

Adposition and Case Supersenses v2: Guidelines for English

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July 2, 2018

Abstract

This document offers a detailed linguistic description of SNACS (Semantic Network of Adposition and Case Supersenses; [Schneider et al., 2018](#)), an inventory of 50 semantic labels (“supersenses”) that characterize the use of adpositions and case markers at a somewhat coarse level of granularity, as demonstrated in the STREUSLE 4.1 corpus (<https://github.com/nert-gu/streusle/>). Though the SNACS inventory aspires to be universal, this document is specific to English; documentation for other languages will be published separately.

Version 2 is a revision of the supersense inventory proposed for English by [Schneider et al. \(2015, 2016\)](#) (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, plus previously unanalyzed genitive case possessives ([Blodgett and Schneider, 2018](#)), as well as consideration of adposition and case phenomena in Hebrew, Hindi, Korean, and German. [Hwang et al. \(2017\)](#) present the theoretical underpinnings of the v2 scheme. [Schneider et al. \(2018\)](#) summarize the scheme, its application to English corpus data, and an automatic disambiguation task.

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1 Overview

This document details version 2 of a scheme for annotating English prepositions and related grammatical markers with semantic class categories called *supersenses*. The motivation and general principles for this scheme are laid out in publications cited in the abstract. This document focuses on the technical details, giving definitions, descriptions, and examples for each supersense and a variety of prepositions and constructions that occasion its use.

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 adpositional if it:

- mediates a semantically asymmetric figure–ground relation between two concepts, and
- is a grammatical item that can mark an NP. We annotate *tokens* of these items even where they mark clauses (as a subordinator) or are intransitive.¹ We also include always-intransitive grammatical items whose core meaning is spatial and highly schematic, like **together**, **apart**, and **away**.

Inspired by [Huddleston and Pullum \(2002\)](#), the above criteria are broad enough to include a use of a word like **before** whether it takes an NP complement, takes a clausal complement (traditionally considered a subordinating conjunction), or is intransitive (traditionally considered an adverb):

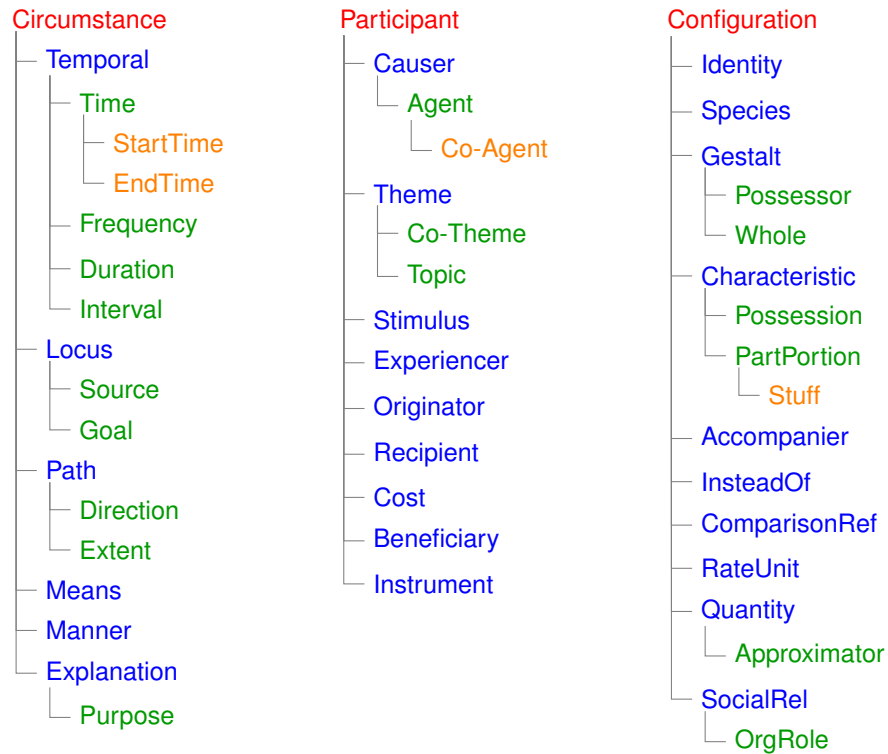
- (1) a. It rained **before** the party. [NP complement]
- b. It rained **before** the party started. [clausal complement]
- c. It rained **before**. [intransitive]

Even though they are not technically adpositions, we also apply adposition supersenses to possessive case marking (the clitic **'s** and possessive pronouns), and some uses of the infinitive marker **to**, as detailed in §6.

¹Usually a coordinating conjunction, **but** only receives a supersense when it is prepositional, as described under [PARTPORTION](#).

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).



- 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 (see §7.2).
- Aspects of meaning that pertain to information structure, discourse, or pragmatics (see §7.1).

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.²

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**, **INITIALLOCATION**, 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 preposition system of English or the other languages considered. 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 these, and there are cases where teasing apart abstract location vs. state vs. value is difficult.) Therefore, **STATE**, **STARTSTATE**, **ENDSTATE**, **VALUE**,

²This 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.

and VALUECOMPARISON were removed.

- **Revised the treatment of comparison and related notions.** Removed COMPARISON/CONTRAST, SCALAR/RANK, VALUECOMPARISON; moved APPROXIMATOR under QUANTITY.
- **Greatly simplified the PATH subhierarchy.** See §2.3.
- **Simplified the TEMPORAL subhierarchy.** See §2.1.
- **Removed ACTIVITY** (mostly replaced with CIRCUMSTANCE and TOPIC), RECIPROCATATION (mostly merged with EXPLANATION), and MATERIAL (merged with SOURCE).
- **Removed abstract labels AFFECTOR, UNDERGOER, and PLACE.**

1.5 Major changes from earlier versions of this document

- *Since the January 16, 2018 version:*
 - Policy changes reflected in STREUSLE 4.0:
 - * Rewrote §6.1: Genitives/Possessives and updated corresponding examples to reflect a clarified policy on possessive construals. Moved wearer from GESTALT to POSSESSOR and attire from CHARACTERISTIC to POSSESSION.
 - * Added §6.2: Passives and updated corresponding examples.
 - Policy changes that are reflected in STREUSLE 4.1:
 - * In §6.3.1, changed the function of the first **as** in the **as-as** construction to EXTENT (was IDENTITY).
 - * Changed the function of ORIGINATOR possessives to GESTALT (was POSSESSOR).
 - * Expanded documentation and removed inconsistencies around containers and collective nouns (see STUFF, QUANTITY, CHARACTERISTIC, ORGROLE).
 - * Specified MANNER→COMPARISONREF for certain adverbial uses of **like**.
 - * Revised the definition of RECIPIENT to relax the requirement of animacy.
 - * Mentioned conditions as a subclass of CIRCUMSTANCE.
 - * Renamed PART/PORION to PARTPORTION to avoid technical complications of the slash.
 - Added §5: Constraints on Role and Function Combinations.
 - Added §6.6: Ages.
 - A few additional examples and fixes.
 - Added an index of construals by function.
 - Changes from v1 had neglected to mention the removal of AFFECT-

TOR, UNDERGOER, PLACE, ELEMENTS, and SUPERSET (thanks to Ken Litkowski for pointing this out).

- *Since the April 7, 2017 version:*
 - Broadened and clarified DEICTICTIME, moved it up a level in the hierarchy, and renamed it to INTERVAL. Clarified the distinction between INTERVAL and DURATION.
 - Clarified LOCUS, SOURCE, GOAL, PATH, and DIRECTION, especially with regard to (i) intransitive prepositions, (ii) distance measurements, and (iii) inherent parts.
 - Significantly expanded the scope of MANNER to cover states of entities and depictives.
 - Clarified **like** as COMPARISONREF with regard to categories and sets, and PARTPORTION with regard to elements and exceptions.
 - Clarified **with** in regard to TOPIC and STIMULUS.
 - Added discussion of the ambiguity of temporal **over**: DURATION versus TIME \rightsquigarrow DURATION.
 - Extensively clarified PURPOSE and BENEFICIARY, and their relationship to COMPARISONREF, RECIPIENT, EXPERIENCER, and STIMULUS.
 - Clarified that goods and services are THEME; expanded on CO-THEME examples.
 - FREQUENCY used for an iteration.
 - Various selectional verbs and miscellaneous constructions.
 - Added examples of 's possessive/genitive marking.
 - Added section for special syntactic constructions (§6).
 - Added special labels (§7).
 - Added an index of adpositions and supersenses, and an index of con-
struals.
 - Revised the title, abstract, and introductory material.

2 CIRCUMSTANCE

Macrolabel for labels pertaining to space and time, and other relations that are usually semantically non-core properties of events.

CIRCUMSTANCE is used directly for:

- **Contextualization**

- (2) **In** arguing for tax reform, the president claimed that loopholes allow big corporations to profit from moving their headquarters over-

seas.

- (3) You crossed the line **in** sharing confidential information.
[but see (231c) under **TOPIC**, which is syntactically parallel]
- (4) I found out **in** our conversation that she speaks 5 languages.
- (5) **CIRCUMSTANCE**~>**LOCUS**:
 - a. I haven't seen them **in** that setting.
 - b. **In** that case, I wouldn't worry about it.
- (6) We have to keep going **through** all these challenges. [metaphoric motion] (**CIRCUMSTANCE**~>**PATH**)
- (7) Bipartisan compromise is unlikely **with** the election just around the corner.
- (8) **As** we watched, she transformed into a cat. ['while', 'unfolding at the same time as'; not simply providing a 'when'—contrast (21) under **TIME**]

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. It may also be realized as an adjective complement:

- (9) a. My tutor was helpful **in** giving concrete examples and exercises.
b. You were correct **in** answering the question.
your answer

Relatedly, we use **CIRCUMSTANCE** to analyze *involved in*:

- (10) a. I was involved **in** a car accident. (**CIRCUMSTANCE**)
b. Many steps are involved **in** the process of buying a home.
(**WHOLE**~>**CIRCUMSTANCE**)

• **Setting events**

- (11) We are having fun **at** the party. (**CIRCUMSTANCE**~>**LOCUS**)
on vacation

The object of the preposition is a noun denoting a containing event; it thus may help establish the place, time, and/or reason for the governing scene, but is not specifically providing any one of these, despite the locative preposition. These can be questioned (at least in some contexts) with *Where?* or *When?*. (11) entails (12):

- (12) We are **at** the party. (**CIRCUMSTANCE**~>**LOCUS**)
on vacation

which may be responsive to the questions *Where are you?* and *What are you doing?*³

- **Occasions**

(13) I bought her a bike **for** Christmas.

(14) 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**. E.g.:

(15) Let's discuss the matter **over** lunch. [compare (19)]

- **Conditions**

(16) You can leave **as long as** your work is done.
provided

(17) Whether you can leave depends **on** whether your work is done.
is subject **to**

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 removed; see §6.6. 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.

³When the object of the preposition is not a (dynamic) event, as with *We are at odds/on medication*, **MANNER**→**LOCUS** is used: see discussion of state PPs at **MANNER**.

2.1.1 TIME

When something happened or will happen, in relation to an explicit or implicit reference time or event.

- (18) We ate **in** the afternoon .
during the afternoon
at 2:00
on Friday
- (19) Let's talk **at** lunch. [compare (15)]
during

For a containing time period or event, **during** can be used and is unambiguously **TIME**—unlike **in**, **at**, and **on**, which can also be locative.⁴

- (20) a. They will greet us **on** our arrival.
upon
b. I succeeded **on** the fourth attempt. [contrast *on occasion*, (44)]
several occasions
- (21) **As** meaning 'when' (contrast (8) under **CIRCUMSTANCE**):
a. The lights went out **as** I opened the door.
b. A bee stung me **as** I was eating lunch.
- (22) I will finish **after** tomorrow.
lunch
you (do)
- (23) I will finish **by** tomorrow.
lunch
- (24) I will contact you **as_soon_as** it's ready.
once

The preposition **since** is ambiguous:

- (25) ['after'] I bought a new car—that was **since** the breakup. (**TIME**)
- (26) ['ever since'] I have loved you **since** the party where we met. (**STARTTIME**)
- (27) ['because'] I'll try not to whistle **since** I know that gets on your nerves.
(**EXPLANATION**)

Simple **TIME** is also used if the reference time is implicit and determined from the discourse:

- (28) We broke up last year, and I haven't seen her **since**. [since we broke up]

⁴See §5.4 regarding the use of locational metaphors for temporal relations.

However, **TIME**→**INTERVAL** is used for adpositions whose complement (object) is the amount of time between two reference points:

(29) We left the party **after** an hour. [an hour after it started] (**TIME**→**INTERVAL**)

(30) We left the party an hour **ago**. [an hour before now] (**TIME**→**INTERVAL**)

The preposition **over** is also ambiguous:

(31) The deal was negotiated **over** (the course of) a year. (**DURATION**)

(32) He arrived in town **over** the weekend. (**TIME**→**DURATION**)

See discussion under **DURATION**.

