

PER-PER

relatives of the dead			
اقارب للمتوفي			
Class	**Type**	**Argument 1**	**Argument 2**
Preposition	*Per-Social.Family*	**relatives** of the dead	the **dead**
Preposition	*Per-Social.Family*	**اقارب** للمتوفي	**للمتوفي**

PER-PER

his wife			
زوجته			
Class	**Type**	**Argument 1**	**Argument 2**
Possessive	*Per-Social.Family*	**his**	his **wife**
Possessive	*Per-Social.Family*	**ه**	**زوجته**

3.3.3 Lasting-Personal

Lasting-Personal captures relationships 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.

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 "his visitors," "his victims," or "his 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.").

Permitted Relation Arguments

Type	Argument 1	Argument 2
Per-Social.Lasting	PER	PER

Examples

PER-PER

she began an affair in late 1995 with one of the hospital's security police			
هي بدأت مشروع تجاري عام 1995 مع واحد من حرس الامن بالمستشفي			
Class	*Type*	*Argument 1*	*Argument 2*
Verbal	*Per-Social.Lasting*	*She*	***one** of the hospital's security police*
Verbal	*Per-Social.Lasting*	**هي**	**واحد** من حرس الامن بالمستشفي

PER-PER

his friendship with some right-wing mayors			
صداقته بمحافظي الحزب اليميني			
Class	*Type*	*Argument 1*	*Argument 2*
Possessive	*Per-Social.Lasting*	*his*	*some right-wing **mayors***
Possessive	*Per-Social.Lasting*	ه	**بمحافظي** الحزب اليميني

PER-PER

your priest
قسيسك

Class	Type	Argument 1	Argument 2
Possessive	Per-Social.Lasting	your	your **priest**
Possessive	Per-Social.Lasting	ك	**قسيسك**

PER-PER

her neighbor			
جيرانها			
Class	**Type**	**Argument 1**	**Argument 2**
Possessive	Per-Social.Lasting	her	her **neighbor**
Possessive	Per-Social.Lasting	ها	**جيرانها**

PER-PER

Sarah's classmate			
زميلة ساره			
Class	**Type**	**Argument 1**	**Argument 2**
Possessive	Per-Social.Lasting	**Sarah**	Sarah's **classmate**
Premod in Arabic	Per-Social.Lasting	**ساره**	زميلة **ساره**

PER-PER

he and a hunting partner			
هو وزميله الصيـاد			
Class	**Type**	**Argument 1**	**Argument 2**
Coordination	Per-Social.Lasting	he	a hunting **partner**
Coordination	Per-Social.Lasting	ه	وزميله الصيـاد

PER-PER

those close to Princess Diana			
هؤلاء المقربون للاميرة ديانا			
Class	**Type**	**Argument 1**	**Argument 2**
Participial	Per-Social.Lasting	**those** close to Princess Diana	Princess **Diana**
Participial	Per-Social.Lasting	**those** close to Princess Diana	للاميرة **ديانا**

PER-PER

a guy I knew			
شخص اعرفه			
Class	**Type**	**Argument 1**	**Argument 2**
Participial	Per-Social.Lasting	a **guy** I knew	**I**
Participial	Per-Social.Lasting	**شخص** اعرفه	ا

PER-PER

nearly everyone he knows			
تقريبا جميع معارفه			
Class	**Type**	**Argument 1**	**Argument 2**

Participial	*Per-Social.Lasting*	*nearly **everyone** he knows*	***he***
Participial	*Per-Social.Lasting*	تقريبا كل **شخص** يعرفه	ه

PER-PER

Junta leader Gen. Robert Guei has close personal ties to the chief justice			
مدير سوني جون سميث له علاقات شخصية وثيقة بمدير المباحث			
Class	**Type**	**Argument 1**	**Argument 2**
Verbal	*Per-Social.Lasting*	*Junta leader Gen. **Robert Guei***	*the chief **justice***
Preposition in Arabic	*Per-Social.Lasting*	**مدير** سوني جون سميث	**بمدير** المباحث

3.4. ORG-Affiliation

3.4.1 Employment

Employment captures the relationship between Persons and their employers. This relation is only taggable when it can be reasonably assumed that the PER is paid by the ORG or GPE. This relation includes the relationship between an elected representative and the GPE he represents, for example, "***John Kerry (D-Massachusetts).***"

Note that this relation trumps ethnicity or citizenship: "*American troops*" and "*Russian President Vladimir Putin*" should both be annotated as Employment rather than Citizen-Resident-Ethnicity.

