Superframes Manual

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Contents

1 Introduction

Superframes is an annotation scheme for semantic roles. Like other such schemes, it is essentially about pinning down, in a machine-readable form, "who did what to whom". It is different from other such schemes, such as FrameNet (Baker et al., 1998), VerbNet (Kipper Schuler, 2005), PropBank (Palmer et al., 2005), VerbAtlas (Di Fabio et al., 2019), or WiSER (Feng et al., 2022) in a number of ways. It aims to avoid a number of practical problems in annotating with those schemes. Here's how Superframes annotation works, in a nutshell:

1. Every content word (verb, noun, pronoun, adjective, or adverb) is a *predicate*. Every predicate evokes one of a few dozen *superframes*, which determines its coarse semantic class and the possible role labels for its core arguments.

2. The syntactic *dependents* of a predicate can be *core arguments*, in which case they get one of the role labels defined by the superframe of the predicate, or *external arguments* or *modifiers*, in which case they are treated as evoking their own frame in which the predicate serves as a core argument.

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Superframe	Roles					Sec.
SCENE	**initial-scene**	**participant**	**scene**	**transitory-scene**	**target-scene**	**2.1**
IDENTIFICATION		**identified**	**identifier**			**2.2**
RANK		**has-rank**	**rank**			**2.3**
CLASS	**initial-class**	**has-class**	**class**		**target-class**	**2.4**
EXISTENCE			**exists**			**2.5**
TRANSFORMATION-CREATION		material			created	2.6
REPRODUCTION		original			copy	2.7
QUALITY		**has-quality**	**quality**			**2.8**
STATE	**initial-state**	**has-state**	**state**		**target-state**	**2.9**
DESTRUCTION		destroyed				2.10
EXPERIENCE		**experiencer**	**experienced**			**2.11**
ACTIVITY		**is-active**	**activity**			**2.12**
MODE		**has-mode**	**mode**			**2.13**
FOCUS		**has-focus**	**focus**			**2.14**
ACCOMPANIMENT		**accompanied**	**accompanier**			**2.15**
DEPICTIVE		has-depictive	depictive			2.16
ATTRIBUTE		**has-attribute**	**attribute**			**2.17**
ASSET		**has-asset**	**asset**			**2.18**
COMPARISON		**compared**	**reference**			**2.19**
CONCESSION		assertion	conceded			2.20
EXPLANATION		**explained**	**explanation**			**2.21**
LOCATION	**initial-location**	**has-location**	**location**	**transitory-location**	**target-location**	**2.22**
WRAPPING-WEARING		worn	wearer			2.23
ADORNMENT-TARNISHMENT	initial-surface	ornament	surface		target-surface	2.24
HITTING		hitting	hit			2.25
INGESTION		ingested		transitory-location	ingester	2.26
EXCRETION	excreter	excreted		transitory-location		2.27
UNANCHORED-MOTION		has-location		transitory-location		2.28
MEANS		**has-means**	**means**			**2.29**
MESSAGE		**topic**	**content**			**2.30**
PART-WHOLE	**initial-whole**	**part**	**whole**		**target-whole**	**2.31**
POSSESSION	**initial-possessor**	**possessed**	**possessor**		**target-possessor**	**2.32**
QUANTITY		**has-quantity**	**quantity**			**2.33**
SENDING		**sent**	**sender**			**2.34**
SEQUENCE		**follows**	**followed**			**2.35**
CAUSATION		result	causer			2.36
REACTION		reaction	trigger			2.37
RESULTATIVE		has-resultative	resultative			2.38
CONDITION		has-condition	condition			2.39
EXCEPTION		has-excpetion	exception			2.40
SOCIAL-RELATION	**initial-social-relation**	**has-social-relation**	**social-relation**		**target-social-relation**	**2.41**
TIME		**has-time**	**time**			**2.42**
NONCOMP		**has-noncomp**	**noncomp**			**2.43**

Table 1: The superframes and their roles. Top-level superframes are shown in bold. Underneath, some superframes have special cases with partly renamed roles, included to make them more intuitive to apply.

3. There are only two main core role labels per superframe.

4. For predicates denoting change (or lack thereof) over time, some superframes have *aspectual variants* with role variants that allow to distinguish participants before, during, and after an event. This avoids having `Source` and `Target` as roles in their own right, which indicate the time sequence but suppress information about the nature of the relation that is changing.

5. Similarly, Superframes do not have the `Agent` role, which is often in conflict with roles indicating more specifically the agent's relation to other participants.

6. Doubt, ambiguity, and figurativity are systematically treated. If there is not one clear solution, the solution is to give two or more alternative labels.

Table 1 shows the superframes and their roles.

1.1 Core Arguments

The most prototypical predicate is a verb, and the simplest case is a verb with only one argument. It can for example denote a state or an activity:

(1)   Kim is sleeping$_{\text{STATE}}$ [has-state]

(2)   Kim is partying$_{\text{ACTIVITY}}$ [is-active]

With two core arguments, a verb denotes a relation that holds between them:

(3)   Kim owns$_{\text{POSSESSION}}$ a house   [possessor] [possession]

(4)   The house belongs$_{\text{POSSESSION}}$ to Kim   [possession] [possessor]

(5)   Kim seems$_{\text{MESSAGE}}$ happy   [topic] [content]

1.2 Aspect and Mode

Rather than a static relationship between two entities, many verbs (and other predicates) denote a change (or absence of change) in such a relationship. We sort such predicates into a few coarse aspectual classes. For example, initiation (-INIT) means a state is begun or worked towards, deinitiation (-DEINIT) means a state is ended, completed, or its end is worked towards, change (-CHANGE) combines both, where one state is replaced by another, continuation (-CONTINUATION) means a state persists or is even intensified, and prevention (-PREVENTION) means it fails to begin. Accordingly, roles with prefix target- mark participants

at or beyond the end of the event, initial- marks participants at the beginning of the event, and transitory- marks participants at some point during the event.

(6) Kim got$_{\text{POSSESSION-INIT}}$ the house
     [target-possessor] [possession]

(7) Kim lost$_{\text{POSSESSION-DEINIT}}$ the house
     [initial-possessor] [posesssion]

(8) Kim sold$_{\text{POSSESSION-CHANGE}}$ the house to Sandy
     [target-possessor] [initial-possessor] [possession]

(9) Kim kept$_{\text{POSSESSION-CONTINUATION}}$ the house
     [initial-possessor] [possession]

(10) Kim went$_{\text{LOCATION-CHANGE}}$ from Chicago via Pittsburgh to Boston
     [target-location] [transitory-location] [has-location] [initial-location]

(11) The vase fell$_{\text{LOCATION-CHANGE}}$ to the ground
     [has-location] [target-location]

(12) The vase broke$_{\text{STATE-CHANGE}}$
     [has-state]

(13) Kim befriended$_{\text{SOCIAL-RELATION-INIT}}$ Sandy
     [has-social-relation] [target-social-relation]

(14) Kim married$_{\text{SOCIAL-RELATION-INIT}}$ Sandy
     [has-social-relation] [target-social-relation]

(15) Kim divorced$_{\text{SOCIAL-RELATION-DEINIT}}$ Sandy
     [has-social-relation] [initial-social-relation]

The SCENE superframe is often evoked by "light" verbs that contribute an aspectual or modal meaning. Thus, its aspectual variants are especially common.

(16) The concert began$_{\text{SCENE-INIT}}$
     [target-scene]

(17) The concert continued$_{\text{SCENE-CONTINUATION}}$
     [initial-scene]

(18) The concert finished$_{\text{SCENE-DEINIT}}$
     [initial-scene]

(19) The shouting intensified$_{\text{SCENE-CONTINUATION}}$ *(initial-scene)*

(20) The shouting faded$_{\text{SCENE-DEINIT}}$ *(initial-scene)*

(21) A coup was attempted$_{\text{SCENE-INIT}}$ *(target-scene)*

(22) Kim finished$_{\text{SCENE-DEINIT}}$ their work *(participant, initial-scene)*

(23) Swift action prevented$_{\text{SCENE-PREVENTION}}$ an outbreak *(x-causer, target-scene)*

(24) Kim refrained$_{\text{SCENE-PREVENTION}}$ from going *(participant, target-scene)*

(25) Kim prevented$_{\text{SCENE-PREVENTION}}$ Sandy from going *(x-causer, target-scene, participant)*

(26) Kim saved$_{\text{SCENE-PREVENTION}}$ Sandy from the dragon *(x-causer, target-scene, participant)*

In the last example, *dragon* is to be understood metonymically as a scene in which Sandy would have been harmed by the dragon.

In addition, we use the modal suffixes -NECESSITY and -POSSIBILITY. They can combine with aspectual suffixes.