If the scene role is **TIME**, the PP can usually be questioned with *When?*

TIME is also used for special constructions for expressing clock times, e.g. identifying a time via an offset:

(33) a. The alarm rang at a quarter **after** 8. (**TIME**)

half **past**

b. The alarm rang at a quarter **to** 8. (**TIME**→**GOAL**)

c. The alarm rang at a quarter **of** 8.⁵ (**TIME**→**SOURCE**)

(34) The alarm rang 15 minutes **before** 8. (**TIME**) [“15 minutes” modifies the PP]

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. **RELATIVETIME** inherited from **TIME** and was reserved for the displaced temporal prepositions, as well as subclasses **STARTTIME**, **ENDTIME**, **DEICTICTIME**, and **CLOCKTIMECXN**.

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

⁵In some dialects, this is an alternate way to express the same meaning as (33b). It seems that **to** and **of** construe the same time interval from opposite directions.

STARTTIME

When the event denoted by the governor begins.

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

- (35) 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 directly described by the PP is the starting, not the thing that started.

- (36) The show will start **at** 10 a.m. (**TIME**)

ENDTIME

When the event denoted by the governor finishes.

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

- (37) The show will run from 10 a.m. **to** 2 p.m.
- (38) Add the cider and boil **until** the liquid has reduced by half.
- (39) If we have survived **up_to** now what is stopping us from surviving in the future?
- (40) 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 directly described by the PP is the ending, not the thing that ended.

- (41) The show will end **at** 2 p.m. (**TIME**)

2.1.2 FREQUENCY

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

- (42) Guests were arriving **at** a steady clip.
- (43) The risk becomes worse **by** the day.
- (44) I see them **on_occasion** . [contrast *on ... occasion*, (20b)]
from_time_to_time
- (45) I see them **on_a_** daily **_basis**. (**FREQUENCY**→**MANNER**) [cf. (174a)]

(46) I keep getting the same message **over** and **over** again.

FREQUENCY is also used when an iteration is specified with an obligatory ordinal number modifier. If the ordinal number is optional, the preposition presumably receives another label:

- (47) a. The camcorder failed **for** the third time. (**FREQUENCY**)
b. They won **for** the third year **in**_{MANNER} a row. (**FREQUENCY**)
c. We arrived **for** our (third) visit. (**PURPOSE**)

Contrast: **RATEUNIT**

2.1.3 **DURATION**

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

- (48) I walked **for** 20 minutes.
#in
- (49) I walked to_{GOAL} the store **in/within** 20 minutes. [see (61a)]
#for
- (50) I walked a mile **in/within** 20 minutes.
#for
- (51) I mowed the lawn **for** an hour.
in/within

Note that the presence of a goal (49) or extent of an event (*a mile* in (50)) can affect the choice **DURATION** preposition, blocking **for**. (51) shows a direct object which can be interpreted either as something against which partial progress is made—licensing **for** and the inference that some of the lawn was not reached—or as defining the complete scope of progress, licensing **in/within** and the inference that the lawn was covered in its entirety.

The object of a **DURATION** preposition can also be a reference event or time period used as a yardstick for the extent of the main event:

- (52) I walked **for** the entire race. [the entire time of the race]
- (53) I walked **throughout** the night.
through
well into
- (54) The deal was negotiated **over** (the course of) a year.

But **over** can also mark a time period that *contains* the main event and is larger than it. While the path preposition **over** highlights that the object of the preposition extends over a period of time, it does not require that the main event extend over a period of time:

- (55) He arrived in town **over** the weekend. (TIME~>DURATION)

Note that **during** can be substituted for **over** in (55) but not (54).

Some **for-DURATIONS** measure the length of the specified event's *result*:

- (56) a. John went to the store **for** an hour. [he spent an hour at the store, not an hour going there]⁶
b. John left the party **for** an hour. [he spent an hour away from the party before returning]

A **DURATION** may be a stretch of time in which a simple event is repeated iteratively or habitually:

- (57) a. I lifted weights **for** an hour. [many individual lifting acts collectively lasting an hour]
b. I walked to the store **for** a year. [over the course of a year, habitually went to the store by walking]

See further discussion at **INTERVAL**.

2.1.4 **INTERVAL**

A marker that points retrospectively or prospectively in time, and if transitive, marks the time elapsed between two points in time.

The clearest example is **ago**, which only serves to locate the **TIME** of some past event in terms of its distance from the present:

- (58) I arrived a year **ago**. TIME~>INTERVAL
[points backwards from the present: before now]

The most common use of **INTERVAL** is in the construal **TIME~>INTERVAL**: the time of an event is described via a temporal offset from some other time.

Another retrospective marker, **back**, can be transitive (59), or can be an intransitive modifier of a **TIME PP** (60). Plain **INTERVAL** is used in the latter case:

⁶This stands in contrast with *John walked to the store for an hour*, where the most natural reading is that it took an hour to get to the store (Chang et al., 1998, p. 230).

(59) I arrived a year **back**.⁷ TIME→INTERVAL

(60) I arrived **back** in_{TIME} June. (INTERVAL)

(This category is unusual in primarily marking a construal for a different scene role. But this seems justified given the restrictive set of English temporal prepositions that can appear with a temporal offset, and the distinct ambiguity of **in**. INTERVAL is designed as the temporal counterpart of DIRECTION, which can construe static distance measures; in fact, TIMEDIRECTION was considered as a possible name, but INTERVAL seemed more straightforward for the most frequent class of usages.)

Other adpositions can also take an amount of intervening time as their *complement* (object):

(61) I will eat **in** 10 minutes.

a. ['for no more than 10 minutes' reading]: DURATION⁸

b. ['10 minutes from now' reading]: TIME→INTERVAL⁹

(62) The game started at 7:00, but I arrived **after** 20 minutes.

within

Some adpositions license a temporal difference measure in *modifier* position, which does not qualify:

(63) To beat the crowds, I will arrive a while **before** (it starts). (TIME)

beforehand

(64) The game started at 7:00, but I arrived 20 minutes **after** (it started). (TIME)

afterward

The preposition **after** can be used either way—contrast (64) with (62).

Note that having INTERVAL as a separate category allows us to distinguish the sense of **in** in (61b) from both the DURATION sense (61a) and the TIME sense (*in the morning*).

⁷While *a while back* and *a few generations back* are generally accepted, the use of **back** rather than **ago** for nearer and more precise temporal references, e.g. *10 minutes back*, appears to be especially associated with Indian English (Yadurajan, 2001, p. 7).

⁸This usage of **in** has been classified under the terms *frame adverbial* (Pustejovsky, 1991) and *span adverbial* (Chang et al., 1998).

⁹This usage of **in**, as well as **ago** (58) and **back** (59, 60), are *deictic*, i.e., they are inherently relative to the speech time or deictic center. (See also Klein (1994, pp. 154–157).) This was taken to be a criterion for the v1 category DEICTICTIME, but that was never well-defined in v1 and was broadened for this version.

Versus DURATION. The prepositions **in** and **within** are ambiguous between **INTERVAL** and **DURATION**.¹⁰ The distinction can be subtle and context-dependent. The key test is whether the phrase answers a *When?* question. If so, its scene role is **TIME**; otherwise, it is a **DURATION**.

(65) **TIME**→**INTERVAL**:

- a. I reached the summit **in** 3 days. [= 3 days later, I reached the summit.]
- b. I was at the summit **within** 3 days. [= 3 days later, I was at the summit.]
- c. I finished climbing **in** 3 days. [= 3 days later, I finished climbing.]
- d. They had the engine fixed **in** 3 days. [= 3 days later, they had the engine fixed.]

(66) **DURATION**:

- a. I reached the summit **in** 3 days. [it took not more than 3 days]
- b. I had climbed 1000 feet **in** [a total of] 3 days.
- c. I fixed the engine **in** 3 days. [it took not more than 3 days]

With a negated event, we use **DURATION**:

- (67) I haven't eaten **in** hours. [hours have passed since the last time I ate]
for
(#When haven't you eaten?)

History. Version 1 featured a label called **DEICTICTIME**, under **RELATIVETIME**, which was meant to cover **ago** and temporal usages of other adpositions (such as **in**) whose reference point is the utterance time or deictic center. This concept proved difficult to apply and was (without good justification) used as a catch-all for intransitive usages of temporal prepositions. For v2, the new concept of **INTERVAL** is broader in that it drops the deictic requirement (also covering **within**), while **TIME** has been clarified to include intransitive usages of prepositions like **before** where the reference time can be recovered from discourse context.

¹⁰By contrast, **after** seems to strongly favor **TIME**→**INTERVAL**. *After a week, I had climbed all the way to the summit* is possible, but the conclusion that the climbing took a week may be an inference rather than something that is directly expressed.

2.2 LOCUS

Location, condition, or value. May be abstract.

- (68) I like to sing **at** the gym .
on Main St.
in the shower
- (69) The cat is **on_top_of** the dog.
off
beside
near
- (70) There are flowers **between** the trees.
among
- (71) When you drive north, the river is **on** the right.
- (72) I read it **in** a book .
on a website
- (73) The charge is **on** my credit card.
- (74) We met **on** a trip to Paris.
- (75) The Dow is **at** a new high.
20,000
- (76) That's **in** my price range.

The **LOCUS** may be a part of another scene argument: part of a figure whose static orientation is described, or a focal part of a ground where contact with the figure occurs:¹¹

- (77) She was lying **on** her back.
- (78) a. She kissed me **on** the cheek.
b. I want to punch you **in** the face.

Words that incorporate a kind of reference point are **LOCUS** even without an overt object:

- (79) a. The cat is **inside** the house.
b. The cat is **inside**.
- (80) a. All passengers are **aboard** the ship.
b. All passengers are **aboard**.

¹¹**PARTPORTION** was considered but rejected for these cases. Instead we assume the verb semantics would stipulate that it licenses a **THEME** as well as a (core) **LOCUS** which must be a part of that **THEME**.

LOCUS also applies to **in**, **out**, **off**, **away**, **back**, etc. when used to describe a location without an overt object:

- (81) a. The doctor is **in** the office.
 out_of
 away_from
 b. The doctor is **in** .
 out
 away
 c. They are **out** to eat.

And to **around** meaning ‘nearby’ or ‘in the area’:

- (82) Will you be **around** in the afternoon?
 (83) She’s the best doctor **around**!

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

- (84) A road runs **through** my property. (**LOCUS**→**PATH**)
 (85) John saw Mary **through** the window.¹² (**LOCUS**→**PATH**)
 over the fence
 (86) The road extends **to** the river. (**LOCUS**→**GOAL**)
 (87) I saw him **from** the roof. (**LOCUS**→**SOURCE**)
 (88) Protesters were kept **from** the area. (**LOCUS**→**SOURCE**)
 missing
 (89) a. We live **across_from** you. (**LOCUS**→**SOURCE**)
 b. We’re just **across** the street from_{LOCUS}→_{SOURCE} you. (**LOCUS**→**PATH**)

Construal is also used for prepositions licensed by scalar adjectives of distance, (90), and prepositions used with a cardinal direction, (91):

- (90) a. We are quite close **to** the river. (**LOCUS**→**GOAL**)
 b. We are quite far **from** the river. (**LOCUS**→**SOURCE**)
 (91) a. The river is **to** the north. (**LOCUS**→**GOAL**) [cf. (71)]
 b. The river is north **of** Paris. (**LOCUS**→**SOURCE**)

¹²The scene establishes a static spatial arrangement of John, Mary, and the window/fence, with only metaphorical motion. Yet this is a non-prototypical **LOCUS**: it cannot be questioned with *Where?*, for example. Moreover, we understand from the scene that the object of the preposition is something with respect to which the viewer is navigating in order to see without obstruction.

See also **LOCUS**→**DIRECTION** for static distance measurements, described under **DIRECTION**.

Qualitative states are analyzed as **MANNER**→**LOCUS**, as described under **MANNER**.

2.2.1 **SOURCE**

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

For motion events, the initial location is where the thing in motion (the figure) starts out. **SOURCE** also applies to abstract or metaphoric initial locations, including initial states in a dynamic event.

In English, a prototypical **SOURCE** preposition is **from**:

- (92) The cat jumped **from** the box.
out_of
- (93) The cat jumped **from** the ledge.
off_of
off
- (94) I got it **from** the internet.
off
- (95) people **from** France
- (96) The temperature is rising **from** a low of 30 degrees.
- (97) I have arrived **from** work.
- (98) We discovered he was French **from** his attire. [indication]
- (99) I made it **out_of** clay. [material]
- (100) She awoke **from** a coma.
came **out_of**
- (101) We are moving **off_of** that strategy.

The **SOURCE** use of **from** can combine with a specific locative PP:

- (102) I took the cat **from** behind_{LOCUS} the couch.

