Superframes Manual

Kilian Evang

Last updated: October 21, 2024

Contents

SUPERFRAME	initial-arg2	arg1	arg2	transitory-arg2	target-arg2	Sec.
SITUATION	initial-situator	theme	situator	transitory-situator	target-situator	2.1
ACCOMPANIMENT	initial-accompanier	accompanied	accompanier		target-accompanier	2.2
DEPICTIVE		has-depictive	depictive			2.3
ASSET		has-asset	asset			2.4
ATTRIBUTE		has-attribute	attribute			2.5
COMPARISON		compared	reference			2.6
CONCESSION		assertion	conceded			2.7
EVENT		undergoer	event			2.8
ACTIVITY		is-active	activity			2.9
EXISTENCE	initial-exists	material	exists		target-exists	2.10
REPRODUCTION		original			copy	2.11
TRANSFORMATION-CREATION		material			created	2.12
EXPERIENCE		experiencer	experienced			2.13
EXPLANATION		explained	explanation			2.14
PURPOSE		has-purpoe	purpose			2.15
IDENTIFICATION	initial-identifier	identified	identifier		target-identifier	2.16
LOCATION	initial-location	has-location	location	transitory-location	target-location	2.17
ADORNMENT-TARNISHMENT	initial-surface	ornament	surface		target-surface	2.18
EXCRETION	excreter	excreted		transitory-location	target-location	2.19
HITTING		hitting	hit			2.20
INGESTION		ingested		transitory-location	ingester	2.21
UNANCHORED-MOTION		in-motion		transitory-location		2.22
WRAPPING-WEARING	initial-wearer	wrapper	wearer		target-wearer	2.23
MEANS		has-means	means			2.24
MESSAGE	initial-content	topic	content		target-content	2.25
MODE		has-mode	mode			2.26
NONCOMP		has-noncomp	noncomp			2.27
PART-WHOLE	initial-whole	part	whole		target-whole	2.28
EXAMPLE		example	exemplified			2.29
POSSESSION	initial-possessor	possessed	possessor		target-possessor	2.30
QUANTITY	initial-quantity	has-quantity	quantity		target-quantity	2.31
RANK	initial-rank	has-rank	rank		target-rank	2.32
SCENE	initial-scene	participant	scene	transitory-scene	target-scene	2.33
STATE	initial-state	has-state	state		target-state	2.34
QUALITY	initial-quality	has-quality	quality		target-quality	2.35
CLASS	initial-class	has-class	class		target-class	2.36
DESTRUCTION		destroyed				2.37
SENDING		sent	sender			2.38
SEQUENCE		follows	followed			2.39
CAUSATION		result	causer			2.40
CONDITION		has-condition	condition			2.41
EXCEPTION		has-exception	exception			2.42
REACTION		reaction	trigger			2.43
RESULTATIVE		has-resultative	resultative			2.44
SOCIAL-RELATION	initial-social-relation	has-social-relation	social-relation		target-social-relation	2.45
TIME	initial-time	has-time	time		target-time	2.46

Table 1: Hierarchy of Superframes and their Roles

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.

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.

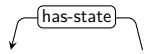
5. Similarly, Superframes do not have the `Agent` role, which is often in conflict with roles indicating more specifically the agent's relation to other participants.

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.

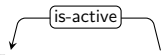
Table 1 shows the superframes and their roles, sorted into a rough hierarchy. At the top is SITUATION. All the main superframes are direct children of SITUATION. Some of them have one or more subtypes intended to make the annotation of certain special cases more intuitive and unambiguous.

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$_{\textsf{STATE}}$



(2) Kim is partying$_{\textsf{ACTIVITY}}$

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

(3) Kim owns$_{\textsf{POSSESSION}}$ a house

(4) The house belongs$_{\textsf{POSSESSION}}$ to Kim

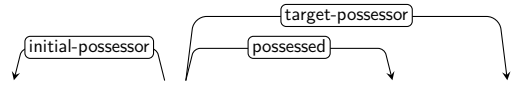
(5) Kim seems$_{\textsf{MESSAGE}}$ happy

1.2 Aspect, Mode, and Polarity

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) means it fails to come about. 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.

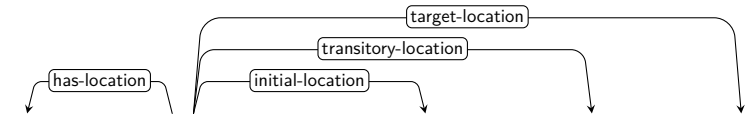
(6) Kim got$_{\text{POSSESSION-INIT}}$ the house

(7) Kim lost$_{\text{POSSESSION-DEINIT}}$ the house

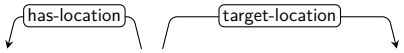


(8) Kim sold$_{\text{POSSESSION-CHANGE}}$ the house to Sandy

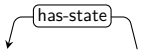
(9) Kim kept$_{\text{POSSESSION-CONTINUATION}}$ the house



(10) Kim went$_{\text{LOCATION-CHANGE}}$ from Chicago via Pittsburgh to Boston



(11) The vase fell$_{\text{LOCATION-CHANGE}}$ to the ground

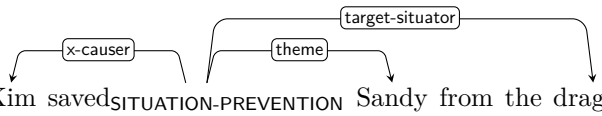


(12) The vase broke$_{\text{STATE-CHANGE}}$

(13) Kim befriended$_{\text{SOCIAL-RELATION-INIT}}$ Sandy

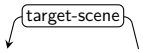
(14) Kim married$_{\text{SOCIAL-RELATION-INIT}}$ Sandy

(15) Kim divorced$_{\text{SOCIAL-RELATION-DEINIT}}$ Sandy

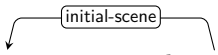


(16) Kim saved$_{\text{SITUATION-PREVENTION}}$ Sandy from the dragon

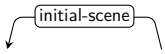
The SCENE superframe is often evoked by "light" verbs that contribute an aspectual or modal meaning. Thus, its aspectual variants are especially common.



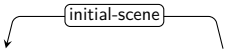
(17) The concert began$_{\text{SCENE-INIT}}$



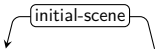
(18) The concert continued$_{\text{SCENE-CONTINUATION}}$



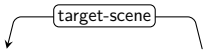
(19) The concert finished$_{\text{SCENE-DEINIT}}$



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



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

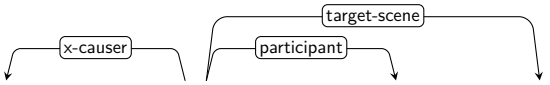


(22) A coup was attempted$_{\text{SCENE-INIT}}$

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

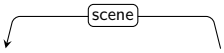
(24) Swift action prevented$_{\text{SCENE-PREVENTION}}$ an outbreak

(25) Kim refrained$_{\text{SCENE-PREVENTION}}$ from going

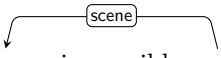


(26) Kim prevented$_{\text{SCENE-PREVENTION}}$ Sandy from going

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



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



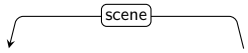
(28) Change is possible$_{\text{SCENE-POSSIBILITY}}$

(29) Kim owes$_{\text{POSSESSION-CHANGE-NECESSITY}}$ Sandy money

Finally, we can use the polarity suffix -NEG. It can combine with aspectual and modal suffixes.

(30) 

absence$_{\text{EXISTENCE-NEG}}$ of evidence

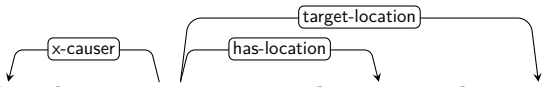
(31) 

That is impossible$_{\text{SCENE-POSSIBILITY-NEG}}$

(32) They never$_{\text{TIME-NEG}}$ understand

1.3 Non-core Arguments

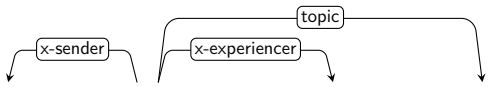
Core arguments always get role labels from the superframe the predicate evokes. But many verbs have more arguments. One common case is a subject that is presented as the causer of the scene. For example, compare (33) with (11). The core scene is the same (same superframe, same arguments). We now assume 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.



(33) Kim threw$_{\text{LOCATION-CHANGE}}$ the vase to the ground

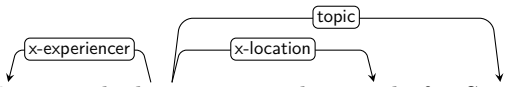
(34) Kim broke$_{\text{STATE-CHANGE}}$ the vase

Two other common non-core arguments are the senders and recipients (experiencers) of messages.

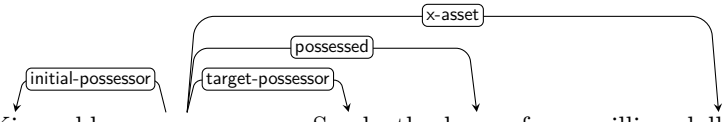


(35) Kim talked$_{\text{MESSAGE-INIT}}$ to Sandy about Bali

Other non-core arguments are usually rather predicate-specific.



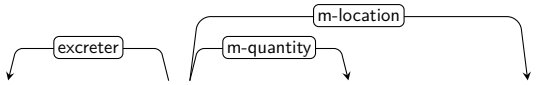
(36) Kim searched$_{\text{MESSAGE-INIT}}$ the woods for Sandy



(37) Kim sold$_{\text{POSSESSION-CHANGE}}$ Sandy the house for a million dollars

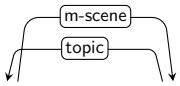
1.4 Modifiers

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-.

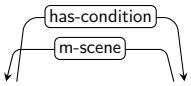


(38) Kim is sweating$_{\text{EXCRETION}}$ profusely in the sauna

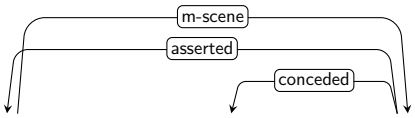
Adjectival and adverbial modification is characterized by the syntactic modifier acting as a predicate, with the syntactic modifiee as an argument. We label such modifier dependencies m-scene (cf. Section 2.33) and add a reverse dependency with the corresponding role label.



