Adposition Supersenses v2

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Abstract

This document describes an inventory of 50 semantic labels designed to characterize the use of adpositions and case markers at a somewhat coarse level of granularity. Version 2 is a revision of the supersense inventory proposed for English by Schneider et al. (2015, 2016) and documented in PrepWiki1 (henceforth “v1”), which in turn was based on previous schemes. The present inventory was developed after extensive review of the v1 corpus annotations for English, as well as consideration of adposition and case phenomena in Hebrew, Hindi, and Korean. Examples in this document are limited to English; a multilingual and more detailed online lexical resource is forthcoming.

1 Overview

1.1 What counts as an adposition?

“Adposition” is the cover term for prepositions and postpositions. Briefly, we consider an affix, word, or multiword expression to be an adposition if it:
• Mediates a semantically asymmetric figure–ground relation between two concepts

1http://tiny.cc/prepwiki
• Is a grammatical item that can mark an NP, and in some cases may mark clauses (as a subordinator) or be intransitive. We also include always-intransitive grammatical items whose core meaning is spatial and highly schematic, like English together, apart, and away.
• Is not a differential object marker (e.g., Hebrew 'et, which marks direct objects if and only if they are definite).

1.2 **Inventory**

The v2 hierarchy is a tree with 50 labels. They are organized into three major subhierarchies: **CIRCUMSTANCE** (18 labels), **PARTICIPANT** (14 labels), and **CONFIGURATION** (18 labels).

| Circumstance | Participant | Configuration |
|--------------|-------------|---------------|
| Temporal     | Causer      | Identity      |
| Time         | Agent       | Species       |
| StartTime    | Co-Agent    | Gestalt       |
| EndTime      | Theme       | Characteristic|
| DeicticTime  | Co-Theme    | Possession    |
| Frequency    | Topic       | Part/Portion  |
| Duration     | Stimulus    | Stuff         |
| Locus        | Experiencer | Accompanier   |
| Source       | Originator  | InsteadOf     |
| Goal         | Recipient   | ComparisonRef|
| Path         | Cost        | RateUnit      |
| Direction    | Beneficiary | Quantity      |
| Extent       | Instrument  | Approximator  |
| Means        |             | SocialRel     |
| Manner       |             | OrgRole       |
| Explanation  |             |               |
| Purpose      |             |               |

• Items in the **CIRCUMSTANCE** subhierarchy are prototypically expressed as adjuncts of time, place, manner, purpose, etc. elaborating an event or entity.
• Items in the **PARTICIPANT** subhierarchy are prototypically entities functioning as arguments to an event.
• Items in the **CONFIGURATION** subhierarchy are prototypically entities or properties in a static relationship to some entity.
1.3 Limitations

This inventory is only designed to capture semantic relations with a figure–ground asymmetry. This excludes:

- The semantics of coordination, where the two sides of the relation are on equal footing, are not captured here. (Note that sometimes a morpheme can have symmetric as well as asymmetric interpretations: e.g., Korean -wa.)
- Aspects of meaning that pertain to information structure, discourse, or pragmatics.

Moreover, this inventory only captures semantic distinctions that tend to correlate with major differences in syntactic distribution. Thus, while there are labels for locative (LOCUS), ablative (SOURCE), allative (GOAL), and PATH semantics—and analogous temporal categories—finer-grained details of spatiotemporal meaning are for the most part lexical (viz.: the difference between in the box and on the box, or temporal at, before, during, and after) and are not represented here.  

1.4 Major changes from v1

Changes that affect only a single label are explained below the relevant v2 labels.

- **Removed multiple inheritance.** The v1 network was quite tangled. The structure is greatly simplified by analyzing some tokens as construals (Hwang et al., 2017).
- **Revised and expanded the Configuration subhierarchy.**
- **Removed the locative concreteness distinction.** In v1, labels LOCATION, INITIAL LOCATION, and DESTINATION were reserved for concrete locations, and the respective supertypes LOCUS, SOURCE, and GOAL used to cover abstract locations. This distinction was found to be difficult and without apparent relevance to the English preposition system. The concrete labels were thus removed.
- **Removed the location/state/value distinction.** The v1 scheme attempted to make an elaborate distinction between values, states, and other kinds of abstract locations. However, the English preposition system does not seem particularly sensitive to these distinctions. (We are not aware of any prepositions that mark primarily values or primarily states; rather, productive metaphors allow locative prepositions to be extended to cover

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2 This is not to claim that all members of a category can be grammatical in all the same contexts: on Saturday and at 5:00 are both labeled TIME, though the prepositions are by no means interchangeable in American English. We are simply asserting that the different constructions specific to days of the week versus times of the day are minor aspects of the grammar of English.
these, and there are cases where teasing apart abstract location vs. state vs. value is difficult.) Therefore, **State**, **Initial State**, **End State**, **Value**, and **Value Comparison** were removed.

- **Revised the treatment of comparison and related notions.**
- **Greatly simplified the Path subhierarchy.** See §2.3.
- **Simplified the Temporal subhierarchy.** See §2.1.

2 **Circumstance**

Macrolabel for labels pertaining to space and time; abstract/metaphoric locations such as states; and other categories that usually constitute semantically non-core properties of events.

Rarely, **Circumstance** is used directly for:

- **Contextualization**
  
  (1) In arguing for tax reform, the president claimed that loopholes allow big corporations to profit from moving their headquarters overseas.
  
  (2) Bipartisan compromise is unlikely with the election just around the corner.

  For these cases, the preposition helps situate the background context in which the main event takes place. The background context is often realized as a subordinate clause preceding the main clause.

- **Occasions**
  
  (3) I bought her a bike for Christmas.
  
  (4) I had peanut butter for lunch.

  These simultaneously express a **Time** and some element of causality similar to **Purpose**. But the PP is not exactly answering a **Why?** or **When?** question. Instead, the sentence most naturally answers a question like **On what occasion was X done?** or **Under what circumstances did X happen?**.