In instances where the Person is a member of some government body (*the Senate, the Knesset, the Supreme Court*, etc.), we will tag this relationship as Membership rather than Employment.

Whenever it is unclear whether an ORG-AFF relation should be annotated as subtype Employment or subtype Membership, we will choose Membership and move on.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Org-Aff.Employment	PER	ORG, GPE

Examples

PER-GPE

the US president			
الرئيس الامريكي			
Class	**Type**	**Argument 1**	**Argument 2**

PreMod	Org-Aff.Employment	the US **president**	**US**
PreMod	Org-Aff.Employment	الرئيس الامريكي	**الامريكي**

PER-ORG

the CEO of Microsoft			
رئيس مجلس ادارة الميكروسوفث			
Class	**Type**	**Argument 1**	**Argument 2**
Preposition	Org-Aff.Employment	the **CEO** of Microsoft	**Microsoft**
Premod in Arabic	Org-Aff.Employment	**رئيس** مجلس ادارة الميكروسوفث	**الميكروسوفث**

PER-GPE

John Kerry (D-Massachusetts)			
جون كيري ، الحزب الديمقراطي، ماساشوسيتس			
Class	**Type**	**Argument 1**	**Argument 2**
Formulaic	Org-Aff.Employment	**John Kerry** (D-Massachusetts)	**Massachusetts**
Formulaic	Org-Aff.Employment	**جون كيري** ، الحزب الديمقراطي، ماساشوسيتس	**ماساشوسيتس**

PER-GPE

Florida Secretary of State Katherine Harris			
وزير الخارجية المصري عمرو موسي			
Class	**Type**	**Argument 1**	**Argument 2**
PreMod	Org-Aff.Employment	Florida **Secretary of State**	**Florida**
PreMod	Org-Aff.Employment	وزير الخارجية المصري	**المصري**

PER-ORG

an interviewer from The Patriot Ledger			
القائم بالمقابلات الشخصية في شركة سوني			
Class	**Type**	**Argument 1**	**Argument 2**
Preposition	Org-Aff.Employment	an **interviewer** from The Patriot Ledger	The **Patriot Ledger**
Preposition	Org-Aff.Employment	**القائم** بالمقابلات الشخصية في شركة سوني	**شركة سوني**

PER-ORG

He had previously worked at NBC Entertainment

هو كان يعمل في شركة سوني			
Class	*Type*	*Argument 1*	*Argument 2*
Verbal	*Org-Aff.Employment*	**He**	**NBC Entertainment**
Preposition in Arabic	*Org-Aff.Employment*	هو كان يعمل في شركة سوني	**سوني**

3.4.2 Ownership

Ownership captures the relationship between a Person and an Organization owned by that Person.

Note: If the second argument is not an ORG, use the Agent-Artifact relation.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Org-Aff.Ownership	PER	ORG

Examples

PER-ORG

the owner of Gibson's Hardware Store			
مالك شركة جيبسون للمعدات الثقيلة			
Class	*Type*	*Argument 1*	*Argument 2*
Preposition	*Org-Aff.Ownership*	*the **owner** of Gibson's Hardware Store*	***Gibson's Hardware Store***
Premod in Arabic	*Org-Aff.Ownership*	**مالك** شركة جيبسون للمعدات الثقيلة	**شركة جيبسون للمعدات الثقيلة**

PER-ORG

[Dallas Cowboys owner] Jerry Jones			
مالك شركة دالاس جيري جونز			
Class	*Type*	*Argument 1*	*Argument 2*
PreMod	*Org-Aff.Ownership*	*Dallas Cowboys **owner***	***Dallas Cowboys***
Verbal	*Org-Aff.Ownership*	*مالك شركة دالاس*	*شركة دالاس*