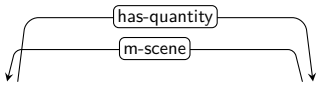
(39) Ich spiele$_{\text{ACTIVITY}}$ lieber$_{\text{MESSAGE}}$ Schach



(40) Der ist sowieso$_{\text{CONDITION}}$ kaputt$_{\text{STATE}}$

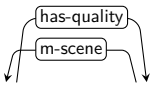


(41) Sie sprangen$_{\text{LOCATION-INIT}}$ des Regens ungeachtet$_{\text{CONCESSION}}$ nach draußen

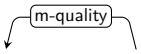


(42) Kim war unvermindert$_{\text{QUANTITY-CONTINUATION}}$ fröhlich$_{\text{MESSAGE}}$

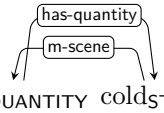
If arg2 has the same name as the frame, this structure can be abbreviated to just use that as a modifier role instead of m-scene and a backlink. For example, the following pairs are equivalent:



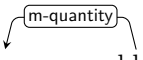
(43) a. a red$_{\text{QUALITY}}$ bucket$_{\text{CLASS}}$



b. a red$_{\text{QUALITY}}$ bucket$_{\text{CLASS}}$

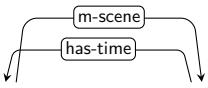


(44) a. The water is very$_{\text{QUANTITY}}$ cold$_{\text{STATE}}$

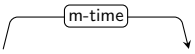


b. The water is very$_{\text{QUANTITY}}$ cold$_{\text{STATE}}$

(45) a. Kim kommt$_{\text{LOCATION-INIT}}$ erstmals$_{\text{TIME}}$ mit Sandy

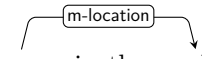


b. Kim kommt$_{\text{LOCATION-INIT}}$ erstmals$_{\text{TIME}}$ mit Sandy

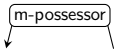


1.5 Nonverbal Predicates

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:



(46) a tree$_{\text{CLASS}}$ in the garden

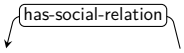


(47) Kim 's tree$_{\text{CLASS}}$

Event nouns evoke event frames and have arguments:

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

Relational nouns evoke relational frames and have arguments:



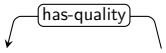
(49) Kim 's friend$_{\text{SOCIAL-RELATION}}$

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

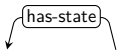
(50) Kim$_{\text{IDENTIFICATION}}$

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

Predicate adjectives most typically denote states or qualities.

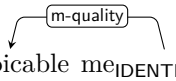


(52) I am despicable$_{\text{QUALITY}}$



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

With attributive adjectives, the dependency relation is reversed, and the role label is changed accordingly.

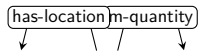


(54) despicable me$_{\text{IDENTIFICATION}}$

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

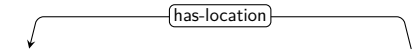
Similarly for adverbs denoting, e.g, manner (quality) or extent (quantity):

(56) 
has-location
m-quality
Kim ran Motion fast

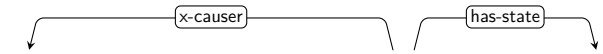
(57) 
has-location
m-quantity
Kim ran Motion far

1.6 Nonlocal Dependencies

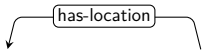
Many constructions systematically introduce semantic predicate-dependent dependencies that do not correspond to (surface) syntactic dependencies. In such cases, we add those dependency links.



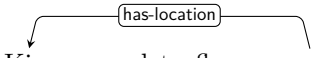
(58) Kim promised Sandy to come$_{\text{LOCATION-CHANGE}}$ (subject control)



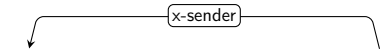
(59) Kim used a hammer to smash$_{\text{STATE-CHANGE}}$ the vase (subject control)



(60) Kim persuaded Sandy to come$_{\text{LOCATION-CHANGE}}$ (object control)

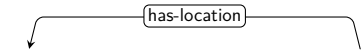


(61) Kim seemed to fly$_{\text{UNANCHORED-MOTION}}$ (raising)



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

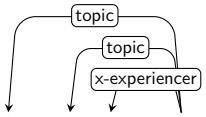
(63) You're talking me silly$_{\text{STATE}}$ (resultative)



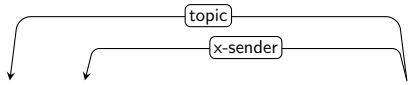
(64) Kim has come to stay$_{\text{LOCATION-CONTINUATION}}$ (subjectless adverbial clause)

(65) Kim left after trashing$_{\text{STATE-CHANGE}}$ the room (subjectless adverbial clause)

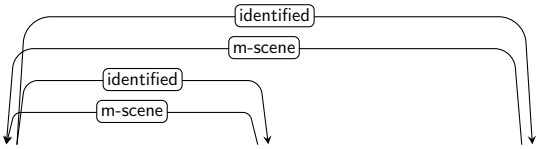
(66) Kim is hard to love$_{\text{MESSAGE}}$ (*tough* construction)



(67) the song that I like$_{\text{MESSAGE}}$ (relative clause)



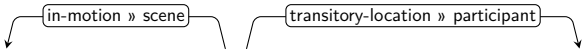
(68) the question we raised without answering$_{\text{MESSAGE-INIT}}$ (parasitic gap)



(69) ein sogenannter$_{\text{IDENTIFICATION-INIT}}$ Televisor$_{\text{CLASS}}$ oder Hörsehschirm$_{\text{CLASS}}$ (coordination)

1.7 Figurativity, Idiomaticity, and Uncertainty

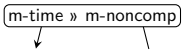
Difficulties in choosing frames often arise because a predicate literally evokes one frame, but is used in a way that perhaps fits another frame equally well or better. In such cases, annotate both the more literal frame and roles, followed by the more figurative frame and roles.



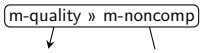
(70) A hush passed$_{\text{UNANCHORED-MOTION » SCENE}}$ over the group

(71) Kim refused$_{\text{MESSAGE-INIT » SCENE}}$ to eat

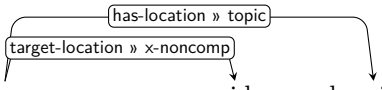
This mechanism can be used to indicate that an expression has become fixed and not fully compositional:



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



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



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

If you cannot choose between two frames for another reason, use `||` instead of `>>`.

2 Superframes Reference

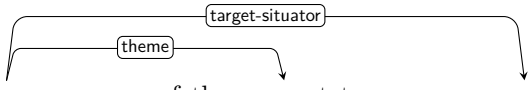
2.1 🔗 SITUATION

This is the most generic superframe: something (theme) is related to something (situator). Prototypically, the former is the less central, more mobile element. It is situated in some conceptual space with respect to the situator, or put differently: it undergoes something in connection with the situator. When in doubt, the syntactically less oblique argument is the theme. In more specific superframes, the theme:situator relation takes the shape of e.g., compared:reference, has-location:location, possessed:possessor, part:whole, follows:followed, has-social-relation:social-relation. It can take more abstract shapes as well, e.g. has-quality:quality, where the situator is a predicate that is true of the theme.

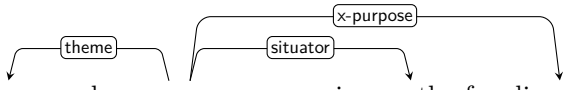
This generic superframe is useful in cases where the type of relation is not specified further.

(75) Yes$_{\text{SITUATION}}$

(76) No$_{\text{SITUATION-NEG}}$



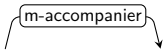
(77) transition$_{\text{SITUATION-CHANGE}}$ of the account to a new government



(78) they need$_{\text{SITUATION-NECESSITY}}$ six months for digestion

2.2 🍴 ACCOMPANIMENT

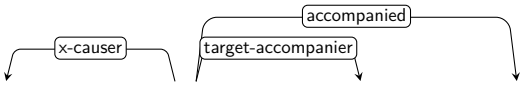
accompanier accompanies accompanied, meaning that it occurs together with it or participates equally in the same scene.

(79) 

veggies$_{\text{CLASS}}$ with rice

(80) 

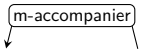
The veggies come$_{\text{ACCOMPANIMENT}}$ with rice

(81) 

Kim added$_{\text{ACCOMPANIMENT-INIT}}$ rice to the veggies

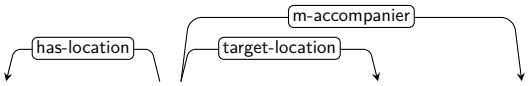
(82) 

Rolling thunder accompanies$_{\text{ACCOMPANIMENT}}$ the rain

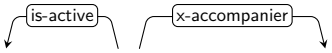
(83) 

boy king$_{\text{SOCIAL-RELATION}}$

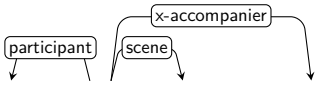
Often, the accompanier denotes not the accompanying scene but an entity participating in it, and must be metonymically understood as the scene.

(84) 

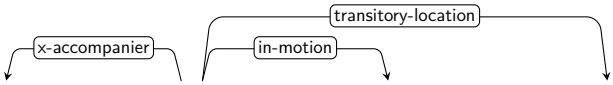
Kim cycled$_{\text{LOCATION-CHANGE}}$ to Rome with Sandy

(85) 

Kim danced$_{\text{ACTIVITY}}$ with Sandy

(86) 

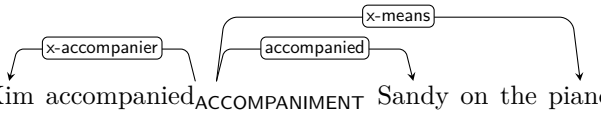
Kim had$_{\text{SCENE}}$ sex with Sandy

(87) 

Kim chased$_{\text{UNANCHORED-MOTION}}$ Sandy around the block

(88) 

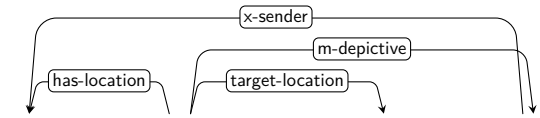
Kim accompanied$_{\text{ACCOMPANIMENT}}$ Sandy

(89) 

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

2.3 🖌️ DEPICTIVE

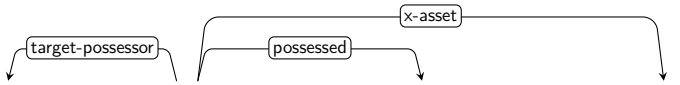
Special case of ACCOMPANIMENT where depictive (aka accompanier) assigns a participant of has-depictive (aka accompanied) a role (cf. Sec. 1.6).

(90) 

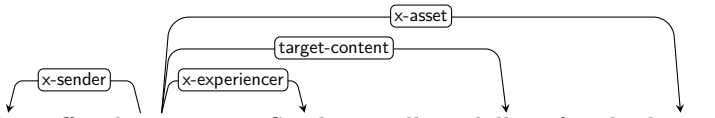
Kim entered$_{\text{LOCATION-INIT}}$ the room singing$_{\text{MESSAGE-INIT}}$

2.4 💰 ASSET

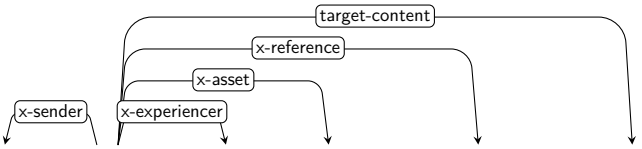
In a scene has-asset, asset is given or offered in an exchange or wager.



(91) Kim bought$_{\text{POSSESSION-CHANGE}}$ the house for a million dollars



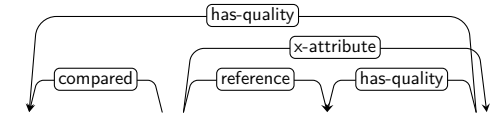
(92) Kim offered$_{\text{MESSAGE-INIT}}$ Sandy a million dollars for the house



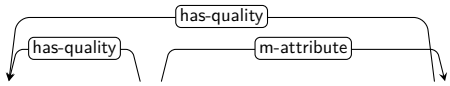
(93) I bet$_{\text{MESSAGE-INIT}}$ you 30 bucks to an apple he will win

2.5 ✳ ATTRIBUTE

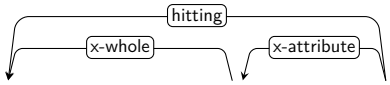
In a scene has-attribute, attribute is the part or attribute of one or more participants that is most directly involved in the scene. Add a dependency link between the participant and its attribute to indicate wich participant(s) have the attribute.