(27) Change is necessary$_{\text{SCENE-NECESSITY}}$ *(target-scene)*

(28) Change is possible$_{\text{SCENE-POSSIBILITY}}$ *(target-scene)*

(29) Kim owes$_{\text{POSSESSION-CHANGE-NECESSITY}}$ Sandy money *(initial-possessor, target-possessor, possessed)*

1.3 Non-core Arguments

Core arguments always get role labels from the superframe the predicate evokes. But many verbs have more arguments. One common case is a subject that is presented as the causer of the scene. For example, compare (30) with (11). The core scene is the same (same superframe, same arguments). We now assume there is an additional CAUSATION scene with *Kim* as the causer and the core
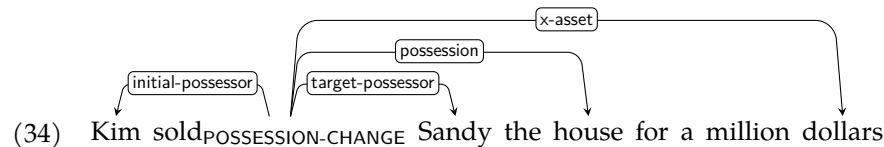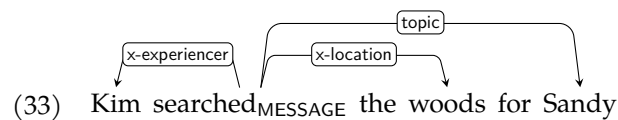
scene as the result. We denote this by giving *Kim* the causer role label, with an x- prefix to mark it as a non-core role.

(30) Kim threw$_{\text{LOCATION-CHANGE}}$ the vase to the ground
     [x-causer] [has-location] [target-location]

(31) Kim broke$_{\text{STATE-CHANGE}}$ the vase
     [x-causer] [has-state]
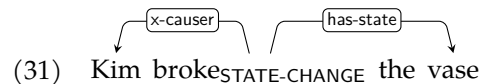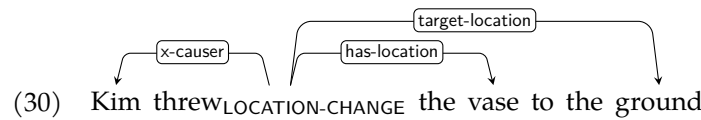
Two other common non-core arguments are the senders and recipients (experiencers) of messages.

(32) Kim talked$_{\text{MESSAGE}}$ to Sandy about Bali
     [x-sender] [x-experiencer] [topic]
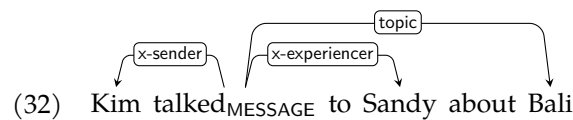
Other non-core arguments are usually rather predicate-specific.

(33) Kim searched$_{\text{MESSAGE}}$ the woods for Sandy
     [x-experiencer] [x-location] [topic]

(34) Kim sold$_{\text{POSSESSION-CHANGE}}$ Sandy the house for a million dollars
     [initial-possessor] [target-possessor] [possession] [x-asset]

1.4 Modifiers

Like non-core arguments, modifiers are assumed to evoke an additional frame, and labeled with the role they fill in that frame, but with a prefix marking them as modifiers: m-.

(35) Kim is sweating$_{\text{EXCRETION}}$ profusely in the sauna
     [excreter] [m-quantity] [m-location]
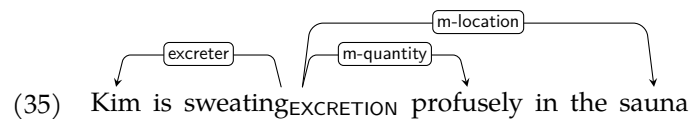
1.5 Nonverbal Predicates

So far, we have only looked at verbal predicates. But of course, there are other types of predicates. An ordinary noun like *tree* evokes the CLASS frame, marking the entity it refers to as being a member of a class (in this case: the class of trees). There are no arguments here because the predicate itself doubles as a referent. However, the predicate can of course be modified:
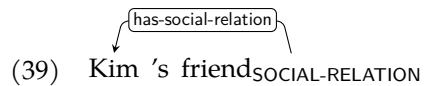
(36) a tree$_{\text{CLASS}}$ in the garden
     [m-location]

(37) Kim 's tree$_{\text{CLASS}}$

[m-possessor arc from "'s" to "tree"]
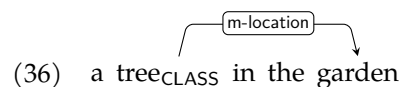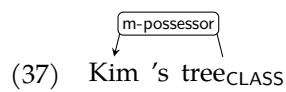
Event nouns evoke event frames and have arguments:

(38) Kim 's breaking$_{\text{STATE-CHANGE}}$ of the vase

[x-causer arc over "Kim 's breaking"; has-state arc over "breaking of the vase"]

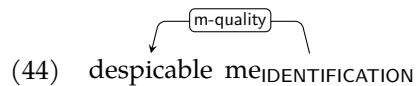Relational nouns evoke relational frames and have arguments:

(39) Kim 's friend$_{\text{SOCIAL-RELATION}}$

[has-social-relation arc over "Kim 's friend"]

Pronouns and names evoke the IDENTIFICATION frame, meaning that they identify their referent as some entity (via naming or anaphora resolution).

(40) Kim$_{\text{IDENTIFICATION}}$

(41) they$_{\text{IDENTIFICATION}}$

Predicate adjectives most typically denote states or qualities.

(42) I am despicable$_{\text{QUALITY}}$

[has-quality arc over "I am despicable"]

(43) the dog is tired$_{\text{STATE}}$

[has-state arc over "dog is tired"]
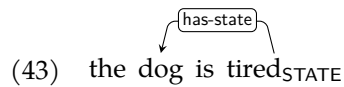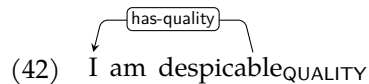
With attributive adjectives, the dependency relation is reversed, and the role label is changed accordingly.

(44) despicable me$_{\text{IDENTIFICATION}}$
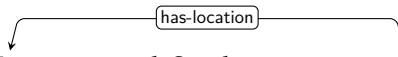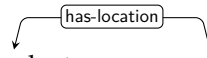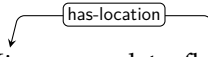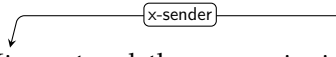
[m-quality arc over "despicable me"]

(45) the tired dog$_{\text{CLASS}}$

[m-state arc over "tired dog"]
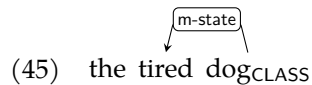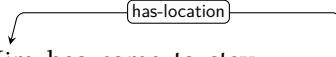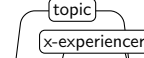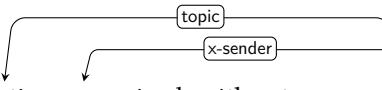
Similarly for adverbs denoting, e.g, manner (quality) or extent (quantity):

(46) Kim ran$_{\text{Motion}}$ fast

[has-location and m-quality arcs]

(47) Kim ran$_{\text{Motion}}$ far

[has-location and m-quantity arcs]
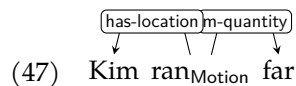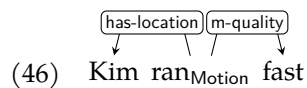
1.6 Control Relations

spell out strategies for consistent detection (xcomp, MESSAGE/SCENE frames, special cases...)

Many constructions systematically introduce semantic predicate-dependent dependencies that do not correspond to (surface) syntactic dependencies. In such cases, we add those dependency links.

(48) Kim promised Sandy to come$_{\text{LOCATION-CHANGE}}$ (subject control)
[has-location]

(49) Kim persuaded Sandy to come$_{\text{LOCATION-CHANGE}}$ (object control)
[has-location]

(50) Kim seemed to fly$_{\text{Motion}}$ (raising)
[has-location]

(51) Kim entered the room singing$_{\text{MESSAGE}}$ (depictive)
[x-sender]

(52) You're talking me silly$_{\text{STATE}}$ (resultative)
[has-state]

(53) Kim has come to stay$_{\text{LOCATION-CONTINUATION}}$ (subjectless adverbial clause)
[has-location]

(54) Kim left after trashing$_{\text{STATE-CHANGE}}$ the room (subjectless adverbial clause)
[x-causer] [has-state]

(55) Kim is hard to love$_{\text{MESSAGE}}$ (*tough* construction)
[topic]

(56) the song I like$_{\text{MESSAGE}}$ (relative clause)
[topic] [x-experiencer]

(57) the question we raised without answering$_{\text{MESSAGE}}$ (parasitic gap)
[topic] [x-sender]

1.7 Figurativity and Idiomaticity

Difficulties in choosing frames often arise because a predicate literally evokes one frame, but is used in a way that perhaps fits another frame equally well or better. In such cases, annotate both the more literal frame and roles, followed by the >> operator, followed by the more figurative frame and roles.