3.4.3 Founder

Founder captures the relationship between an agent (Person, Organization, or GPE) and an Organization or GPE established or set up by that agent.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Org-Aff.Founder	PER, ORG	ORG, GPE

Examples

PER-ORG

Joseph Conrad Parkhurst, [who founded the motorcycle magazine Cycle World in 1962], has died.			
جوزيف كونراد الذي اسس جريدة الموتوسيكلات عام 1962 قد توفي في حادث سيارة			
Class	*Type*	*Argument 1*	*Argument 2*
Verbal	*Org-Aff.Founder*	***who***	*the motorcycle **magazine***
Verbal	*Org-Aff.Founder*	**الذي**	**جريدة** الموتوسيكلات

3.4.4 Student-Alum

Student-Alum captures the relationship between a Person and an educational institution the Person attends or attended. Please note that only attendance is required. It is not necessary for the person to have officially graduated from the institution.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Org-Aff.Student-Alum	PER	ORG.Educational

Examples

PER-ORG

the students at Nazareth Academy			
الطلاب في جامعة بيروت			
Class	*Type*	*Argument 1*	*Argument 2*
Preposition	*Org-Aff.Student-Alum*	*the **students** at Nazareth Academy*	***Nazareth Academy***
Preposition	*Org-Aff.Student-Alum*	**الطلاب** في جامعة بيروت	**جامعة بيروت**

PER-ORG

Card graduated from the University of South Carolina			
احمد تخرج من جامعة القاهرة			
Class	*Type*	*Argument 1*	*Argument 2*
Verbal	*Org-Aff.Student-Alum*	***Card***	*the **University of South Carolina***
Verbal	*Org-Aff.Student-Alum*	**احمد**	**جامعة القاهرة**

3.4.5 Sports-Affiliation

Sports-Affiliation captures the relationship between a player, coach, manager, or assistant and his or her affiliation with a sports organization (including sports leagues or divisions as well as individual sports teams). This relation subtype exists because it often requires domain-specific world knowledge to determine whether a sports team is made up of paid or unpaid players (i.e. whether a relationship between a player and a team qualifies as Employment).

We will **always** use the Sports-Affiliation subtype for EMP-ORG relations between a PERSON entity and an ORGANIZATION entity with the subtype Sports.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Org-Aff.Sports-Aff	PER	ORG

Examples

PER-ORG

J a goaltender in the National Hockey League			
Class	*Type*	*Argument 1*	*Argument 2*
Preposition	*Org-Aff.Sports-Aff*	a **goaltender** in the National Hockey League	the **National Hockey League**

PER-ORG

Zidane led France to the European title this year			
زيدان قاد فرنسا في بطولة كأس العالم			
Class	*Type*	*Argument 1*	*Argument 2*
Other	*Org-Aff.Sports-Aff*	**Zidane**	**France**
Other	*Org-Aff.Sports-Aff*	زيدان	**فرنسا**

PER-ORG

One other Major League baseball manager			
مدير جديد للاهلي			
Class	*Type*	*Argument 1*	*Argument 2*
PreMod	*Org-Aff.Sports-Aff*	One other Major League baseball **manager**	**Major League baseball**
Preposition in Arabic	*Org-Aff.Sports-Aff*	مدير جديد للاهلي	**للاهلي**

PER-ORG

some former NFL first-rounders			
بعض لاعبي الاهلي السابقين			
Class	*Type*	*Argument 1*	*Argument 2*
PreMod	*Org-Aff.Sports-Aff*	some former NFL **first-rounders**	**NFL**
PreMod	*Org-Aff.Sports-Aff*	بعض **لاعبي** الاهلي السابقين	**الاهلي**

PER-ORG

a first-round pick of the Miami Dolphins in 1998	
اللاعبون في نادي الزمالك يرغون في الاحتراف الخارجي	