- **Any other descriptions of event/state properties that are insufficiently specified** to fall under spatial, temporal, causal, or other subtypes like **Manner**.
2.1 **Temporal**

Abstract supercategory for temporal descriptions: *when, for how long, how often, how many times*, etc. something happened or will happen.

**History.** The v1 category **AGE** (e.g., a *child of five*) was a mutual subtype of **TEMPORAL** and **ATTRIBUTE**. Being quite specific and rare, for v2 it was merged with **CHARACTERISTIC**. Combined with the changes to **TIME** subcategories (see below), this reduced by 3 the number of labels in the **TEMPORAL** subtree, bringing it to 7.

2.1.1 **Time**

*When* something happened or will happen, in relation to a reference time or event.

(5) We ate **in** the afternoon.  
   **at** 2:00  
   **on** Friday  
(6) Let’s talk **at** lunch.  
   **during**  
(7) I will finish **after** tomorrow.  
   lunch  
   you (do)  
(8) I will finish **by** tomorrow.  
   lunch  

The preposition **since** is ambiguous:

(9) ['after'] I grew a beard—that was **since** the breakup.  (*TIME*)  
(10) ['ever since'] I have loved you **since** the party where we met.  (*STARTTIME*)  
(11) ['because'] I’ll try not to whistle **since** I know that gets on your nerves.  (*EXPLANATION*)

**History.** In v1, point-like temporal prepositions (**at, on, in, as**) were distinguished from displaced temporal prepositions (**before, after, etc.**) which present the two times in the relation as unequal. **RELATIVE TIME** inherited from **TIME** and was reserved for the displaced temporal prepositions, as well as subclasses **STARTTIME, ENDTIME, DEICTICTIME**, and **CLOCKTIME CXXN**.

For v2, **RELATIVE TIME** was merged into **TIME**: the distinction was found to be entirely lexical and lacked parallelism with the spatial hierarchy. **CLOCKTIME CXXN**
was also merged with Time, the usages covered by the former (expressions of clock
time like ten of seven) being exceedingly rare and not very different semantically
from prepositions like before.

**START TIME**

When the event denoted by the governor begins.

Prototypical prepositions are *from* and *since* (but see note under *Time* about
the ambiguity of *since*):

(12)  a. The show will run *from* 10 a.m. to 2 p.m.
   
   b. a document dating *from* the thirteenth century

   Note that simple *Time* is used with verbs like *start* and *begin*: the event di-
rectly described by the PP is the starting, not the thing that started.

(13)  The show will start *at* 10 a.m. (*Time*)

**END TIME**

When the event denoted by the governor finishes.

Prototypical prepositions are *to*, *until*, *till*, *up_to*, and *through*:

(14)  The show will run *from* 10 a.m. *to* 2 p.m.

(15)  Add the cider and boil *until* the liquid has reduced by half.

(16)  If we have survived *up_to* now what is stopping us from surviving in the
future?

(17)  They will be in London *from* March 24 *through* May 7.

   Note that simple *Time* is used with verbs like *end* and *finish*: the event di-
rectly described by the PP is the ending, not the thing that ended.

(18)  The show will end *at* 2 p.m. (*Time*)

**DEICTIC TIME**

When an event took place or will take place, expressed with a
measure of time that serves as an offset relative to the present
time.

(19)  I ate 10 minutes *ago*.

   a while *back*

(20)  I will eat in 10 minutes.

   a. ['for no more than 10 minutes’ reading]: *Duration*

   b. ['10 minutes from now’ reading]: *Deictic Time*
2.1.2 **Frequency**

*At what rate* something happens or continues, or the instance of repetition that the event represents.

(21) Guests were arriving *at* a steady clip.

(22) The risk becomes worse *by* the day.

(23) The camcorder failed *for* the third time.

Contrast: **RateUnit**

2.1.3 **Duration**

Indication of *how long* something lasts (with reference to an amount of time or time period/larger event that it spans).

(24) I ate *for* 10 minutes.

(25) I ate *in* [for no more than] 10 minutes. [see (20a)]

(26) I ate *throughout* the night.

*through*

*into*

2.2 **Locus**

Location, condition, or value. May be abstract.

(27) I like to sing *at* the gym.

*in* the shower

*on* Main St.

(28) The cat is *on_top_of* the dog.

*beside*

*near*

(29) the wheels *on* the bus

(30) I read it *in a book*.

*on* a website

(31) The charge is *on* my credit card.

(32) We met *on* a trip to Paris.

(33) The Dow is *at* a new high.

20,000
(34) I am now off work.
(35) She was in a coma.

In a phenomenon called fictive motion (Talmy, 1996), dynamic language may be used to describe static scenes. We use construal for these:

(36) A road runs through my property. LOCUS~PATH
(37) The road extends to the river. LOCUS~GOAL
(38) I saw him from the roof. LOCUS~SOURCE

2.2.1 **SOURCE**

Initial location, condition, or value. May be abstract.

| Prototypical prepositions include from, off, off_of, and out_of: |
|---------------------------------------------------------------|
| (39) The cat jumped off_of the ledge.                         |
|      off                                                      |
|      from                                                    |
| (40) I got it from the internet.                             |
|      off                                                     |
| (41) people from France                                      |
| (42) The temperature is rising from a low of 30 degrees.     |
| (43) I have arrived from work.                               |
| (44) She awoke from a coma.                                  |
|      came out of                                             |

SOURCE is prototypically inanimate, though it can be used to construe animate PARTICIPANTS (especially ORIGINATOR and CAUSER). Contrasts with GOAL.

2.2.2 **GOAL**

Final location (destination), condition, or value. May be abstract.

| Prototypical prepositions include to, for, toward(s), into, and onto: |
|---------------------------------------------------------------------|
| (45) I ran to the store.                                            |
| (46) The cat jumped onto the ledge.                                |
| (47) The temperature is rising to a high of 40 degrees.             |
I will leave for work.