Note that **away_from** is ambiguous between marking a starting point (**SOURCE**) and a separate orientational reference point (**DIRECTION**):

- (103) At the sound of the gun, the sprinters ran **away_from** the starting line.
from
(**SOURCE**)

- (104) The bikers ride parallel to the river for several miles, then head east, **away_from** the river. (**DIRECTION**: bikers are never at the river) **#from**

Note, too, that **off(_of)** and **out(_of)** can also mark simple states:

- (105) I am **off** medications. (**MANNER**→**LOCUS**)
work
- (106) The lights are **off**. (**MANNER**→**LOCUS**)
out
- (107) Stay **out_of** trouble. (**MANNER**→**LOCUS**)

States are discussed at length under **MANNER**. There is also a (negated) possession sense of **out/out_of**:

- (108) We are **out_of** toilet paper. (**POSSESSION**)

Sometimes a specific **SOURCE** is implicit, and the preposition is intransitive. But if no specific referent is implied, another label may be more appropriate:

- (109) The cat was sitting on the ledge, then jumped **off**. (**SOURCE**: implicit ‘(of it)’) **off**
- (110) He was offered the deal, but walked **away**. (**SOURCE**: implicit ‘from it’) **off**
- (111) The bird flew **away**. (**DIRECTION**: vaguely away from the viewpoint) **off**

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

Agency as giving. When an **AGENT**’s action to help somebody is conceptualized as giving, and the nominalized action as the thing given, then **from** can mark the **AGENT** (metaphorical giver). If the **from**-PP is adnominal, **AGENT**→**SOURCE** is used (112). However, if the **from**-PP is adverbial, and the verb relates to the metaphoric transfer rather than the event described by the action nominal, then the argument linking becomes too complicated for this scheme to express; simple **SOURCE** is used by default (113):

- (112) The attention **from** the staff made us feel welcome. (**AGENT**→**SOURCE**)
- (113) **SOURCE**:
- a. I received great care **from** this doctor.
 - b. I got a second chance **from** her.
 - c. I need a favor **from** you.

2.2.2 GOAL

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

Prototypical prepositions include **to**, **into**, and **onto**:

- (114) I ran **to** the store.
- (115) The cat jumped **onto** the ledge.
- (116) I touched my ear **to** the floor.
- (117) She sank **to** her knees.
- (118) Add vanilla extract **to** the mix.
- (119) Everyone contributed **to** the meeting.
- (120) The temperature is rising **to** a high of 40 degrees.
- (121) We have access **to** the library's extensive collections.
- (122) She slipped **into** a coma.
- (123) The drugs put her **in** a coma. (GOAL \rightsquigarrow LOCUS)
- (124) **Result** (Huddleston and Pullum, 2002, p. 1224):
 - a. We arrived at the airport only **to** discover that our flight had been canceled.
 - b. May you live **to** be 100!

For motion events, a **GOAL** must have been reached if the event has progressed to completion (was not interrupted). **DIRECTION** is used instead for **toward(s)** and **for**, which mark an intended destination that is not necessarily reached:

- (125) a. I headed **to** work. (GOAL)
 - b. I headed **towards** work but never made it there. (DIRECTION)
- for**
#to

go to. A conventional way to express one's status as a student at some school is with the expression *go to* (*name or kind of school*). Construal is used when *go to* indicates student status, rather than (or in addition to) physical attendance:

- (126) I went **to** (school at_{LOCUS}) UC Berkeley. (ORGR_{OLE} \rightsquigarrow GOAL)
- (126') I went **to** UC Berkeley for the football game. (GOAL)

Going to a business as a customer, going to an attorney as a client, going to a doctor as a patient, etc. can also convey long-term status, but there is considerable gray area between habitual going and being in a professional relationship, so we simply use **GOAL**:

(127) I go **to** Dr. Smith for my allergies. (**GOAL**)

Locative as destination. English regularly allows canonically static locative prepositions to mark goals with motion verbs like *put*. We use the **GOAL**→**LOCUS** construal to capture both the static and dynamic aspects of meaning:

(128) **GOAL**→**LOCUS**:

- a. I put the lamp **next_to** the chair.
- b. I'll just hop **in** the shower.
- c. I put my CV **on** the internet.
- d. The cat jumped **on** my face.
- e. The box fell **on** its side.
- f. We arrived **at** the airport.

Application of a substance.

- (129) a. the paint that was applied **to** the wall (**GOAL**)
b. the paint that was sprayed **onto** the wall (**GOAL**)
c. the paint that was sprayed **on** the wall (**GOAL**→**LOCUS**)

The wall is the endpoint of the paint, hence **GOAL** is the scene role. (Though the wall can be said to be affected by the action, we prioritize the motion aspect of the scene in choosing **GOAL** rather than **THEME**.)

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

2.3 **PATH**

The ground that must be covered in order for the motion to be complete.

The ground covered is often a linear extent with or without specific starting and ending points:

(130) The bird flew **over** the building.

- (131) The sun traveled **across** the sky.
 (132) Hot water is running **through** the pipes.

It can also be a waypoint/something that must be passed or encircled.

- (133) We flew to Rome **via** Paris.
 (134) I go **by** that coffee shop every morning.
 (135) The earth has completed another orbit **around** the sun.

If this is a portal in the boundary of a container, it is often construed as **SOURCE**, **GOAL**, or **LOCUS**:

- (136) The bird flew **in** the window. (**PATH**~>**LOCUS**)
 (137) The bird flew **out** the window. (**PATH**~>**SOURCE**)
 (138) A cool breeze blew **into** the window. (**PATH**~>**GOAL**)

The prepositions **around** and **throughout** can mark a region in which motion that follows an aimless or complex trajectory is contained. Construal is used for these, whether or not the region is explicit:

- (139) **LOCUS**~>**PATH**:
 a. The kids ran **around**.
 b. The kids ran **around** the kitchen.
 throughout
 c. The kids ran **around** in the kitchen.

See also: **INSTRUMENT**, **MANNER**

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

2.3.1 **DIRECTION**

How motion or an object is aimed/oriented.

A **DIRECTION** expresses the orientation of a stationary figure or of a figure's motion. Prototypical markers¹³ are **away** and **back**; **up** and **down**; **off**; and **out**, provided that no specific **SOURCE** or **GOAL** is salient:

¹³Known variously as *adverbs*, *particles*, and *intransitive prepositions*.

(140) The bird flew **up** .
out
away
off

(141) I walked **over** to where they were sitting.

(142) The price shot **up**.

In addition, transitive **toward(s)**, **for**, and **at** can indicate where something is aimed or directed (but see discussion at **GOAL**):

(143) The camera is aimed **at** the subject.

(144) The toddler kicked **at** the wall.

See discussion of **away_from** at **SOURCE**.

Distance. **LOCUS**→**DIRECTION** is used for expressions of static distance between two points:

(145) a. The mountains are 3 km **away**. (**LOCUS**→**DIRECTION**)
apart

b. The mountains are 3 km **away_from** our house. (**LOCUS**→**DIRECTION**)

This also applies to distances measured by *travel time* (the amount of time is taken to be metonymic for the physical distance):

(146) The mountains are an hour **away**. (**LOCUS**→**DIRECTION**)
apart

Compare **EXTENT**, which is the length of a path of motion or the amount of change.

Informal direction modifier in location description.

(147) They live (way) **out** past_{**LOCUS**→**PATH**} the highway. (**LOCUS**→**DIRECTION**)
over by_{**LOCUS**} the school

Cf. (60) at **INTERVAL**.

2.3.2 **EXTENT**

The size of a path, amount of change, or degree.

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

- (148) We ran **for** miles.
- (149) The price shot up **by** 10%.
- (150) an increase **of** 10% (**EXTENT**~>**IDENTITY**)

For static distance measurements, see **DIRECTION**.

For scalar **as** (see §6.3.1), **EXTENT** serves as the function (and sometimes also the role):

- (151) a. I helped **as** much as I could. (**EXTENT**)
- b. Your face is **as** red as a rose. (**CHARACTERISTIC**~>**EXTENT**)
- c. I stayed **as** long as I could. (**DURATION**~>**EXTENT**)

EXTENT also covers degree expressions, such as the following PP idioms:

- (152) a. I'm not tired **at_all**.
- b. The food is mediocre **at_best**.
- c. You should **at_least** try.
- d. It is the worst **by_far**.
- e. We've finished **for_the_most_part**.
- f. It was a success **in_every_respect**.
on_all_levels
- g. I hate it when they repeat a song **to_death**.

Typically these are licensed by a verb or adjective.

2.4 **MEANS**

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

Prototypically a volitional action, though not necessarily (156). A volitional **MEANS** will often modify an intended result, though the outcome can be unintended as well (155).

- (153) Open the door **by** turning the knob.
- (154) They retaliated **by** shooting .
with shootings
- (155) The owners destroyed the company **by** growing it too fast.
- (156) 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**. See also **MANNER**, **TOPIC**.

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**

The style in which an event unfolds, the form that something takes, or the condition that something is in.

MANNER is used as the scene role for several kinds of descriptors which typically license some sort of *How?* question:

- The style in which an action is performed or an event unfolds, expressed adverbially (canonical use of the term “manner”):

(157) He reacted **with** anger.¹⁴

in anger
angrily

(158) He reacted **with** nervous laughter. [contrast: **MEANS**]

(159) I made the decision **by** myself . [see §6.5.1]

without anyone else
on_ my _own

(160) **MANNER**→**COMPARISONREF**:

- You eat **like** a pig (eats).
- You smell **like** a pig.

(161) Your father smells **of** elderberries. (**MANNER**→**STUFF**) [also (391)]
The soup tastes

- An adverbial **depictive** characterizing a participant of an event:

(162) She entered the room **in** a stupor. (**MANNER**→**LOCUS**)
drunk

- The **form or shape** that something takes, including language of communication and shape of motion:

¹⁴He reacted **out_of** anger is **EXPLANATION**→**SOURCE**.

(163) MANNER~>LOCUS:

- a. The clothes are (sitting) **in** a pile. [contrast adnominal use: (327) under WHOLE]
 - b. The ribbon is (tied) **in** a bow.
 - c. The sand is **in** a pyramid shape.
 - d. They dance **in** a circle.
 - e. I read the book **in** French.
 - f. The book is **in** French.
 - g. music **in** C major
 - h. She loves teaching, and it shows **in** her smile.
- *What + like* (*what he looks like*, etc.): see (390) under COMPARISONREF.
 - The **state or condition** that something is in. The PP or intransitive preposition is used (especially predicatively) to describe a qualitative state or condition of something (especially an entity) that is not simply a relation of location, time, possession, quantity, causation, etc. between governor and object. For example:

– With the noun *state, condition*, etc.:

(164) MANNER~>LOCUS:

- a. The chairs are **in** excellent shape.
 - b. I'm **in** no condition to go outside.
- Bodily/medical conditions presented as applying to the governor:

(165) John is **on** his back . (MANNER~>LOCUS)
on antibiotics
on the ventilator
in pain
in a coma

– Miscellaneous qualitative senses of specific prepositions used statively:

(166) John is **for** the war. [opinion] (MANNER~>BENEFICIARY)
against

(167) John is **into** sports. [hobbies/interests] (MANNER~>GOAL)

– Idiomatic PPs expressing states, for example:¹⁵

¹⁵Often the object of the preposition is determinerless (*in business*) (Baldwin et al., 2006) or has a fixed determiner (*in a hurry*).

(168) *on fire* (contrast *in the fire*), *on time* (contrast *at the time*), *in trouble*, *in love*, *in tune*, *in a hurry*, *at odds*, *out_of business*, *out_of control* (MANNER→LOCUS)

(169) They are *on_ the _way* (MANNER→LOCUS)
on_ their \$ _way

– Intransitive prepositions expressing a qualitative state (not location, time, etc.):

(170) MANNER→LOCUS:

- a. The lights are **off**.
- b. The party tonight is **on**. [scheduled to happen; not canceled]
- c. Political TV shows are **in**. [in fashion]

A few observations about these state PPs are in order.

1. In a reversal of the usual asymmetry between governor and adpositional object, semantically, the PP defines the kind of scene that the governor participates in. To an extent, this may be true of all predicative PPs, but the state PPs are often such that the object of the preposition is neither an event nor a referential entity. I.e., *John is in a hurry* does not exactly express a relation between the entities *John* and *a hurry*; rather, it expresses something qualitative about the entity *John's* condition.

2. The most idiomatic of the state PPs seem to resist questions of the form *What?+NP-supercategory* with a stranded preposition:

(171) More productive prepositional usages:

- a. The party is **in** January. → What month is the party **in**? [Or: When is the party?] (TIME)
- b. John is **on** aspirin. → What medication is John **on**?¹⁶ (MANNER→LOCUS)

(172) Less productive/more idiomatic preposition + NP combinations:

- a. John is **in** a hurry. → What _ is John **in**?¹⁷ (MANNER→LOCUS)
a coma
- b. John is **on** fire. → What _ is John **on**? (MANNER→LOCUS)

3. Typically these states are binary: something is either *on fire/on time*, or not. For some, the negation may be expressed by substituting a contrasting preposition: an orchestra that is not *in tune* is *out_of tune*.

¹⁶Or, colloquially, with a suspected mind-altering substance: *What is John on?!*

¹⁷*What condition/state is John in?* does work, but is quite vague.