Class	Type	Argument 1	Argument 2
Preposition	*Org-Aff.Sports-Aff*	*a first-round **pick** of the Miami Dolphins in 1998*	*the **Miami Dolphins***
Preposition	*Org-Aff.Sports-Aff*	**اللاعبون** في نادي الزمالك يرغون في الاحتراف الخارجي	**نادي الزمالك**

3.4.6 Investor-Shareholder

Investor-Shareholder captures the relationship between an agent (Person, Organization, or GPE) and an Organization in which the agent has invested or in which the agent owns shares/stock. Please note that agents may invest in GPEs.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Org-Aff.Shareholder	PER, ORG, GPE	ORG, GPE

Examples

PER-ORG

its stockholders	
حاملوا اسهمها	

Class	Type	Argument 1	Argument 2
Possessive	*Org-Aff.Investor-Shareholder*	*its **stockholders***	***its***
Possessive	*Org-Aff.Investor-Shareholder*	**اسهمها**	**ها**

PER-ORG

Time Warner's largest shareholder, with more than 120 million shares	
اكبر مساهمي شركة وارتر يملكون 120 مليون سهم	

Class	Type	Argument 1	Argument 2
Possessive	*Org-Aff. Investor-Shareholder*	*Time Warner's largest **shareholder**, with more than 120 million shares*	***Time Warner***
Premod	*Org-Aff. Investor-Shareholder*	اكبر**مساهمي** شركة وارتريملكون 120 مليون سهم	**وارتر**

ORG-GPE

In 1992, the Motorola Company invested 120 million US dollars in Tianjin…	
شركة موتورولا استثمرت 120 مليون دولار في تايوان	

Class	Type	Argument 1	Argument 2
Possessive	*Org-Aff.Investor-Shareholder*	*the **Motorola Company***	***Tianjin***
Preposition	*Org-Aff.Investor-Shareholder*	**شركة موتورولا**	***Tianjin***

3.4.7 Membership

Membership captures the relationship between an agent and an organization of which the agent is a member. Organizations and GPEs can be members of other Organizations (such as *NATO* or *the UN*). As discussed above, instances where a Person is a member of some government body (*the Senate, the Knesset, the Supreme Court*, etc.) will be tagged as Membership, even when the word "member" is not present (e.g. *Supreme Court justice*).

We will always tag the relation between members of terrorist Organizations and those organizations as ORG-AFF.Membership.

Whenever it is unclear whether an ORG-AFF relation should be annotated as subtype Employment or subtype Membership, we will choose Membership and move on.

Exception: This does *not* include political or religious affiliation, even if that affiliation is with an organization as well as an ideology (e.g. Democrat or Catholic). All political party and religious relationships should be marked as Ideology. For examples of Ideology relations, please see section 3.F.1.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Org-Aff.Membership	PER, ORG, GPE	ORG

Examples

PER-ORG

an activist for Peace Now			
ناشط في حركة السلام الان			
Class	*Type*	*Argument 1*	*Argument 2*
Preposition	Org-Aff.Membership	an **activist** for **Peace Now**	**Peace Now**
Preposition	Org-Aff.Membership	**ناشط** في حركة السلام الان	**حركة السلام الان**

PER-ORG

a member of the Supreme Court			
عضو في المحكمة العليا			
Class	*Type*	*Argument 1*	*Argument 2*
Preposition	Org-Aff.Membership	a **member** of the **Supreme Court**	the **Supreme Court**
Preposition	Org-Aff.Membership	**عضو** في المحكمة العليا	**المحكمة العليا**

PER-ORG

Supreme Court justice			
Class	*Type*	*Argument 1*	*Argument 2*
PreMod	*Org-Aff.Membership*	***Supreme Court justice***	***Supreme Court***

PER-ORG

Senate leaders			
اعضاء مجلس الشعب			
Class	*Type*	*Argument 1*	*Argument 2*
PreMod	*Org-Aff.Membership*	*Senate **leaders***	***Senate***
PreMod	*Org-Aff.Membership*	*اعضاء مجلس الشعب*	***مجلس الشعب***