(58) A hush passed$_{\text{LOCATION-CHANGE » SCENE}}$ over the group

[annotation: has-location » scene; transitory-location » participant]

(59) Kim refused$_{\text{MESSAGE » SCENE}}$ to eat

[annotation: x-sender » participant; topic » scene]

This mechanism can be used to indicate that a modification may not be fully compositional:

(60) primeval forest$_{\text{CLASS}}$

[annotation: m-time » m-noncomp]

(61) colored pencil$_{\text{CLASS}}$

[annotation: m-quality » m-noncomp]

(62) to lay$_{\text{LOCATION-CHANGE » MESSAGE-DEINIT}}$ aside my drawings

[annotation: has-location » topic; target-location » x-noncomp]

2 Superframes Reference

2.1 SCENE

A "meta" frame for predicates where the main frame is invoked by scene, and the predicate adds some temporal, aspectual, modal, etc., meaning, or just acts as a light verb. If there is a participant, it is assigned a role by scene. In the following examples, we show the annotations for both the matrix predicate and the embedded predicate in one graph.

(63) The concert$_{\text{MESSAGE}}$ began$_{\text{SCENE-INIT}}$

[annotation: target-scene]

(64) The concert$_{\text{MESSAGE}}$ continued$_{\text{SCENE-CONTINUATION}}$

[annotation: initial-scene]

(65) The concert$_{\text{MESSAGE}}$ finished$_{\text{SCENE-DEINIT}}$

[annotation: initial-scene]

(66) The shouting$_{\text{MESSAGE}}$ intensified$_{\text{SCENE-CONTINUATION}}$

[annotation: initial-scene]

(67) The shouting$_{\text{MESSAGE}}$ faded$_{\text{SCENE-DEINIT}}$

[annotation: initial-scene]

(68) A coup$_{\text{EXPERIENCE}}$ was attempted$_{\text{SCENE-INIT}}$

[annotation: target-scene]

(69) Kim finished$_{\text{SCENE-DEINIT}}$ their work$_{\text{ACTIVITY}}$

(70) Swift action prevented$_{\text{SCENE-PREVENTION}}$ an outbreak$_{\text{SCENE-INIT}}$ of measles$_{\text{EXPERIENCE}}$

(71) Kim refrained$_{\text{SCENE-PREVENTION}}$ from going$_{\text{LOCATION-CHANGE}}$

(72) Kim prevented$_{\text{SCENE-PREVENTION}}$ Sandy from going$_{\text{LOCATION-CHANGE}}$

(73) Kim saved$_{\text{SCENE-PREVENTION}}$ Sandy from the dragon$_{\text{CLASS}}$

(74) Kim plays$_{\text{SCENE}}$ tennis$_{\text{ACTIVITY}}$

(75) Kim used$_{\text{SCENE}}$ to play$_{\text{SCENE}}$ tennis$_{\text{ACTIVITY}}$

(76) Kim gave$_{\text{SCENE}}$ Sandy a kick$_{\text{HITTING}}$

The modifier relation m-scene is used when a syntactic dependeny points from an argument to a predicate, as, e.g., with relative clauses or sentence adverbs that are not already covered by a frame such as MODE or FOCUS.

(77) the clown$_{\text{CLASS}}$ I saw$_{\text{MESSAGE}}$ smiled

(78) Fortunately$_{\text{EXPERIENCE}}$ for Sandy , Kim is here$_{\text{LOCATION}}$

11

2.2 IDENTIFICATION

identifier identifies identified.

Evoked by pronouns, names, and other identifiers, as well as predicates denoting naming relationships.
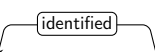
(79) I$_{\text{IDENTIFICATION}}$ saw a picture

(80) I can distinguish China$_{\text{IDENTIFICATION}}$ from Arizona

(81) a book called$_{\text{IDENTIFICATION}}$ True Stories from Nature

(82) This is Kim$_{\text{IDENTIFICATION}}$

Predicates that evoke other frames can still use x-identified to mark the copula subject as identified:
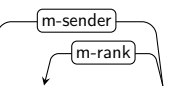
(83) This is the book$_{\text{MESSAGE}}$ I like

2.3 RANK

rank indicates the order that has-rank has in some sequence.

(84) Chapter$_{\text{MESSAGE}}$ 1

(85) my first drawing$_{\text{MESSAGE}}$

2.4 CLASS

class indicates the class of entity that has-class represents.

Most prototypically evoked by common nouns with no arguments.

(86) swallowing an animal$_{\text{CLASS}}$

2.5 EXISTENCE

exists exists. Use this only for non-scene entities; for scenes, use the SCENE frame.

(87) I exist$_{\text{EXISTENCE}}$

(88) There is_EXISTENCE a hill
    [x-expletive] [exists]

(89) There is_SCENE a hubbub
    [x-expletive] [scene]

2.6 TRANSFORMATION-CREATION

Special case of EXISTENCE-INIT where rlcreated (aka target-exists) is newly created from material, or material is transformed to become created.

(90) I succeeded in making_Transformation-Creation my first drawing
    [x-causer] [created]

(91) Kim built_Transformation-Creation a castle out of sand
    [x-causer] [created] [material]

(92) Kim turned_Transformation-Creation straw into gold
    [x-causer] [material] [created]

2.7 REPRODUCTION

Special case of EXISTENCE-INIT where original continues to exist, and a (modified) copy (aka target-exists) comes into existence.

(93) Here is a copy_Reproduction of the drawing
    [original]

(94) This is a translation_Reproduction of the pamphlet into English
    [copy] [original] [x-quality]

2.8 QUALITY

quality indicates a (permanent) quality/property/manner of has-quality.
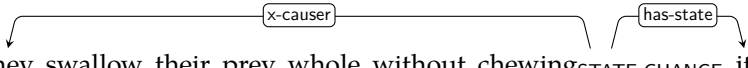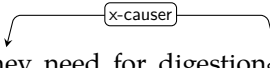
(95) when I was six years old_QUALITY
    [has-quality] [x-quantity]

(96) a magnificent picture_MESSAGE
    [m-quality]

(97) I pondered_MESSAGE deeply over the adventures of the jungle
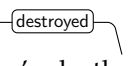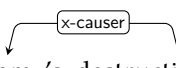   [x-experiencer] [m-quality] [topic]

13

2.9 STATE

state indicates a (temporary) state of has-state.

(98) Boa constrictors swallow their prey whole$_{\text{STATE}}$ [has-state]

(99) they sleep$_{\text{STATE}}$ [has-state]

(100) they swallow their prey whole without chewing$_{\text{STATE-CHANGE}}$ it [x-causer] [has-state]

(101) the six months that they need for digestion$_{\text{STATE-CHANGE}}$ [x-causer]

(102) And that hasn't much improved$_{\text{STATE-CHANGE}}$ my opinion of them [x-causer] [has-state]
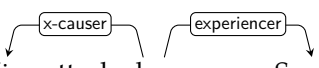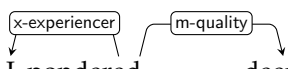
2.10 DESTRUCTION

Special case of STATE-CHANGE where destroyed (aka has-state) goes out of existence.

(103) Sam 's death$_{\text{Destruction}}$ [destroyed]

(104) Sam 's destruction$_{\text{Destruction}}$ of the city [x-causer]

2.11 EXPERIENCE

experienced indicates an experience that experiencer undergoes.

Used for dynamic scenes where the experiencer is not necessarily active, and that cannot well be framed as a state change. Also used for sensory and mental perception, addressees in communication, beneficiaries, and for "bystander" roles.

(105) Kim 's adventures$_{\text{EXPERIENCE}}$ in the jungle [experiencer] [m-location]

(106) Kim attacked$_{\text{EXPERIENCE}}$ Sandy [x-causer] [experiencer]

(107) I saw$_{\text{MESSAGE}}$ a magnificent picture [x-experiencer] [topic]

(108) I pondered$_{\text{MESSAGE}}$ deeply [x-experiencer] [m-quality]

(109) Kim talked~MESSAGE~ to Sandy
      x-sender · x-experiencer

(110) Kim did~SCENE~ something nice for Sandy
      participant · scene · m-experiencer

(111) Kim cooked a meal only to have~SCENE~ Sandy spurn it
      x-experiencer · scene · participant

(112) Kim managed~EXPERIENCE~ with dealing the cards
      experiencer · experienced

(113) Die Piroggen waren Maria zu dunkel geraten~SCENE-INIT~
      participant · x-experiencer · target-scene

(114) Das hat mir gerade noch gefehlt~EXPERIENCE~
      experienced · x-noncomp · experiencer · x-noncomp · x-noncomp

For more uses, see MESSAGE (Section 2.30).