She slipped into a coma.

English regularly allows canonically static locative prepositions to mark goals with motion verbs like put. We use the construal GOAL~LOCUS:

I put the lamp next to the chair.

I’ll just hop in the shower.

I put my CV on the internet.

The cat jumped on my face.

GOAL is prototypically inanimate, though it can be used to construe animate PARTICIPANTS (especially RECIPIENT). Contrasts with SOURCE.

2.3 PATH

An intermediate space between an initial position and a final position.

The bird flew over the building.

The sun traveled across the sky.

Hot water is running through the pipes.

See also: INSTRUMENT, MANNER

History. The v1 hierarchy distinguished many different subcategories of path descriptions. The labels TRAVERSED, 1DTRAJECTORY, 2DAREA, 3DMEDIUM, COUNTOUR, VIA, TRANSIT, and COURSE have all been merged with PATH for v2.

2.3.1 DIRECTION

How motion or an object is aimed/oriented.

This is typically used for intransitive prepositions (sometimes classified as adverbs). There may or may not be an implicit SOURCE or GOAL:

The bird flew up.

The price shot up.
2.3.2 **Extent**

The size of a path.

This can be the physical distance traversed or the amount of change on a scale:

(59) We ran **for** miles.
(60) The price shot up **by** 10%.

2.4 **Means**

Secondary action or event that characterizes **how** the main event happens or is achieved.

Prototypically a volitional action, though not necessarily (64). A volitional **Means** will often modify an intended result, though the outcome can be unintended as well (63).

(61) Open the door **by** turning the knob.
(62) They retaliated **by** shooting .
    **with** shootings
(63) The owners destroyed the company **by** growing it too fast.
(64) Chlorophyll absorbs the light **by** transfer of electrons.

**Means** is similar to **Instrument**, which is used for causally supporting entities and is a kind of **Participant**.

Contrast with **Explanation**, which characterizes **why** something happens. I.e., an **Explanation** portrays the secondary event as the causal **instigator** of the main event, whereas **Means** portrays it merely as a **facilitator**.

**History.** In v1, **Means** was a subtype of **Instrument**, but with the removal of multiple inheritance for v2, the former was moved directly under **Circumstance** and the latter directly under **Participant**.
2.5 **Manner**

Description of **how** something happens or exists that does not directly invoke a location, path, or temporal or causal relation. Often the “style” of something.

(65) The toddler is old enough to eat **by** herself.

(66) The people shouted **with** pleasure.

(67) They dance **in** a circle. (**Path~Manner**)

(68) The sand is **in** a pyramid shape.

(69) It was written **in** French.

(70) music **in** C major

*History.* In v1, **Manner** was positioned as an ancestor of all categories that license a *How?* question, including **Instrument**, **Means**, and **Contour**, as in (67). This criterion was deemed too broad, so **Manner** has no subtypes in v2.

2.6 **Explanation**

**Assertion of why** something happens or is the case.

This marks a secondary event that is asserted as the reason for the main event or state.

(71) I went outside **because of** the smell.

(72) The rain is **due to** a cold front.

(73) I will appoint him **as** he is most qualified for the job.

**since**

Question test: **Explanation** and its subtype **Purpose** license *Why?* questions.

2.6.1 **Purpose**

Something that somebody wants to bring about, asserted to be **why** something was done, is the case, or exists.
Central usages of **Purpose** explain the motivation behind an action. Typically the governing event serves as a means for achieving or facilitating the **Purpose**. Prototypical markers include *for* and infinitive marker *to*:

(74)  
   a. He rose *to* make a grand speech.  
   b. surgery *to* treat a leg injury

(75)  
   a. He rose *for* a grand speech.  
   b. We hired a caterer *for* (the party) tonight.

Something directly manipulated/affected can stand in metonymically for the desired event:

(76)  
   a. I went to the store *for* eggs. [understood: ‘to acquire/buy eggs’]  
   b. surgery *for* a leg injury [understood: ‘to treat a leg injury’]

In contrast to the above, where the governor denotes an event, an entity can be modified to explicate an intended use or affordance. Because this can be understood as a static property of the entity—why it was created or what it is useful for (part of its qualia structure)—we use the construal **Characteris-tic→Purpose**: 3

(77)  
   **Characteristic→Purpose:**  
   a. a shoulder *to* cry on  
   b. The noose *for* the prisoner was too loose. [understood: ‘for use on the prisoner’]  
   c. a good store *for* eggs [understood: ‘for acquiring/buying eggs’]  
   d. a good book *to* give to young readers  
   e. a good book *for* young readers [understood: ‘for giving to young readers’]

**Question test:** **Explanation** and its subtype **Purpose**, when used adver-bially, license *Why?* questions. **Purpose** usually licenses an *in order to* or *for the purpose of* paraphrase.

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*History.* In v1, the usages illustrated in (77) were assigned a separate label, **Function**, which inherited from both **Attribute** and **Purpose**. The ability to use construal removes the need for a separate label.

3 In FrameNet as of v1.7, these sorts of purposes are labeled as **Inherent_Purpose**. See, e.g., the example “MONEY [to support yourself and your family]” in the Money frame (https://framenet2.icsi.berkeley.edu/fnReports/data/lu/lu13361.xml?mode=annotation).
3 PARTICIPANT

Thing, usually an entity, that plays a causal role in an event.

Not used directly—see subtypes.

3.1 CAUSER

Instigator of, and a core participant in, an event.

CAUSER is applied directly to inanimate things or forces conceptualized as entities. Prototypical prepositions are by (prominently including passive-by) and of:

(78) the devastation of the town wreaked by the fire
(79) the devastation of the fire

The CAUSER is sometimes construed as a SOURCE:

(80) a. the devastation from the fire (CAUSER~SOURCE)
    b. fatalities from cancer (CAUSER~SOURCE)
    c. FDR suffered from polio. (CAUSER~SOURCE)

See also: INSTRUMENT

3.1.1 AGENT

Animate instigator of an action (typically volitional).