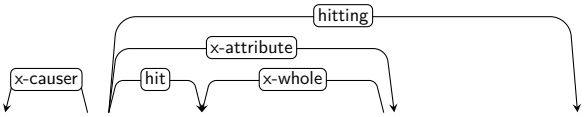
(94) Kim exceeds$_{\text{COMPARISON}}$ Sandy in height$_{\text{QUALITY}}$



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



(96) Kim ist auf den Kopf$_{\text{CLASS}}$ gefallen$_{\text{HITTING}}$

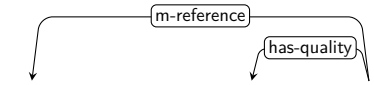


(97) Kim hit$_{\text{HITTING}}$ Sandy on the head$_{\text{CLASS}}$ with a stick

2.6 ⚖ COMPARISON

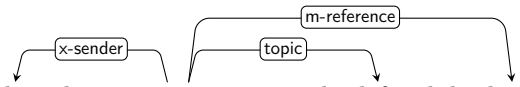
compared is characterized with respect to reference.

Examples of comparing scenes:



(98) Compared to Sandy, Kim is tall$_{\text{QUALITY}}$

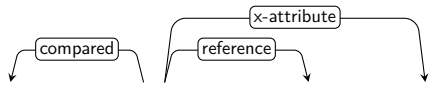
(99) Sandy is short$_{\text{QUALITY}}$ whereas Kim is tall



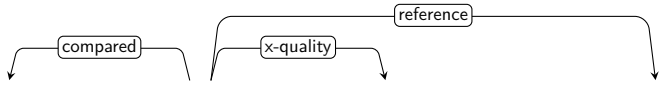
(100) They demonize$_{\text{MESSAGE-INIT}}$ the left while doing nothing about the right

Examples of comparing non-scene entities:

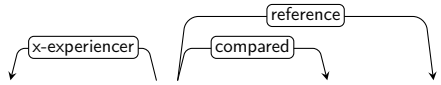
(101) Kim outranks$_{\text{COMPARISON}}$ Sandy



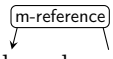
(102) Kim exceeds$_{\text{COMPARISON}}$ Sandy in height



(103) The Polish restaurant compared$_{\text{COMPARISON}}$ favorably to the Spanish one



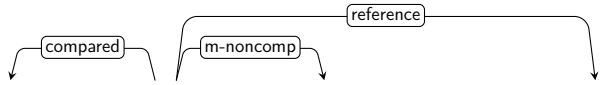
(104) Kim compared$_{\text{COMPARISON}}$ Coke to Pepsi



(105) kidney bean$_{\text{CLASS}}$

The reference need not be an entity similar to the compared, it can also be an abstract constraint:

(106) The program conforms$_{\text{COMPARISON}}$ to the spec



(107) Kim ran$_{\text{COMPARISON-DEINIT}}$ afoul of Fielding 's constraints

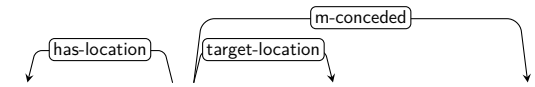
We analyze gradation of adjectives as a valency-changing derivation that adds an x-reference argument.

(108) 
m-quantity
x-reference
more isolated SOCIAL-RELATION than a shipwrecked sailor

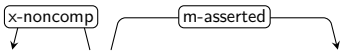
(109) 
has-quality
x-reference
Kim is taller QUALITY than Sandy

2.7 👌 CONCESSION

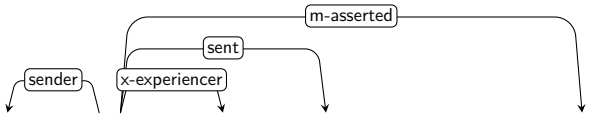
Special case of COMPARISON, where compared is what's asserted and reference is what's conceded.



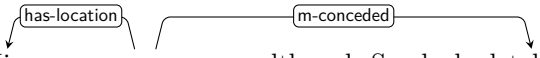
(110) Kim went$_{\text{LOCATION-CHANGE}}$ out despite the rain



(111) It rained$_{\text{STATE}}$, but Kim went out



(112) Kim sent$_{\text{SENDING}}$ Sandy a letter , but it never arrived



(113) Kim came$_{\text{LOCATION-INIT}}$ although Sandy had told them not to

2.8 ⚔️ EVENT

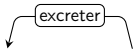
Used for predicates that are inherently dynamic and cannot be framed as -CHANGE/-INIT/-DEINIT, so usually activities in terms of Vendler.

(114) Kim 's adventures$_{\text{EVENT}}$ in the jungle

(115) Kim attacked$_{\text{EVENT}}$ Sandy

(116) career girl$_{\text{CLASS}}$

Note that many predicates that denote events in terms of Vendler can be framed differently (as changes):

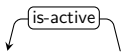


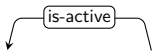
(117) Kim sneezed$_{\text{EXCRETION}}$

(118) The ambassador arrived$_{\text{LOCATION-INIT}}$ in Moscow

2.9  ACTIVITY

Special case of EVENT where the undergoer is active.

(119) 

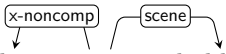
(120) 

2.10 ✨ EXISTENCE

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

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

(122) There is$_{\text{EXISTENCE}}$ a hill

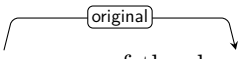


(123) There is$_{\text{SCENE}}$ a hubbub

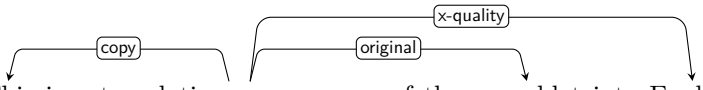
2.11 📝 REPRODUCTION

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

(124) Here is a copy_{REPRODUCTION} of the drawing



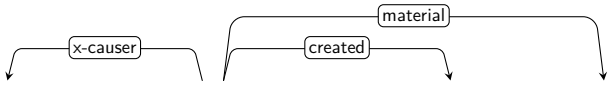
(125) This is a translation_{REPRODUCTION} of the pamphlet into English



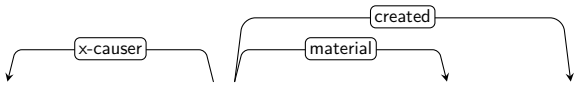
2.12 🪄 TRANSFORMATION-CREATION

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

(126) I succeeded in making$_{\text{TRANSFORMATION-CREATION}}$ my first drawing



(127) Kim built$_{\text{TRANSFORMATION-CREATION}}$ a castle out of sand

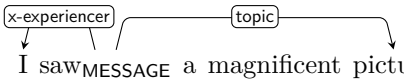


(128) Kim turned$_{\text{TRANSFORMATION-CREATION}}$ straw into gold

2.13 EXPERIENCE

experiencer experiences experienced.

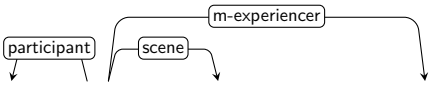
In connection with a MESSAGE frame in the experienced role, used for sensory and mental perception as well as addressees in communication. Also use for beneficiaries, and for "bystander" roles.



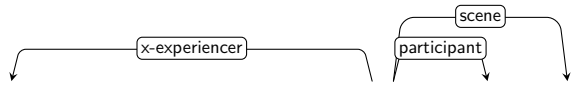
(129) I saw$_{\text{MESSAGE}}$ a magnificent picture

(130) I pondered$_{\text{MESSAGE-INIT}}$ deeply

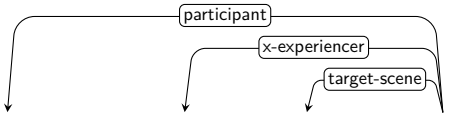
(131) Kim talked$_{\text{MESSAGE-INIT}}$ to Sandy



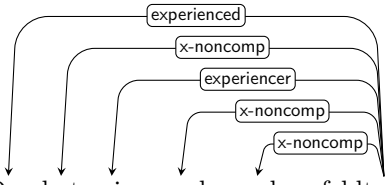
(132) Kim did$_{\text{SCENE}}$ something nice for Sandy



(133) Kim cooked a meal only to have$_{\text{SCENE}}$ Sandy spurn it



(134) Die Piroggen waren Maria zu dunkel geraten$_{\text{SCENE-INIT}}$

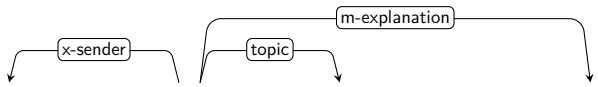


(135) Das hat mir gerade noch gefehlt$_{\text{EXPERIENCE}}$

For more uses, see the examples for MESSAGE in Section 2.25.

2.14 ❗ EXPLANATION

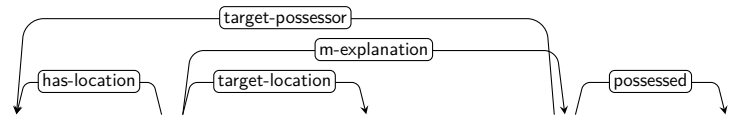
explanation explains explained, but is not a cause.



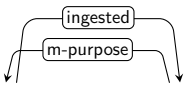
(136) I am stressing$_{\text{MESSAGE-INIT}}$ this because it is important

2.15 🎯 PURPOSE

Special case of EXPLANATION where explanation is a purpose.

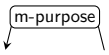


(137) Kim went$_{\text{LOCATION-CHANGE}}$ to town to buy$_{\text{POSSESSION-CHANGE}}$ food

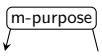


(138) drinking$_{\text{INGESTION}}$ water$_{\text{CLASS}}$

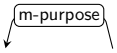
(139) lamp oil$_{\text{CLASS}}$



(140) train station$_{\text{CLASS}}$



(141) buffer state$_{\text{STATE}}$



(142) animal doctor$_{\text{CLASS}}$

2.16 IDENTIFICATION

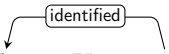
identifier identifies identified.

Evoked by definite pronouns, names, and other identifiers, as well as predicates denoting naming relationships.

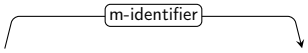
(143) I$_{\text{IDENTIFICATION}}$ saw a picture

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

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

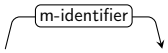


(146) This is Kim$_{\text{IDENTIFICATION}}$

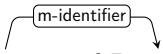


(147) Obamas Sonderberaterin$_{\text{SOCIAL-RELATION}}$ Kori Schulman

In English, the preposition *of* has an identifying sense, which can also be metaphorical:



(148) the island$_{\text{CLASS}}$ of Pultanella



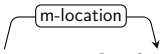
(149) the stallion$_{\text{CLASS}}$ of Rumour

Likewise, *in* has an identifying sense:

(150) In answer , he repeated$_{\text{MESSAGE-INIT}}$: Please, draw me a sheep !