2.12 ACTIVITY

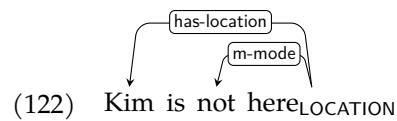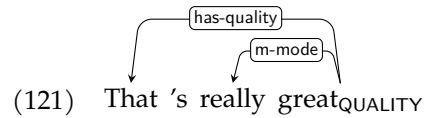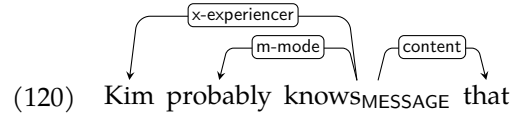is-active actively participates in activity.

Used for dynamic scenes where is-active has agency and that cannot well be framed as a state change.

(115) Kim worked~ACTIVITY~
      is-active

(116) Kim partied~ACTIVITY~
      is-active

(117) Kim had sex~ACTIVITY~
      is-active

(118) after some work~ACTIVITY~ with a colored pencil
      m-means

(119) I devoted myself to geography~ACTIVITY~
      is-active

2.13 MODE

Used to mark modal modifiers, including what UMR calls *modal strength*.

(120) Kim probably knows_MESSAGE that
(annotation: x-experiencer, m-mode, content)

(121) That 's really great_QUALITY
(annotation: has-quality, m-mode)

(122) Kim is not here_LOCATION
(annotation: has-location, m-mode)

2.14 FOCUS

Used to mark focus particles such as *only* and *even*.

(123) Even Kim_IDENTIFICATION did n't know that
(annotation: m-focus)

(124) They only rinsed_ADORNMENT-TARNISHMENT-DEINIT the dishes
(annotation: x-causer, m-focus, initial-surface)
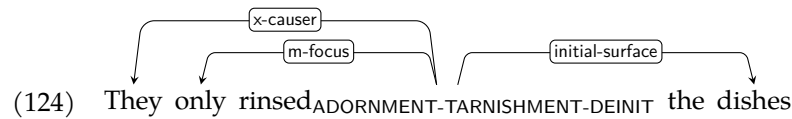
2.15 ACCOMPANIMENT

accompanier accompanies accompanied, meaning that it occurs together with it or participates equally in the same scene.

(125) veggies_CLASS with rice
(annotation: m-accompanier)

(126) The veggies come_ACCOMPANIMENT with rice
(annotation: accompanied, accompanier)

(127) Kim added_ACCOMPANIMENT-INIT rice to the veggies
(annotation: x-causer, accompanier, accompanied)

(128) Rolling thunder accompanies_ACCOMPANIMENT the rain
(annotation: accompanier, accompanied)
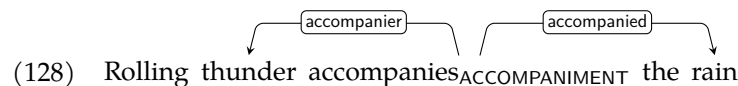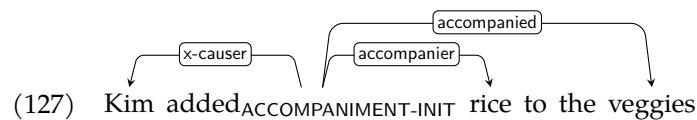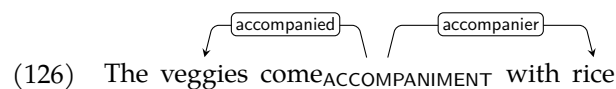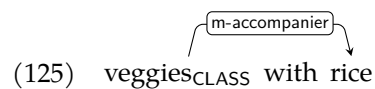
Often, the accompanier denotes not the accompanying scene but an entity participating in it, and must be metonymically understood as the scene.

(129) Kim cycled$_{\text{LOCATION-CHANGE}}$ to Rome with Sandy

(130) Kim danced$_{\text{ACTIVITY}}$ with Sandy

(131) Kim had$_{\text{SCENE}}$ sex with Sandy

(132) Kim chased$_{\text{Motion}}$ Sandy around the block

(133) Kim accompanied$_{\text{ACCOMPANIMENT}}$ Sandy

(134) Kim accompanied$_{\text{ACCOMPANIMENT}}$ Sandy on the piano

2.16 DEPICTIVE

Special case of ACCOMPANIMENT where depictive (aka accompanier) assigns a participant of has-depictive (aka accompanied) a role (cf. Sec. 1.6).

(135) Kim entered$_{\text{LOCATION-INIT}}$ the room singing$_{\text{MESSAGE}}$

2.17 ATTRIBUTE

In a scene has-attribute, attribute is the part or attribute of one or more participants that is most directly involved in the scene.

(136) Kim exceeds$_{\text{COMPARISON}}$ Sandy in height$_{\text{QUALITY}}$

(137) That is great$_{\text{QUALITY}}$ in terms of ROI$_{\text{QUALITY}}$

(138) Kim ist auf den Kopf_CLASS gefallen_HITTING

[hitting] [x-whole] [x-attribute]

(139) Kim hit_HITTING Sandy on the head_CLASS with a stick

[hitting] [x-causer] [x-attribute] [hit] [x-whole]
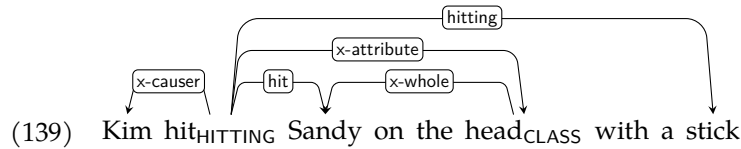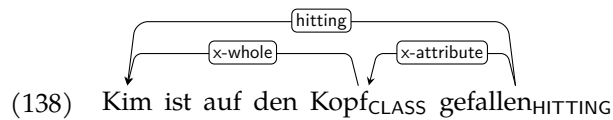
> Control relations?

2.18 ASSET

In a scene has-asset, asset is given or offered in an exchange or wager.

(140) Kim bought_POSSESSION-CHANGE the house for a million dollars

[target-possessor] [possession] [x-asset]

(141) Kim offered_MESSAGE Sandy a million dollars for the house

[x-sender] [x-experiencer] [content] [x-asset]

(142) I bet_MESSAGE you 30 bucks to an apple he will win

[x-sender] [x-experiencer] [x-asset] [x-reference] [content]
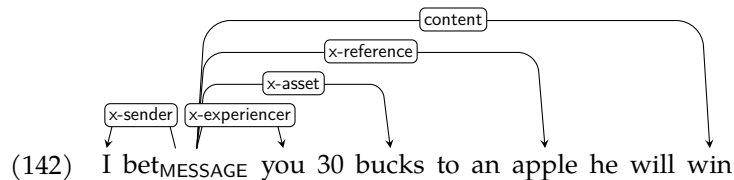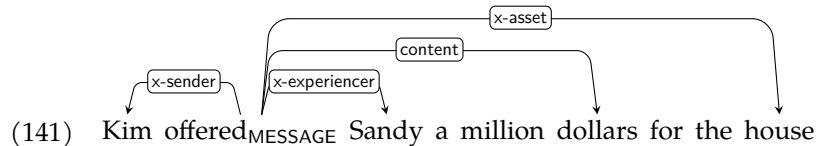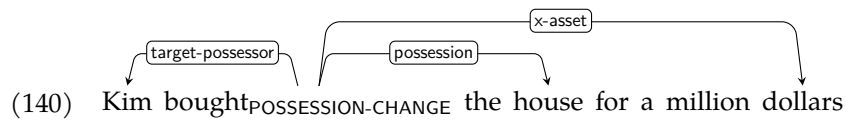
2.19 COMPARISON

compared is characterized with respect to reference.

