Superframes Manual

Kilian Evang

Last updated: May 28, 2024

Contents

1 Introduction **2**
1.1 Core Arguments . . . 4
1.2 Aspect and Mode . . . 5
1.3 Non-core Arguments . . . 7
1.4 Modifiers . . . 7
1.5 Nonverbal Predicates . . . 8
1.6 Control Relations . . . 9
1.7 Figurativity, Idiomaticity, and Uncertainty . . . 10

2 Superframes Reference **10**
2.1 SCENE . . . 10
2.2 IDENTIFICATION . . . 12
2.3 RANK . . . 12
2.4 CLASS . . . 13
2.5 EXISTENCE . . . 13
2.6 TRANSFORMATION-CREATION . . . 13
2.7 REPRODUCTION . . . 14
2.8 QUALITY . . . 14
2.9 STATE . . . 14
2.10 DESTRUCTION . . . 15
2.11 EXPERIENCE . . . 15
2.12 ACTIVITY . . . 16
2.13 MODE . . . 16
2.14 ACCOMPANIMENT . . . 17
2.15 DEPICTIVE . . . 18
2.16 ATTRIBUTE . . . 18
2.17 ASSET . . . 19
2.18 COMPARISON . . . 19
2.19 CONCESSION . . . 20
2.20 EXPLANATION . . . 21
2.21 PURPOSE . . . 21
2.22 LOCATION . . . 21
2.23 WRAPPING-WEARING . . . 21
2.24 ADORNMENT-TARNISHMENT . . . 22
2.25 HITTING . . . 22
2.26 INGESTION . . . 23

2.27 EXCRETION . . . 23
2.28 UNANCHORED-MOTION . . . 23
2.29 MEANS . . . 24
2.30 MESSAGE . . . 24
2.30.1 Expression . . . 24
2.30.2 Gesture . . . 25
2.30.3 Performance . . . 25
2.30.4 Depiction . . . 25
2.30.5 Recording . . . 25
2.30.6 Perception . . . 26
2.30.7 Beginning and Ending Perception . . . 27
2.31 PART-WHOLE . . . 27
2.32 POSSESSION . . . 28
2.33 QUANTITY . . . 29
2.34 SENDING . . . 29
2.35 SEQUENCE . . . 29
2.36 CAUSATION . . . 30
2.37 REACTION . . . 30
2.38 RESULTATIVE . . . 31
2.39 CONDITION . . . 31
2.40 EXCEPTION . . . 31
2.41 SOCIAL-RELATION . . . 32
2.42 TIME . . . 33
2.43 NONCOMP . . . 34

3 Memos **34**
3.1 Prefer Core over Non-core Arguments . . . 34
3.2 Arguments Determine Frames . . . 35
3.3 A Participant whose Syntactic Argument Position is Occupied Should Not Be Treated like an Implicit Argument . . . 36
3.4 When in Doubt, Treat Different Syntactic Frames of the Same Predicate Consistently . . . 36
3.5 Symmetric Argument Pairs . . . 36
3.6 SCENE or STATE/QUALITY/...? . . . 37
3.7 Participant Nouns . . . 37
3.8 Particle Verbs . . . 38

4 Pronouns with Arguments **38**

5 TODO **39**

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.,

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

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

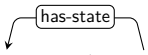
2005), VerbAtlas (Di Fabio et al., 2019), or WiSER (Feng et al., 2022) in a number of ways. It aims to avoid a number of practical problems in annotating with those schemes. Here's how Superframes annotation works, in a nutshell:

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.

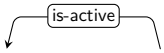
Table 1 shows the superframes and their roles.

1.1 Core Arguments

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



(1) Kim is sleeping$_{\text{STATE}}$



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

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

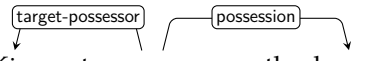
(3) Kim owns$_{\text{POSSESSION}}$ a house

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

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

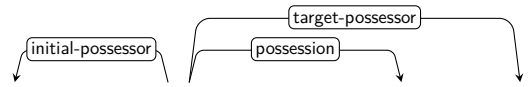
1.2 Aspect and Mode

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



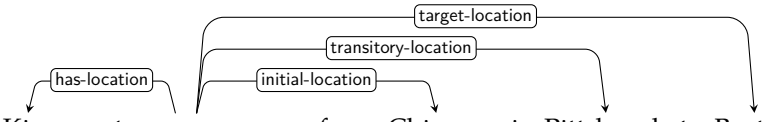
(6) Kim got$_{\text{POSSESSION-INIT}}$ the house

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

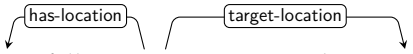


(8) Kim sold$_{\text{POSSESSION-CHANGE}}$ the house to Sandy

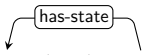
(9) Kim kept$_{\text{POSSESSION-CONTINUATION}}$ the house



(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$_{\text{STATE-CHANGE}}$

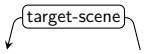
(13) Kim befriended$_{\text{SOCIAL-RELATION-INIT}}$ Sandy

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

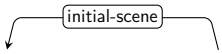
(15) Kim divorced$_{\text{SOCIAL-RELATION-DEINIT}}$ Sandy

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

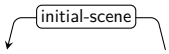
(16) The concert began$_{\text{SCENE-INIT}}$



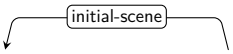
(17) The concert continued$_{\text{SCENE-CONTINUATION}}$



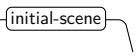
(18) The concert finished$_{\text{SCENE-DEINIT}}$



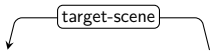
(19) The shouting intensified$_{\text{SCENE-CONTINUATION}}$



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



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



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

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

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

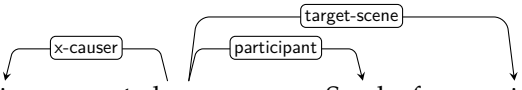
(24) Change is possible$_{\text{SCENE-POSSIBILITY}}$

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

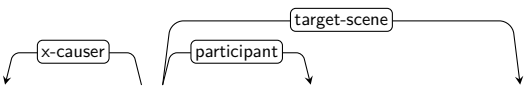
(26) Swift action prevented$_{\text{SCENE-INIT-NEG}}$ an outbreak

(27) Kim refrained$_{\text{SCENE-INIT-NEG}}$ from going

(28) Kim prevented$_{\text{SCENE-INIT-NEG}}$ Sandy from going



(29) Kim saved$_{\text{SCENE-INIT-NEG}}$ Sandy from the dragon

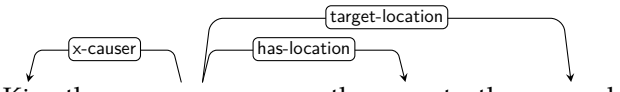


(30) Kim never$_{\text{TIME-NEG}}$ smokes

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

1.3 Non-core Arguments

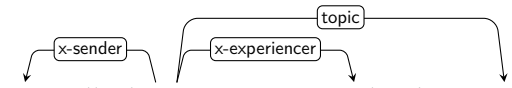
Core arguments always get role labels from the superframe the predicate evokes. But many verbs have more arguments. One common case is a subject that is presented as the causer of the scene. For example, compare (31) with (11). The core scene is the same (same superframe, same arguments). We now assume 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.