GPE-ORG

three permanent UN member countries			
ثلاث بلاد تحمل العضوية الدائمة للامم المتحدة			
Class	*Type*	*Argument 1*	*Argument 2*
PreMod	*Org-Aff.Membership*	*three permanent UN member **countries***	***UN***
Verbal in Arabic	*Org-Aff.Membership*	ثلاث **بلاد** تحمل العضوية الدائمة للامم المتحدة	**للامم المتحدة**

3.5 Agent-Artifact

3.5.1 User-Owner-Inventor-Manufacturer

This relation applies when an agent owns an artifact, has possession of an artifact, uses an artifact, or caused an artifact to come into being.

Note: if the second argument is an Organization, use ORG-Affiliation.Ownership (arg1=PER) or Part-Whole.Subsidiary (arg1=ORG or GPE).

Note: We will tag the relation between a passenger (or a pilot or a driver) and the vehicle that they are using as PHYS.Located, rather than as ART.User-Owner-Inventer-Manufacturer.

Permitted Relation Arguments

Type	Argument 1	Argument 2
Agent-Artifact.UOIM	PER, ORG, GPE	WEA, VEH, FAC

Examples

PER-FAC

[My house] is in West Philadelphia			
منزلي يقع في غرب فيلادلفيا			
Class	**Type**	**Argument 1**	**Argument 2**
Possessive	*Agent-Artifact.UOIM*	***My***	*My **house***
Possessive	*Agent-Artifact.UOIM*	منزلي يقع في غرب فيلادلفيا	**منزلي**

ORG-VEH

The company's delivery truck			
سيارة الشركة			
Class	**Type**	**Argument 1**	**Argument 2**
Possessive	*Agent-Artifact.UOIM*	*The **company***	*The company's delivery **truck***
Premod in Arabic	*Agent-Artifact.UOIM*	سيارة **الشركة**	**سيارة**

ORG-VEH

Rubin Military design, [the makers of the Kursk]			
المرسيدس صانعة السيارات الاوتوماتيكية			
Class	**Type**	**Argument 1**	**Argument 2**
Preposition	*Agent-Artifact.UOIM*	*the **makers** of the Kursk*	*the **Kursk***
Participial	*Agent-Artifact.UOIM*	**المرسيدس** صانعة السيارات الاوتوماتيكية	**السيارات**

GPE-VEH

[US helicopters] flew over northern Iraq.			
الهليوكوبتر الامريكية حلقت فوق شمال العراق			
Class	**Type**	**Argument 1**	**Argument 2**
PreMod	*Agent-Artifact.UOIM*	***US***	*US **helicopters***
PreMod	*Agent-Artifact.UOIM*	*الهليوكوبتر **الامريكية** حلقت فوق شمال العراق*	**الهليوكوبتر**

ORG-VEH, ORG-VEH

[British Airways bought seven [Boeing 777s]].			
بريتيش اير وايز اشترت سبعة طائرات بوينج 777			
Class	**Type**	**Argument 1**	**Argument 2**
Verbal	*Agent-Artifact.UOIM*	***British Airways***	*Boeing **777s***
PreMod	*Agent-Artifact.UOIM*	***Boeing***	*Boeing **777s***
Verbal	*Agent-Artifact.UOIM*	**بريتيش اير وايز**	بوينج **777**
PreMod	*Agent-Artifact.UOIM*	**بوينج**	بوينج **777**

3.6. Gen-Affiliation

3.6.1 Citizen-Resident-Religion-Ethnicity

Citizen-Resident-Religion-Ethnicity describes the relation between a PER and the GPE in which they have citizenship, the GPE or Location in which they live, or the GPE or PER entity that indicates their ethnicity. We consider a person's birthplace as a place of residence for this purpose (e.g. "the Russian-born athlete" or "he was born in San Francisco").

The default category for a relation indicated by a GPE premodifier is GEN-AFF.Citizen-Resident-Religion-Ethnicity (e.g. "Chicago gangs"), not PHYS.Located. (This follows the same reasoning that dictates GPE premodifiers defaulting to role GPE.)