Examples of comparing scenes:

(143) Compared to Sandy, Kim is tall_QUALITY

[m-reference] [has-quality]

(144) Sandy is short_QUALITY whereas Kim is tall

[has-quality] [m-comparison]

(145) They demonize_MESSAGE the left while doing nothing about the right

[x-sender] [topic] [m-reference]
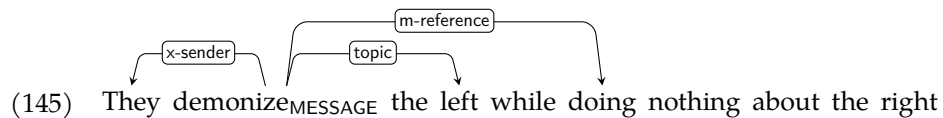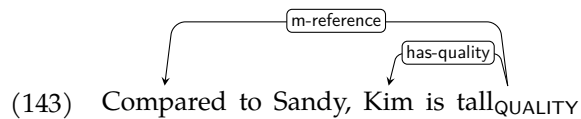
Examples of comparing non-scene entities:

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(146) Kim outranks$_{\text{COMPARISON}}$ Sandy
    [compared, reference]

(147) Kim exceeds$_{\text{COMPARISON}}$ Sandy in height
    [compared, reference, x-attribute]

(148) The Polish restaurant compared$_{\text{COMPARISON}}$ favorably to the Spanish one
    [compared, x-quality, reference]

(149) Kim compared$_{\text{COMPARISON}}$ Coke to Pepsi
    [x-experiencer, reference, compared]

(150) Kim ran$_{\text{COMPARISON}}$ afoul of Fielding 's constraints
    [compared, x-noncomp, reference]

2.20 CONCESSION

Special case of COMPARISON, where compared is what's asserted and reference is what's conceded.

(151) Kim went$_{\text{LOCATION-CHANGE}}$ out despite the rain
    [has-location, target-location, m-conceded]

(152) It rained$_{\text{STATE}}$, but Kim went went out
    [x-expletive, m-asserted]

(153) Kim sent$_{\text{SENDING}}$ Sandy a letter but it never arrived
    [sender, sent, x-experiencer, m-asserted]

(154) Kim came$_{\text{LOCATION-CHANGE}}$ although Sandy had told them not to
    [has-location, m-conceded]

2.21 EXPLANATION

explanation explains explained, but is not a cause, but, e.g., a purpose.

(155) I am stressing$_{\text{MESSAGE}}$ this because it is important
    [x-sender, topic, m-explanation]

19

(156) Kim went_LOCATION-CHANGE to town to buy_POSSESSION-CHANGE food

Arcs: target-possessor, m-explanation, has-location, target-location, possession
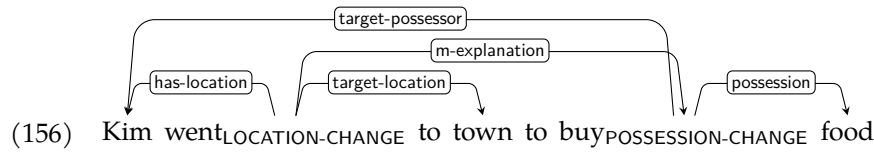
2.22 LOCATION

Describes has-location as located or moving wrt. respect to location.

(157) the hat_CLASS in the box

Arc: m-location

(158) Kim lives_LOCATION in Boston

Arcs: has-location, location

(159) Kim went_LOCATION-CHANGE from the living room through the door into the kitchen

Arcs: target-location, transitory-location, has-location, initial-location

(160) Kim placed_LOCATION-CHANGE the hat on the table

Arcs: target-location, x-causer, has-location
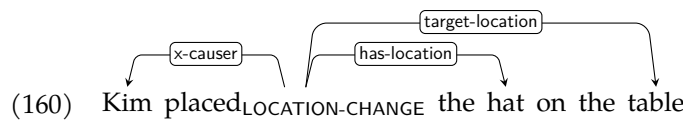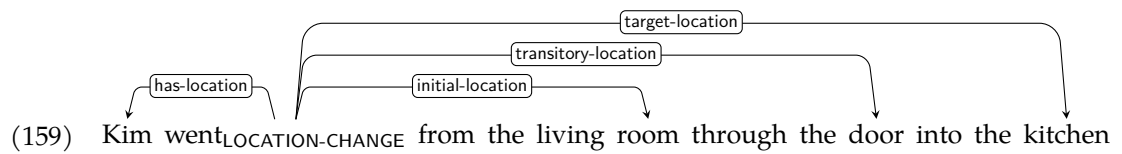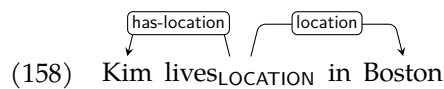
2.23 WRAPPING-WEARING

Special case of LOCATION where wearer (aka location) wears or is wrapped in wrapper (aka has-location).

(161) Kim is wearing_WRAPPING-WEARING a shirt

Arcs: wearer, wrapper

(162) Kim is wearing_WRAPPING-WEARING glasses

Arcs: wearer, wrapper

(163) The shroud wraps_WRAPPING-WEARING the scepter

Arcs: wrapper, wearer

(164) Kim put_WRAPPING-WEARING-INTI on a sweater

Arcs: target-wearer, wrapper

(165) Kim took_WRAPPING-WEARING-DEINIT off their glasses

Arcs: initial-wearer, wrapper
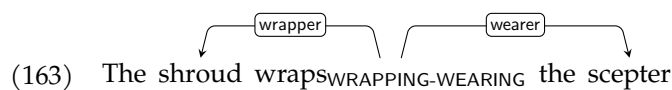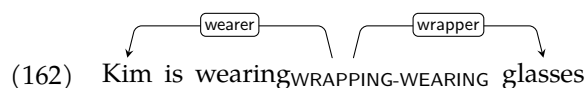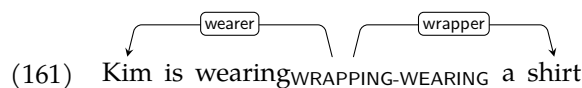
2.24 ADORNMENT-TARNISHMENT

Special case of LOCATION where ornament (aka has-location sits on surface (aka location).

Kim decorated$_\text{ADORNMENT-TARNISHMENT}$ the balcony with fairy lights

[x-causer, surface, ornament annotations]

Kim splashed$_\text{ADORNMENT-TARNISHMENT-INIT}$ Sandy with water

[x-causer, surface, ornament annotations]

Kim washed$_\text{ADORNMENT-TARNISHMENT-DEINIT}$ the dirt off Sandy

[x-causer, ornament, initial-surface annotations]

Kim washed$_\text{ADORNMENT-TARNISHMENT-DEINIT}$ Sandy

[x-causer, initial-surface annotations]

2.25 HITTING

Special case of LOCATION-INIT where hitting (aka has-location) comes into contact with hit (aka target-location).

(166) Kim hit$_\text{HITTING}$ Sandy

[x-causer, hit annotations]

(167) Kim hit$_\text{HITTING}$ Sandy with a stick

[x-causer, hit, hitting annotations]

(168) The stick hit$_\text{HITTING}$ Sandy

[hitting, hit annotations]

(169) Kim hit$_\text{HITTING}$ Sandy on the head$_\text{CLASS}$ with a pool noodle

[x-causer, hit, x-whole, x-attribute, hitting annotations]

(170) Kim kicked$_\text{HITTING}$ Sandy

[x-causer, hit annotations]
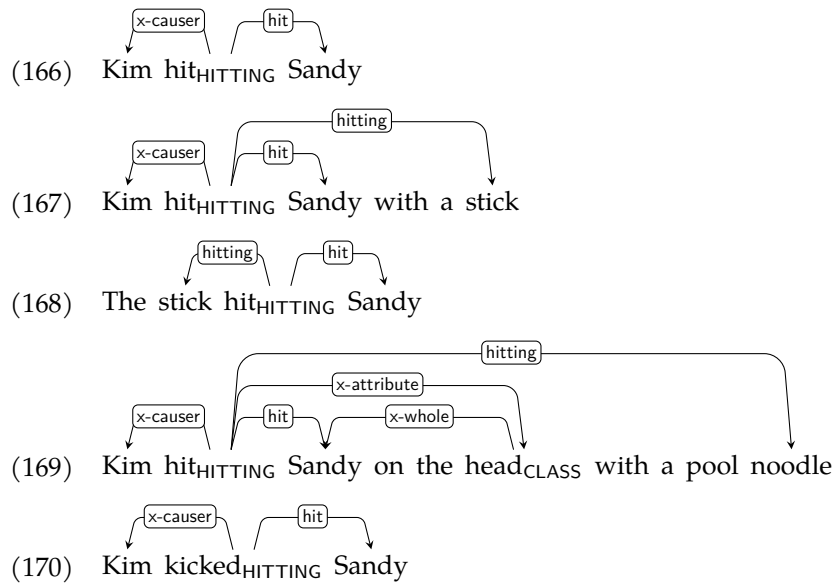
2.26 INGESTION

Special case of LOCATION-INIT where ingester (aka target-location) ingests ingested (aka has-location).

(171) Kim ate$_\text{INGESTION}$ an apple

[ingester, ingested annotations]

(172) Kim nibbled$_\text{INGESTION}$ on the pretzel

[ingester, ingested annotations]
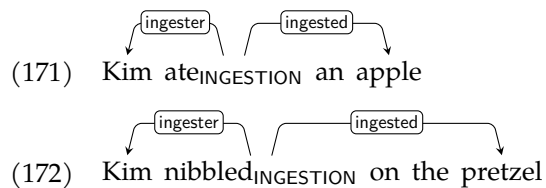
2.27   EXCRETION

Special case of LOCATION-DEINIT where excreter (aka initial-location) excretes excreted (aka has-location).