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

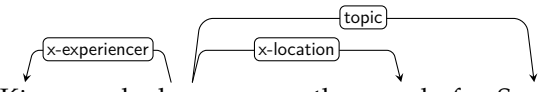
(32) Kim broke$_{\text{STATE-CHANGE}}$ the vase

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

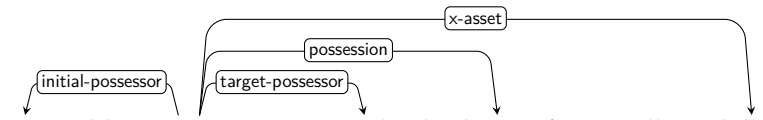


(33) Kim talked$_{\text{MESSAGE-INIT}}$ to Sandy about Bali

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



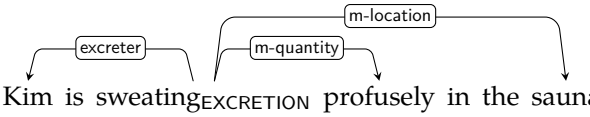
(34) Kim searched$_{\text{MESSAGE-INIT}}$ the woods for Sandy



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

1.4 Modifiers

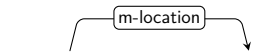
Like non-core arguments, modifiers are assumed to evoke an additional frame, and labeled with the role they fill in that frame, but with a prefix marking them as modifiers: m-.



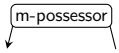
(36) Kim is sweating$_{\text{EXCRETION}}$ profusely in the sauna

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:



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

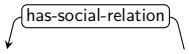


(38) Kim 's tree$_{\text{CLASS}}$

Event nouns evoke event frames and have arguments:

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

Relational nouns evoke relational frames and have arguments:



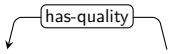
(40) Kim 's friend$_{\text{SOCIAL-RELATION}}$

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

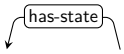
(41) Kim$_{\text{IDENTIFICATION}}$

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

Predicate adjectives most typically denote states or qualities.

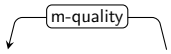


(43) I am despicable$_{\text{QUALITY}}$



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

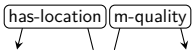
With attributive adjectives, the dependency relation is reversed, and the role label is changed accordingly.



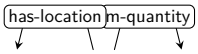
(45) despicable me$_{\text{IDENTIFICATION}}$

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

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



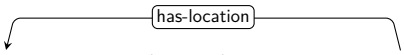
(47) Kim ran$_{\text{Motion}}$ fast



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

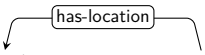
1.6 Control Relations

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

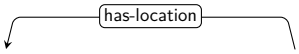


(49) Kim promised Sandy to come$_{\text{LOCATION-CHANGE}}$ (subject control)

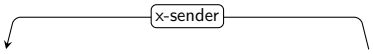
(50) Kim used a hammer to smash$_{\text{STATE-CHANGE}}$ the vase (subject control)



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

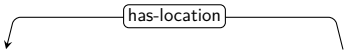


(52) Kim seemed to fly$_{\text{UNANCHORED-MOTION}}$ (raising)



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

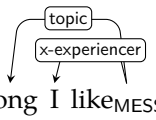
(54) You're talking me silly$_{\text{STATE}}$ (resultative)



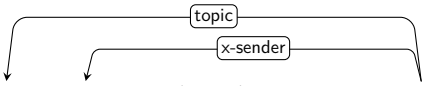
(55) Kim has come to stay$_{\text{LOCATION-CONTINUATION}}$ (subjectless adverbial clause)

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

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



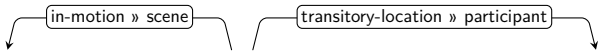
(58) the song I like$_{\text{MESSAGE}}$ (relative clause)



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

1.7 Figurativity, Idiomaticity, and Uncertainty

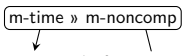
Difficulties in choosing frames often arise because a predicate literally evokes one frame, but is used in a way that perhaps fits another frame equally well or better. In such cases, annotate both the more literal frame and roles, followed by the >> operator, followed by the more figurative frame and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



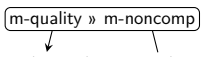
(60) A hush passed$_{\text{UNANCHORED-MOTION » SCENE}}$ over the group

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

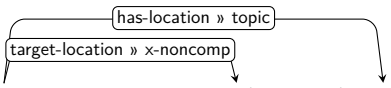
This mechanism can be used to indicate that a modification may not be fully compositional:



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



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



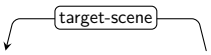
(64) to lay$_{\text{LOCATION-CHANGE » MESSAGE-DEINIT}}$ aside my drawings

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

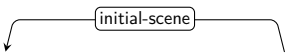
2 Superframes Reference

2.1 SCENE

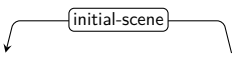
A "meta" frame for predicates where the main frame is invoked by scene, and the predicate adds some temporal, aspectual, modal, etc., meaning, or just acts as a light verb. If there is a participant, it is assigned a role by scene, which needs an extra dependency link. In the following examples, we show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



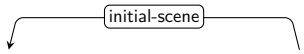
(65) The concert$_{\text{MESSAGE-INIT}}$ began$_{\text{SCENE-INIT}}$



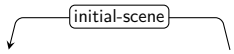
(66) The concert$_{\text{MESSAGE-INIT}}$ continued$_{\text{SCENE-CONTINUATION}}$



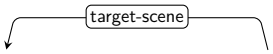
(67) The concert$_{\text{MESSAGE-INIT}}$ finished$_{\text{SCENE-DEINIT}}$



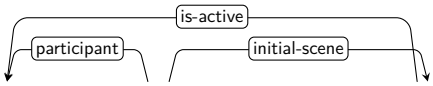
(68) The shouting$_{\text{MESSAGE-INIT}}$ intensified$_{\text{SCENE-CONTINUATION}}$



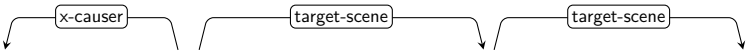
(69) The shouting$_{\text{MESSAGE-INIT}}$ faded$_{\text{SCENE-DEINIT}}$



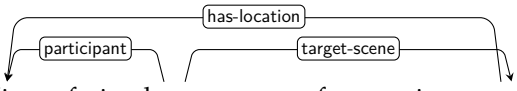
(70) A coup$_{\text{EXPERIENCE}}$ was attempted$_{\text{SCENE-INIT}}$



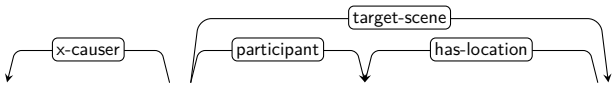
(71) Kim finished$_{\text{SCENE-DEINIT}}$ their work$_{\text{ACTIVITY}}$