Prototypical prepositions are by (prominently including passive-by) and of:

(81) the decisive vote by the City Council

of

When two symmetric AGENTS are collected in a single NP functioning as a set, it is marked as a WHOLE construal:

(82) There was a war between France and Spain. (AGENT~WHOLE)
(83) This is a discussion among friends. (AGENT~WHOLE)

Compare: CO-AGENT; see also: ORGROLE, ORIGINATOR, STIMULUS
**Co-Agent**

Second semantically core participant that would otherwise be labeled **AGENT**, but which is adpositionally marked in contrast with an **AGENT** occupying a non-oblique syntactic position (subject or object). Typically, the **AGENT** and **CO-AGENT** engage in the event in a reciprocal fashion.

(84) I fought in a war **against** the Germans.
(85) I talked **with** my roommate about cleaning duties.

argued

See also: **ACCOMPANIER**, **SOCIAL REL**

3.2 **Theme**

Undergoer that is a semantically core participant in an event or state, and that does not meet the criteria for any other label.

Prototypical **THEMES** undergo (nonagentive) motion, are transferred, or undergo an internal change of state (sometimes called **patients**). Adpositional **THEMES** are usually construed as something else:

(86) Fill the bowl with water. (**THEME**~**INSTRUMENT**)
(87) The mechanic made a repair to the engine. (**THEME**~**GOAL**)
(88) a. Sheldukher searched for his laser pistol. (**THEME**~**GOAL**)
       fumbled
   b. There is a significant demand for new housing. (**THEME**~**GOAL**)
   c. They charge higher prices for goods bought by credit card. (**THEME**~**GOAL**)
(89) a. the price of tea in China (**THEME**~**GESTALT**)
   b. the approach of the waves
   c. the death of a salesman murder
(90) a. The mechanic worked on the engine.
   b. We noshed on snacks.
   c. Students spend a lot of money on textbooks.
(91) a. There was an increase in oil prices.
   b. I’m covered in bees! (**THEME**~**LOCUS**)
(92) a. The training saved us from almost certain death. (**THEME**~**SOURCE**)

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b. They prevented us from boarding the plane. (\textsc{theme} \textsc{~ source})

When two symmetric undergoers are collected in a single NP functioning as a set, it is marked as a \textsc{whole} construal:

(93) There was a collision in mid-air between two light aircraft. (\textsc{theme} \textsc{~ whole})

(94) Links between science and industry are important. (\textsc{theme} \textsc{~ whole})

\begin{center}
\textit{History.} In v1, following many thematic role inventories, \textsc{patient} was a distinct label for undergoers that were affected (undergoing an internal change of state). It was merged into \textsc{theme} for v2 because the affectedness criterion can be subtle and difficult to apply.
\end{center}

Compare: \textsc{co-theme}

\subsection*{3.2.1 \textsc{co-theme}}

Second semantically core undergoer that would otherwise be labeled \textsc{theme}, but which is adpositionally marked in contrast with a \textsc{theme} occupying a non-oblique syntactic position (subject or object).

(95) They replaced my old tires with new ones.

\begin{center}
\textit{History.} In v1, \textsc{co-patient} was a distinct label, and the two shared a common supertype, \textsc{co-participant}. See note at \textsc{theme}.
\end{center}

See also: \textsc{instead} of, \textsc{co-agent}

\subsection*{3.2.2 \textsc{topic}}

Information content or subject matter in communication or cognition.

Prototypical prepositions are \textsc{about} and \textsc{on}:

(96) I gave a presentation \textsc{about} politics.

(97) Try not to think \textsc{about} it.

Less prototypical \textsc{topic} markers include:

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(98) Are you interested in politics?
(99) I was accused of treason.
(100) I’m an expert at cooking.
   talented

See also: *Stimulus*

3.3 *Stimulus*

| That which is perceived or experienced (bodily, perceptually, or emotionally). |

*Stimulus* does not seem to have any prototypical adposition in the languages we have looked at. In English, it can be construed in several ways:

(101) My affection for you (*Stimulus*~*Beneficiary*)
(102) Scared by the bear (*Stimulus*~*Causer*)
(103) I startled at the noise (*Stimulus*~*Goal*)
(104) I care about you (*Stimulus*~*Topic*)

Counterpart: *Experiencer*

3.4 *Experiencer*

| Animate who is aware of a bodily experience, perception, emotion, or mental state. |

*Experiencer* does not seem to have any prototypical adposition in the languages we have looked at. In English, it can be construed in several ways:

(105) The anger of the students (*Experiencer*~*Possessor*)
(106) Running is enjoyable for me (*Experiencer*~*Beneficiary*)
(107) It feels hot to me (*Experiencer*~*Goal*)

Elsewhere, the term *cognizer* is sometimes used for one whose mental state is described.

Counterpart: *Stimulus*
3.5 **Originator**

Animate who is the initial possessor or creator/producer of something, including the speaker/communicator of information. Excludes events where transfer/communication is not framed as unidirectional.

A “source” in the broadest sense of a starting point/condition. Contrasts with **Recipient** if there is transfer/communication.

Typically construed as **Agent** (with give, tell, talk to, create: subject or passive-by; adnominal by as in works by Shakespeare) or **Source** (obtain/hear from; adnominal of as in works of Shakespeare). Occasionally construed as **Theme** (rob her of her life savings: direct object).

Does not apply to events like exchange, talk/chat with, or negotiate, which involve a back-and-forth between **Agent** and **Co-Agents** (or a plural **Agent**).