2.17 📍 LOCATION

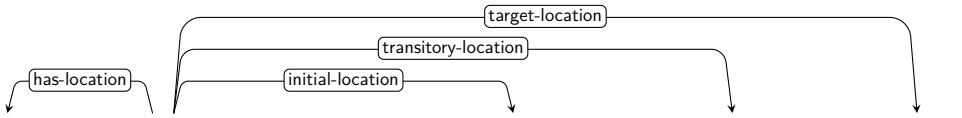
Describes has-location as located or moving wrt. respect to location.

(151) 

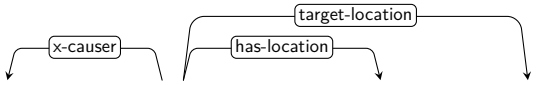
the hat$_{\text{CLASS}}$ in the box

(152) 

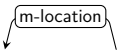
Kim lives$_{\text{LOCATION}}$ in Boston

(153) 

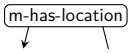
Kim went$_{\text{LOCATION-CHANGE}}$ from the living room through the door into the kitchen

(154) 

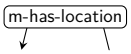
Kim placed$_{\text{LOCATION-CHANGE}}$ the hat on the table

(155) 

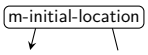
house music$_{\text{MESSAGE}}$

(156) 

music hall$_{\text{CLASS}}$

(157) 

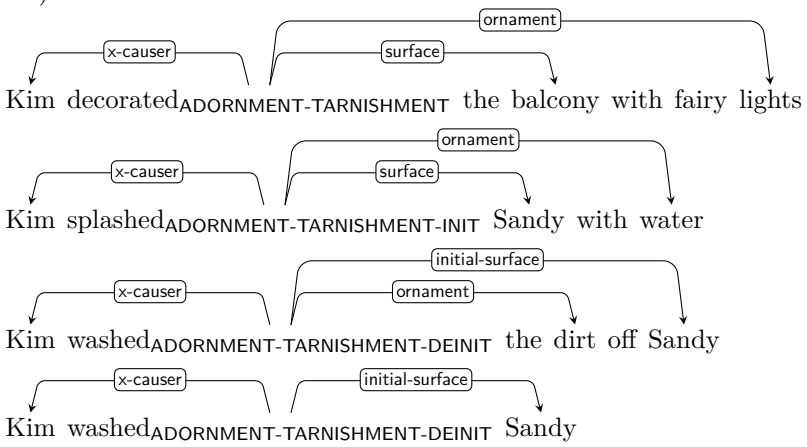
sugar cane$_{\text{CLASS}}$

(158) 

cane sugar$_{\text{CLASS}}$

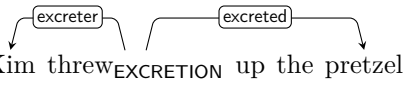
2.18 💎 ADORNMENT-TARNISHMENT

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



2.19 💦 EXCRETION

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

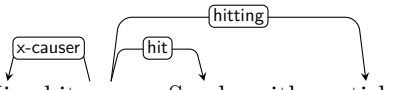
(159) 

2.20 🏏 HITTING

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

(160) 

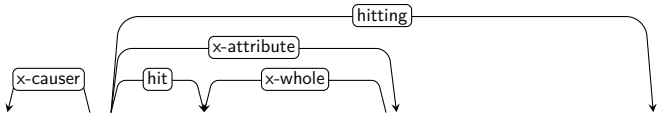
Kim hit$_{\text{HITTING}}$ Sandy

(161) 

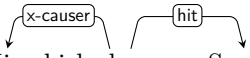
Kim hit$_{\text{HITTING}}$ Sandy with a stick

(162) 

The stick hit$_{\text{HITTING}}$ Sandy

(163) 

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

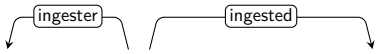
(164) 

Kim kicked$_{\text{HITTING}}$ Sandy

2.21 🥣 INGESTION

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

(165) 

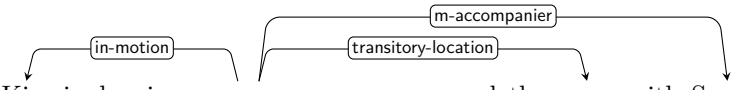
(166) 

2.22 UNANCHORED-MOTION

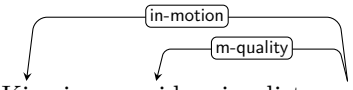
Special case of LOCATION-CHANGE where no initial or target location is indicated.

(167) Kim is running$_{\text{UNANCHORED-MOTION}}$ along the river

(168) I learned to pilot$_{\text{UNANCHORED-MOTION}}$ airplanes



(169) Kim is dancing$_{\text{UNANCHORED-MOTION}}$ around the room with Sandy



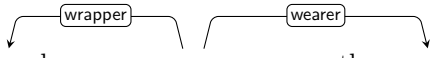
(170) Kim is an avid unicyclist$_{\text{UNANCHORED-MOTION}}$

2.23 👕 WRAPPING-WEARING

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

(171) Kim is wearing$_{\text{WRAPPING-WEARING}}$ a shirt

(172) Kim is wearing$_{\text{WRAPPING-WEARING}}$ glasses



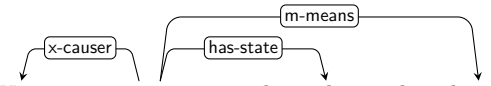
(173) The shroud wraps$_{\text{WRAPPING-WEARING}}$ the scepter

(174) Kim put$_{\text{WRAPPING-WEARING-INIT}}$ on a sweater

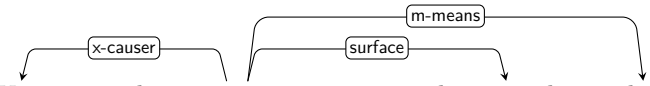
(175) Kim took$_{\text{WRAPPING-WEARING-DEINIT}}$ off their glasses

2.24 🔨 MEANS

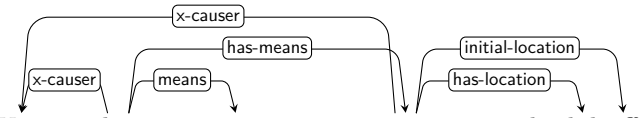
has-means is a scene caused by something via an intermediary means.

(176) 

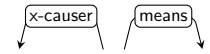
Kim cut$_{\text{STATE-CHANGE}}$ the cake with a knife

(177) 

Kim painted$_{\text{ADORNMENT-TARNISHMENT}}$ the room by exploding a paint bomb

(178) 

Kim used$_{\text{MEANS}}$ a pen to get$_{\text{LOCATION-DEINIT}}$ the lid off

(179) 

You used$_{\text{MEANS}}$ me !

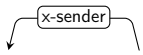
(180) 

oil lamp$_{\text{CLASS}}$

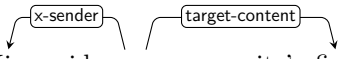
2.25 🗨 MESSAGE

A message about topic with content content exists in perceived, measured, or recorded recorded form. When a message is created through expression or observation, use MESSAGE-INIT. When content and topic are both realized, content must assign a role to topic.

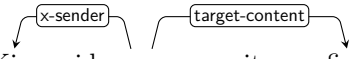
Predicates of expression use MESSAGE-INIT:



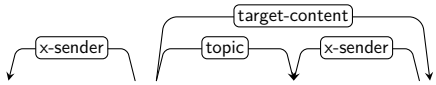
(181) Kim yelped$_{\text{MESSAGE-INIT}}$



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

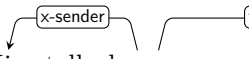


(183) Kim said$_{\text{MESSAGE-INIT}}$ it was fine

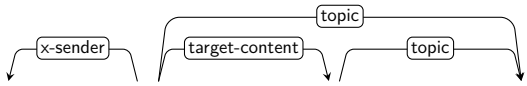


(184) Kim called$_{\text{MESSAGE-INIT}}$ Sandy a liar$_{\text{MESSAGE}}$

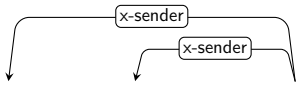
(185) Kim told$_{\text{MESSAGE-INIT}}$ Sandy a secret



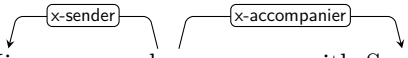
(186) Kim talked$_{\text{MESSAGE-INIT}}$ about Sandy



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



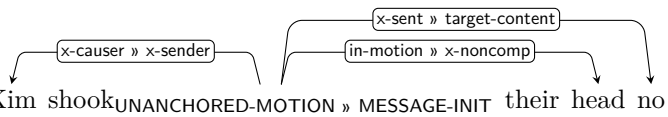
(188) Kim and Sandy conversed$_{\text{MESSAGE-INIT}}$



(189) Kim conversed$_{\text{MESSAGE-INIT}}$ with Sandy

Gesture is a kind of expression, too:

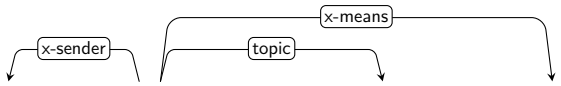
(190) Kim curtseyed$_{\text{MESSAGE-INIT}}$ to the Queen



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

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

the topic:



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

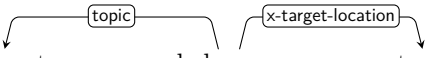
(193) They performed$_{\text{MESSAGE-INIT}}$ the play

(194) Kim sang$_{\text{MESSAGE-INIT}}$ a song

What is depicted gets the topic role:

(195) Kim drew$_{\text{MESSAGE-INIT}}$ a heron

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



(197) The concert was recorded$_{\text{MESSAGE-INIT}}$ on tape

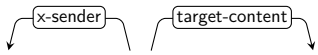
Recordings of information are framed as messages:

(198) history book$_{\text{MESSAGE}}$

(199) a book$_{\text{MESSAGE}}$ about the primeval forest

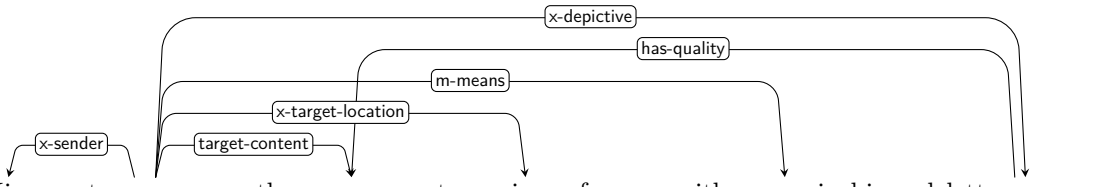
(200) sales target$_{\text{MESSAGE}}$

The result of recording something gets the target-content role:



(201) Kim drew$_{\text{MESSAGE-INIT}}$ a picture

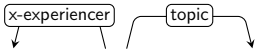
(202) Kim wrote$_{\text{MESSAGE-INIT}}$ Sandy a letter



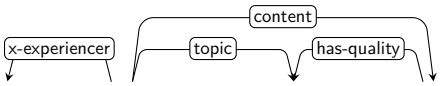
(203) Kim wrote$_{\text{MESSAGE-INIT}}$ the message onto a piece of paper with a pen in big red letters$_{\text{QUALITY}}$