Note: We will include religious affiliation, even when such affiliation is with an established organization (i.e. "*Catholic parishioners*…").

Permitted Relation Arguments

Type	Argument 1	Argument 2
Gen-Aff.CRRE	PER	PER.Group, LOC, GPE, ORG

Examples

PER-GPE

[U.S. businessman] Edmond Pope			
رجل الاعمال الامريكي ادمون بوب			
Class	*Type*	*Argument 1*	*Argument 2*
PreMod Asserted Unspecified	*Gen-Aff.CRRE*	*U.S.* **businessman**	***U.S.***
PreMod Asserted Unspecified	*Gen-Aff.CRRE*	*رجل الاعمال الامريكي*	**الامريكي**

PER-GPE

Their hometown of Arusha, Tanzania			
بلدهم الام بيروت, لبنان			
Class	*Type*	*Argument 1*	*Argument 2*
Possessive Asserted Unspecified	*Gen-Aff.CRRE*	***Their***	*their **hometown** of Arusha, Tanzania*
Possessive Asserted Unspecified	*Gen-Aff.CRRE*	**هم**	**بلدهم** الام بيروت, لبنان

PER-GPE

Some Missouri voters			
بعض ناخبي ميسوري			
Class	**Type**	**Argument 1**	**Argument 2**
PreMod Asserted Unspecified	Gen-Aff.CRRE	Some Missouri **voters**	**Missouri**
PreMod Asserted Unspecified	Gen-Aff.CRRE	بعض **ناخبي** ميسوري	**ميسوري**

PER-GPE

a sheep shearer from New Zealand			
مساهم من نيوزيلاندا			
Class	**Type**	**Argument 1**	**Argument 2**
Preposition Asserted Unspecified	Gen-Aff.CRRE	a sheep **shearer** from New Zealand	**New Zealand**
Preposition Asserted Unspecified	Gen-Aff.CRRE	**مساهم** من نيوزيلاندا	**نيوزيلاندا**

PER-GPE

Albanian rebel fighters			
المقاتلون الالبان المتمردون			
Class	**Type**	**Argument 1**	**Argument 2**
PreMod Asserted Unspecified	Gen-Aff.CRRE	Albanian rebel **fighters**	**Albanian**
PreMod Asserted Unspecified	Gen-Aff.CRRE	**المقاتلون** الالبان المتمردون	**الالبان**

PER-PER

Cuban-American people			
المواطنين المصريين الامريكان			
Class	**Type**	**Argument 1**	**Argument 2**
PreMod Asserted Unspecified	Gen-Aff.CRRE	Cuban-American **people**	**Cuban-American**
PreMod Asserted Unspecified	Gen-Aff.CRRE	**المواطنين** المصريين الامريكان	**المصريين الامريكان**

PER-PER

two Jewish settlers			
مستعمرتين يهوديتين			
Class	**Type**	**Argument 1**	**Argument 2**
PreMod	Gen-Aff.CRRE	two Jewish	**Jewish**

		settlers	
Asserted Unspecified			
PreMod Asserted Unspecified	*Gen-Aff.CRRE*	**مستعمرتين** يهوديتين	**يهوديتين**

PER-ORG

a Methodist minister			
الوزير السني			
Class	**Type**	**Argument 1**	**Argument 2**
PreMod Asserted Unspecified	*Gen-Aff.CRRE*	a Methodist **minister**	**Methodist**
PreMod Asserted Unspecified	*Gen-Aff.CRRE*	**الوزير** السني	**السني**

PER-ORG

members of Walnut Lane Baptist Church			
اعضاء في الكنيسة الرسولية			
Class	**Type**	**Argument 1**	**Argument 2**
Preposition Asserted Unspecified	*Gen-Aff.CRRE*	**members** of Walnut Lane Baptist Church	**Walnut Lane Baptist Church**
	Gen-Aff.CRRE	**اعضاء** في الكنيسة الرسولية	الكنيسة الرسولية