*History:* **Originator** merges v1 labels **Donor/Speaker** and **Creator**, which were difficult to distinguish in the case of authorship. **Donor/Speaker** was a subtype of **Initial Location**, which inherited from **Location** and **Source**. **Creator** was a subtype of **Agent**. Moving **Originator** directly under **Participant** puts it in a neutral position with respect to its possible construals.

3.6 **Recipient**

Animate who is the (actual or intended) final possessor of a thing or message. Excludes events where transfer/communication is not framed as unidirectional.

A “goal” in the broadest sense of an ending point/condition. Contrasts with **Originator**.

Typically construed as **Goal** (give/talk to), **Agent** (with receive: subject or passive-by), or **Theme** (with inform: direct object).

Does not apply to events like exchange, talk/chat with, or negotiate, which involve a back-and-forth between **Agent** and **Co-Agent** (or a plural **Agent**).

*History:* In v1, **Recipient** was the counterpart to **Donor/Speaker**: **Recipient** was a subtype of **Destination**, which inherited from **Location** and **Goal**. Moving **Recipient** directly under **Participant** puts it in a neutral position with respect to its possible construals.
3.7 **Cost**

An amount (typically of money) that is linked to an item or service that it pays for/could pay for, or given as the amount earned or owed.

The governor may be an explicit commercial scenario:

(108) I bought the book *for* $10.
(109) The book is priced *at* $10.
(110) I got a refund *of* $10.

Or the *Cost* may be specified as an adjunct with a non-commercial governor:

(111) You can ride the bus *for* free.

*Cost* is *not* used with general scenes of possession or transfer, even if the thing possessed or transferred happens to be an amount of money:

(112) I bestowed the winner *with* $100.

*History:* This category was not present in v1, which had the broader category *Value*. VerbNet (*Kipper et al., 2008; Palmer et al., 2017*) has a similar category called *Asset*; we chose the name *Cost* to emphasize that it describes a relation rather than an entity type (it does not apply to money with a verb like *possess* or *transfer*, for instance).

3.8 **Beneficiary**

Animate or personified undergoer that is (potentially) advantaged or disadvantaged by the event or state.

This label does not distinguish the polarity of the relation (helping or hurting, which is sometimes termed *maleficiary*).

(113) Vote *for* Pedro!
(114) Junk food is bad *for* your health.
(115) My parrot died *on* me.
3.9 **INSTRUMENT**

An entity that facilitates an action by applying intermediate causal force.

Prototypically, an Agent intentionally applies the Instrument with the purpose of achieving a result:

(116) a. I broke the window **with** a hammer.
    b. I destroyed the argument **with** my words.

Less prototypically, the action could be unintentional:

(117) I accidentally poked myself in the eye **with** a stick.

The key is that the Instrument is not sufficiently “independently causal” to instigate the event.

However, to downplay the agency of the individual operating the instrument, the instrument can be placed in a passive by-phrase, which construes it as the instigator:

(118) a. The window was broken **by** the hammer. (**INSTRUMENT~Causer**)
    b. My headache was alleviated **by** aspirin. (**INSTRUMENT~Causer**)

Note that the examples in (118) can be rephrased in active voice with the Instrument as the subject.

A device serving as a mode of transportation or medium of communication counts as an Instrument, but is often construed as a Locus or Path:

(119) Communicate **by** phone. (**INSTRUMENT**)
    email
(120) Talk **on** the phone. (**INSTRUMENT~Locus**)
(121) Send it **over** email. (**INSTRUMENT~Path**)
    via
(122) Travel **by** train. (**INSTRUMENT**)
(123) Escape **with** a getaway car. (**INSTRUMENT**)
(124) Escape **in** the getaway car. (**INSTRUMENT~Locus**)

This includes some expressions which incorporate the Instrument in a noun:

(125) **ride on** horseback (**INSTRUMENT~Locus**)
(126) **hold at** knifepoint (**INSTRUMENT~Locus**)

19
Other non-prototypical instruments that can be construed as paths include waypoints from SOURCE to GOAL, and people that serve as intermediaries:

(127) We flew to London via Paris. (INSTRUMENT~PATH)
(128) I found out the news via Sharon. (INSTRUMENT~PATH)

Conversely, roadways count as PATHs but can be construed as INSTRUMENTs:

(129) Escape through the tunnel. (PATH)
(130) Escape by tunnel. (PATH~INSTRUMENT)

Compare MEANS, which is used for facilitative events rather than entities.

4 CONFIGURATION

| Thing, usually an entity or property, that is involved in a static relationship to some other entity. |
|--------------------------------------------------------------------------------------------------|
| Not used directly—see subtypes.                                                                  |

4.1 IDENTITY

| A category being ascribed to something, or something belonging to the category denoted by the governor. |
|--------------------------------------------------------------------------------------------------------|
| Prototypical prepositions are of (where the governor is the category) and as (where the object is the category): |
(131) the state of Washington [as opposed to the city]  
(132) The liberal state of Washington has not been receptive to Trump's message.  
(133) As a liberal state, Washington has not been receptive to Trump's message.  
(134) I like Bob as a colleague. [but not as a friend]  
(135) What a gem of a restaurant! [exclamative idiom: both NPs are indefinite]  
(136) the idea of opening a new business  
    task  
    hassle  
(137) the topic of semantics  
    issue
Something may be specified with a category in order to disambiguate it (131), or to provide an interpretation or frame of reference with which that entity is to be considered. In some cases, like (137), the category is a *shell noun* (Schmid, 2000) requiring further specification.

Categorizations may be situational rather than permanent/definitional:

(138)  
  a. She appears as Ophelia in *Hamlet*.
  
  b. He is usually a bartender, but today he is working as a waiter.

Paraphrase test: “(thing) IS (category) [in the context of the event]”: “Washington is a liberal state”, “opening a new business is a hassle”, “She is Ophelia”, etc. Note that *as*+category may attach syntactically to a verb, as in (134) and (138), rather than being governed by the item it describes.