(204) The band recorded$_{\text{MESSAGE-INIT}}$ an album

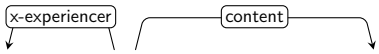
Predicates of perception use MESSAGE, including mental perception:



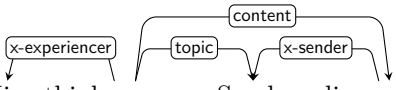
(205) Kim saw$_{\text{MESSAGE}}$ a flower



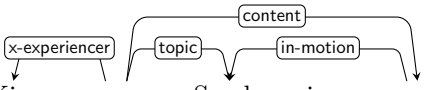
(206) Kim found$_{\text{MESSAGE}}$ the flower beautiful$_{\text{QUALITY}}$



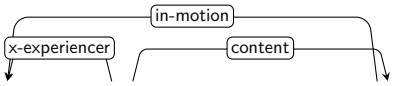
(207) Kim thinks$_{\text{MESSAGE}}$ Sandy is a liar



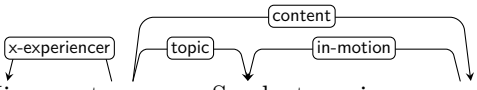
(208) Kim thinks$_{\text{MESSAGE}}$ Sandy a liar$_{\text{MESSAGE}}$



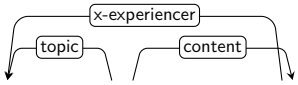
(209) Kim saw$_{\text{MESSAGE}}$ Sandy swim$_{\text{UNANCHORED-MOTION}}$



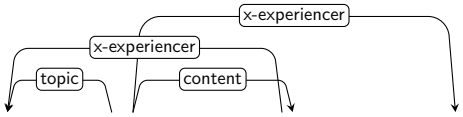
(210) Kim wants$_{\text{MESSAGE}}$ to swim$_{\text{UNANCHORED-MOTION}}$



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

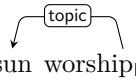


(212) Kim seems$_{\text{MESSAGE}}$ happy$_{\text{MESSAGE}}$

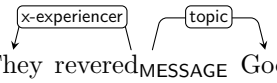


(213) Kim seems$_{\text{MESSAGE}}$ happy$_{\text{MESSAGE}}$ to Sandy

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

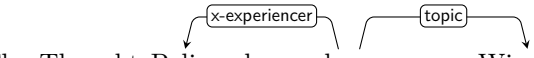


(215) sun worship$_{\text{MESSAGE}}$



(216) They revered$_{\text{MESSAGE}}$ God

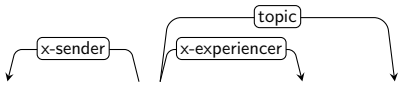
Predicates that denote the initiation of perception (e.g., by acquiring knowledge, or observation, or reasoning), use MESSAGE-INIT:



(217) The Thought Police observed$_{\text{MESSAGE-INIT}}$ Winston

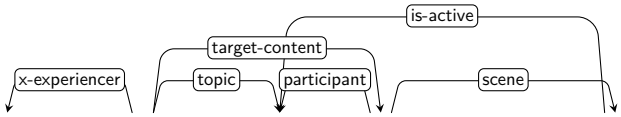
(218) Kim studies$_{\text{MESSAGE-INIT}}$ linguistics

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



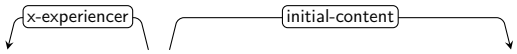
(220) Kim taught$_{\text{MESSAGE-INIT}}$ Sandy Spanish

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



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

Predicates that denote the deinitiation of perception use MESSAGE-DEINIT:



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

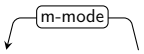
(224) Kim forgot$_{\text{MESSAGE-DEINIT}}$ about the cake

And finally, perception (here: remembering something) that was meant to happen but didn't is framed as MESSAGE-PREVENTION:

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

2.26 ❓ MODE

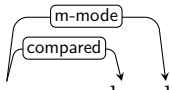
Used for adverbial modifiers that have no arguments other than the phrase they modify, and that, rouhgly speaking, indicate the modal strength of what is expressed and/or its relation to the discourse.

(226) 

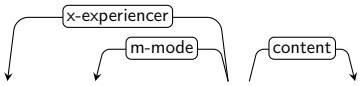
Even Kim$_{\text{IDENTIFICATION}}$ did n't know that

(227) 

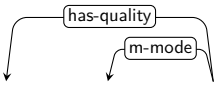
They only rinsed$_{\text{ADORNMENT-TARNISHMENT-DEINIT}}$ the dishes

(228) 

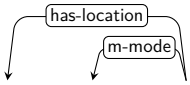
Passt$_{\text{COMPARISON}}$ das eh ?

(229) 

Kim probably knows$_{\text{MESSAGE}}$ that

(230) 

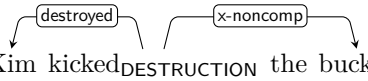
That 's really great$_{\text{QUALITY}}$

(231) 

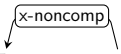
Kim is not here$_{\text{LOCATION}}$

2.27 NONCOMP

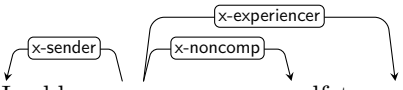
Used to mark syntactic arguments that are thought of as part of the predicate, as in verbal idioms, weather verbs, inherently reflexive verbs, existential *there*, or other fixed expressions. (Light verbs, on the other hand, are treated with SCENE, see Section 2.33.)



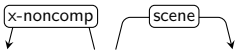
(232) Kim kicked$_{\text{DESTRUCTION}}$ the bucket



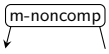
(233) It is raining$_{\text{STATE}}$



(234) I address$_{\text{MESSAGE-INIT}}$ myself to you

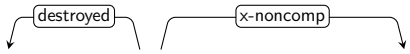


(235) There was$_{\text{SCENE}}$ a famine

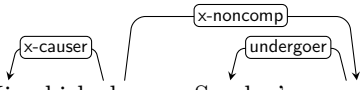


(236) fountain pen$_{\text{CLASS}}$

The superframe to assign to such dependents is either NONCOMP, unless an argument of the whole predicate syntactically attaches to it. In that case, label it the same as the top predicate:



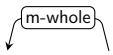
(237) Kim kicked$_{\text{DESTRUCTION}}$ the bucket$_{\text{NONCOMP}}$



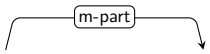
(238) Kim kicked$_{\text{EVENT}}$ Sandy 's ass$_{\text{EVENT}}$

2.28 🧩 PART-WHOLE

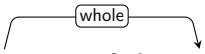
part is part of whole.

(239) 

Kim 's leg$_{\text{CLASS}}$

(240) 

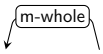
a man$_{\text{CLASS}}$ with a mustache

(241) 

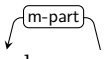
part$_{\text{PART-WHOLE}}$ of the year

(242) 

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

(243) 

orange seed$_{\text{CLASS}}$

(244) 

seed orange$_{\text{CLASS}}$

(245) 

car motor$_{\text{CLASS}}$

(246) 

motor car$_{\text{CLASS}}$

(247) 

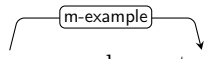
cube sugar$_{\text{CLASS}}$

(248) 

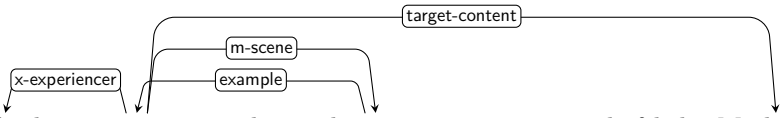
sugar cube$_{\text{CLASS}}$

2.29 💡 EXAMPLE

Special case of PART-WHOLE where example (aka part) is given as an example of exemplified (aka whole).



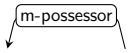
(249) birds$_{\text{CLASS}}$ such as storks



(250) Sie lernen$_{\text{MESSAGE-INIT}}$ beispielsweise$_{\text{EXAMPLE}}$ wissenschaftliche Methoden

2.30 🐕‍🦺 POSSESSION

possessor possesses or controls the possessed.

(251) 

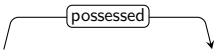
Kim 's house$_{\text{CLASS}}$

(252) 

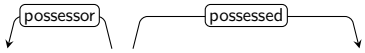
Kim owns$_{\text{POSSESSION}}$ a house

(253) 

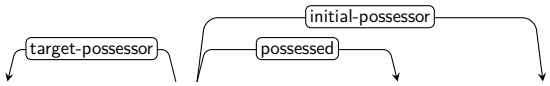
The house belongs$_{\text{POSSESSION}}$ to Kim

(254) 

the owner$_{\text{POSSESSION}}$ of the house

(255) 

Kim has$_{\text{POSSESSION}}$ Sandy 's phone

(256) 

Kim bought$_{\text{POSSESSION-CHANGE}}$ a house from Sandy

(257) 

Sandy sold$_{\text{POSSESSION-CHANGE}}$ Kim the house

(258) 

Kim kept$_{\text{POSSESSION-CONTINUATION}}$ the house

(259) 

Kim lost$_{\text{POSSESSION-DEINIT}}$ the house

(260) 

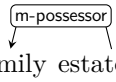
Caesar conquered$_{\text{POSSESSION-INIT}}$ Gaul

(261) 

Caesar 's conquest$_{\text{POSSESSION-INIT}}$ of Gaul

(262) 

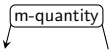
Kim owes$_{\text{POSSESSION-CHANGE-NECESSITY}}$ Sandy money

(263) 

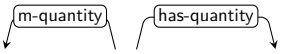
family estate$_{\text{CLASS}}$

2.31 QUANTITY

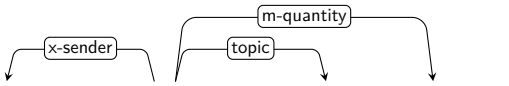
quantity is the quantity, degree, or extent of has-quantity.