(173)   Kim threw_{EXCRETION} up the pretzel

(with arcs labeled: excreter, excreted)

2.28   UNANCHORED-MOTION

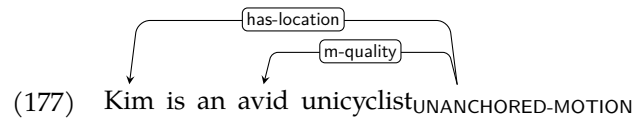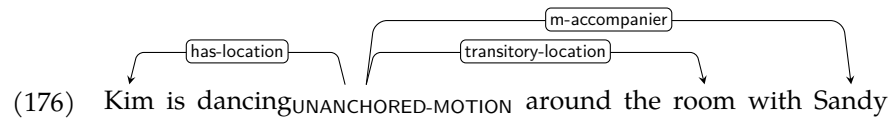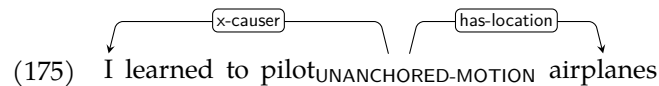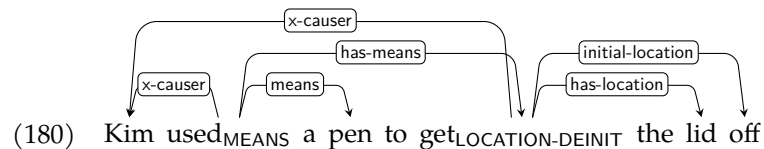Special case of LOCATION-CHANGE where no initial or target location is indicated.

(174)   Kim is running_{UNANCHORED-MOTION} along the river

(with arcs labeled: has-location, transitory-location)

(175)   I learned to pilot_{UNANCHORED-MOTION} airplanes

(with arcs labeled: x-causer, has-location)

(176)   Kim is dancing_{UNANCHORED-MOTION} around the room with Sandy

(with arcs labeled: m-accompanier, has-location, transitory-location)

(177)   Kim is an avid unicyclist_{UNANCHORED-MOTION}

(with arcs labeled: has-location, m-quality)

> define clearly when dancing etc. is UNANCHORED-MOTION and when it is ACTIVITY

2.29   MEANS

has-means is a scene caused by something via an intermediary means.

(178)   Kim cut_{STATE-CHANGE} the cake with a knife

(with arcs labeled: x-causer, m-means, has-state)

(179)   Kim painted_{ADORNMENT-TARNISHMENT} the room by exploding a paint bomb

(with arcs labeled: x-causer, m-means, surface)

(180)   Kim used_{MEANS} a pen to get_{LOCATION-DEINIT} the lid off

(with arcs labeled: x-causer, x-causer, has-means, means, initial-location, has-location)

(181)   You used$_{\text{MEANS}}$ me !

2.30   MESSAGE

A message about topic with content content is expressed or received or just exists in recorded form. When content and topic are both realized, content must assign a role to topic.

2.30.1   Expression

(182)   Kim yelped$_{\text{MESSAGE}}$

(183)   Kim said$_{\text{MESSAGE}}$: it 's fine

(184)   Kim said$_{\text{MESSAGE}}$ it was fine

(185)   Kim called$_{\text{MESSAGE}}$ Sandy a liar$_{\text{MESSAGE}}$

(186)   Kim told$_{\text{MESSAGE}}$ Sandy a secret

(187)   Kim talked$_{\text{MESSAGE}}$ about Sandy

(188)   Kim talked$_{\text{MESSAGE}}$ shit$_{\text{MESSAGE}}$ about Sandy

(189)   Kim and Sandy conversed$_{\text{MESSAGE}}$

(190)   Kim conversed$_{\text{MESSAGE}}$ with Sandy

2.30.2   Gesture

(191)   Kim curtseyed$_{\text{MESSAGE}}$ to the Queen

(192) Kim shook$_{\text{UNANCHORED-MOTION » MESSAGE}}$ their head no

x-causer » x-sender
x-content » content
has-location » x-noncomp

2.30.3 Performance

Performance of a work of art is framed as MESSAGE where the work of art is the topic.

(193) Kim played$_{\text{MESSAGE}}$ a little tune on their tuba

x-sender
topic
x-means

(194) They performed$_{\text{MESSAGE}}$ the play

x-sender
topic

(195) Kim sang$_{\text{MESSAGE}}$ a song

x-sender
topic

2.30.4 Depiction

(196) Kim drew$_{\text{MESSAGE}}$ a heron

x-sender
topic

(197) a picture$_{\text{MESSAGE}}$ of the heron

topic

2.30.5 Recording

(198) Kim drew$_{\text{MESSAGE}}$ a picture

x-sender
x-created

(199) Kim wrote$_{\text{MESSAGE}}$ Sandy a letter

x-sender
x-experiencer
content

(200) Kim wrote$_{\text{MESSAGE}}$ the message onto a piece of paper with a pen in big red letters$_{\text{QUALITY}}$

x-sender
content
x-location
m-means
has-quality
x-depictive

(201) The concert was recorded$_{\text{MESSAGE}}$ on tape

topic
x-location

24

(202) The band recorded$_\text{MESSAGE}$ an album

x-sender · x-created

2.30.6 Perception

We also frame perception as MESSAGE, including mental and volitional perception.

(203) Kim saw$_\text{MESSAGE}$ a flower

x-experiencer · topic

(204) Kim found$_\text{MESSAGE}$ the flower beautiful$_\text{QUALITY}$

x-experiencer · content · topic · has-quality

(205) Kim thinks$_\text{MESSAGE}$ Sandy is a liar

x-experiencer · content

(206) Kim thinks$_\text{MESSAGE}$ Sandy a liar$_\text{MESSAGE}$

x-experiencer · content · topic · x-sender

(207) Kim saw$_\text{MESSAGE}$ Sandy swim$_\text{UNANCHORED-MOTION}$

x-experiencer · content · topic · has-location

(208) Kim wants$_\text{MESSAGE}$ to swim$_\text{UNANCHORED-MOTION}$

x-experiencer · has-location · content

(209) Kim wants$_\text{MESSAGE}$ Sandy to swim$_\text{UNANCHORED-MOTION}$

x-experiencer · content · topic · has-location

(210) Kim seems$_\text{MESSAGE}$ happy$_\text{MESSAGE}$

x-experiencer · topic · content

(211) Kim seems$_\text{MESSAGE}$ happy$_\text{MESSAGE}$ to Sandy

x-experiencer · x-experiencer · topic · content

(212) The Thought Police observed$_\text{MESSAGE}$ Winston

x-experiencer · topic

(213) Kim studies$_\text{MESSAGE}$ linguistics

x-experiencer · topic

25

(214) Sandy is a professor$_{\text{MESSAGE}}$ of linguistics

      x-experiencer   *topic*

(215) The jury found$_{\text{MESSAGE}}$ Kim guilty$_{\text{SCENE}}$ of the crime$_{\text{ACTIVITY}}$

is-active / *content* / *x-experiencer* / *topic* / *participant* / *scene*

Use MESSAGE-INIT (MESSAGE-DEINIT, MESSAGE-PREVENTION) for the coming about (ending, failing to come about) of knowledge and awareness.

(216) Kim noticed$_{\text{MESSAGE-INIT}}$ the bird

x-experiencer / *topic*

(217) Kim taught$_{\text{MESSAGE-INIT}}$ Sandy Spanish

topic / *x-sender* / *x-experiencer*

(218) Kim measured$_{\text{MESSAGE-INIT}}$ the elasticity

x-experiencer / *topic*

(219) Kim forgot$_{\text{MESSAGE-DEINIT}}$ everything they knew

x-initial-experiencer / *initial-content*

(220) Kim forgot$_{\text{MESSAGE}}$ about the cake

x-initial-experiencer / *topic*

(221) Kim forgot$_{\text{MESSAGE-PREVENTION}}$ to take the trash out

x-experiencer / *target-content*

2.31 PART-WHOLE

part is part of whole.

(222) Kim 's leg$_{\text{CLASS}}$

m-whole

(223) a man$_{\text{CLASS}}$ with a mustache

m-part

(224) part$_{\text{PART-WHOLE}}$ of the year

whole

(225) wheat contains$_{\text{PART-WHOLE}}$ gluten

whole / *part*
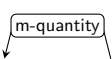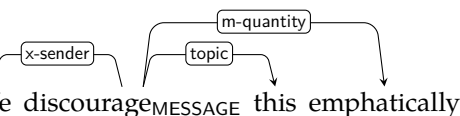
2.32 POSSESSION

possessor possesses or controls the possessed.