*History.* Generalized from v1, where it was called *INSTANCE* and restricted to the “(category) of (thing)” formulation. The relevant usages of *as* were labeled *ATTRIBUTE*.

### 4.2 *SPECIES*

A category qualified by *sort, type, kind, species, breed, etc.* Includes *variety, selection, range, assortment, etc.* meaning ‘many different kinds’.

(139) that sort of business

(140) A good type of ant to keep is the red ant.

(141) certain strains of *Escherichia coli*

(142) Modern breeds of these homing pigeons return reliably

(143) Some poor sap applied the wrong brand of paint

(144) This store offers a wide selection of footstools

*SPECIES* is *not* used if the sort/variety noun is the object rather than the governor:

(145) a business of *characteristic* that sort
4.3 **GESTALT**

Generalized notion of “whole” understood with reference to a component part, possession, set member, or characteristic.

See **CHARACTERISTIC**.

**GESTALT** applies directly to:

- The holder of a property if the property is the governor:
  
  (146)  
  a. the blueness of the sky  
  b. the wisdom of the crowd  
  c. the time of the party  
  d. the amount of time allowed [but see (195)]

- The wearer of attire:
  
  (147) the uniforms of the children  
  (148) the shirt on him (GESTALT~LOCUS)

- Anything that is borderline between subcategories **POSSESSOR** and **WHOLE**

See also: **QUANTITY**

4.3.1 **POSSESSOR**

Animate who **has** something (the **POSSESSION**) which is not part of their body or inherent to their identity/character but could, in principle, be taken away.

Prototypically expressed with **of**:

(149) the money of the rich

See **SOCIALREL**.

4.3.2 **WHOLE**

Something described with respect to its part, portion, subevent, subset, or set element. See **PART/PORTION**.

(150)  
  a. The new engine of the car  
  b. The flaxen hair of the girl  
  c. The 3 layers of the cake
d. The 3 prongs of the strategy

e. The remainder of the cake

f. The tastiest bit of the cake

g. The tennis matches of a series

h. The interior of the shopping bag

i. The south (region) of France

j. The beginning of the party

(151) a. The tennis matches in a series (\textsc{whole}\textasciitilde\textsc{locus})
b. The new engine in the car (\textsc{whole}\textasciitilde\textsc{locus})
c. the escape key on the keyboard (\textsc{whole}\textasciitilde\textsc{locus})
d. The clothes in the pile (\textsc{whole}\textasciitilde\textsc{manner})

(152) Sets and ratios:

a. This is one of the worst restaurants in town. (\textsc{whole})
   better
b. 2 in 10 American children are redheads. (\textsc{whole}\textasciitilde\textsc{locus})
c. 2 out of 10 American children are redheads. (\textsc{whole}\textasciitilde\textsc{source})
d. Out of the 10 children in the class, only Mary is a redhead. (\textsc{whole}\textasciitilde\textsc{source})
e. Among the 10 children in the class, only Mary is a redhead. (\textsc{whole})

If the governor narrows the reference to a certain amount of the \textsc{whole} the construal \textsc{quantity}\textasciitilde\textsc{whole} is used—see (197). Note that this only applies if the governor is a measure term; it does not apply to distinctive parts like “layers” (150c) and “prongs” (150d), even if a count is specified.

Used to construe geographic and temporal “containers”:

(153) Famous castles of the valley (\textsc{locus}\textasciitilde\textsc{whole})

(154) a. the 15th of March (\textsc{time}\textasciitilde\textsc{whole})
   Ides
b. March of 44 BC (\textsc{time}\textasciitilde\textsc{whole})

The prepositions between and among can impose \textsc{whole} construals by combining two or more items in the object NP (contrast with (152e)):

(155) The negotiations between the parties went well. (\textsc{agent}\textasciitilde\textsc{whole})

(155′) The negotiations by the parties went well. (\textsc{agent})
4.4 **Characteristic**

Generalized notion of a part, feature, possession, or the contents or composition of something, understood with respect to that thing (the *gestalt*).

Can be used to construe person-to-person relationships such as kinship, whose scene role should be *SocialRel*. Labels *Possession*, *Part/Portion*, and its subtype *Stuff* are defined for some important subclasses.

*Characteristic* applies directly to:
- A property value:
  
  (156) a. a car of high quality
  b. a man of honor
  c. a business of that sort [contrast with *Species*, §4.2]
- Attire:
  
  (157) the kid with a vest (on)
  (158) the kid in a vest (*Characteristic~Locus*)
- Role of a complex framal *gestalt* that has no obvious decomposition into parts:
  
  (159) a. the restaurant with a convenient location
  b. a party with great music
- That which is located in a container denoted by the governor:
  
  (160) a room with 2 beds
- Anything that is borderline between subcategories *Possession* and *Part/Portion*

Typically, one of “*gestalt* [HAS, CONTAINS] *characteristic*” is entailed. This does not help to distinguish subtypes.

*History.* The v1 label *Attribute* was intended to apply to features of something, but was rather squishy.
4.4.1 **Possession**

That which some **Possessor** (animate or personified, e.g. an institution) **has**, and which is not part of their body or inherent to their identity/character but could, in principle, be taken away.

Sometimes called *alienable* possession. The possession may be concrete or abstract, and temporary or permanent. Excludes attire: see **Characteristic**.

Prototypical prepositions are *with* and *without*:

(161) People *with* money

Immediate concrete possession uses an **accompanier** construal:

(162) Hagrid exited the shop *with* (= carrying) a snowy owl. (Possessor~→*accompanier*)

Paraphrase test: “**Possessor** **possesses** **Possession**”, or “**Possessor** is in **Possession of** **Possession**”. The latter is especially appropriate for immediate concrete possession.

4.4.2 **Part/portion**

A part, portion, subevent, subset, or set element (e.g., an example or exception) of some **whole**.