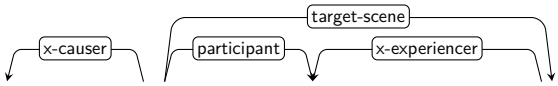
(72) Swift action prevented$_{\text{SCENE-INIT-NEG}}$ an outbreak$_{\text{SCENE-INIT}}$ of measles$_{\text{EXPERIENCE}}$



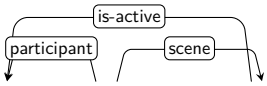
(73) Kim refrained$_{\text{SCENE-INIT-NEG}}$ from going$_{\text{LOCATION-CHANGE}}$



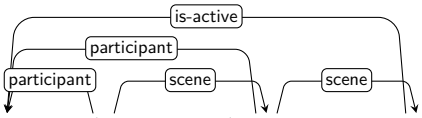
(74) Kim prevented$_{\text{SCENE-INIT-NEG}}$ Sandy from going$_{\text{LOCATION-CHANGE}}$



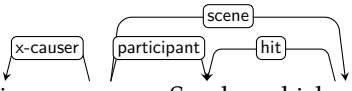
(75) Kim saved$_{\text{SCENE-INIT-NEG}}$ Sandy from the dragon$_{\text{CLASS}}$



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

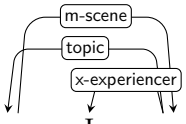


(77) Kim used$_{\text{SCENE}}$ to play$_{\text{SCENE}}$ tennis$_{\text{ACTIVITY}}$

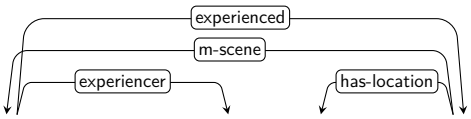


(78) Kim gave$_{\text{SCENE}}$ Sandy a kick$_{\text{HITTING}}$

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 evaluatives.



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



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

2.2 IDENTIFICATION

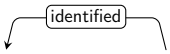
identifier identifies identified.

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

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

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

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

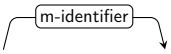


(84) This is Kim$_{\text{IDENTIFICATION}}$

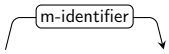
Predicates that evoke other frames can still use x-identified to mark the copula subject as identified:

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

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



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



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

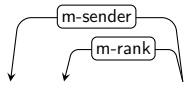
Likewise, *in* has an identifying sense:

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

2.3 RANK

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

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



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

2.4 CLASS

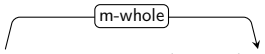
class indicates the class of entity that has-class represents.

Most prototypically evoked by common nouns with no arguments.

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

Indefinite pronouns also evoke CLASS.

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



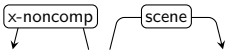
(93) Nothing$_{\text{IDENTIFICATION-NEG}}$ about him suggested a child

2.5 EXISTENCE

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

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

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

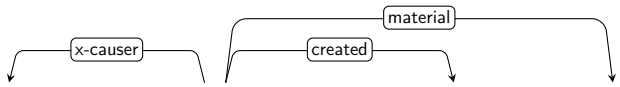


(96) There is$_{\text{SCENE}}$ a hubbub

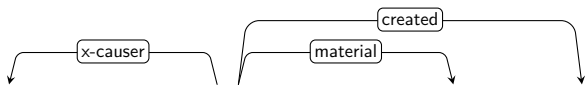
2.6 TRANSFORMATION-CREATION

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

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



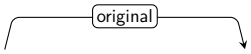
(98) Kim built$_{\text{TRANSFORMATION-CREATION}}$ a castle out of sand



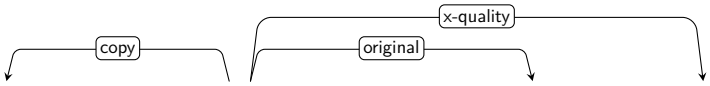
(99) Kim turned$_{\text{TRANSFORMATION-CREATION}}$ straw into gold

2.7 REPRODUCTION

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



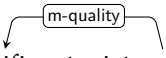
(100) Here is a copy$_{\text{REPRODUCTION}}$ of the drawing



(101) This is a translation$_{\text{REPRODUCTION}}$ of the pamphlet into English

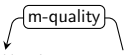
2.8 QUALITY

quality indicates a (permanent) quality/property/manner of has-quality.

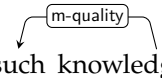


(102) a magnificent picture$_{\text{MESSAGE}}$

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



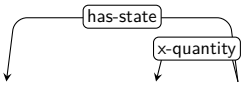
(104) a skilled surgeon$_{\text{CLASS}}$



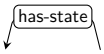
(105) such knowledge$_{\text{MESSAGE}}$ is valuable

2.9 STATE

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

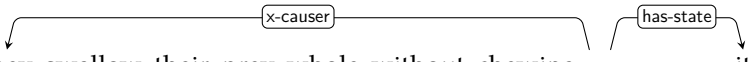


(106) when I was six years old$_{\text{STATE}}$

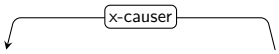


(107) Boa constrictors swallow their prey whole$_{\text{STATE}}$

(108) they sleep$_{\text{STATE}}$



(109) they swallow their prey whole without chewing$_{\text{STATE-CHANGE}}$ it

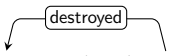


(110) the six months that they need for digestion$_{\text{STATE-CHANGE}}$

(111) And that hasn't much improved$_{\text{STATE-CHANGE}}$ my opinion of them

2.10 DESTRUCTION

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



(112) Sam 's death$_{\text{DESTRUCTION}}$

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

2.11 EXPERIENCE

experience indicates an experience that experiencer undergoes.

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

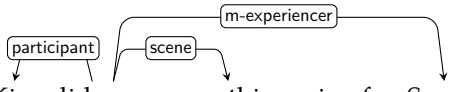
(114) Kim 's adventures$_{\text{EXPERIENCE}}$ in the jungle

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

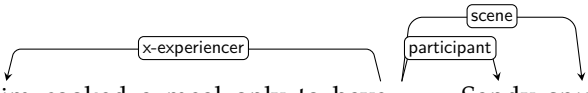
(116) I saw$_{\text{MESSAGE}}$ a magnificent picture

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

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

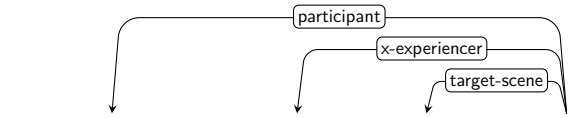


(119) Kim did$_{\text{SCENE}}$ something nice for Sandy

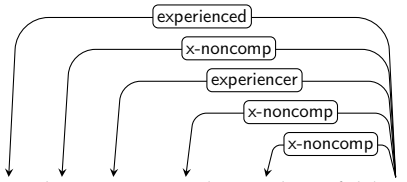


(120) Kim cooked a meal only to have$_{\text{SCENE}}$ Sandy spurn it

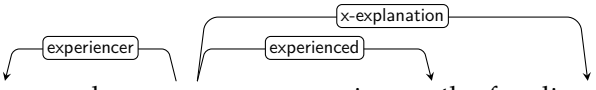
(121) Kim managed$_{\text{EXPERIENCE}}$ with dealing the cards



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



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



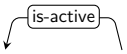
(124) they need$_{\text{EXPERIENCE-NECESSITY}}$ six months for digestion

For more uses, see the examples for MESSAGE in Section 2.30.