(226) Kim 's house$_{\text{CLASS}}$
    m-possessor

(227) Kim owns$_{\text{POSSESSION}}$ a house
    possessor · *possessed*

(228) The house belongs$_{\text{POSSESSION}}$ to Kim
    possessed · *possessor*

(229) the owner$_{\text{POSSESSION}}$ of the house
    possessed

(230) Kim has$_{\text{POSSESSION}}$ Sandy 's phone
    possessor · *possessed*

(231) Kim bought$_{\text{POSSESSION-CHANGE}}$ a house from Sandy
    target-possessor · *possessed* · *initial-possessor*

(232) Sandy sold$_{\text{POSSESSION-CHANGE}}$ Kim the house
    initial-possessor · *target-possessor* · *possessed*

(233) Kim kept$_{\text{POSSESSION-CONTINUATION}}$ the house
    initial-possessor · *possessed*

(234) Kim lost$_{\text{POSSESSION-DEINIT}}$ the house
    initial-possessor · *possessed*

(235) Caesar conquered$_{\text{POSSESSION-INIT}}$ Gaul
    target-possessor · *possessed*

(236) Caesar 's conquest$_{\text{POSSESSION-INIT}}$ of Gaul
    target-possessor · *possessed*

(237) Kim owes$_{\text{POSSESSION-CHANGE-NECESSITY}}$ Sandy money
    initial-possessor · *target-possessor* · *possessed*
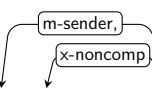
2.33 QUANTITY

quantity is the quantity, degree, or extent of has-quantity.

(238) three burgers_{CLASS} — *m-quantity*

(239) three liters_{QUANTITY} of coke — *m-quantity*, *has-quantity*

(240) We discourage_{MESSAGE} this emphatically — *x-sender*, *m-quantity*, *topic*

2.34 SENDING
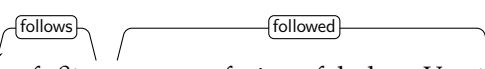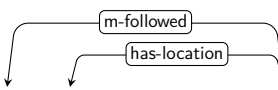
sender originates a message, sent, that can be experienced.

(241) According to Kim it is raining_{STATE} — *m-sender,* *x-noncomp*

For more uses, see MESSAGE (Section 2.30).

2.35 SEQUENCE

follows follows followed, e.g., temporally, logically, by rank, as heir, etc.

(242) Form follows_{SEQUENCE} function — *follows*, *followed*

(243) Cook is Jobs 's successor_{SEQUENCE} — *follows*, *followed*

(244) Das fußt_{SEQUENCE} auf einer falschen Vorstellung — *follows*, *followed*

(245) Kim deduced_{SEQUENCE} the truth from the clues — *x-experiencer*, *follows*, *followed*

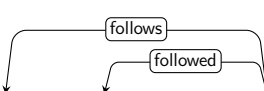(246) Given that I 'm tired , I wo n't be there_{LOCATION} — *m-followed*, *has-location*

2.36 CAUSATION

Special case of SEQUENCE where causer (aka followed) causes result (aka follows).

(247) Kim broke_STATE-CHANGE the glass
x-causer, has-state

(248) The knife cut_STATE-CHANGE the bread
x-causer, has-state

(249) Kim cut_STATE-CHANGE the bread with a knife
x-causer, has-state, m-means

(250) The war caused_CAUSATION a famine
causer, result

(251) There was_SCENE a famine because of the war
x-expletive, scene, m-causer

(252) Der Wasserdruck stieg_QUANTITY-CHANGE , wodurch der Brunnen überfloss
has-quantity, m-result

(253) Die Qualität ist der Motivation geschuldet_CAUSATION
result, causer

(254) Kim went_LOCATION-CHANGE to town because they wanted to buy food
has-location, target-location, m-causer

Note how the last example expresses a purpose, but expresses it as a cause, so m-causer lis the right label to use. Compare this to construal as a purpose:

(255) Kim went_LOCATION-CHANGE to town to buy food
has-location, target-location, m-explanation

2.37 REACTION

Special case of CAUSATION where trigger (aka causer) triggers a reaction (aka result) in the x-causer.

(256) Kim reacted_SEQUENCE to the allegations with a denial
x-causer, followed, follows
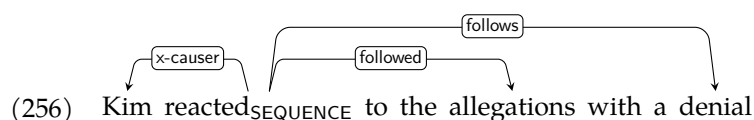
2.38 RESULTATIVE

Special case of CAUSATION where resultative (aka result) assigns an argument of has-resultative (aka causer) a role. We treat the English resultative construc-

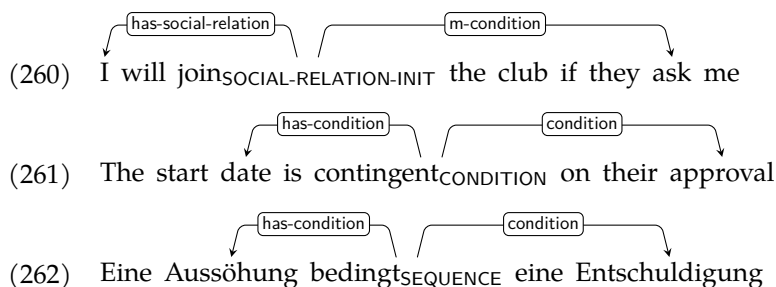tion as a valency-changing operation that adds one or two arguments to the matrix predicate, so we use x-resultative rather than m-resultative.

(257) Kim hammered_HITTING the metal flat_STATE

x-causer, x-resultative, hit, has-state

(258) Kim sneezed_EXPERIENCE the napkin off the table_CLASS

experiencer, x-resultative, x-resultative, x-has-location

(259) Kim painted_ADORNMENT-TARNISHMENT the room red_QUALITY

x-causer, x-resultative, surface, has-quality
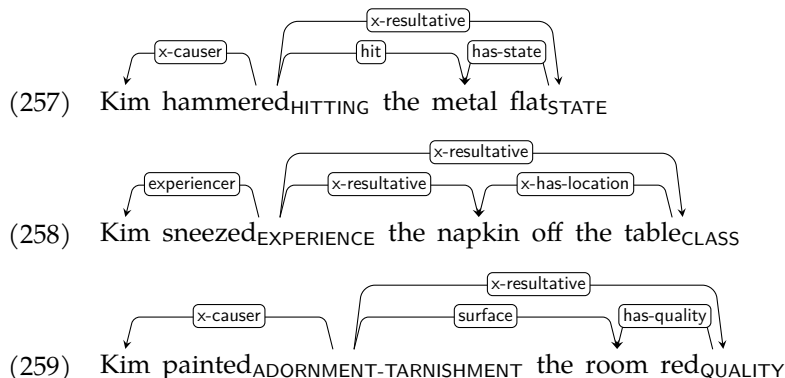
> explain x-has-location

2.39 CONDITION

Special case of SEQUENCE where condition (aka followed) is a condition to has-condition (aka follows).

(260) I will join_SOCIAL-RELATION-INIT the club if they ask me

has-social-relation, m-condition

(261) The start date is contingent_CONDITION on their approval

has-condition, condition

(262) Eine Aussöhung bedingt_SEQUENCE eine Entschuldigung

has-condition, condition

2.40 EXCEPTION

Special case of SEQUENCE where exception (aka followed) is an exception (a negative condition, if you will) to has-exception (aka follows).