Anything directly labeled with **part/portion** is understood to be *incomplete* relative to the **whole**. This includes body parts and partial food ingredients.

Prototypical prepositions include *with*, *without*; *such as*, *like* for exemplification; and *but*, *except*, *except for* for exceptions:

(163) a. A car *with* a new engine
    b. A strategy *with* 3 prongs
    c. The girl *with* flaxen hair
    d. A man *with* a wooden leg named Smith
    e. A valley *with* a castle
    f. A quintet *with* 2 cellos
    g. A performance *with* a guitar solo
    h. A cake *with* 3 layers
    i. A sandwich *with* wheat bread
j. Soup with carrots (in it)
k. A chicken sandwich with ketchup (on it)

(164) Bread without gluten
(165) Strategies such as divide-and-conquer
(166) Everyone except Bob plays trombone.

Some can be paraphrased with INCLUDES, but this is not determinative.

**STUFF**

The members comprising a group/ensemble, or the material comprising some unit of substance. **STUFF** is distinguished from other instances of **PART/PORTION** in fully covering (or “summarizing”) the aggregate whole.

Paraphrase test: “**WHOLE CONSISTS OF STUFF**”

(167) a. A flock of birds
    b. A throng of tourists
    c. A clump of sand
    d. A piece of wood
    e. A series of tennis matches
    f. An evening of Brahms
    g. A meal of salmon

(168) A salad of mixed greens
    with

(169) This bottle is of beer (and that one is of wine). [but see (187)]

(170) **ORGROLE~STUFF:**
    a. An order of nuns
    b. A chamber group of 5 players
        with

See also: **QUANTITY**

**STUFF** has no specific counterpart under **WHOLE**.
4.5 **ACCOMPANIER**

Entity that another entity is together with.

Sometimes called *comitative*. Prototypical prepositions are *with, without, along_with, together_with, and in_addition_to*:

(171) I’ll have soup *with* salad. 

*without*

(172) She’ll be *with* us in spirit.

For an “extra participant” in an activity, where two parties perform the activity together (but the nature of the activity would not fundamentally change if they each performed it independently), a Co-Agent construal is used:

(173) Do you want to walk *with* me? *(ACCOMPANIER~Co-Agent)*

By contrast, if the nature of the scene fundamentally requires multiple participants, simple Co-Agent is used. Often there is ambiguity:

(174) Do you want to talk *with* me?

a. [*The reading: Should we have a conversation?] *(Co-Agent)*

b. [*The reading: Do you want to join me in talking to a third party?] *(ACCOMPANIER~Co-Agent)*

(175) I fought *with* them to reform the regulation.

a. [*The reading: I fought against them.*] *(Co-Agent)*

b. [*The reading: I was on the same side as them.*] *(ACCOMPANIER~Co-Agent)*

If the object denotes a item that the governor has on hand in their possession, then the construal Possession~Accompanier is used:

(176) I walked in *with* an umbrella. *(Possession~Accompanier)*

See also: Instrument, Manner

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4Adding *together* seems to favor the (b) readings: *I fought together_with them*, *We fought together* can only mean we were on the same side. Contrastive stress can also force one reading: *I fought WITH them (not AGAINST them).*
4.6 **instead_of**

A default or already established thing for which something else stands in or is chosen as an alternative.

(177) I ordered soup *instead_of* salad.

(178) *Instead_of* ordering salad, I ordered soup.

(179) The new shirts were gray *instead_of* black.

(180) They substituted my old tires *for* new ones.

May be construed spatially:

(181) I chose soup *over* salad. *(instead_of~Locus)*

See also: *accompainier, comparisonRef, co-theme*

4.7 **comparisonRef**

The reference point in an explicit comparison (or contrast), i.e., an expression indicating that something is *similar/analogous to*, *different from*, or *the same as* something else.

The marker of the “something else” (the ground in the figure–ground relationship) is given the label *comparisonRef*:

(182)  a. She is taller *than* me.
    b. She is taller *than* I am.
    c. She is taller *than* she is wide.
    d. She is better at math *than* at drawing.
    e. The shirt is more gray *than* black.

(183)  a. She is as tall *as* I am.
    b. Your face is as *characteristic* red *as* a rose.
    c. Your face is red *as* a rose.
    d. Your surname is the_same *as* mine.

(184)   Harry had never met anyone quite *like* Luna.

(185) It was as_if he had insulted my mother.

  like
The comparison is often made with respect to some dimension or attribute, the \textit{Characteristic}, which may or may not be scalar. The comparison may be figurative, employing simile, hyperbole, or spatial metaphor (\textit{close to} in the sense of ‘similar to’). The \textit{ComparisonRef} may even be a desirable or hypothetical/irrealis event or state (\textit{It was \textbf{as it should have been}}).

Prototypical prepositions include \textit{than, as} (including the second item in the \textit{as-as} construction), \textit{like, unlike}. Prominent construals are \textit{to (Goal} for similar-thing) and \textit{from (Source} for dissimilar-thing).

\section*{4.8 RateUnit}

Unit of measure in a rate expression.

The prototypical preposition in \textit{per}:

\begin{quote}
\begin{enumerate}
\item The cost is $10 \textit{per} item.
\item A fuel efficiency of 40 miles \textit{per} gallon (of gas)
\end{enumerate}
\end{quote}

Paraphrase: The adposition can be paraphrased as “for each/every”.

\textit{History.} In v1, this fell under \textit{Value}.

\section*{4.9 Quantity}

Something measured by a quantity denoted by the governor.

The governor may be a precise or vague count/measurement. This includes nouns like “lack”, “dearth”, “shortage”, “excess”, or “surplus” (meaning a too-small or too-large amount).

Question test: the governor answers “How much/many of (object)?”