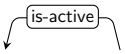
2.12 ACTIVITY

is-active actively participates in activity.

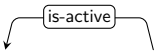
Used for dynamic scenes where is-active has agency and that cannot well be framed as a state change.



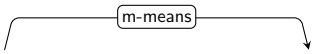
(125) Kim worked$_{\text{ACTIVITY}}$



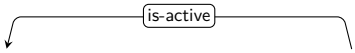
(126) Kim partied$_{\text{ACTIVITY}}$



(127) Kim had sex$_{\text{ACTIVITY}}$



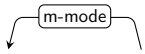
(128) after some work$_{\text{ACTIVITY}}$ with a colored pencil



(129) I devoted myself to geography$_{\text{ACTIVITY}}$

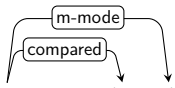
2.13 MODE

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.

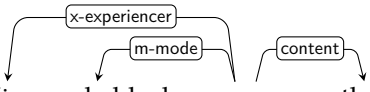


(130) Even Kim$_{\text{IDENTIFICATION}}$ did n't know that

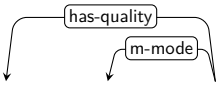
(131) They only rinsed$_{\text{ADORNMENT-TARNISHMENT-DEINIT}}$ the dishes



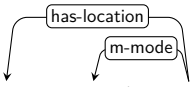
(132) Passt$_{\text{COMPARISON}}$ das eh ?



(133) Kim probably knows$_{\text{MESSAGE}}$ that



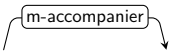
(134) That 's really great$_{\text{QUALITY}}$



(135) Kim is not here$_{\text{LOCATION}}$

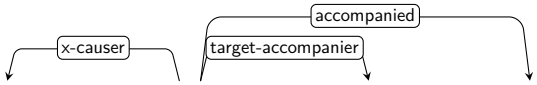
2.14 ACCOMPANIMENT

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



(136) veggies$_{\text{CLASS}}$ with rice

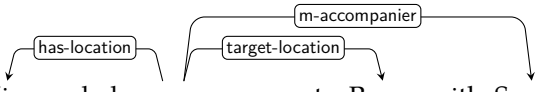
(137) The veggies come$_{\text{ACCOMPANIMENT}}$ with rice



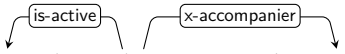
(138) Kim added$_{\text{ACCOMPANIMENT-INIT}}$ rice to the veggies

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

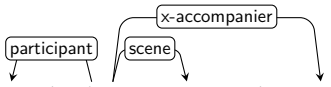
Often, the accompanier denotes not the accompanying scene but an entity participating in it, and must be metonymically understood as the scene.



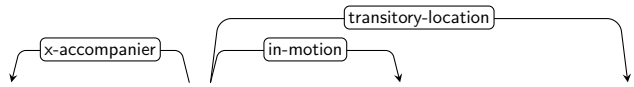
(140) Kim cycled$_{\text{LOCATION-CHANGE}}$ to Rome with Sandy



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

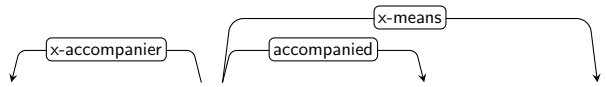


(142) Kim had$_{\text{SCENE}}$ sex with Sandy



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

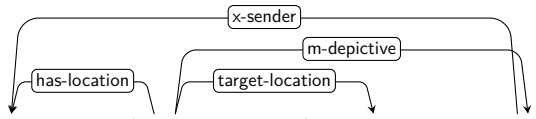
(144) Kim accompanied$_{\text{ACCOMPANIMENT}}$ Sandy



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

2.15 DEPICTIVE

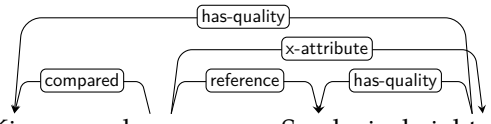
Special case of ACCOMPANIMENT where depictive (aka accompanier) assigns a participant of has-depictive (aka accompanied) a role (cf. Sec. 1.6).



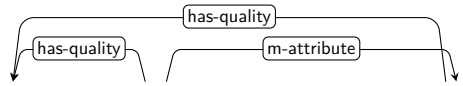
(146) Kim entered$_{\text{LOCATION-INIT}}$ the room singing$_{\text{MESSAGE-INIT}}$

2.16 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.

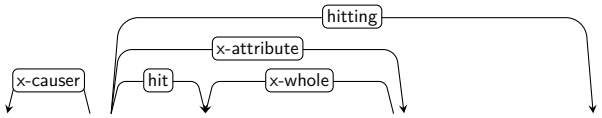


(147) Kim exceeds$_{\text{COMPARISON}}$ Sandy in height$_{\text{QUALITY}}$



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

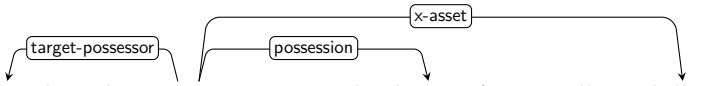
(149) Kim ist auf den Kopf$_{\text{CLASS}}$ gefallen$_{\text{HITTING}}$



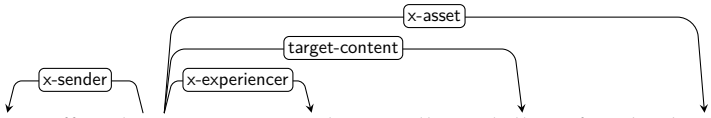
(150) Kim hit$_{\text{HITTING}}$ Sandy on the head$_{\text{CLASS}}$ with a stick

2.17 ASSET

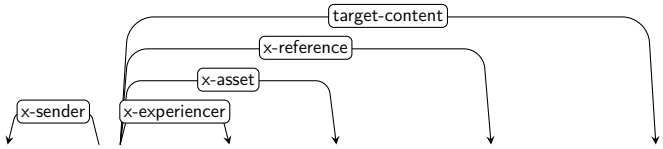
In a scene has-asset, asset is given or offered in an exchange or wager.



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



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

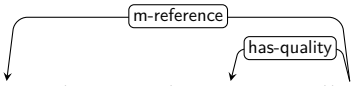


(153) I bet$_{\text{MESSAGE-INIT}}$ you 30 bucks to an apple he will win

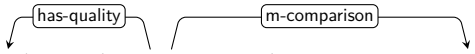
2.18 COMPARISON

compared is characterized with respect to reference.