State PPs with complements. The **MANNER**→**LOCUS** construal is also used when there is effectively a preposition+NP+preposition combination that links two arguments:

(173) **MANNER**→**LOCUS**:

- a. John is **in** love (with_{STIMULUS}→_{TOPIC} Mary). [cf. (241f)]
- b. That is **at** odds with_{COMPARISONREF}→_{TOPIC} our agreement.

Idiomatic PP with modifier slot: *on a(n)...basis*. There seems to be a construction **on a(n) MODIFIER basis** where the modifier phrase reflects the scene role being filled. We use **MANNER** as the function:

- (174) a. The legislation was passed **on_a_** bipartisan **_basis**. (**MANNER**)
b. I see them **on_a_** daily **_basis**. (**FREQUENCY**→**MANNER**) [also (45)]

Change-of-state PPs. Occasionally, a PP will mark a start or end state, in which case we collapse the state/location distinction, using **SOURCE** or **GOAL** as the scene role:

- (175) John came **out_of** a coma. (**SOURCE**)
(176) John slipped **into** a coma. (**GOAL**)
(177) The drugs put John **in** a coma. (**GOAL**→**LOCUS**)
(178) They chopped the wood **in** pieces. (**GOAL**→**LOCUS**)

Versus CIRCUMSTANCE. State PPs like **at odds** and **on medication**, which receive the construal **MANNER**→**LOCUS**, are similar to situating events like **at the party** and **on vacation**, which are analyzed as **CIRCUMSTANCE**→**LOCUS**. What matters for the scene role is whether the object of the preposition is an event or not.

Versus CHARACTERISTIC. Note that, despite the prevailing use of the term ‘manner’ for descriptors of *events*, **MANNER** and **CHARACTERISTIC** each cover certain descriptors of *entities*. The use of **MANNER**→**LOCUS** to cover the state that an entity is in was deemed necessary to account for the dual function of PPs like **in French** as predicate complements (*the book is in French*) and adverbials (*read it in French*).

When an entity is being described, it is difficult to semantically separate **states** from **attributes**. We currently make the distinction based on whether

there is a construal of *partiality*, using **CHARACTERISTIC** or its subtype **POSSESSION** for partial-attributes like possessions, attire, and body part conditions (*the man **with** a hat; He is **in** a suit; the man **with** an ear infection*). **MANNER** is reserved for conditions where the object of the preposition cannot be localized with respect to the entity (*the man **with** a cold; He is **in** pain*). However, the feasibility of this distinction may be worth revisiting in the future.

Versus COMPARISONREF. See **COMPARISONREF**.

History. In v1, **MANNER** was positioned as an ancestor of all categories that license a *How?* question, including **INSTRUMENT**, **MEANS**, and **CONTOUR**, as in (163d). 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.

- (179) I went outside **because_of** the smell.
- (180) The rain is **due_to** a cold front.
- (181) He reacted **out_of** anger. (**EXPLANATION**~>**SOURCE**)
- (182) a. He thanked her **for** the cookies.
b. Thank you **for** being so helpful.

When a preposition like **after** is used and the relation is temporal as well as causal, construal captures the overlap. While **since** and **as** can also be temporal, there are tokens where they cannot be paraphrased respectively with **after** and *when*:

- (183) I joined a protest **after** the shameful vote in Congress. (**EXPLANATION**~>**TIME**)
- (184) Her popularity has grown **since** she announced a bid for president. (**EXPLANATION**~>**TIME**)
- (185) I will appoint him **since** he is most qualified for the job. (**EXPLANATION**)

as
#after
#when

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**:

- (186) a. He rose **to** make a grand speech.
b. He rose **for** a grand speech.
c. surgery **to** treat a leg injury

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

- (187) 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']

The following subcases serve to clarify the boundaries of **PURPOSE**:

- A desired outcome that is separate from, but typically a motivation for (hence subtype of **EXPLANATION**), the main event. It is possible to complete the main event without realizing the purpose.
- **Inanimate** thing or event which is aided/facilitated/addressed/achieved/acquired as a consequence of the main event:

- (188) We hired a caterer **for** the party.
(189) surgery **for** an ingrown toenail
(190) Call the doctor **for** an appointment.
(191) Go to the store **for** eggs.

For **animates** who are aided or harmed as a consequence of the main event, see **BENEFICIARY**.

- Something characterized as good/appropriate (or not) for some kind of use/activity/occasion or inanimate thing affected/addressed/etc., delimiting the applicability of a descriptor to that aspect of the thing:

- (192) a. This place is great **for** ping-pong.
b. This is a great place **for** ping-pong.
(193) This cleaner is good **for** hardwood floors.
(194) This restaurant is great **for** dinner.

The evaluation is being delimited to a particular purpose: (194) is not claiming the restaurant is great *in general*, just with respect to dinner.

For **animates** used in similar constructions, see **BENEFICIARY**.

Question test: **EXPLANATION** and its subtype **PURPOSE**, when used adverbially, license *Why?* questions. **PURPOSE** usually licenses an *in order to* or *for the purpose of* paraphrase.

Goods and services. See discussion at **THEME**.

Inherent purposes. An *entity* (typically an artifact) can be modified to explicate an intended use or affordance. We analyze such a relationship with the construal **CHARACTERISTIC**~>**PURPOSE**: the function of **PURPOSE** reflects the *intended use* aspect of the meaning, while the scene role of **CHARACTERISTIC** highlights that the intended use can be understood as a *static property* of the entity (part of its qualia structure).¹⁸

(195) **CHARACTERISTIC**~>**PURPOSE**:

- a. a shoulder **to** cry on
- b. something **to** eat
- c. cleaner **for** hardwood floors

Question test: *What is this _for?*

Necessity. **PURPOSE** marks the consequence enabled or prevented by some condition, typically a resource:

(196) I need another course **in_order_to** graduate. (**PURPOSE**)

(197) I need \$20 **for** the show. (**PURPOSE**)
to attend

(198) The dough takes an hour **to** rise. (**PURPOSE**)

¹⁸In 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>).

Sufficiency and excess. See [COMPARISONREF](#).

Versus CIRCUMSTANCE for ritualized occasions. **PURPOSE** applies to **for** when it marks a ritualized activity such as a meal or holiday/commemoration for which the main event describes a **preparation** stage:

(199) **PURPOSE:**

- a. I walked to this restaurant **for** dinner. [walking is not a part of dinner]
- b. I bought food **for** dinner.
- c. We saved money **for** our annual vacation.

However, if the activity marked by **for** is interpreted as **containing** the main event, then we use **CIRCUMSTANCE**:

(200) **CIRCUMSTANCE:**

- a. We ate there **for** dinner.
- b. I received a new bicycle **for** Christmas.
- c. I always drink eggnog **for** Christmas. [at and in celebration of Christmastime]
- d. We were wearing costumes **for** Halloween.

If in doubt, **CIRCUMSTANCE** is broader: e.g., *We went there **for** dinner* if *went* is ambiguous between journeying and attending.

History. In v1, the usages illustrated in (195) 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 **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, such as in a passive **by**-phrase (§6.2):

(201) the devastation of_{THEME} the town wreaked **by** the fire

(202) **CAUSER**~>**GESTALT**:

- a. the devastation **of** the fire on_{THEME} the town
- b. the fire's devastation of_{THEME} the town

The **CAUSER** is sometimes construed as a **SOURCE**:

(203) **CAUSER**~>**SOURCE**:

- a. the devastation **from** the fire
- b. fatalities **from** cancer
- c. FDR suffered **from** polio.

See also: **INSTRUMENT**

3.1.1 AGENT

Animate instigator of an action (typically volitional).

This is most directly associated with the passive **by**-phrase (§6.2), but also permits other construals:

(204) the decisive vote **by** the City Council

(205) **AGENT**~>**GESTALT**:

- a. the decisive vote **of** the City Council
- b. the City Council's decisive vote
- c. they needed Joan's help
- d. It was the chairman's fault .
the fault **of** the chairman

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

(206) There was a war **between** France and Spain. (**AGENT**~>**WHOLE**)

(207) a discussion **among** the board members (**AGENT**~>**WHOLE**)

Compare: **CO-AGENT**; see also: **ORGRole**, **ORIGINATOR**, **SOURCE**, **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.

- (208) I fought in a war **against** the Germans.
(209) I talked **with** my roommate about cleaning duties.
argued

See also: **ACCOMPANIER**, **SOCIALREL**

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 (nonagentive¹⁹) motion, are transferred, or undergo an internal change of state (sometimes called *patients*). Adpositional **THEMES** are usually, but not always, construed as something else:

- (210) a. Quit **with** the whining!
b. She helped me **with** my taxes.
c. Don't bother **with** an extra trip.
waste time
d. I managed to cope **with** the heavy load .
my fear of heights
- (211) There's nothing wrong **with** the engine.
- (212) Fill the bowl **with** water. (**THEME**~**INSTRUMENT**)
- (213) a. The food was covered **with** grease. (**THEME**~**INSTRUMENT**)
b. The food was covered **in** grease. (**THEME**~**LOCUS**)
- (214) My hovercraft is full **of** eels.
- (215) a. Sheldukher looked **for** his laser pistol.
searched
fumbled
[contrast with transitive verb plus **CHARACTERISTIC** in (340)]

¹⁹We distinguish agentivity at the token level, unlike VerbNet, where the subject of motion verbs like *arrive* is **THEME** because it need not be agentive.

- b. Sheldukher asked **for** his laser pistol.
made a request
- c. There is a significant demand **for** new housing.
- d. Let's wait **for** Steve .
more information
the end of the party
- (216) The mechanic made a repair **to** the engine. (THEME~>GOAL)
- (217) THEME THEME~>GESTALT
- a. the approach **of** the waves the waves' approach
- b. the death **of** a salesman the salesman's death
murder murder
- (218) a. The mechanic worked **on** the engine.
b. We noshed **on** snacks.
c. Students spend a lot of money **on** textbooks.
- (219) a. There was an increase **in** oil prices.
b. I'm covered **in** bees! (THEME~>LOCUS)
- (220) a. The training saved us **from** almost certain death. (THEME~>SOURCE)
b. They prevented us **from** boarding the plane. (THEME~>SOURCE)

Goods and services. In a commercial scene, the preposition introducing the item or event incurring a cost receives **THEME** as its scene role. If the object of the preposition denotes an event and the preposition is **to**, **for**, or similar, then the construal **THEME~>PURPOSE** is used:

- (221) a. They spent \$500 **on** the repairs. (THEME)
b. They charged/paid/owed \$500 **for** the bicycle. (THEME)
c. They charged/paid/owed \$500 **for** the repairs. (THEME~>PURPOSE)
d. They asked \$500 **to** make the repairs. (THEME~>PURPOSE)
e. \$500 **for** the repairs was excessive. (THEME~>PURPOSE)
to make

Between and among. When two symmetric undergoers are collected in a single NP functioning as a set, it is marked as a **WHOLE** construal:

(222) There was a collision in mid-air **between** two light aircraft. (**THEME**~**WHOLE**)

(223) Links **between** science and industry are important. (**LOCUS**~**WHOLE**)

History. In v1, following many thematic role inventories, **PATIENT** was a distinct label for undergoers that were affected (undergoing an internal change of state). It was merged into **THEME** for v2 because the affectedness criterion can be subtle and difficult to apply.

Compare: **CO-THEME**

See also: **BENEFICIARY**

3.2.1 **CO-THEME**

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

Often, the **THEME** and the **CO-THEME** are similarly situated entities—rather than one being more figure-like and the other more ground-like—but the **CO-THEME** is an oblique (adpositionally marked) argument. This includes concrete scenes of combination, attachment, separation, and substitution of two similar entities.

(224) a. His bicycle collided **with** hers.
b. Combine butter **with** vanilla.
c. They replaced my old tires **with** new ones. [replacement; contrast (374)]

(225) a. The boys were separated **from** the girls. (**CO-THEME**~**SOURCE**)
b. Keep the dogs **from** the cats. (**CO-THEME**~**SOURCE**)
c. The shin bone is connected **to** the knee bone. (**CO-THEME**~**GOAL**)

By contrast, for similar scenes where the oblique argument is a ground-like entity (larger, less dynamic, more locational, etc. than the **THEME**), that entity is typically a **LOCUS**, **SOURCE**, or **GOAL**:

(226) Dynamic:

- a. Add vanilla **to** the mixture. (GOAL)
- b. Stir vanilla **into** the mixture. (GOAL)
- c. Detach the cable **from** the wall. (SOURCE)

(227) Static:

- a. The cable is attached **to** the wall. (LOCUS~>GOAL)
connects
- b. Protesters were kept **from** the area. (LOCUS~>SOURCE) [repeated:
missing

(88)]

For creation or transformation of a whole entity (or a group of entities, such as ingredients) into another entity, SOURCE applies to the initial entity and GOAL to the result.

With abstract scenes, CO-THEME is sometimes needed because another argument would be THEME—e.g. 2-argument adjectives:

- (228)
- a. You shouldn't confuse/associate Mozart **with** Rossini. (CO-THEME)
 - b. We are ready/eligible/due **for** an upgrade. (CO-THEME~>PURPOSE)
 - c. They prevented us **from** entering. (CO-THEME~>SOURCE)

History. In v1, CO-PATIENT was a distinct label, and the two shared a common supertype, CO-PARTICIPANT. See note at THEME.