The main preposition is \textit{of}.

\begin{itemize}
\item \textit{Simple Quantity:}
\begin{enumerate}
\item Pour me a bottle('s worth) \textit{of} beer. [but see (169)]
\item I have 2 years \textit{of} training.
\item I ate 6 ounces \textit{of} cake.
\item An ounce \textit{of} compassion
\item There's a dearth \textit{of} cake in the house.
\item This cake has thousands \textit{of} sprinkles.
\end{enumerate}
\end{itemize}
(192) They number in the tens of thousands.

(193) a. I have a number of students.
    handful
b. I have a lot of students.
c. We did a lot of traveling.
d. There is a lot of wet sand on the beach.

(194) A pair of shoes

• If the measure includes a word like “amount”, “quantity”, or “number”, the construal QUANTITY~GESTALT is used (because the amount of something can be viewed as an attribute):

(195) QUANTITY~GESTALT:
    a. A generous amount of time
    b. A large number of students

But if “amount”, “quantity”, etc. is used without a measure as its modifier, it is simply GESTALT: see (146d).

• If the governor is a collective noun, the construal QUANTITY~STUFF is used (note that a “consisting of” paraphrase is possible):

(196) QUANTITY~STUFF:
    a. Can you outrun a herd of wildebeest?
    b. Put 3 bales of hay on the truck.
    c. A group of vacationers just arrived.
    2 groups
    A throng

• Otherwise, if the object refers to a specific item or set, and the quantity measures a portion of that item (whether a quantifier, absolute measure, or fractional measure), the construal QUANTITY~WHOLE is used:

(197) QUANTITY~WHOLE:
    a. I ate 6 ounces of the cake in the refrigerator.
    b. I ate half of the cake.
    50%
c. All/many/lots/a lot/ of the town’s residents are students.
    some/few/both/none
d. I have seen all of the city. (= the whole city)
e. A lot of the sand on the beach is wet.

5Excluding the expression “a number” meaning ‘several’, as in (193a).
f. 2 of the children are redheads.
g. 2 of the 10 children in the class are redheads.

However, simple \textit{Whole} is used if the portion is specified as “the rest”, “the remainder”, etc., as in (150e).

4.9.1 \textbf{APPROXIMATOR}

An “operator” that semantically takes a measurement, quantity, or range as an argument and “transforms” it in some way into a new measurement, quantity, or range.

For instance:

(198) We have \textit{about} 3 eggs left.
(199) We have \textit{in the vicinity of} 3 eggs left.
(200) We have \textit{over} 3 eggs left.
(201) We have \textit{between} 3 and 6 eggs left.

Similarly for \textit{around}, \textit{under}, \textit{more than}, \textit{less than}, \textit{greater than}, \textit{fewer than}, \textit{at least}, and \textit{at most}.

6

4.10 \textbf{SOCIALREL}

Entity, such as an institution or another individual, with which an individual has a stable affiliation.

Typically, \textit{SocialRel} applies directly to relations between individuals. It does not have any prototypical adpositions. Construals include:

(202) a. I work with Michael. (\textit{SocialRel}~\textit{Co-Agent})
    b. Joan has a class with Miss Zarves. (\textit{SocialRel}~\textit{Co-Agent})

(203) a. Joan is the sister of John. (\textit{SocialRel}~\textit{Possessor})
        wife
    b. Joan is a student of Miss Zarves. (\textit{SocialRel}~\textit{Possessor})

(204) Joan is studying under Prof. Smith. (\textit{SocialRel}~\textit{Locus})

\footnote{These constructions are markedly different from most PPs; it is even questionable whether these usages should count as prepositions. Without getting into the details here, even if their syntactic status is in doubt, we deem it practical to assign them with a semantic label in our inventory because they overlap lexically with “true” prepositions.}
(205) Joan is married to John. (SOCIALREL~GOAL)

Note, however, that work with is ambiguous between being in an established professional relationship (202a), and engaging temporarily in a joint productive activity:

(206) I was working with CO-AGENT Michael after lunch.

It is up to annotators to decide from context which interpretation better fits the context.

History. Renamed from v1 label PROFESSIONALASPECT, which was borrowed from Srikumar and Roth (2013a,b). The name SOCIALREL reflects a broader set of stative relations involving an individual in a social context, including kinship and friendship. See also note under ORGROLE.

4.10.1 ORGROLE

Organization or institution with which an individual has a stable affiliation, such as membership or a business relationship.

Like its supertype SOCIALREL, ORGROLE lacks any prototypical adposition, but participates in numerous construals:

(207) a. the chairman of the board (ORGROLE~GESTALT)
    b. the president of the U.S. (ORGROLE~GESTALT)
    c. I am a loyal customer of Graeter’s. (ORGROLE~GESTALT)
    d. employees of Grunnings (ORGROLE~GESTALT)
(208) Mr. Dursley works for Grunnings. (ORGROLE~BENEFICIARY)
(209) Mr. Dursley works at Grunnings. (ORGROLE~LOCUS)
(210) Mr. Dursley is from Grunnings. (ORGROLE~SOURCE)
(211) Mr. Dursley is with Grunnings. (ORGROLE~ACCOMPANIER)
(212) Mr. Dursley is employed by Grunnings. (ORGROLE~AGENT)
(213) I bank with TSB. (ORGROLE~ACCOMPANIER)
(214) I serve on the committee. (ORGROLE~LOCUS)

A family counts as an institution construed as a WHOLE (set of its members) or as a LOCUS:

(215) I am the baby of the family. (ORGROLE~WHOLE)
people in my family (OrganizationalRole→Location)

For a relation between a unit and a larger institution, use whole:

the Principals Committee of the National Security Council

See also: Stuff

History. OrganizationalRole is now distinguished within the broader SocialRelation category following the precedent of the Abstract Meaning Representation (AMR; Banarescu et al., 2013, 2015). In AMR, have-org-role captures relations between an individual and an institution (such as an organization or family), whereas have-rel-role is used for relations between two individuals.

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