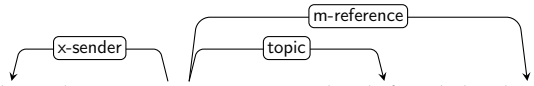
Examples of comparing scenes:



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



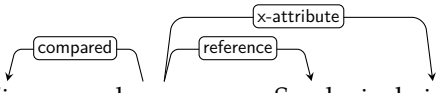
(155) Sandy is short$_{\text{QUALITY}}$ whereas Kim is tall



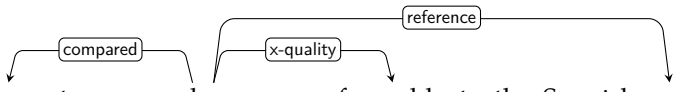
(156) They demonize$_{\text{MESSAGE-INIT}}$ the left while doing nothing about the right

Examples of comparing non-scene entities:

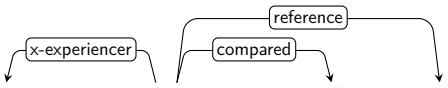
(157) Kim outranks$_{\text{COMPARISON}}$ Sandy



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



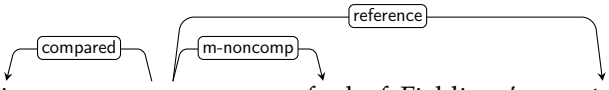
(159) The Polish restaurant compared$_{\text{COMPARISON}}$ favorably to the Spanish one



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

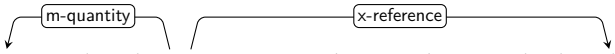
The reference need not be an entity similar to the compared, it can also be an abstract constraint:

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



(162) 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.

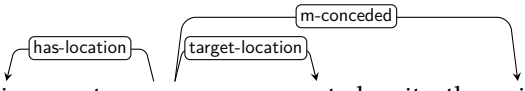


(163) more isolated$_{\text{SOCIAL-RELATION}}$ than a shipwrecked sailor

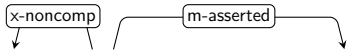
(164) Kim is taller$_{\text{QUALITY}}$ than Sandy

2.19 CONCESSION

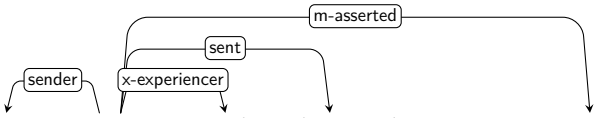
Special case of COMPARISON, where compared is what's asserted and reference is what's conceded.



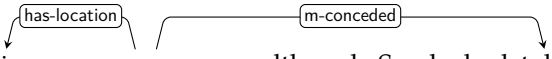
(165) Kim went$_{\text{LOCATION-CHANGE}}$ out despite the rain



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



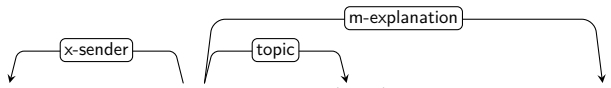
(167) Kim sent$_{\text{SENDING}}$ Sandy a letter , but it never arrived



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

2.20 EXPLANATION

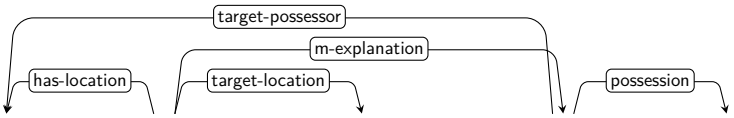
explanation explains explained, but is not a cause.



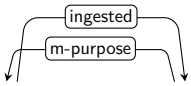
(169) I am stressing$_{\text{MESSAGE-INIT}}$ this because it is important

2.21 PURPOSE

Special case of EXPLANATION where explanation is a purpose.



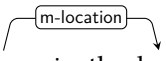
(170) Kim went$_{\text{LOCATION-CHANGE}}$ to town to buy$_{\text{POSSESSION-CHANGE}}$ food



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

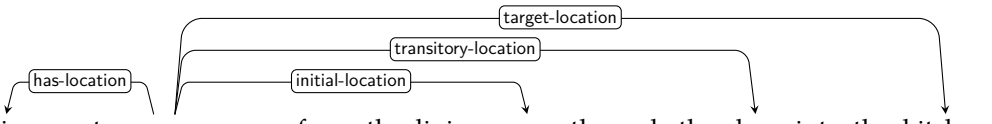
2.22 LOCATION

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

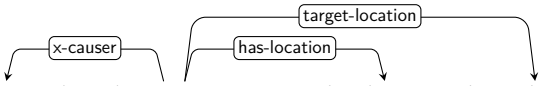


(172) the hat$_{\text{CLASS}}$ in the box

(173) Kim lives$_{\text{LOCATION}}$ in Boston



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



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

2.23 WRAPPING-WEARING

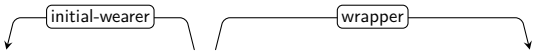
Special case of LOCATION where wearer (aka location) wears or is wrapped in wrapper (aka has-location).

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

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

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

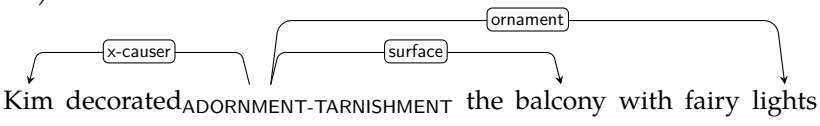
(179) Kim put$_{\text{WRAPPING-WEARING-INIT}}$ on a sweater



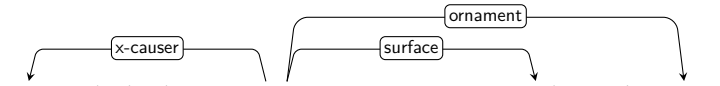
(180) Kim took$_{\text{WRAPPING-WEARING-DEINIT}}$ off their glasses

2.24 ADORNMENT-TARNISHMENT

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



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



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

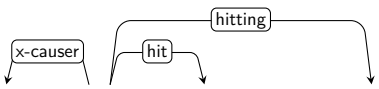
Kim washed$_{\text{ADORNMENT-TARNISHMENT-DEINIT}}$ the dirt off Sandy

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

2.25 HITTING

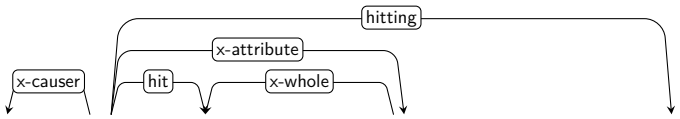
Special case of LOCATION-INIT where hitting (aka has-location) comes into contact with hit (aka target-location).

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



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

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

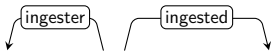


(184) Kim $\text{hit}_{\text{HITTING}}$ Sandy on the $\text{head}_{\text{CLASS}}$ with a pool noodle

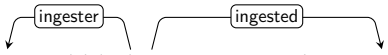
(185) Kim $\text{kicked}_{\text{HITTING}}$ Sandy

2.26 INGESTION

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



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



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

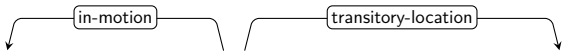
2.27 EXCRETION

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

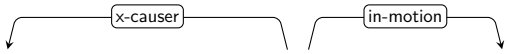
(188) Kim $\text{threw}_{\text{EXCRETION}}$ up the pretzel

2.28 UNANCHORED-MOTION

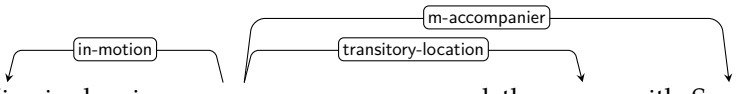
Special case of LOCATION-CHANGE where no initial or target location is indicated.