(264) 

three burgers$_{\text{CLASS}}$

(265) 

three liters$_{\text{QUANTITY}}$ of coke

(266) 

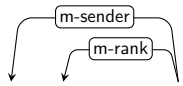
We discourage$_{\text{MESSAGE-INIT}}$ this emphatically

2.32 🥇 RANK

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

(267) 

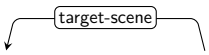
Chapter$_{\text{MESSAGE}}$ 1

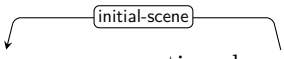
(268) 

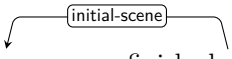
my first drawing$_{\text{MESSAGE}}$

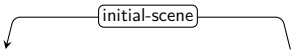
2.33 🎭 SCENE

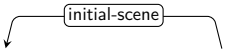
A "meta" frame for predicates where the main frame is invoked by scene, and the predicate adds some temporal, aspectual, modal, etc., meaning, or just acts as a light verb. If there is a participant, it is assigned a role by scene, which needs an extra dependency link. In the following examples, we show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

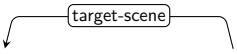
(269) 

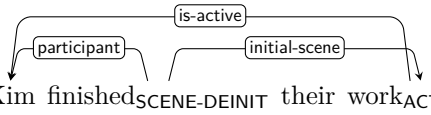
(270) 

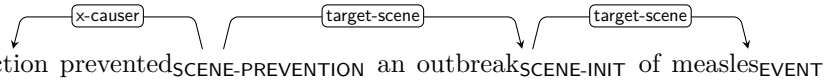
(271) 

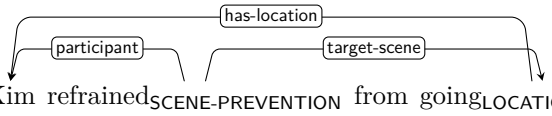
(272) 

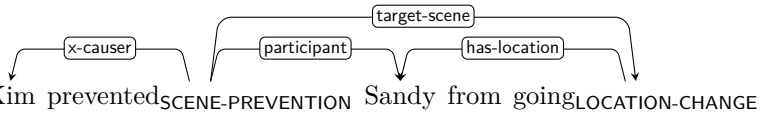
(273) 

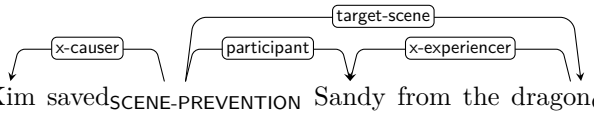
(274) 

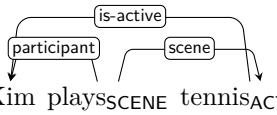
(275) 

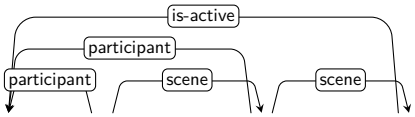
(276) 

(277) 

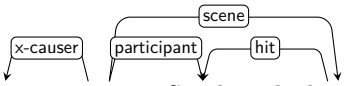
(278) 

(279) 

(280) 

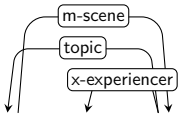


(281) Kim used$_{\text{SCENE}}$ to play$_{\text{SCENE}}$ tennis$_{\text{ACTIVITY}}$

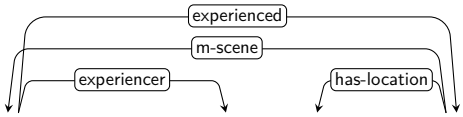


(282) Kim gave$_{\text{SCENE}}$ Sandy a kick$_{\text{HITTING}}$

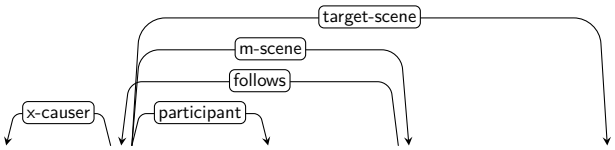
The modifier relation m-scene is used when a syntactic dependeny points from an argument to a predicate, as, e.g., with relative clauses or sentence adverbs.



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



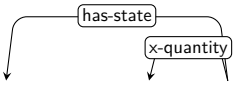
(284) Fortunately$_{\text{EXPERIENCE}}$ for Sandy , Kim is here$_{\text{LOCATION}}$

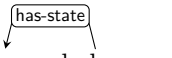


(285) I devoted$_{\text{SCENE-INIT}}$ myself instead$_{\text{SEQUENCE}}$ to geography

2.34 STATE

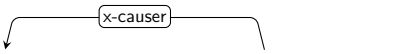
state indicates a state of has-state. Typically used with predicates that do not, in fact, have a state role, because the state is already incorporated into the meaning of the predicate.

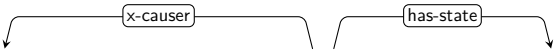
(286) 

(287) 

(288) 

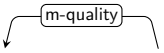
(289) 

(290) 

(291) 

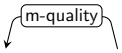
2.35 🍎 QUALITY

Special case of STATE – a quality is a bit more permanent than a state; the has-quality (aka has-state) is not expected to change back and forth between qualitys (aka states) regularly. Also used to describe qualitites of events, i.e., manners.

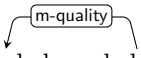


(292) a magnificent picture$_{\text{MESSAGE}}$

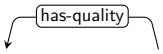
(293) I pondered$_{\text{MESSAGE-INIT}}$ deeply over the adventures of the jungle



(294) a skilled surgeon$_{\text{CLASS}}$



(295) such knowledge$_{\text{MESSAGE}}$ is valuable



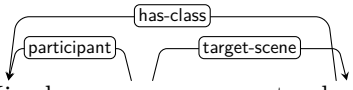
(296) The leaves reddened$_{\text{QUALITY-INIT}}$

2.36 🌳 CLASS

Special case of QUALITY – a class is even more permanent, in the sense that if the has-class (aka has-state) takes on a new class (aka state), it becomes a new kind of entity.

Most prototypically evoked by common nouns with no arguments.

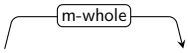
(297) swallowing an animal$_{\text{CLASS}}$



(298) Kim became$_{\text{SCENE-INIT}}$ a teacher$_{\text{CLASS}}$

Indefinite pronouns also evoke CLASS.

(299) She saw one$_{\text{CLASS}}$



(300) Nothing$_{\text{CLASS}}$ about him suggested a child

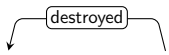
(301) Why would anyone$_{\text{CLASS}}$ be frightened by a hat?

(302) Something$_{\text{CLASS}}$ is broken

(303) Where I live everything$_{\text{CLASS}}$ is small

2.37 💀 DESTRUCTION

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

(304) 

Sam 's death$_{\text{DESTRUCTION}}$

(305) 

Sam 's destruction$_{\text{DESTRUCTION}}$ of the city

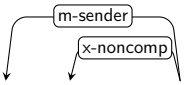
When something is broken but not completely destroyed, use STATE.

(306) 

Something was broken$_{\text{STATE}}$ in my enginge

2.38 📣 SENDING

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



(307) According to Kim , it is raining$_{\text{STATE}}$

(308) song bird$_{\text{CLASS}}$

(309) bird song$_{\text{MESSAGE}}$

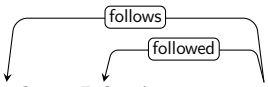
For more uses, see MESSAGE (Section 2.25).

2.39 ➡️ SEQUENCE

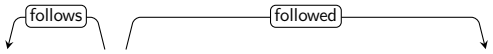
follows follows followed, e.g., temporally, logically, by rank, as heir, etc.

(310) 

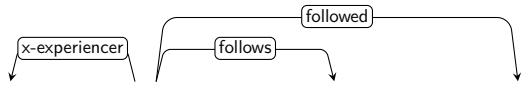
Form follows$_{\text{SEQUENCE}}$ function

(311) 

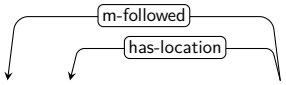
Cook is Jobs 's successor$_{\text{SEQUENCE}}$

(312) 

Das fußt$_{\text{SEQUENCE}}$ auf einer falschen Vorstellung

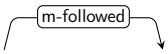
(313) 

Kim deduced$_{\text{SEQUENCE}}$ the truth from the clues

(314) 

Given that I 'm tired , I wo n't be there$_{\text{LOCATION}}$

Also used to indicate proportional amounts: for each scoop (followed), it costs 1 euro (follows).

(315) 

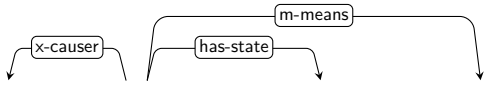
It costs 1 euro$_{\text{QUANTITY}}$ per scoop

2.40 🕹️ CAUSATION

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

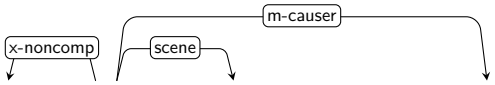
(316) Kim broke$_{\text{STATE-CHANGE}}$ the glass

(317) The knife cut$_{\text{STATE-CHANGE}}$ the bread

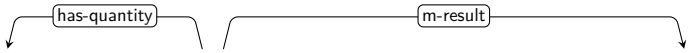


(318) Kim cut$_{\text{STATE-CHANGE}}$ the bread with a knife

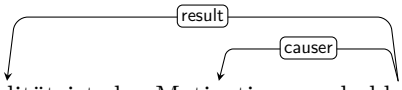
(319) The war caused$_{\text{CAUSATION}}$ a famine



(320) There was$_{\text{SCENE}}$ a famine because of the war

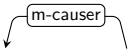


(321) Der Wasserdruck stieg$_{\text{QUANTITY-CHANGE}}$, wodurch der Brunnen überfloss



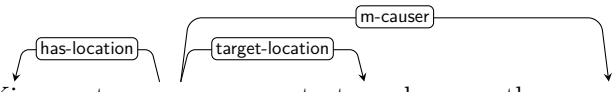
(322) Die Qualität ist der Motivation geschuldet$_{\text{CAUSATION}}$

(323) tear gas$_{\text{CLASS}}$



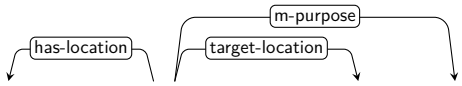
(324) sun burn$_{\text{STATE-CHANGE}}$

(325) honey bee$_{\text{CLASS}}$



(326) Kim went$_{\text{LOCATION-CHANGE}}$ to town because they wanted to buy food

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:

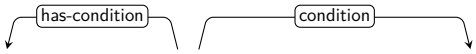


(327) Kim went$_{\text{LOCATION-CHANGE}}$ to town to buy food

2.41 📜 CONDITION

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

(328) I will join$_{\text{SOCIAL-RELATION-INIT}}$ the club if they ask me

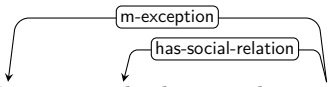


(329) The start date is contingent$_{\text{CONDITION}}$ on their approval

(330) Eine Aussöhung bedingt$_{\text{SEQUENCE}}$ eine Entschuldigung

2.42 🚫 EXCEPTION

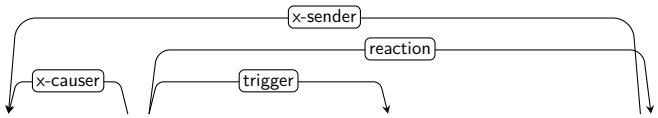
Special case of SEQUENCE where exception (aka followed) is an exception (a negative condition, if you will) to has-exception (aka follows).



(331) Except for Kim , everybody joined$_{\text{SOCIAL-RELATION-INIT}}$

2.43 💥 REACTION

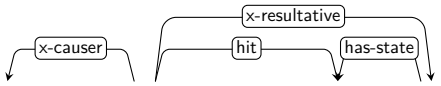
Special case of CAUSATION where trigger (aka causer) triggers a reaction (aka result) in the x-causer.



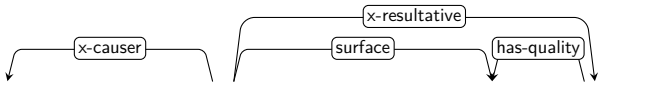
(332) Kim reacted$_{\text{SEQUENCE}}$ to the allegations with a denial$_{\text{MESSAGE-INIT}}$

2.44 🤧 RESULTATIVE

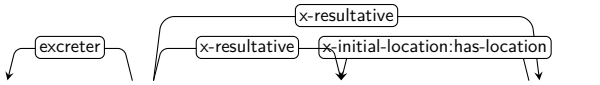
Special case of CAUSATION where resultative (aka result) assigns an argument of has-resultative (aka causer) a role. We treat the English resultative construction as a valency-changing operation that adds one or two arguments to the matrix predicate, so we use x-resultative rather than m-resultative.