See also: INSTEADOF, CO-AGENT

3.2.2 TOPIC

Information content or subject matter in communication or cognition, or the matter something pertains to.

A variety of prepositions—including the vast majority of occurrences of **about**—can mark a TOPIC. The following subclasses warrant TOPIC as the scene role:

- **Communication** scenes: the content or subject matter of speech, writing, art, performance, etc.

- (229)
- a. I gave a presentation **about/on** politics.
spoke
 - b. They wouldn't stop arguing **over** the plan.
 - c. I was accused **of** treason.
 - d. a picture **of** Whistler's mother

- e. three copies **of** the test
versions
 - f. **TOPIC**→**IDENTITY**—see discussion at **IDENTITY**:
 - i. the topic/issue/question **of** semantics
 - ii. the idea **of** raising money
 - g. The ratings **for** this film are atrocious.
reviews
 - h. I did not hazard a guess **as_to** the cause.
- **Cognition** scenes: the content or subject matter of thought and knowledge—belief, opinion, decision, learning, study, interest, expertise, skill, etc.
 - (230) a. Try not to think **about** it.
 - b. We took a minute to think **over** the situation.
ponder
 - c. I plan **on** going again.
 - d. I am focused **on** the task at hand.
 - e. There is not enough research **on** the effects of global warming.
 - f. She was dumbfounded **as_to** why the police had done that.
 - g. Think **of** all the possibilities!
 - h. I have no memory **of** the incident.
 - i. I am aware **of** the problem.
 - j. You can have your choice **of** chicken or fish.
 - k. I disagree **with** that statement.
 - l. I am familiar **with** this topic.
 - m. Are you interested **in** politics?
 - n. I'm confident **in** your abilities.
 - (231) a. My daughter excels **in** sports.
at
 - b. I'm an expert **at** baking cookies.
talented
good
 - c. I wouldn't hesitate **in** seeing a doctor.
[but see (3) under **CIRCUMSTANCE**, which is syntactically parallel]
 - Relations of **regard**: the entity, issue, or aspect that the governing predicate pertains to. The relation to the governor may be somewhat loose, skirting the boundary between semantics and information structure.

- (232)
- a. Be reasonable **with** your expectations!
 - b. They are transparent **with** their fee.
 - c. The discount should apply **with** other restaurants too.
 - d. I approached the manager **about** the poor service. [implied communication]
 - e. I am a big baby **about** needles. [implied cognition]
 - f. The owner wouldn't budge **on** the price.
 - g. They came through **on** all of their promises.
 - h. She did not do the right thing **for** an item that was marked incorrectly.
 - i. I'm fast **at** baking cookies. [cf. (231b)]
 - j. They have almost anything you could want **when_it_comes_to**
in_terms_of
 spy and surveillance equipment .

A few specific governors merit further discussion:

agree.

- (233)
- a. Let us agree **on** the deal. (TOPIC)
 - b. Let us agree **to** the deal. (TOPIC~>GOAL)

answer, respond, etc.

- (234) TOPIC~>GOAL:
- a. the answer **to** the question
 - b. my response **to** your question

For *respond with* and similar, it depends whether the object is an action, a device facilitating communication, or some aspect of transferred information:

- (235)
- a. He responded to my kick **with** a punch. (MEANS)
 - b. He responded to my accusation **with** a lawsuit. (MEANS)
 - c. He responded to my accusation **with** dishonest emails. (INSTRUMENT)
 - d. He responded to my accusation **with** falsehoods. (TOPIC)

problem with, experience with, etc. These are simply **TOPIC**:

- (236) a. There was a problem **with** mice in the basement.
We had
b. I have limited experience **with** numerical methods.
c. I had a bad experience **with** a vampire.
my bad experience

See also: **STIMULUS**

History. Previously, **ACTIVITY** covered usages such as in (231), but such usages were found to be infrequent and **ACTIVITY** was deemed too narrow.

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:

- (237) My affection **for** you (**STIMULUS**~>**BENEFICIARY**)
(238) Scared **by** the bear (**STIMULUS**~>**CAUSER**)
(239) You should listen **to** the music. (**STIMULUS**~>**GOAL**)
pay attention
(240) **STIMULUS**~>**DIRECTION**:
a. We were looking **at** the photo.
b. I was angry **at** him. [cf. (241e)]
c. I startled **at** the noise.
(241) **STIMULUS**~>**TOPIC** is assigned to cases where the PP describes the topic or content of one's emotion:
a. I care **about** you.
b. That's what I love **about** the show.
c. I took_pride **in** the results.
d. I was proud **of** the results.
happy **with**
e. I was angry **with** him. [cf. (240b)]
f. I was in**MANNER**~>**LOCUS** love **with** him. [cf. (173a)]
g. They bored me **with** their incessant talk about cats.

(242) **STIMULUS**→**BENEFICIARY**:

- a. Her disdain **for** customers was apparent.
- b. He has/feels compassion **towards** animals.
for

(243) I am thankful **for** your help. (**STIMULUS**→**EXPLANATION**)
grateful

See also: **TOPIC**, **BENEFICIARY**
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:

- (244) a. The anger **of** the students (**EXPERIENCER**→**GESTALT**)
- b. The students' anger (**EXPERIENCER**→**GESTALT**)
- (245) a. Running is enjoyable **for** me (**EXPERIENCER**→**BENEFICIARY**)
- b. The pizza was (too) salty **for** me (**EXPERIENCER**→**BENEFICIARY**)
- (246) a. It feels hot **to** me (**EXPERIENCER**→**GOAL**)
- b. That was astounding **to** me (**EXPERIENCER**→**GOAL**)

Less canonically, **EXPERIENCER** applies to semi-pragmatic usages meaning 'from the perspective of':²⁰

- (247) a. **For** John, the party was not fun at all. (**EXPERIENCER**→**BENEFICIARY**)
- b. **For** John, there was no reason to attend. (**EXPERIENCER**→**BENEFICIARY**)

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

Counterpart: **STIMULUS**

²⁰Interestingly, many uses of **for** carry an information structural association of delimiting the scope of an assertion. *For John, the party was not fun at all* makes no commitment regarding how fun the party was to others. *This food is good for_{PURPOSE} dinner/for_{BENEFICIARY} folks with dietary constraints* and *He is short for_{COMPARISONREF} a basketball player* also have this property. As the present scheme targets semantic relations, it is not equipped to formalize pragmatic aspects of the meaning.

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.

English construals:²¹

(248) **ORIGINATOR**→**AGENT** (passive-**by** or adnominal **by**):

- a. works **by** Shakespeare [cf. (249a, 250a)]
- b. The telephone was invented **by** Alexander Graham Bell.
- c. The story was given to **RECIPIENT**→**GOAL** her **by** her editor.
told

(249) **ORIGINATOR**→**SOURCE**:

- a. works **of** Shakespeare [cf. (248a, 250a)]
- b. The story was obtained **from** an anonymous White House employee.
- c. I bought it **from** this company.
- d. I heard the news **from** Larry.

(250) **ORIGINATOR**→**GESTALT**:

- a. Shakespeare’s works [cf. (249a, 248a)]
- b. Rodin’s sculptures
- c. the store’s fresh produce
- d. the restaurant’s food
- e. John’s question
speech

²¹If we consider subject position as an **AGENT** construal and direct object position as a **THEME** construal, then we can add examples like *She talked to her editor* (**ORIGINATOR**→**AGENT**) and *They robbed her of her life savings* (**ORIGINATOR**→**THEME**). **ORIGINATOR** does not apply to the subject of events like *exchange* or *talk/chat (with)*, which involve a back-and-forth between **AGENT** and **CO-AGENT** (or a plural **AGENT**).

learn from. If the source of learning is an individual (or group of individuals, organization, etc.) who provides information, **ORIGINATOR**→**SOURCE** applies. Otherwise, it is simply **SOURCE**:

(251) We learned a lot **from** Miss Zarves. (**ORIGINATOR**→**SOURCE**)

(252) We learned a lot **from** that book . (**SOURCE**)
experience

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 **INITIALLOCATION**, 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**

The party (usually animate) that is the endpoint of (actual or intended) transfer of a thing or message, becoming the final **POSSESSOR** or **GESTALT**. Excludes events where transfer/communication is not framed as unidirectional.

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

English construals:²²

(253) She gave the story **to** her editor. (**RECIPIENT**→**GOAL**)
spoke

(254) What title did you give **to** your essay? [inanimate] (**RECIPIENT**→**GOAL**)

(255) news **for** our readers (**RECIPIENT**→**DIRECTION**)

(256) He is yelling **at** me to get ready! (**RECIPIENT**→**DIRECTION**²³)

(257) The news was not well received **by** the White House. (**RECIPIENT**→**AGENT**)

(258) Timmy’s piano lesson (**RECIPIENT**→**GESTALT**)

(259) I’ll have to check **with** my supervisor. (**RECIPIENT**→**CO-AGENT**)

²²If subject position is viewed as an **AGENT** construal, then active subject with a transfer verbs like *get* or *receive* is **RECIPIENT**→**AGENT**. If direct object position is viewed as a **THEME** construal, then *She informed her editor* are **RECIPIENT**→**THEME**.

²³While *yell at* often has a connotation of shouting criticism towards somebody, and criticism would suggest **BENEFICIARY**, the **RECIPIENT** aspect of the meaning is more explicit and essential: yelling from a distance at someone does not imply criticism, and criticism about someone who is absent is not yelling at them.

RECIPIENT does not apply to events like *exchange/talk/chat* (**with**), which involve a back-and-forth between **AGENT** and **CO-AGENT** (or a plural **AGENT** subject):

- (260) She swapped stories **with** her friends. (**CO-AGENT**)
chatted

See also: **BENEFICIARY**

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:

- (261) I bought the book **for** \$10.
sold
(262) I got a refund **of** \$10.
(263) **COST**→**LOCUS**:
a. The book is priced **at** \$10.
valued
b. I bought it **at** a great price/rate.

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

- (264) You can ride the bus **for** free.
\$1

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:

- (265) I bestowed the winner **with** \$100. (**CO-THEME**)

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*).

(266) Vote **for** Pedro!

against

(267) Junk food is bad **for** your health.

(268) My parrot died **on** me.

(269) a. These are clothes **for** children.

b. These are children's clothes. (BENEFICIARY~>POSSESSOR)

(270) Fortunately **for** the turkey('s future), he received a presidential pardon.

Specific subclasses include:

- Animate who will potentially experience a benefit or harm as a result of something but is not an experiencer or recipient of the main predicate itself. (May be an experiencer or recipient of the result.)
- Animate target of emotion or behavior, discussed below.
- Animate who someone supports or opposes (e.g., *vote for*, *cheer for*, *Hooray for*).
- Intended user/usee:

(271) (We sell) clothes **for** children

(272) a gallows **for** criminals

(273) This is the car **for** you! [advertising idiom]

- Something characterized as good/appropriate (or not) for some kind of **animate user or usee**, delimiting the applicability of a descriptor to that kind of individual:

(274) a. This place is great **for** young children.

b. This is a great place **for** young children.

The first and last items above have analogues with **PURPOSE**. The key difference is that **BENEFICIARY** applies to an animate participant, whereas **PURPOSE** applies to an intended consequence or one of its inanimate participants.

Targets of behavior versus emotion. A preposition can mark an individual in the context of evaluating how someone else is treating them, with a noun or adjective governor. If behavior is more salient than emotion, then **BENEFICIARY** is the scene role. If emotion is highly salient, then **STIMULUS** is the scene role.

(275) Behavior-focused:

- a. She exhibits rudeness **towards** customers. (**BENEFICIARY**~>**DIRECTION**)
- b. He is rude **to** women. (**BENEFICIARY**~>**GOAL**)
condescending
- c. He is gentle and compassionate **with** animals. (**BENEFICIARY**~>**THEME**)

(276) Emotion-focused, repeated from (242):

- a. Her disdain **for** customers was apparent. (**STIMULUS**~>**BENEFICIARY**)
- b. He has/feels compassion **towards** animals. (**STIMULUS**~>**BENEFICIARY**)
for

Note that the emotion-focused examples can describe private emotional states directly, while the behavior-focused examples are behavior-based judgments or inferences about emotional states.