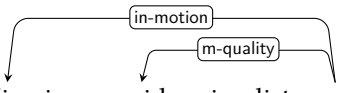
(189) Kim is $\text{running}_{\text{UNANCHORED-MOTION}}$ along the river



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



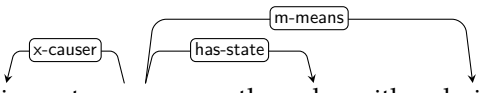
(191) Kim is $\text{dancing}_{\text{UNANCHORED-MOTION}}$ around the room with Sandy



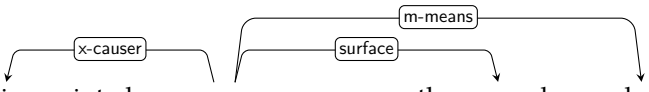
(192) Kim is an avid $\text{unicyclist}_{\text{UNANCHORED-MOTION}}$

2.29 MEANS

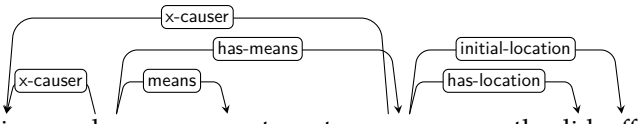
has-means is a scene caused by something via an intermediary means.



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



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



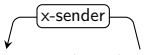
(195) Kim used$_{\text{MEANS}}$ a pen to get$_{\text{LOCATION-DEINIT}}$ the lid off

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

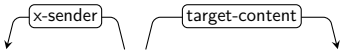
2.30 MESSAGE

A message about topic with content content is received or exists in 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.

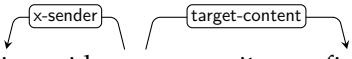
2.30.1 Expression



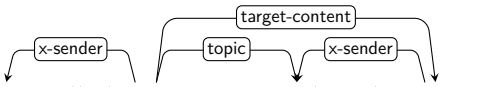
(197) Kim yelped$_{\text{MESSAGE-INIT}}$



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



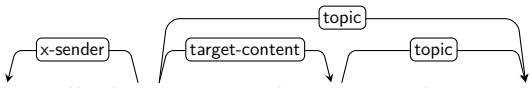
(199) Kim said$_{\text{MESSAGE-INIT}}$ it was fine



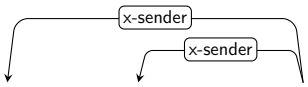
(200) Kim called$_{\text{MESSAGE-INIT}}$ Sandy a liar$_{\text{MESSAGE}}$

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

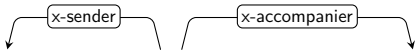
(202) Kim talked$_{\text{MESSAGE-INIT}}$ about Sandy



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

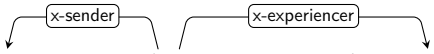


(204) Kim and Sandy conversed$_{\text{MESSAGE-INIT}}$

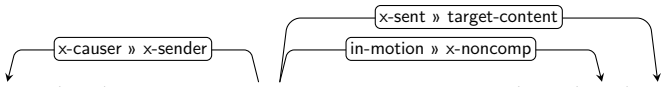


(205) Kim conversed$_{\text{MESSAGE-INIT}}$ with Sandy

2.30.2 Gesture



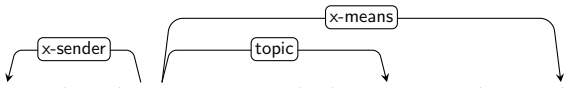
(206) Kim curtseyed$_{\text{MESSAGE-INIT}}$ to the Queen



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

2.30.3 Performance

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



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

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

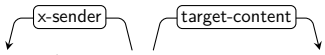
(210) Kim sang$_{\text{MESSAGE-INIT}}$ a song

2.30.4 Depiction

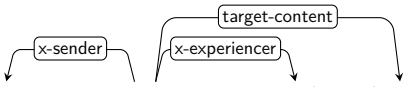
(211) Kim drew$_{\text{MESSAGE-INIT}}$ a heron

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

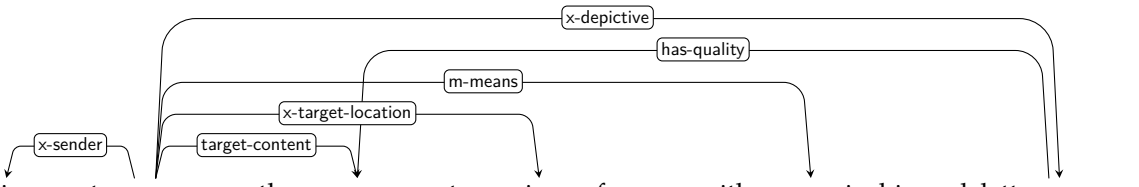
2.30.5 Recording



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



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



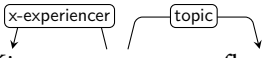
(215) Kim wrote$_{\text{MESSAGE-INIT}}$ the message onto a piece of paper with a pen in big red letters$_{\text{QUALITY}}$

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

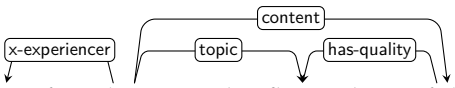
(217) The band recorded$_{\text{MESSAGE-INIT}}$ an album

2.30.6 Perception

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

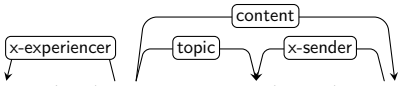


(218) Kim saw$_{\text{MESSAGE}}$ a flower

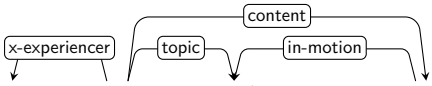


(219) Kim found$_{\text{MESSAGE}}$ the flower beautiful$_{\text{QUALITY}}$

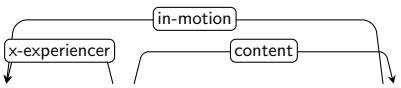
(220) Kim thinks$_{\text{MESSAGE}}$ Sandy is a liar



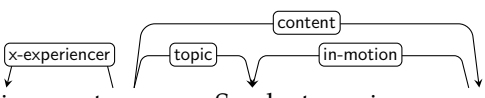
(221) Kim thinks$_{\text{MESSAGE}}$ Sandy a liar$_{\text{MESSAGE}}$



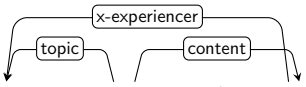
(222) Kim saw$_{\text{MESSAGE}}$ Sandy swim$_{\text{UNANCHORED-MOTION}}$



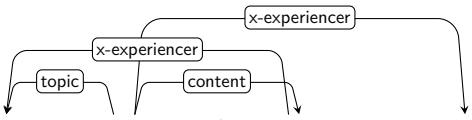
(223) Kim wants$_{\text{MESSAGE}}$ to swim$_{\text{UNANCHORED-MOTION}}$



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



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



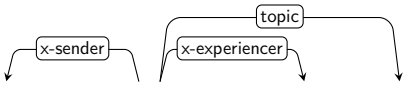
(226) Kim seems$_{\text{MESSAGE}}$ happy$_{\text{MESSAGE}}$ to Sandy

2.30.7 Beginning and Ending Perception

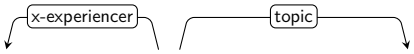
Use MESSAGE-INIT (MESSAGE-DEINIT, MESSAGE-INIT-NEG) for predicates denoting the coming about (ending, failing to come about) of knowledge and awareness.