PER-GPE, PER-GPE

the Serbian people of Bosnia-Herzegovina			
اهل صربيا من البوسنة			
Class	**Type**	**Argument 1**	**Argument 2**
Preposition Asserted Unspecified	*Gen-Aff.CRRE*	the Serbian **people** of Bosnia-Herzegovina	**Bosnia-Herzegovina**
PreMod Asserted Unspecified	*Gen-Aff.CRRE*	the Serbian **people** of Bosnia-Herzegovina	**Serbian**
Preposition Asserted Unspecified	*Gen-Aff.CRRE*	**اهل** صربيا من البوسنة	**البوسنة**
PreMod Asserted Unspecified	*Gen-Aff.CRRE*	**اهل** صربيا من البوسنة	**صربيا**

3.6.2 Org-Location-Origin

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.Geographical (*banks*, *state*)

Permitted Relation Arguments

Type	Argument 1	Argument 2
Gen-Aff.Loc-Origin	ORG	LOC, GPE

Examples

ORG-LOC

a small robotics company in a St. Louis suburb			
شركة اليكترونيات صغيرة في ضواحي سانت لويس			
Class	*Type*	*Argument 1*	*Argument 2*
Preposition Asserted Unspecified	*Gen-Aff.Loc-Origin*	*a small robotics* **company** *in a St. Louis suburb*	*a St. Louis* **suburb**
Preposition Asserted Unspecified	*Gen-Aff.Loc-Origin*	**شركة** اليكترونيات صغيرة في ضواحي سانت لويس	**ضواحي**

ORG-LOC

the area's third-largest employer			
ثالث اكبر شركة توظيف في المنطقة			
Class	*Type*	*Argument 1*	*Argument 2*
Possessive Asserted Unspecified	*Gen-Aff.Loc-Origin*	*the area's third-largest* **employer**	*the* **area**
Preposition Asserted Unspecified	*Gen-Aff.Loc-Origin*	ثالث اكبر **شركة** توظيف في المنطقة	**المنطقة**

ORG-GPE

a leading Chinese pharmaceutical company			
شركة ادوية صينية رائدة			
Class	*Type*	*Argument 1*	*Argument 2*
PreMod Asserted Unspecified	*Gen-Aff.Loc-Origin*	*a leading Chinese pharmaceutical* **company**	**Chinese**
PreMod	*Gen-Aff.Loc-Origin*	**شركة** ادوية صينية رائدة	صينية

Class		
Asserted Unspecified		

ORG-GPE, ORG-GPE

its Beijing branch			
فرعها في بكين			
Class	**Type**	**Argument 1**	**Argument 2**
PreMod Asserted Unspecified	Gen-Aff.Loc-Origin	its Beijing **branch**	**Beijing**
Possessive Asserted Unspecified	Gen-Aff.Loc-Origin	**its**	**Beijing**
Preposition in Arabic	Gen-Aff.Loc-Origin	فرعها	بكين
Possessive Asserted Unspecified	Gen-Aff.Loc-Origin	ها	بكين

4 Cross-Type Metonymy Relations

Cross-Type Metonymy occurs when more than one aspect of an entity is referenced in a document. For example, entities of EDT type Organization often have a physical entity of type Facility associated with them. These two incarnations of the same entity will be tagged as type Organization when the textual reference is directly referring to the organization and as type Facility when the mention refers to the physical building.

At the relation annotation stage, we will group entities of different types together with a Metonymy relation when they refer to different aspects of the same underlying entity.

The most common Cross-Type Metonymy Link occurs between Organizations and the Facilities they occupy. These two EDT entities are often referred to using the same strings of text.

Examples

In this example, there are two mentions of a hospital. The first mention is referencing the physical building or hospital facility. The second references the organization that runs or administrates the hospital.

Wouters, 42, died an hour later at St. John Macomb Hospital. The suspect died later the same night, hospital spokeswoman Rebecca O'Grady said Thursday. His name wasn't released.

We will annotate examples like this as follows.

Type	**Argument 1**	**Argument 2**

Metonymy	St. John Macomb Hospital	hospital
Metonymy	مستشفي القديس حنا	مستشفي