An obligation directed at somebody is analyzed like targeted behavior:

(277) We have a solemn responsibility **to** our armed forces. (**BENEFICIARY**~>**GOAL**)

Similar to the behavior-focused examples, inanimate causes can have the potential to positively or negatively affect somebody. Ability and permission modalities are included here:

- (278) a. The strategy is beneficial **for** investors. (**BENEFICIARY**)
risky
an option
- b. The strategy is helpful **to** investors. (**BENEFICIARY**~>**GOAL**)
poses a risk
is available

Versus RECIPIENT. **BENEFICIARY** applies to the classic English benefactive construction where it is ambiguous between assistance and intended-transfer:

(279) John baked a cake **for** Mary. [to help Mary out, and/or with the intention of giving her the cake]

However, if transfer (or communication) is the main semantics of the scene and benefit or harm is no more than an inference, then the scene role is **RECIPIENT**:

(280) a message **for** my mother (**RECIPIENT**~>**DIRECTION**)
gift

(291) ride **on** horseback (INSTRUMENT~>LOCUS)

(292) hold **at** knifepoint (INSTRUMENT~>LOCUS)

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

(293) We flew to London **via** Paris. (INSTRUMENT~>PATH)

(294) I found out the news **via** Sharon. (INSTRUMENT~>PATH)

(295) Joan bought her house **through** a real estate agent. (SOCIALREL~>INSTRUMENT)

(296) For my Honda I always got replacement parts **through** the dealership.
(ORGROLE~>INSTRUMENT)

Conversely, roadways count as PATHS but can be construed as INSTRUMENTS:

(297) Escape **through** the tunnel. (PATH)

(298) Escape **by** tunnel. (PATH~>INSTRUMENT)

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

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):

(299) the state **of** Washington [as opposed to the city]

(300) The liberal state **of** Washington has not been receptive to Trump's message.

(301) **As** a liberal state, Washington has not been receptive to Trump's message.

- (302) I like Bob **as** a colleague. [but not as a friend]
- (303) What a gem **of** a restaurant! [exclamative idiom: both NPs are indefinite]
- (304) the problem/task/hassle **of** raising money
- (305) the age **of** eight
- (306) They did a great job **of** cleaning my windows.
- (307) **TOPIC**~>**IDENTITY**, with a governing noun in the domain of communication or cognition:
- a. the topic/issue/question **of** semantics
 - b. the idea **of** raising money

Something may be specified with a category in order to disambiguate it (299), or to provide an interpretation or frame of reference with which that entity is to be considered. In some cases, like (307), the category is a *shell noun* (Schmid, 2000) requiring further specification.

Categoryizations may be situational rather than permanent/definitional:

- (308) 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 (302) and (308), rather than being governed by the item it describes.

If the object of the preposition is a property (as opposed to a category), the scene role is **CHARACTERISTIC**:

- (309) Adnominal: **CHARACTERISTIC**~>**IDENTITY**
- a. a car **of** high quality
 - b. a man **of** honor
 - c. a business **of** that sort [contrast with **SPECIES**, §4.2]
- (310) Secondary predicate adjective: **CHARACTERISTIC**~>**IDENTITY**
- a. She described him **as** sad.
 - b. He strikes me **as** sad.

See also: **COMPARISONREF**

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’.

- (311) a. that sort **of** business
b. A good type **of** ant to keep is the red ant .
c. certain strains **of** *Escherichia coli*
d. Modern breeds **of** these homing pigeons return reliably
e. Some poor sap applied the wrong brand **of** paint
f. This store offers a wide selection **of** footstools

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

- (312) a business **of** that sort (**CHARACTERISTIC**)

4.3 GESTALT

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

GESTALT—the supercategory of **WHOLE** and **POSSESSOR**—applies directly for entities and eventualities which can loosely be conceptualized as containing or possessing something else, but for which neither **WHOLE** nor **POSSESSOR** is a good fit.

Properties. The holder of a property if the property is the governor:

- (313) a. the blueness **of** the sky the sky’s blueness
b. the size **of** the crowd the crowd’s size
c. the price **of** the tea the tea’s price
d. the start time **of** the party the party’s start time

- (314) the amount **of** time allowed [but see (403)]

- (315) the food/service **at** this restaurant (**GESTALT**→**LOCUS**)

Containers. The construal **LOCUS**→**GESTALT** is used for a container denoted by the governor:

(316) the room's 2 beds (**LOCUS**→**GESTALT**)

Discourse-associated item. A referent temporarily associated with another referent in the discourse and used to help identify it:

(317) Sam's dog (= the dog that Sam mentioned seeing earlier in the conversation)

Other possessive constructions. **GESTALT** is the construal for many uses of possessive syntax where the semantic criteria for **POSSESSOR** are not met. For instance, s-genitive marking of participant roles (**AGENT**, **EXPERIENCER**, etc.) are analyzed with **GESTALT** as the function. Moreover, the s-genitive construction, unlike **of**, is never analyzed with **WHOLE** as the function, so **WHOLE**→**GESTALT** is used. See §6.1 for discussion of possessive constructions.

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 the *s-genitive* (§6.1: 's and possessive pronouns), and **of** (the *of-genitive*):

(318) a. the house **of** the Smith family the Smith family's house
 b. the corgis **of** Queen Elizabeth Queen Elizabeth's corgis

POSSESSOR is not limited to cases of *ownership*, but also includes temporary forms of possession, such when something is on loan to or under the control of the possessor:

(319) John's hotel room [the room John is staying in as a guest]

(320) Mary's delivery truck [the company truck that Mary drives as an employee]

A wearer of attire is also in this category:

- (321) the cloak **of** He-Who-Must-Not-Be-Named He-Who-Must-Not-Be-Named's cloak
- (322) the cloak **on** He-Who-Must-Not-Be-Named (POSSessor~>LOCUS)
- See ACCOMPANIER, BENEFICIARY, ORGROLE.

4.3.2 WHOLE

Something described with respect to its part, portion, subevent, subset, or set element. See PARTPORTION.

- | | | |
|-------|--|-----------------------------|
| (323) | WHOLE | WHOLE~>GESTALT |
| | a. the new engine of the car | the car's new engine |
| | b. the flaxen hair of the girl | the girl's flaxen hair |
| | c. the 3 layers of the cake | the cake's 3 layers |
| | d. the 3 prongs of the strategy | the strategy's 3 prongs |
| | e. the tastiest bit of the cake | the cake's tastiest bit |
| | f. the southern tip of the island | the island's southern tip |
| | g. the interior of the shopping bag | the shopping bag's interior |
| | h. the end of the journey | the journey's end |
| | i. the 14 episodes of a TV series | a TV series's 14 episodes |
- (324) the south **of** France
- (325) The remainder **of** the cake
rest
- (326) **WHOLE~>LOCUS:**
- | | |
|----|---------------------------------------|
| a. | the 14 episodes in a TV series |
| b. | the new engine in the car |
| c. | the escape key on the keyboard |
| d. | the flaxen hair on the girl |
- (327) the clothes **in** that pile are dirty (**WHOLE~>LOCUS**) [but contrast adverbial/predicative **in**+shape: (163) under **MANNER**]
- (328) There are several options to choose **from**. (**WHOLE~>SOURCE**)
- (329) Sets and ratios:
- | | |
|----|---|
| a. | This is one of the worst restaurants in town. (WHOLE)
better |
| b. | 2 in 10 American children are redheads. (WHOLE~>LOCUS) |

- c. a business **of** that sort [contrast with SPECIES, §4.2]
 - (334) Secondary predicate adjective: CHARACTERISTIC~>IDENTITY
 - a. She described him **as** sad.
 - b. He strikes me **as** sad.
 - Role of a complex frame GESTALT that has no obvious decomposition into parts:
 - (335) a. the restaurant **with** a convenient location
an extensive menu
 - b. a party **with** great music
 - That which is located in a container denoted by the governor:
 - (336) a room **with** 2 beds [beds are among the things in the room]
 - (337) CHARACTERISTIC~>STUFF where the object of the preposition is construed as describing the contents in their entirety:
 - a. a shelf **of** rare books
 - b. a cardboard box **of** snacks
 - Member(s) forming a partial subset of an organizational collective denoted by the governor:
 - (338) A piano quintet is a chamber group **with** a piano (in it)
(ORGRole~>CHARACTERISTIC)
 - With a transitive verb like *search*, *examine*, or *test*, the attribute of the THEME that is being examined:
 - (339) He examined the vase **for** damage.
 - (340) He searched the room **for** his laser pistol. [contrast intransitive THEME, (215a)]
 - (341) He was tested **for** low blood sugar.
 - The scale or dimension by which items are compared:
 - (342) The children are sorted **by** height
screened
 - (343) a. She exceeds him **in** height
 - b. There is no difference **in** height
 - Anything that is borderline between the POSSESSION and PARTPORTION subcategories
- 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 vaguely defined. With the overhaul of the **CONFIGURATION** subhierarchy, **ATTRIBUTE** has primarily been replaced by **CHARACTERISTIC** and its subtypes and **IDENTITY**.

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.

Prototypical prepositions are **with** and **without**:

(344) People **with** money

Attire is included here as well:

(345) the kid **with** a vest (on)
makeup

(346) the kid **in** a vest (**POSSESSION**→**LOCUS**)

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

(347) Hagrid exited the shop **with** (= carrying) a snowy owl. (**POSSESSION**→**ACCOMPANIER**)

There is also a (negated) possession sense of **out/out_of**:

(348) a. We are **out_of** toilet paper.
b. Toilet paper? We are **out**.

Paraphrase test: “**POSSESSOR POSSESSES POSSESSION**”, “**POSSESSOR** is IN **POSSESSION OF POSSESSION**”, or “**POSSESSOR HAS ON POSSESSION**”. The latter is especially appropriate for immediate concrete possession.

4.4.2 **PARTPORTION**

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

Anything directly labeled with **PARTPORTION** 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:

- (349) 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)

- (350) Bread **without** gluten

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

Elements and Exceptions. **PARTPORTION** is used for adpositions marking a member or non-member of a set:

- (351) strategies **such_as** divide-and-conquer
- (352) Everyone **except/but** Bob plays trombone.

Set-membership can be construed as comparison:

- (353) strategies **like** divide-and-conquer [same reading as (351)]
(**PARTPORTION**~>**COMPARISONREF**)

Diverse Examples. In describing a set or whole, a sort of scanning with **from...to** can be used indicate diversity or coverage of the items/parts:

- (354) Everyone **from**_{**PARTPORTION**~>**SOURCE**} the peasants **to**_{**PARTPORTION**~>**GOAL**} the lord and lady gathered for the feast.

Start with, end with, etc. Along similar lines as (354), **with** can be used with an aspectual verb to indicate an item in a sequence: *start with, continue with, end with*, and similar. Here the scene role **PARTPORTION** applies (though note that it is a part with respect to another argument of the verb, not the verb itself):

(355) **PARTPORTION**~>**MEANS**:

- a. My teacher started the lesson **with** a quiz.
- b. The lesson started **with** a quiz.

(356) The meal started **with** an appetizer. (**PARTPORTION**~>**INSTRUMENT**)

History. In v1, instead of this category, there were separate categories **ELEMENTS** for set members, **COMPARISON/CONTRAST** for exemplification, and **ATTRIBUTE** for other parts (grouped with properties, which are now **GESTALT**). (**SUPERSET** was removed along with **ELEMENTS**: see **WHOLE**.)

STUFF

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

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

(357) a. A clump **of** sand

b. A piece **of** wood

c. An evening **of** Brahms

d. A meal **of** salmon

(358) A salad **of** mixed greens

with

(359) This bottle is **of** beer (and that one is of wine). (**CHARACTERISTIC**~>**STUFF**)
[but see (395)]

(360) A group/throng **of** vacationers (**QUANTITY**~>**STUFF**) [governor is collective noun not denoting an organization; more at **QUANTITY**]

(361) **ORGRole**~>**STUFF**:

a. An order **of** nuns

b. A chamber group **of** 5 players

with

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**, **together_with**, and **in_addition_to**:

(362) I'll have soup **with** salad.

without

(363) She'll be **with** us in spirit.

'Togetherness' is a subjective concept that goes beyond proximity; contrast (364a) with (364b), which provide slightly different interpretations of the same spatial scene:

(364) a. The girl is standing **with** her mother. (ACCOMPANIER)

b. The girl is standing **next_to** her mother. (LOCUS)

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:

(365) Do you want to walk **with** me? (ACCOMPANIER \rightsquigarrow CO-AGENT)

By contrast, if the nature of the scene fundamentally requires multiple participants, simple **CO-AGENT** is used. Often there is ambiguity:²⁴

(366) 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 \rightsquigarrow CO-AGENT)

(367) 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 \rightsquigarrow CO-AGENT)

If the object denotes an item that the governor has on hand in their possession, then the construal **POSSESSION** \rightsquigarrow **ACCOMPANIER** is used:

(368) I walked in **with** an umbrella. (POSSESSION \rightsquigarrow ACCOMPANIER)

²⁴ Adding **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*).

- (376) 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.
- (377) a. She is as tall **as** I am.
 b. Your face is (as_{CHARACTERISTIC}→_{EXTENT}) red **as** a rose. (more on **as-as** comparatives: §6.3.1)
 c. Your surname is the same **as** mine.
- (378) Harry had never met anyone quite **like** Luna.
- (379) It was **as_if** he had insulted my mother.

like

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

Prototypical prepositions include **than**, **as** (including the second item in the **as-as** construction), **like**, **unlike**. Prominent construals are **to** (**GOAL** for similar-thing) and **from** (**SOURCE** for dissimilar-thing).

LOCUS construal. If something is preferred or appreciated **over** something else, **COMPARISONREF**→**LOCUS** is used:

- (380) I prefer this restaurant **over** that one. (**COMPARISONREF**→**LOCUS**)
 [paraphrase: I like this restaurant better **than** that one.]