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

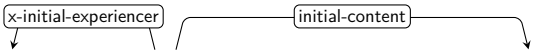
(228) Kim noticed$_{\text{MESSAGE-INIT}}$ the bird



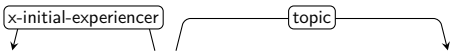
(229) Kim taught$_{\text{MESSAGE-INIT}}$ Sandy Spanish



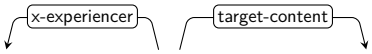
(230) Kim measured$_{\text{MESSAGE-INIT}}$ the elasticity



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



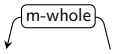
(232) Kim forgot$_{\text{MESSAGE-DEINIT}}$ about the cake



(233) Kim forgot$_{\text{MESSAGE-INIT-NEG}}$ to take the trash out

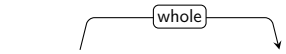
2.31 PART-WHOLE

part is part of whole.



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

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

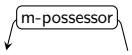


(236) part$_{\text{PART-WHOLE}}$ of the year

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

2.32 POSSESSION

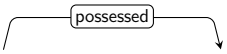
possessor possesses or controls the possessed.



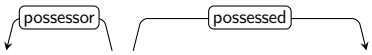
(238) Kim 's house$_{\text{CLASS}}$

(239) Kim owns$_{\text{POSSESSION}}$ a house

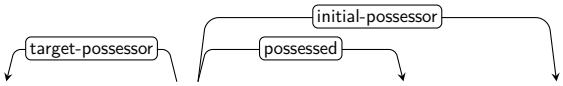
(240) The house belongs$_{\text{POSSESSION}}$ to Kim



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



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



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

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

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

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

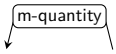
(247) Caesar conquered$_{\text{POSSESSION-INIT}}$ Gaul

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

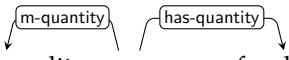
(249) Kim $\text{owes}_{\text{POSSESSION-CHANGE-NECESSITY}}$ Sandy money

2.33 QUANTITY

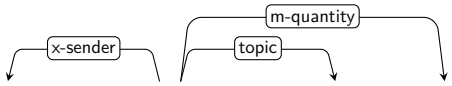
quantity is the quantity, degree, or extent of has-quantity.



(250) three $\text{burgers}_{\text{CLASS}}$



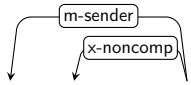
(251) three $\text{liters}_{\text{QUANTITY}}$ of coke



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

2.34 SENDING

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



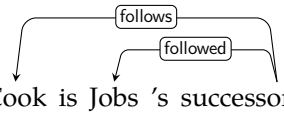
(253) According to Kim , it is $\text{raining}_{\text{STATE}}$

For more uses, see MESSAGE (Section 2.30).

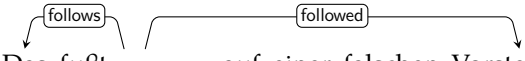
2.35 SEQUENCE

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

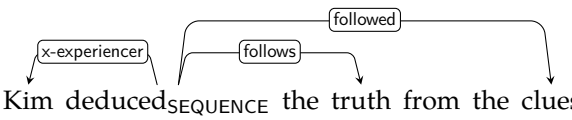
(254) Form $\text{follows}_{\text{SEQUENCE}}$ function



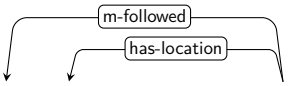
(255) Cook is Jobs 's $\text{successor}_{\text{SEQUENCE}}$



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



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



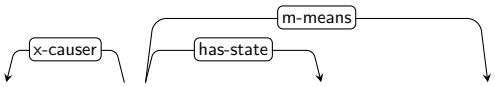
(258) Given that I 'm tired , I wo n't be there$_{\text{LOCATION}}$

2.36 CAUSATION

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

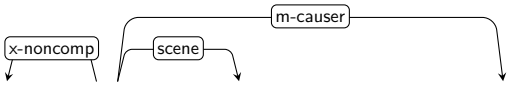
(259) Kim broke$_{\text{STATE-CHANGE}}$ the glass

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

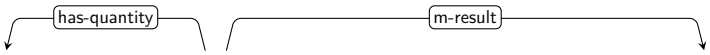


(261) Kim cut$_{\text{STATE-CHANGE}}$ the bread with a knife

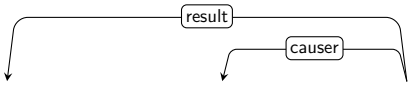
(262) The war caused$_{\text{CAUSATION}}$ a famine



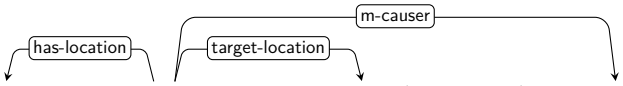
(263) There was$_{\text{SCENE}}$ a famine because of the war



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

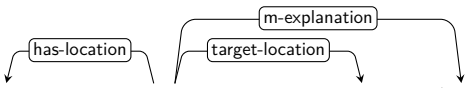


(265) Die Qualität ist der Motivation geschuldet$_{\text{CAUSATION}}$



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

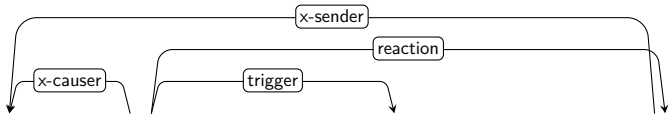
Note how the last example expresses a purpose, but expresses it as a cause, so m-causer lis the right label to use. Compare this to construal as a purpose:



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

2.37 REACTION

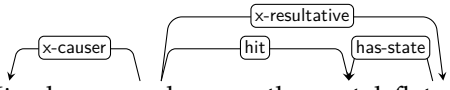
Special case of CAUSATION where trigger (aka causer) triggers a reaction (aka result) in the x-causer.



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

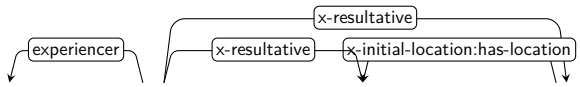
2.38 RESULTATIVE

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



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

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

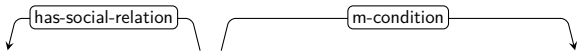


(271) Kim sneezed$_{\text{EXPERIENCE}}$ the napkin off the table$_{\text{CLASS}}$

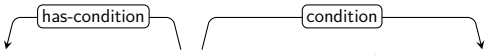
In the last example, we use x-initial-location:has-location to specify not only the role of the napkin in the resulting event (has-location) but also that of the table (initial-location). Using x-has-location would be imprecise because we would then assume that the table has location.