(333) Kim hammered$_{\text{HITTING}}$ the metal flat$_{\text{STATE}}$



(334) Kim painted$_{\text{ADORNMENT-TARNISHMENT}}$ the room red$_{\text{QUALITY}}$



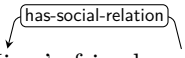
(335) Kim sneezed$_{\text{EXCRETION}}$ the napkin off the table$_{\text{CLASS}}$

In the last example, we use x-initial-location:has-location to specify not only the role of the napkin in the resulting event (has-location) but also that of the table (initial-location). Using x-has-location would be imprecise because we would then assume that the table has location.

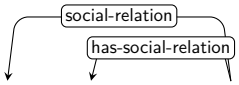
2.45 🤝 SOCIAL-RELATION

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.

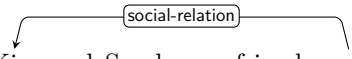
(336) Kim 's friend$_{\text{SOCIAL-RELATION}}$



(337) Kim is my cousin$_{\text{SOCIAL-RELATION}}$



(338) Kim and Sandy are friends$_{\text{SOCIAL-RELATION}}$

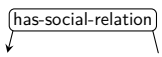


(339) Kim is friends$_{\text{SOCIAL-RELATION}}$ with Sandy

(340) Kim works$_{\text{SOCIAL-RELATION}}$ at Google

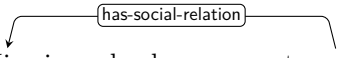
(341) Kim works$_{\text{SOCIAL-RELATION}}$ for Sandy

(342) Kim emcees$_{\text{SOCIAL-RELATION}}$

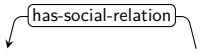


(343) Kim is hosting$_{\text{SOCIAL-RELATION}}$ the party

(344) Kim is under house arrest$_{\text{SOCIAL-RELATION}}$

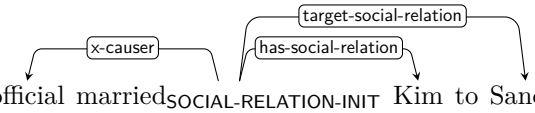


(345) Kim 's sentence$_{\text{SOCIAL-RELATION}}$ was suspended



(346) Kim married$_{\text{SOCIAL-RELATION-INIT}}$ Sandy

(347) The official married$_{\text{SOCIAL-RELATION-INIT}}$ Kim to Sandy



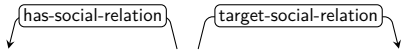
(348) The official married$_{\text{SOCIAL-RELATION-INIT}}$ Kim and Sandy

(349) Kim divorced$_{\text{SOCIAL-RELATION-DEINIT}}$ Sandy

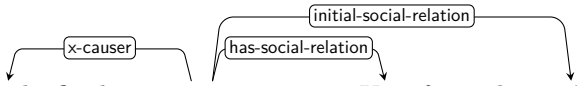
(350) Kim befriended$_{\text{SOCIAL-RELATION-INIT}}$ Sandy

(351) Kim took$_{\text{SOCIAL-RELATION-INIT}}$ the job

(352) Kim joined$_{\text{SOCIAL-RELATION-INIT}}$ Google



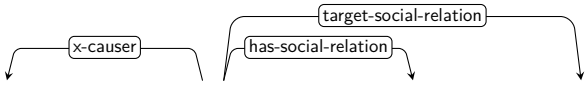
(353) Kim joined$_{\text{SOCIAL-RELATION-INIT}}$ a union



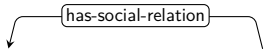
(354) Sandy fired$_{\text{SOCIAL-RELATION-DEINIT}}$ Kim from their job

(355) Kim left$_{\text{SOCIAL-RELATION-DEINIT}}$ Google

(356) Kim assumed$_{\text{SOCIAL-RELATION-INIT}}$ office



(357) The judge sentenced$_{\text{SOCIAL-RELATION-INIT}}$ Kim to three days in prison



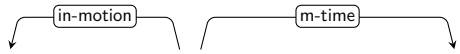
(358) Kim was pardoned$_{\text{SOCIAL-RELATION-DEINIT}}$

2.46 ⏰ TIME

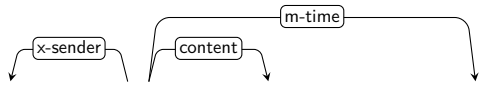
time indicates when, how often, or for how long has-time takes place. Also evoked by time expressions without arguments.

(359) Kim swims$_{\text{UNANCHORED-MOTION}}$ on Monday

(360) Kim sneezed$_{\text{EXCRETION}}$ twice

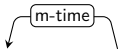


(361) Kim swam$_{\text{UNANCHORED-MOTION}}$ for an hour

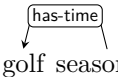


(362) Kim says$_{\text{MESSAGE-INIT}}$ hello whenever I meet them

(363) Once$_{\text{TIME}}$ when I was six years old



(364) summer job$_{\text{ACTIVITY}}$



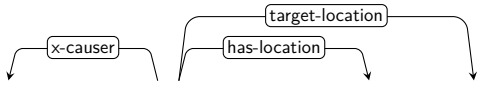
(365) golf season$_{\text{TIME}}$

3 Argument Structure and Frame Choice

3.1 Prefer Core over Non-core Arguments

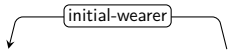
When an argument fills both a core and a non-core role, it is more important to annotate the former.

(366) Kim drove$_{\text{LOCATION-CHANGE}}$ to Boston



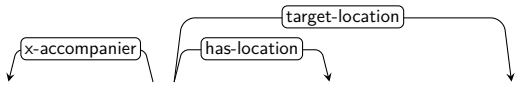
(367) Kim drove$_{\text{LOCATION-CHANGE}}$ the car to Boston

(368) They plundered$_{\text{POSSESSION-CHANGE}}$ Rome



(369) Kim undressed$_{\text{WRAPPING-WEARING-DEINIT}}$

Also, when in doubt, choose the frame so that you can use core roles rather than resorting to non-core roles. For example, in the following sentence, we should use LOCATION-INIT rather than UNANCHORED-MOTION so that we can use target-location and do not have to resort to x-target-location.

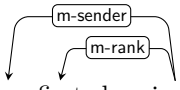


(370) Kim followed$_{\text{LOCATION-INIT}}$ Sandy into the room

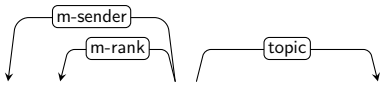
3.2 Arguments Determine Frames

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 (implicit) 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.

(371) a. my first drawing$_{\text{MESSAGE}}$

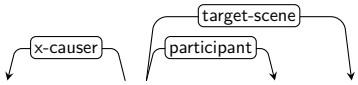


b. my first drawing$_{\text{MESSAGE}}$ of a snake

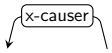


(372) a. Kim helped$_{\text{SCENE-INIT}}$ Sandy

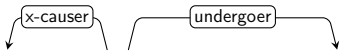
b. Kim helped$_{\text{SCENE-INIT}}$ Sandy clean the dishes



(373) a. Kim worked$_{\text{EVENT}}$



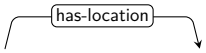
b. Kim worked$_{\text{EVENT}}$ on the drawing



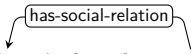
For nouns, you have to decide whether they are nonrelational nouns (CLASS) or relation/event nouns. A useful test is to try and add an argument, i.e., a dependent that is assigned a specific role by the noun. For example:

(374) a tree$_{\text{CLASS}}$

(375) venue$_{\text{LOCATION}}$ of the event

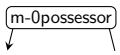


(376) Kim 's brother$_{\text{SOCIAL-RELATION}}$



Note that in *Kim 's tree*, Kim's role is that of possessor, but it is not assigned by the noun *tree* but by the possessive construction, so *tree* is still CLASS and we annotate *Kim* as a modifier.

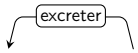
(377) Kim 's tree$_{\text{CLASS}}$



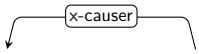
3.3 Shadow and Default Arguments

Arguments that determine a predicate's superframe include *shadow arguments* and *default arguments* (Pustejovsky, 1995; Di Fabio et al., 2019), i.e., arguments that do not appear in the syntactic argument structure because they are incorporated into the predicate or logically implied, like the bones in (378), mucus and air in (379), groceries in (380), or sun in (381).

(378) Kim deboned$_{\text{PART-WHOLE-DEINIT}}$ the fish



(379) Kim sneezed$_{\text{EXCRETION}}$

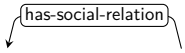


(380) Our local supermarket delivers$_{\text{LOCATION-INIT}}$

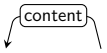
(381) at sunrise$_{\text{LOCATION-CHANGE » TIME}}$

3.4 Predicates that Refer to a Shadow Argument

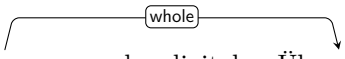
A special case of shadow argument are those that the predicate itself refers to. For example, the predicate *friend* evokes a SOCIAL-RELATION frame, but also refers to the filler of that frame's social-relation role. And the predicate *model* evokes a MESSAGE frame, but also refers to the filler of that frame's topic role, and so on.



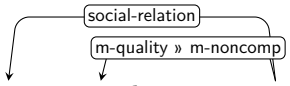
(382) Kim 's friend$_{\text{SOCIAL-RELATION}}$



(383) the drawing and its model$_{\text{MESSAGE}}$



(384) ein Großteil$_{\text{PART-WHOLE}}$ des digitalen Übergangs

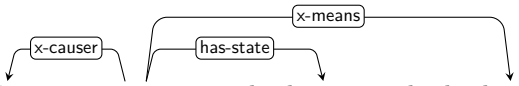


(385) Obama special assistant$_{\text{SOCIAL-RELATION}}$

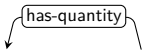
3.5 A Participant whose Syntactic Argument Position is Occupied Should Not Be Treated like an Implicit Argument

For example, consider (386), Here, *The knife* occupies the subject position and should be treated as the causer of the cutting. We could add the person handling the knife as the causer, and treat the knife as an instrument. However, to add the former to the sentence, we would not merely have to add another realized argument, but also change the syntactic argument structure so that the the subject position goes to that causer, as in (387). Thus, we treat this as a different framing with a different causer, rather than a more explicit version of the same framing. Likewise, (388) and (389) are two different framings, one with *price* as has-state, and one with *butter*.