But for scenes of choice and substitution, see **INSTEADOF**.

SOURCE and GOAL construals. Resemblance and equivalence may be expressed with **to**, while difference may be expressed with **from**:

- (381) **COMPARISONREF**→**GOAL**:
 a. Shall I compare thee **to** a summer’s day?
 b. Her height is equal **to** mine.
 close
- (382) **COMPARISONREF**→**SOURCE**:
 a. We need to distinguish what is achievable **from** what is desirable.

- b. Her height is different **from** mine.²⁵

ACCOMPANIER construal.

- (383) Don't compare me **with** my sister! (COMPARISONREF \rightsquigarrow ACCOMPANIER)

Category as standard. An indirect comparison can be made by relating something to a category to which it may or may not belong. The category stands for its members or prototypes. For example, in:

- (384) He is short **for** a basketball player. (COMPARISONREF)

the category *basketball player* serves as the standard against which *he* is deemed short.

Sufficiency and excess. In a statement of sufficiency or excess, COMPARISONREF \rightsquigarrow PURPOSE marks the consequence enabled or prevented by some condition. This is similar to **necessity** (discussed under PURPOSE), only here, the condition involves a comparison; the standard of comparison is implied by the consequence:

- (385) COMPARISONREF \rightsquigarrow PURPOSE:
a. He is too short **for** basketball.
not tall enough **to** play
b. His height is insufficient **for** basketball.

In these constructions, an adverb (*too*, *enough*, *insufficiently*, etc.) or an adjective (*insufficient*) licenses the PP or infinitival expressing the consequence.²⁶ They amount to saying *He is shorter than the height he would have to be in order to play basketball*, which features separate constructions for comparison and necessity-for-purpose.

MANNER \rightsquigarrow COMPARISONREF construal. This applies to an analogy that describes the *how* of an event (be it agentive or perceptual):

- (386) MANNER \rightsquigarrow COMPARISONREF:
a. You eat **like** a pig (eats).
b. You smell **like** a pig.

²⁵American English. Interestingly, *different to* occurs in British English.

²⁶See the Degree-Consequence construction (Bonial et al., 2018).

However, where an analogy is an external comment on an event rather than filling in a role of the event, it is simply **COMPARISONREF**. Contrast:

- (387) You ate a whole pie **like** my cousin did.
- a. *Role reading*: The way in which you ate a pie was similar. (**MANNER**→**COMPARISONREF**)
 - b. *External comment reading*: You ate a whole pie, and so did my cousin. (**COMPARISONREF**)

Analogy and non-analogy readings of like. In descriptions, adverbial **like**, **as_if**, etc. can be ambiguous, especially in a scene of perception. For example:

- (388) This looks **like** a Van Gogh painting.
- a. *Analogy reading*: This looks similar to a Van Gogh painting. (**MANNER**→**COMPARISONREF**)
 - b. *Conclusion reading*: This looks to be a Van Gogh painting (it probably is one). (**THEME**→**COMPARISONREF**)
- (389) It sounded **like/as_if**
- a. ...he had drunk a gallon of helium. (**MANNER**→**COMPARISONREF**: analogy reading more likely)
 - b. ...they weren't taking me seriously. (**THEME**→**COMPARISONREF**: conclusion reading more likely)

Similarly for *seem like*, *feel like*, etc.

Another ambiguity can arise when **like** occurs with *what* as its extracted object. In the following sentences, the most likely interpretation is not one of analogy between two things, but rather an open-ended description. (*Who does it look like?*, by contrast, implicates an analogy to an individual.) We therefore treat **like what** as a PP idiom, and label it **MANNER**→**COMPARISONREF**:

- (390) **MANNER**→**COMPARISONREF**:
- a. I know what_ Steve looks _**like**. (I know how Steve looks.)
 - b. What_ does her hair look _**like**? (How does her hair look?)
 - c. What_ is the party _**like**? (How is the party?)

A *how*-paraphrase is generally possible, though *how* may suggest a positive or negative evaluation is available, whereas *what* is more neutral.

Constrast unaccusative perception verb + **of** combinations:

- (391) Your father smells **of** elderberries. (**MANNER**→**STUFF**) [also (161)]
The soup tastes

Category exemplars and set members. When governed by an NP naming a category or set, **like** is ambiguous between exemplifying a member, as in (392b) and (393b), and merely indicating similarity, as in (392a) and (393a):

- (392) Colbert frequently promotes comedians **like** himself.
- a. [*Exclusive/restrictive reading: similar to himself (but not including himself)*] (COMPARISONREF)
 - b. [*Inclusive/nonrestrictive reading: such as/including himself (he promotes himself, among others)*] (PARTPORTION \leadsto COMPARISONREF)
- (393) a. I don't know anyone else **like** her. [anyone else *similar to* her] (COMPARISONREF)
- b. It must be great to have a wonderful doctor **like** her .
she is
 [It must be great to have her because she is a wonderful doctor] (IDENTITY \leadsto COMPARISONREF)

4.8 RATEUNIT

Unit of measure in a rate expression.

This is for constructions using **per** or **by** to specify a unit:

- (394) a. The cost is \$10 **per** item.
 b. A fuel efficiency of 40 miles **per** gallon (of gas)
 c. Pizza is sold **by** the slice.
 d. They charge **by** the hour.

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

History. In v1, this fell under VALUE.

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 **of**.

- Simple **QUANTITY**:

(395) Pour me a bottle('s worth) **of** beer. [but see (359)]

(396) I have 2 years **of** training.

(397) a. I ate 6 ounces **of** cake.
a piece

b. An ounce **of** compassion

(398) There's a dearth **of** cake in the house.

(399) This cake has thousands **of** sprinkles.

(400) They number in the tens **of** thousands.

(401) 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.

(402) A pair **of** shoes

- If the measure includes a word like “amount”, “quantity”, or “number”,²⁷ the construal **QUANTITY**~**GESTALT** is used (because the amount of something can be viewed as an attribute):

(403) **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 (314).

- If the governor is a **collective noun** not denoting an organization, the construal **QUANTITY**~**STUFF** is used (note that a “consisting of” paraphrase is possible):

(404) **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

²⁷Excluding the expression “a number” meaning ‘several’, as in (401a).

For organizational collectives, see **ORGR**OLE.

- 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:

(405) **QUANTITY**~>**WHOLE**:

- I ate 6 ounces **of** the cake in the refrigerator.
- I ate half **of** the cake.
50%
- All/many/lots/a lot/ **of** the town's residents are students.
some/few/both/none
- I have seen all **of** the city. (= the whole city)
- A lot **of** the sand on the beach is wet.
- 2 **of** the children are redheads.
- 2 **of** the 10 children in the class are redheads.

However, simple **WHOLE** is used if the portion is specified as “the rest”, “the remainder”, etc., as in (325).

4.9.1 **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:

- (406) We have **about** 3 eggs left.
(407) We have **in_the_vicinity_of** 3 eggs left.
(408) We have **over** 3 eggs left.
(409) We have **between** 3 and 6 eggs left.

Similarly for **around**, **under**, **more_than**, **less_than**, **greater_than**, **fewer_than**, **at_least**, and **at_most**.²⁸

²⁸These 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.

4.10.1 ORGROLE

Either party in a relation between an organization/institution and an individual who has a stable affiliation with that organization, such as membership or a business relationship.

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

- (417) **ORGROLE**~**GESTALT** with the institution as possessor:
- a. the chairman **of** the board the board's chairman
 - b. the president **of** France France's president
 - c. employees **of** Grunnings Grunnings's employees
customers customers
- (418) **ORGROLE**~**GESTALT** with possessive marking on the individual:
- a. **my** school/gym [that I attend]
 - b. **my** work [the place where I work]
 - c. **my** landscaping company [that I hired]
- (419) **ORGROLE**~**POSSESSOR** if the individual is understood to possess authority within or as a representative of the institution:
- a. **my** small business [that I own or operate]
 - b. the president's administration
- (420) a. Mr. Dursley works **for** Grunnings. (**ORGROLE**~**BENEFICIARY**)
b. Mr. Dursley works **at** Grunnings. (**ORGROLE**~**LOCUS**)
c. Mr. Dursley is **from** Grunnings. (**ORGROLE**~**SOURCE**)
d. Mr. Dursley is **with** Grunnings. (**ORGROLE**~**ACCOMPANIER**)
e. Mr. Dursley is employed **by** Grunnings. (**ORGROLE**~**AGENT**)
- (421) I always do business **with** this company. (**ORGROLE**~**CO-AGENT**)
- (422) **ORGROLE**~**ACCOMPANIER**:
- a. I bank **with** TSB.
 - b. my phone service **with** Verizon
- (423) For my Honda I always got replacement parts **through** the dealership. [intermediary business] (**ORGROLE**~**INSTRUMENT**)
- (424) I serve **on** the committee. (**ORGROLE**~**LOCUS**)
- (425) **ORGROLE**~**STUFF** if the governor is an organizational collective noun and the object of the preposition describes the full membership:

- a. An order **of** nuns
 - b. A chamber group **of** 5 players
with
- (426) **ORGROLE**~>**CHARACTERISTIC** if the governor is an organizational collective noun and the object of the preposition denotes a subset of members:
- a. A piano quintet is a chamber group **with** a piano (in it)

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

(427) I am the baby **of** the family. (**ORGROLE**~>**WHOLE**)

(428) people **in** my family (**ORGROLE**~>**LOCUS**)

For a relation between a unit and a larger institution, use **WHOLE**:

(429) the Principals Committee **of** the National Security Council (**WHOLE**)

See also: **STUFF**

History. **ORGROLE** is now distinguished within the broader **SOCIALREL** category following the precedent of the Abstract Meaning Representation (AMR; Banarescu et al., 2013, 2015). In AMR, have-org-role-91 captures relations between an individual and an institution (such as an organization or family), whereas have-rel-role-91 is used for relations between two individuals.

5 Constraints on Role and Function Combinations

The present scheme emerged out of extensive descriptive work with corpus data. Given the abundance of rare preposition usages, this document does not claim to cover every possible role/function combination for English, let alone other languages. Below are the few categorical restrictions that seem warranted for English.

5.1 Supersenses that are purely abstract

PARTICIPANT, **CONFIGURATION**, and **TEMPORAL** are intended only to organize subtrees of the hierarchy, and not to be used directly.

5.2 Supersenses that cannot serve as functions

EXPERIENCER, STIMULUS, ORIGINATOR, RECIPIENT, SOCIALREL, and ORGROLE can only serve as scene roles in English. Though scenes of perception, transfer, and interpersonal/organizational relationships are fundamental in language, they always seem to exploit construals from other domains (motion, causation, possession, and so forth), at least insofar as English preposition/case marking is concerned.

For example, (430a) is clearly **RECIPIENT** at the scene level—Sam acquires possession of the box—but also fits the criteria for **GOAL** because Sam is an endpoint of motion (and **to** frequently marks **GOALS** that are not **RECIPIENTS**). (430b) and (430c) reflect **RECIPIENT**→**AGENT** and **RECIPIENT**→**GESTALT** construals, respectively.

- (430) a. Give the box **to** Sam. (**RECIPIENT**→**GOAL**)
b. the box received **by** Sam (**RECIPIENT**→**AGENT**)
c. Sam's receipt of the box (**RECIPIENT**→**GESTALT**)

Though the **GOAL** construal is arguably the most canonical expression of **RECIPIENT**, there is no preposition with a primary meaning of **RECIPIENT** independent of one of these other domains.

Additional constraints on functions arise in the context of specific constructions (§6). For instance,

- the s-genitive requires either **POSSESSOR** or **GESTALT** as its function (§6.1)
- passive **by** requires **AGENT** or **CAUSER** as its function (§6.2)

5.3 Supersenses that cannot serve as roles

In the present scheme, there are no supersenses that are restricted to serving as functions.

5.4 No temporal-locational construals

Temporal prepositions never occur with a function of LOCUS, PATH, or EXTENT.

Languages routinely borrow from spatial language to describe time, and spatial cognition may underlie temporal cognition (e.g., Lakoff and Johnson, 1980; Núñez and Sweetser, 2006; Casasanto and Boroditsky, 2008). A liberal use of construal would treat *arriving in the afternoon* as **TIME**→**LOCUS**, *sleeping through the night* as **DURATION**→**PATH**, *running for 20 minutes* as **DURATION**→**EXTENT**, and so forth. However, for simplicity and practicality, we elect not to annotate **LOCUS**, **PATH**, or **EXTENT** construals on ordinary temporal adpositions. Thus:

- (431) a. arriving **in** the afternoon (TIME)
 b. sleeping **through** the night (DURATION)
 c. running **for** 20 minutes (DURATION)

TIME \rightsquigarrow DIRECTION is possible, however, as are other atemporal functions:

- (432) a. Schedule the appointment **for** Monday. (TIME \rightsquigarrow DIRECTION)
 b. January **of** last year (TIME \rightsquigarrow WHOLE)
 c. Will you attend Saturday's class? (TIME \rightsquigarrow GESTALT)
 d. It took a year's work to finish the book. (DURATION \rightsquigarrow GESTALT)

Note that the above is qualified to 'ordinary temporal adpositions'. **When the first argument of a comparative construction is marked with as, the function is always EXTENT, even if the scene role is temporal.** See §6.3.1.