(263) Except for Kim , everybody joined_SOCIAL-RELATION-INIT

m-exception, has-social-relation
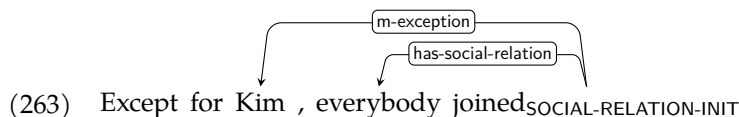
2.41 SOCIAL-RELATION

has-social-relation is an individual that is in some socially constructed relationship with social-relation. social-relation might, e.g., be a relative, a friend, an organization, a responsibility, or a judicial sentence.
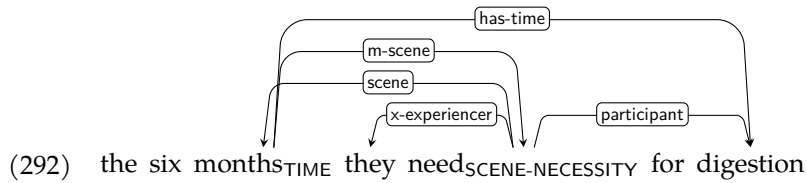
(264) Kim 's friend_SOCIAL-RELATION

has-social-relation
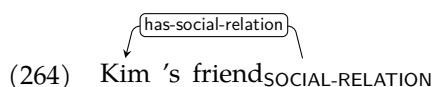
(265) Kim is my cousin_{SOCIAL-RELATION}

arcs: social-relation, has-social-relation

(266) Kim and Sandy are friends_{SOCIAL-RELATION}

arc: social-relation

(267) Kim is friends_{SOCIAL-RELATION} with Sandy

arcs: has-social-relation, social-relation

(268) Kim works_{SOCIAL-RELATION} at Google

arcs: has-social-relation, social-relation

(269) Kim works_{SOCIAL-RELATION} for Sandy

arcs: has-social-relation, social-relation

(270) Kim emcees_{SOCIAL-RELATION}

arc: has-social-relation

(271) Kim is hosting_{SOCIAL-RELATION} the party

arcs: has-social-relation, social-relation

(272) Kim is under house arrest_{SOCIAL-RELATION}

arc: has-social-relation

(273) Kim sentence_{SOCIAL-RELATION} was suspended

arc: has-social-relation

(274) Kim married_{SOCIAL-RELATION-INIT} Sandy

arcs: has-social-relation, target-social-relation

(275) The official married_{SOCIAL-RELATION-INIT} Kim to Sandy

arcs: x-causer, has-social-relation, target-social-relation

(276) The official married_{SOCIAL-RELATION-INIT} Kim and Sandy

arcs: x-causer, has-social-relation

(277) Kim divorced_{SOCIAL-RELATION-INIT} Sandy

arcs: has-social-relation, initial-social-relation

(278) Kim befriended_{SOCIAL-RELATION} Sandy

arcs: has-social-relation, target-social-relation

(279) Kim took_{SOCIAL-RELATION-INIT} the job

arcs: has-social-relation, target-social-relation

(280) Kim joined_{SOCIAL-RELATION-INIT} Google
has-social-relation, target-social-relation

(281) Kim joined_{SOCIAL-RELATION-INIT} a union
has-social-relation, target-social-relation

(282) Sandy fired_{SOCIAL-RELATION-DEINIT} Kim from their job
x-causer, has-social-relation, initial-social-relation

(283) Kim left_{SOCIAL-RELATION-DEINIT} Google
has-social-relation, initial-social-relation

(284) Kim assumed_{SOCIAL-RELATION-INIT} office
has-social-relation, target-social-relation

(285) The judge sentenced_{SOCIAL-RELATION-INIT} Kim to three days in prison
x-causer, has-social-relation, target-social-relation

(286) Kim was pardoned_{SOCIAL-RELATION-DEINIT}
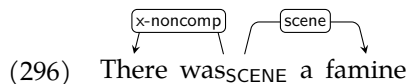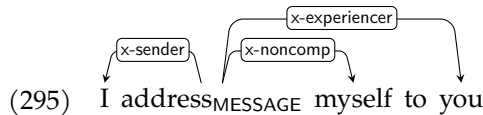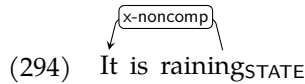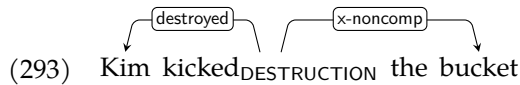*has-social-relation*

2.42 TIME

time indicates when, how often, or for how long has-time takes place. Also evoked by time expressions without arguments.

(287) Kim swims_{UNANCHORED-MOTION} on Monday
has-location, m-time

(288) Kim sneezed_{EXPERIENCE} twice
experiencer, m-time

(289) Kim swam_{UNANCHORED-MOTION} for an hour
has-location, m-time

(290) Kim says_{MESSAGE} hello whenever I meet them
x-sender, content, m-time

(291) Once_{TIME} when I was six years old

(292) the six months_TIME they need_SCENE-NECESSITY for digestion

2.43 NONCOMP

Used to mark syntactic arguments that are thought of as part of the predicate, as in verbal idioms, weather verbs, inherently reflexive verbs, or existential *there*.

(293) Kim kicked_DESTRUCTION the bucket

(294) It is raining_STATE

(295) I address_MESSAGE myself to you

(296) There was_SCENE a famine

Light verbs, on the other hand, are treated with SCENE, see Section 2.1.

3 Memos

3.1 Prefer Core over Non-core Arguments

When an argument fills both a core and a non-core role, it is more important to annotate the former.

(297) Kim drove_LOCATION-CHANGE to Boston

(298) Kim drove_LOCATION-CHANGE the car to Boston
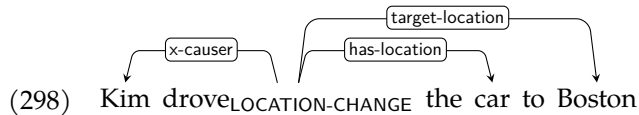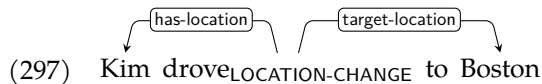
3.2 Arguments Determine Frames

The most important criterion in choosing a frame for a predicate is that there should be suitable roles for the predicate's arguments, even if they are unrealized in the annotated instance. For example, while *drawing* denotes a CLASS of things, it can occur with a prepositional argument denoting a topic, so MESSAGE is a better choice.

(299)
```
      ┌─── m-sender ───┐
      │  ┌── m-rank ──┐ │
```
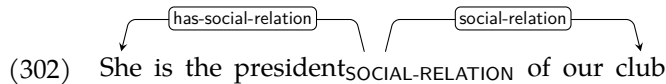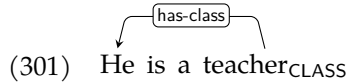my first drawing_{MESSAGE}
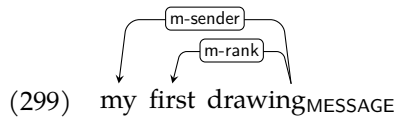
3.3 Participant Nouns

Some nouns denote a person who participates in a specific type of scene in a specific type of role. In such cases, use the most appropriate frame for that scene. For example, in a narrative where the narrator has just been criticized by a stranger, you could annotate as follows:
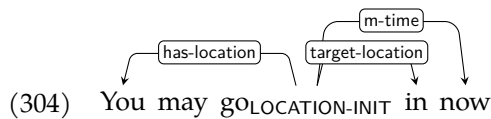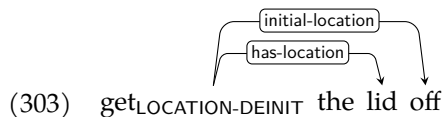
(300)
```
         ┌─ topic ─┐
```
With that, my critic_{MESSAGE} sat down again

In other cases, such nouns rather denote a person's profession or expertise or their role in a social context:

(301)
```
      ┌── has-class ──┐
```
He is a teacher_{CLASS}

(302)
```
      ┌── has-social-relation ──┐    ┌── social-relation ──┐
```
She is the president_{SOCIAL-RELATION} of our club
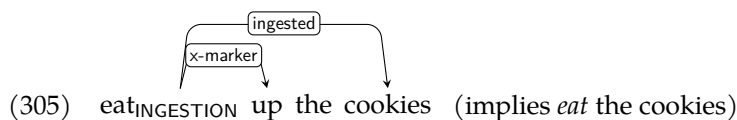
3.4 Particle Verbs

In UD, particle verbs are connected to their particle via the `compound:prt` relation. If the meaning is spatial, this dependency is labeled with initial-location or target-location.

(303)
```
         ┌──── initial-location ────┐
         │  ┌── has-location ──┐     │
```
get_{LOCATION-DEINIT} the lid off

(304)
```
                        ┌── m-time ──┐
      ┌── has-location ──┐ ┌ target-location ┐
```
You may go_{LOCATION-INIT} in now

In semi-non-compositional particle verbs, where the particle adds a partially predictable but nonspatial meaning to the verb, use an appropriate role, e.g., x-marker if the meaning is aspectual.

(305)
```
         ┌──── ingested ────┐
      ┌ x-marker ┐          │
```
eat_{INGESTION} up the cookies   (implies *eat* the cookies)

In fully non-compositional particle verbs, where the meaning is not predictable, use `x-noncomp`.

34

(306) do_EXPERIENCE somebody in   (does not imply *do* somebody)
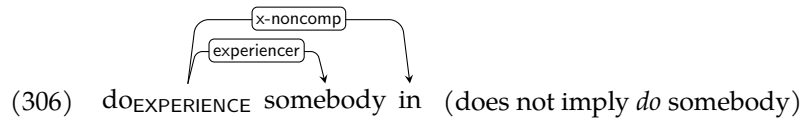
refer to PARSEME guidelines

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