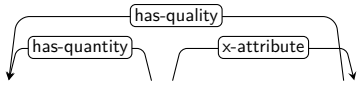
(386) The knife cut$_{\text{STATE-CHANGE}}$ the butter



(387) Kim cut$_{\text{STATE-CHANGE}}$ the butter with the knife



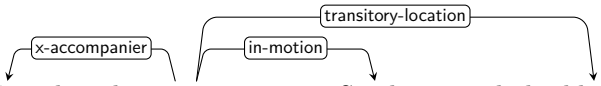
(388) The price is high$_{\text{QUANTITY}}$



(389) The butter is high$_{\text{QUANTITY}}$ in price$_{\text{QUALITY}}$

3.6 When in Doubt, Treat Different Syntactic Frames of the Same Predicate Consistently

For example, in (390), *chase* could be framed as caused motion with Kim as x-causer or as accompanied motion with Kim as x-accompanier. Because the latter works for other syntactic frames of *chase* as well, as in (391), prefer it.



(390) Kim chased$_{\text{UNACHORED-MOTION}}$ Sandy around the block

(391) Kim chased$_{\text{UNACHORED-MOTION}}$ after Sandy

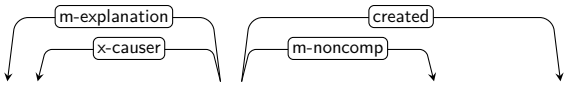
3.7 However, Different Senses of a Predicate Can Have Different Arguments and Therefore Different Superframes

One special case of this is when a predicate occurs as part of an opaque fixed expression, like *hand* in *close at hand*. In this case, *hand* is not annotated with CLASS, but with NONCOMP.

(392) I have seen them intimately , close$_{\text{LOCATION}}$ at hand$_{\text{NONCOMP}}$

3.8 Look Up Unfamiliar Words in a Dictionary

When you come across an unfamilar predicate, you might not be able to determine what arguments it has, and consequenlty what the most appropriate superframe is, from this one context alone. Use a dictionary such as Wiktionary in this case. In the following example, I found that *toss off* can mean "to assemble hastily"[1], thus went for the TRANSFORMATION-CREATION frame.

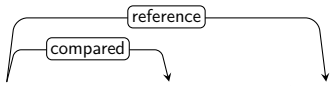


(393) So I tossed$_{\text{TRANSFORMATION-CREATION}}$ off this drawing

[1] `https://en.wiktionary.org/w/index.php?title=toss_off&oldid=77814489`, retrieved 2024-05-28

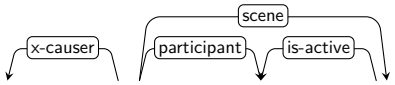
3.9 Symmetric Argument Pairs

Some predicates have a pair of arguments that are semantically symmetric. In such cases, assign the first role to the syntactically less oblique argument.

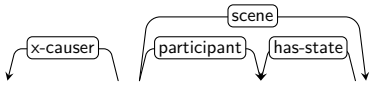
(394) 

3.10 When to Use SCENE

SCENE should definitely be used if a predicate can add aspectual meaning to predicates of more than one type. For example, English *make* can be used with states and activities, so *make* itself should be neither STATE nor ACTIVITY but SCENE.



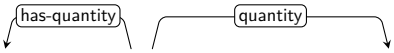
(395) Kim made$_{\text{SCENE-INIT}}$ Sandy dance$_{\text{ACTIVITY}}$



(396) Kim made$_{\text{SCENE-INIT}}$ Sandy tired$_{\text{STATE}}$

On the other hand, if a predicate is restricted to subordinate predicates of a certain type, it can have the same type.

(397) I lived$_{\text{EVENT}}$ my life



(398) They number$_{\text{QUANTITY}}$ in the thousands

4 Aspect, Mode, and Polarity

4.1 Aspect Annotation is wrt. the Superframe, Not the Predicate

(399) Kim lost$_{\text{POSSESSION-DEINIT}}$ the house

In (399), losing is framed as POSSESSION-DEINIT because a state of possession ends. POSSESSION-INIT would be incorrect because although a losing event begins, the state that the superframe POSSESSION describes ends. In general, aspectual suffixes modify superframes, they do not necessarily indicate the aspectual class of the predicate (here: *lost*).

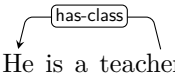
5 Construction-specific Guidelines

5.1 Participant Nouns

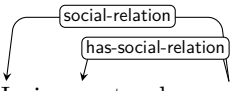
Some nouns denote a person who participates in a specific type of scene in a specific role. In such cases, use the most appropriate frame for that scene. For example, in a narrative where the narrator has just been criticized by a stranger, you could annotate as follows:

(400) With that, my critic$_{\text{MESSAGE}}$ sat down again

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



(401) He is a teacher$_{\text{CLASS}}$



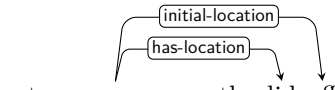
(402) He is our teacher$_{\text{SOCIAL-RELATION}}$

(403) She is the president$_{\text{SOCIAL-RELATION}}$ of our club

5.2 Particle Verbs

In UD, particle verbs are connected to their particle via the `compound:prt` relation.

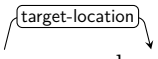
If the particle can be interpreted as an adposition with an elided complement (often the case with spatial meanings), label that relation as the elided complement would be labeled:



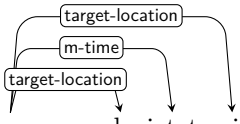
(404) get$_{\text{LOCATION-DEINIT}}$ the lid off (the jar)

(405) You may go$_{\text{LOCATION-INIT}}$ in (-to the room) now

Also treat separated and nonseparated adpositional adverbs this way:

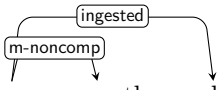


(406) Komm$_{\text{LOCATION-INIT}}$ herein !

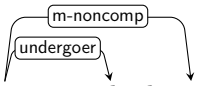


(407) Geh$_{\text{LOCATION-INIT}}$ da jetzt rein !

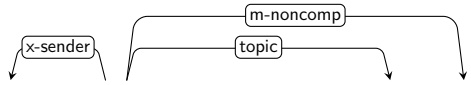
Otherwise, use m-noncomp:



(408) eat$_{\text{INGESTION}}$ up the cookies



(409) do$_{\text{EVENT}}$ somebody in



(410) Es stellte$_{\text{MESSAGE}}$ ein riesiges Gesicht dar

5.3 Pronouns with Arguments

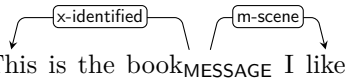
Definite pronouns are normally annotated with IDENTIFICATION, indefinite ones with CLASS, and they do not have any arguments. However, sometimes they do have arguments, in which case give them their antecendent's superframe:

(411) The picture was that$_{\text{MESSAGE}}$ of the boa

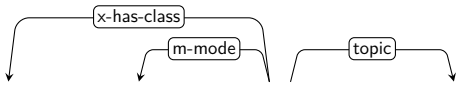
(412) I drew a picture of a dog , one$_{\text{MESSAGE}}$ of a cat , and another$_{\text{MESSAGE}}$ of a sheep

5.4 Nominal Copula Constructions

In nominal copula constructions, the copula subject is interpreted as a non-core argument – typically x-has-class if the predicate is indefinite, and x-identified if it is definite.



(413) This is the book$_{\text{MESSAGE}}$ I like

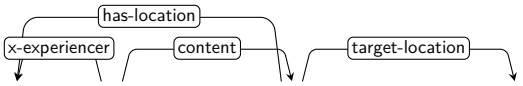


(414) My drawing was not a picture$_{\text{MESSAGE}}$ of a hat

5.5 Predicative Adpositions

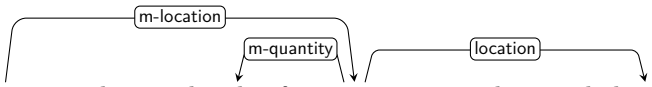
At the moment, Superframes follows UD's principle of treating adpositions like case markers, dependent on their objects. This greatly simplifies the annotation of adpositional arguments. On the other hand, it sometimes creates problems. An adposition, added to a noun, can cause a new superframe to be evoked, which it would be simpler to annotate if we could just label the adposition with it. Consider the following examples, where we nonstandardly treat the adpositions *in*, *out of*, and *from* as adpositions. The annotation is quite natural:

(415) a. Ich will$_{\text{MESSAGE}}$ in$_{\text{LOCATION-CHANGE}}$ die Berge$_{\text{CLASS}}$



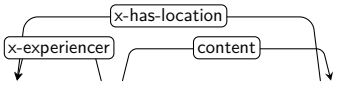
b. I am out$_{\text{LOCATION-NEG}}$ of the office today

c. sleep$_{\text{STATE}}$ a thousand miles from$_{\text{LOCATION}}$ any human habitation



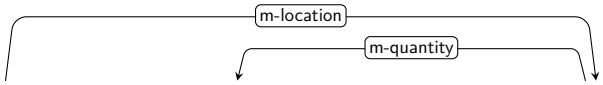
But since we don't treat adpositions as predicates, we are forced to choose the following, more opaque and less detailed annotation:

(416) a. Ich will$_{\text{MESSAGE}}$ in die Berge$_{\text{CLASS}}$



b. I am out of the office$_{\text{CLASS}}$ today

c. sleep$_{\text{STATE}}$ a thousand miles from any human habitation$_{\text{LOCATION}}$



In (416-a) and (416-b), we are forced to give *Berge* and *office* an x-has-location role, which is not part of the frame evoked by these words alone; we have to assume it is added by adding the adposition. We also do not have a way to indicate that the additional superframe introduced by the non-core subject is LOCATION-INIT and LOCATION-NEG, respectively. In (416-c), there is an even more severe problem: the quantity modifier *a thousand miles* semantically modifies the LOCATION frame evoked by the adposition *from*, but we have to attach it to *habitation*, which evokes a *different* LOCATION frame which does not have a quantity modifier. Confusion ensues, but for now we have to live with these issues.

6 TODO

codify the general principle somewhere: if superframe and ARG1 have the same name (quasi-unary relations), we can just use m-rel. Otherwise, use m-scene.

Treatment of valency-changing operations:

1. (obligatory) resultative
2. V one's way P N
3. comparative
4. ...

Clearer criteria for distinguishing between LVCs and idioms (or somehow eliminate it).

Make POSSESSION a special case of SOCIAL-RELATION. Rename SOCIAL-RELATION to something like OBLIGATION?

References

Baker, C. F., Fillmore, C. J., and Lowe, J. B. (1998). The Berkeley FrameNet project. In *COLING 1998 Volume 1: The 17th International Conference on Computational Linguistics*.

Di Fabio, A., Conia, S., and Navigli, R. (2019). VerbAtlas: a novel large-scale verbal semantic resource and its application to semantic role labeling. In Inui, K., Jiang, J., Ng, V., and Wan, X., editors, *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and the 9th International Joint Conference on Natural Language Processing (EMNLP-IJCNLP)*, pages 627–637, Hong Kong, China. Association for Computational Linguistics.

Feng, L., Williamson, G., He, H., and Choi, J. D. (2022). Widely Interpretable Semantic Representation: Frameless Meaning Representation for Broader Applicability.

Kipper Schuler, K. (2005). *VerbNet: A broad-coverage, comprehensive verb lexicon*. PhD thesis, University of Pennsylvania.

Palmer, M., Gildea, D., and Kingsbury, P. (2005). The Proposition Bank: An annotated corpus of semantic roles. *Computational Linguistics*, 31(1):71–106.

Pustejovsky, J. (1995). *The Generative Lexicon*. MIT Press, Cambridge, MA.