5.5 Construals where the function supersense is an ancestor or descendant of the role supersense

Ordinarily, if a construal holds between two (distinct) supersenses, these are from different branches of the hierarchy. In a few cases, however, one is the ancestor of the other.

Role is ancestor of function.

- Setting events or situations with a salient spatial metaphor are CIRCUMSTANCE \rightsquigarrow LOCUS or CIRCUMSTANCE \rightsquigarrow PATH.
- Fictive motion (the extension of a normally dynamic preposition to a static spatial scene) can warrant LOCUS \rightsquigarrow GOAL or LOCUS \rightsquigarrow SOURCE, as discussed under LOCUS.
- Complete contents of containers are CHARACTERISTIC \rightsquigarrow STUFF.

Function is ancestor of role.

- Some s-genitives are annotated as WHOLE \rightsquigarrow GESTALT: see §6.1.
- When a locative PP is coerced to a goal, as with *put*, GOAL \rightsquigarrow LOCUS is used.

6 Special Constructions

This section discusses notable constructions that are not limited to a single supersense.

6.1 Genitives/Possessives

Blodgett and Schneider (2018) detail the application of this scheme to English possessive constructions: the so-called **s-genitive**, as in (433), and **of-genitive**, as in (434):

- (433) a. the Smith family's house (**POSSESSOR**)
 their
 b. the tea's price (**GESTALT**)
 its
- (434) a. the house **of** the Smith family (**POSSESSOR**)
 b. the price **of** the tea (**GESTALT**)

Note that the s-genitive is realized with case marking (clitic 's or possessive pronoun²⁹) rather than a preposition, and the case-marked NP in the s-genitive alternates with the object of the preposition in the of-genitive. (This may feel unintuitive: annotators looking at the s-genitive construction are often tempted to focus on the role occupied by the head noun rather than the case-marked noun.)

The s-genitive and of-genitive are particularly associated with **POSSESSOR** (which applies to a canonical form of possession) and the more general category **GESTALT**; both supersenses are illustrated above (433, 434). In addition, both genitive constructions can mark participant roles and other kinds of relations, including **WHOLE** and **SOCIALREL** relations. When the s-genitive is used, the *function* is always either **GESTALT** (most cases) or **POSSESSOR** (when the possession is sufficiently canonical). While overlapping in scene roles with the s-genitive, **of** is considered compatible with some additional functions, including **WHOLE**, **SOURCE**, and **THEME**; thus of-genitives with such roles do not need to be construed as **GESTALT** or **POSSESSOR**:

- (435) **SOCIALREL** \rightsquigarrow **GESTALT**:
 a. the grandfather **of** Lord Voldemort
 b. Lord Voldemort's grandfather
 his
- (436) a. the hood **of** the car (**WHOLE**)

²⁹For ease of indexing, 's or s' is preferred over possessive pronouns for s-genitive examples in this document.

- b. the nose **of** He-Who-Must-Not-Be-Named (WHOLE)
- c. the car's hood (WHOLE~>GESTALT)
- its**
- d. He-Who-Must-Not-Be-Named's nose (WHOLE~>GESTALT)
- his**
- (437) a. the arrival **of** the queen (THEME)
- b. the queen's arrival (THEME~>GESTALT)
- her**
- (438) Shakespeare's works (ORIGINATOR~>GESTALT)
- his**
- (439) These are children's clothes.³⁰ [clothes intended for use and possession by children] (BENEFICIARY~>POSSESSOR)

The literature on the genitive alternation examines the factors that condition the choice of construction; important factors include the length and animacy of the possessed NP. In addition, **of** participates in certain constructions that are not really possessives—e.g. *this sort of sweater* (SPECIES).

Certain idioms require an s-genitive argument that does not participate in any transparent semantic relationship; for these, `s is used (§7.4).

6.2 Passives

The construction for passive voice (in verbs and nominalizations thereof) involves an optional **by**-PP; the object of **by** alternates with the subject in active voice. While a variety of scene roles can be expressed with this phrase, the *functions* associated with passive **by** are limited to AGENT and CAUSER:

- (440) a. the decisive vote **by** the City Council (AGENT)
- b. the devastation wreaked **by** the fire (CAUSER)
- c. This story was told **by** my grandmother. (ORIGINATOR~>AGENT)
- d. The news was not well received **by** the White House. (RECIPIENT~>AGENT)
- e. Mr. Dursley is employed **by** Grunnings. (ORGRole~>AGENT)
- f. The window was broken **by** the hammer. (INSTRUMENT~>CAUSER)
- g. scared **by** the bear (STIMULUS~>CAUSER)

³⁰Cannot readily be paraphrased with **their** because *children* is not referential, but rather refers to a kind. This construction has been termed the *descriptive genitive* (Quirk et al., 1985, pp. 322, 327–328).

6.4 Infinitive Clauses

In its function as infinitive marker, **to** is not generally considered to be a preposition. Nevertheless, we consider all uses of **to** for adposition supersense annotation because infinitive clauses (infinitivals) can express similar semantic relations as prepositional phrases. Most notably, infinitival purpose adjuncts alternate with **for**-PP purpose adjuncts:

- (444) **PURPOSE**:
- a. i. Open the door **to** let in some air.
ii. Open the door **for** some air.
 - b. i. I flew to headquarters **to** meet with the principals.
ii. I flew to headquarters **for** a meeting with the principals.

Thus, from a practical point of view, we might as well treat infinitival **to** as capable of marking a **PURPOSE**.

The following is an exhaustive list of semantic analyses that we consider for infinitivals:

- **Purpose adjuncts**, generally adverbial, as in (444). These are labeled **PURPOSE**. They can generally be paraphrased with **in_order_to**.
- **Inherent purposes**, generally adnominal, as in (195), described under **PURPOSE**. These are labeled **CHARACTERISTIC**→**PURPOSE**.
- In a **commercial scene**, that which costs money; labeled **THEME**→**PURPOSE**. Repeated from the discussion under **THEME**:

- (445) a. They asked \$500 **to** make the repairs. (**THEME**→**PURPOSE**)
b. \$500 **to** make the repairs was excessive. (**THEME**→**PURPOSE**)

- Constructions of **sufficiency and excess**—*too short to ride, not tall enough to ride*, etc., where the assertion of sufficiency or excess licenses an infinitival, labeled **COMPARISONREF**→**PURPOSE**. See discussion at **COMPARISONREF**.

Infinitival tokens not covered by this list are labeled **i** (§7.3).

Infinitival with for-subject. In (444), the infinitive clause has no local subject—rather, an argument of the matrix clause doubles as the subject of the infinitive clause (control). However, a separate subject can be introduced with **for**, in which case **for**+NP is treated as a dependent of the infinitive verb and labeled **i**:

- (446) a. I opened the door [**for**_i Steve **to**_{PURPOSE} take out the trash].
b. It cost \$500 [**for**_i the mechanic **to**_{THEME}→_{PURPOSE} make the repairs].

6.5 PP Idioms

Many PPs exhibit some amount of lexicalization or idiomaticity. This is especially true of PPs that tend to be used predicatively. In general it is extremely difficult to establish tests to distinguish idiomatic PPs from fully productive combinations. However, the usual criteria apply for the supersense analysis.

For example, if the PP answers a *Where?* question, it qualifies as **LOCUS**; whereas qualitative states usually have **MANNER** as the scene role:

(447) He is **out_of** town. (**LOCUS**)

(448) The company is **out_of** business. (**MANNER**~**LOCUS**)

See further discussion at **MANNER**.

6.5.1 Reflexive PP Idioms

Certain idiomatic constructions involve a preposition that requires a reflexive direct object.

PERFORM-ACTIVITY *for* oneself.

- When something is done for one's own benefit rather than someone else's:

(449) I took a vacation **for** myself (**BENEFICIARY**)

- When something is done in a way that affords direct rather than second-hand information:

(450) You should try out the restaurant **for** yourself! (**AGENT**~**BENEFICIARY**)

PERFORM-ACTIVITY *by* oneself.

- When something is done without accompaniment (the negation would be ***with others***):

(451) I had lunch (all) **by** myself ['alone'] (**ACCOMPANIER**³¹)

- When something is accomplished without assistance:

(452) I made the decision (all) **by** myself. (**MANNER**)

(453) The computer rebooted all **by** itself. (**MANNER**)

³¹Though *myself* is not literally accompanying *I*, the PP as a whole describes the nature of accompaniment (or lack thereof).

BE *by oneself*. Alone; unaccompanied:

(454) I am **by** myself right now. (ACCOMPANIER)

6.6 Ages

An individual's age is a temporal property, licensing both **TIME** and **CHARACTERISTIC** prepositions:

- (455) a. a child **of** (age) 5 (years) (CHARACTERISTIC)
b. Martha was already reading **at/by/before** (the age of_{IDENTITY}) 5 (years). (TIME)

7 Special Labels

For annotating data, there needs to be a way to indicate that *none* of the adposition supersenses apply to a particular token.

7.1 DISCOURSE (**d**)

Discourse connectives and other markers that transition between ideas or convey speaker attitude/hedging/emphasis/attribution but do not belong to propositional content. Examples include:

(456) **according_to**; **after_all**, **of_course**, **by_the_way**; **for_chrisssake** (interjection); **above_all**, **to_boot**; **in_other_words**, **on_the_other_hand**; **in_my_experience**, **in_my_opinion**

This label also covers “additive focusing markers” (Huddleston and Pullum, 2002, p. 592) with a meaning similar to ‘also’ or ‘too’, where an item is added to something already established in the discourse:

- (457) a. I shot the sheriff **as_well**.
b. They serve coffee, and tea **as_well**.

It also covers topicalization markers:

(458) **As_for** the sheriff, well, I shot 'im.

Finally, **d** applies to adpositions relating a metalinguistic mention of a speech act to the speech content itself—whether the adposition introduces this speech act mention, as in (459a), or links the discourse expression to a subordinate statement, as in (459b).

- (459) a. **To** sum it up: It was a terrible experience.
b. I will sum it up **with**: It was a terrible experience.

7.2 COORDINATOR (^c)

Coordinating conjunctions and similar expressions where the two elements in the relation are semantically on an equal footing, rather than in a figure/ground relationship:

(460) They serve coffee **as_well_as** tea. [‘They serve coffee and also tea’]

7.3 OTHER INFINITIVE (^i)

As described in §6.4, infinitive clauses are analyzed with a supersense if and only if they serve as a purpose adjunct, or in certain purpose-related constructions (inherent purpose, action that costs money in a commercial scene, that which something is sufficient or excessive for). The special label **^i** is reserved for all other uses of infinitival **to**, as well as **for** whenever it introduces the subject of an infinitive clause.³²

Infinitivals warranting **^i** include:

- (461)
- a. I want **to** meet you. [complement of control verb]
 - b. I would_like **to** try the fish. [*would_like* is a polite alternative to *want*]
 - c. It seems **to** be broken. [complement of raising verb]
 - d. You have an opportunity **to** succeed. [complement of noun]
 - e. I’m ready **to** leave. [complement of adjective]
 - f. I’m glad **to** hear you’re engaged! [complement of emotion adjective]
 - g. You’re great/a pleasure **to** work with. [complement of evaluative adjective or noun]
 - h. These new keys are expensive **to** copy. [tough-movement]
 - i. My plan is **to** eat at noon. [infinitival as NP]
 - j. It’s impossible **to** get an appointment. [infinitival as NP, with cleft]
 - k. I know how **to** lead. [complement of wh-word]
 - l. I have nothing **to** hide. [complement of indefinite pronoun]
 - m. Do you have time **to** help me? [with resource, not necessity]
 - n. They took_the_time **to** listen to my concerns. [complement of verbal idiom]

³²Essentially, our position is that these uses of infinitivals are more like syntactically core elements (subject, object) than obliques, and thus should be excluded from semantic annotation under the present scheme.

Multiword auxiliaries—such as quasi-modals *have_to* ‘must’, *ought_to* ‘should’, etc., as well as *have_yet_to*—subsume the infinitival **to**, so no label on **to** is required:

(462) You *have_to* choose a date.

Whenever **for** introduces a subject of an infinitival clause, the **for** token is labeled ``i` (regardless of whether **to** receives a semantic label; see §6.4):

- (463) a. I need [**for**_{``i`} you **to**_{``i`} help me].
b. I opened the door [**for**_{``i`} Steve **to**_{`PURPOSE`} take out the trash].

7.4 OPAQUE POSSESSIVE SLOT IN IDIOM (``$`)

Semantic supersenses are used where possible for genitive/possessive constructions, as discussed in §6.1. However, there are a few idioms which require a possessive pronoun that does not participate transparently in any semantic relation; these are designated with the special label ``$`:

- (464) a. I am eating on_ **my** _own today.
b. She tried **her** best.
c. He’s not **your** average baseball player.
d. Billy knows **his** ABCs!

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