2.39 CONDITION

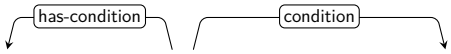
Special case of SEQUENCE where condition (aka followed) is a condition to has-condition (aka follows).



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



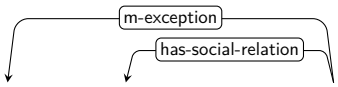
(273) The start date is contingent$_{\text{CONDITION}}$ on their approval



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

2.40 EXCEPTION

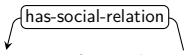
Special case of SEQUENCE where exception (aka followed) is an exception (a negative condition, if you will) to has-exception (aka follows).



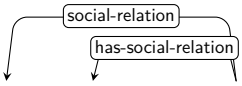
(275) Except for Kim , everybody joined$_{\text{SOCIAL-RELATION-INIT}}$

2.41 SOCIAL-RELATION

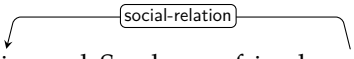
has-social-relation is an individual that is in some socially constructed relationship with social-relation. social-relation might, e.g., be a relative, a friend, an organization, a responsibility, or a judicial sentence.



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



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

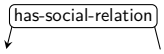


(278) Kim and Sandy are friends$_{\text{SOCIAL-RELATION}}$

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

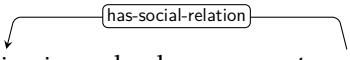
(280) Kim works$_{\text{SOCIAL-RELATION}}$ at Google

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

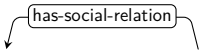


(282) Kim emcees$_{\text{SOCIAL-RELATION}}$

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

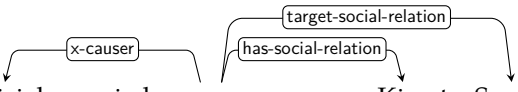


(284) Kim is under house arrest$_{\text{SOCIAL-RELATION}}$

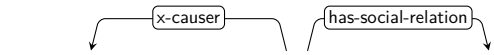


(285) Kim 's sentence$_{\text{SOCIAL-RELATION}}$ was suspended

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



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



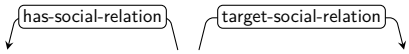
(288) The official married$_{\text{SOCIAL-RELATION-INIT}}$ Kim and Sandy

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

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

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

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

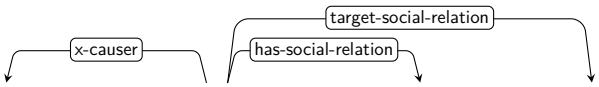


(293) Kim joined$_{\text{SOCIAL-RELATION-INIT}}$ a union

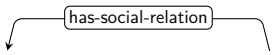
(294) Sandy fired$_{\text{SOCIAL-RELATION-DEINIT}}$ Kim from their job

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

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



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



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

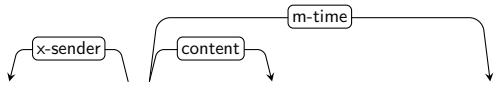
2.42 TIME

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

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

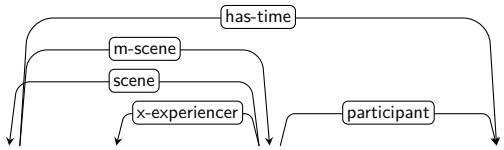
(300) Kim sneezed$_{\text{EXPERIENCE}}$ twice

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



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

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

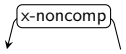


(304) the six months$_{\text{TIME}}$ they need$_{\text{SCENE-NECESSITY}}$ for digestion

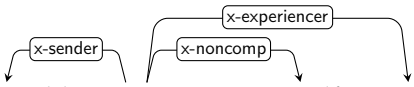
2.43 NONCOMP

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

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

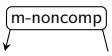


(306) It is raining$_{\text{STATE}}$



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

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



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

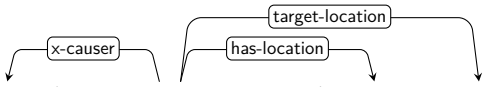
Light verbs, on the other hand, are treated with SCENE, see Section 2.1.

3 Memos

3.1 Prefer Core over Non-core Arguments

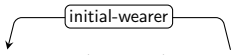
When an argument fills both a core and a non-core role, it is more important to annotate the former.

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



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

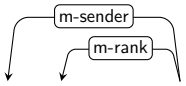
(312) They plundered$_{\text{POSSESSION-CHANGE}}$ Rome



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

3.2 Arguments Determine Frames

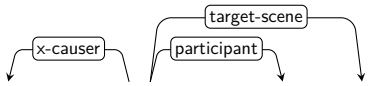
The most important criterion in choosing a frame for a predicate is that there should be suitable roles for the predicate's arguments, even if they are unrealized (implicit) in the annotated instance. For example, while *drawing* denotes a CLASS of things, it can occur with a prepositional argument denoting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



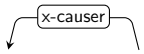
(314) a. my first drawing$_{\text{MESSAGE}}$

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

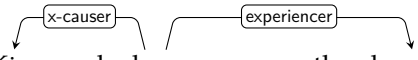
(315) a. Kim helped$_{\text{SCENE-INIT}}$ Sandy



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



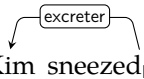
(316) a. Kim worked$_{\text{EXPERIENCE}}$



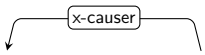
b. Kim worked$_{\text{EXPERIENCE}}$ on the drawing

This logic extends to *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 (317), mucus and air in (318), or groceries in (319).

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



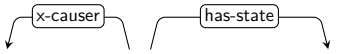
(318) Kim sneezed$_{\text{EXCRETION}}$



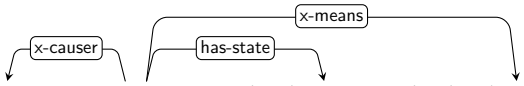
(319) Our local supermarket delivers$_{\text{LOCATION-INIT}}$

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

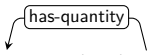
For example, consider (320), Here, *The knife* occupies the subject position and should be treated as the causer of the cutting. We could add the person handling the knife as the causer, and treat the knife as an instrument. However, to add the former to the sentence, we would not merely have to add another realized argument, but also change the syntactic argument structure so that the the subject position goes to that causer, as in (321). Thus, we treat this as a different framing with a different causer, rather than a more explicit version of the same framing. Likewise, (322) and (323) are two different framings, one with *price* as has-state, and one with *butter*.



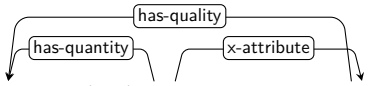
(320) The knife cut$_{\text{STATE-CHANGE}}$ the butter



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



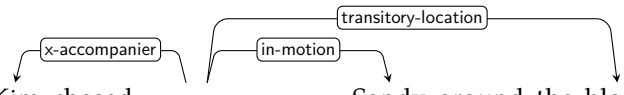
(322) The price is high$_{\text{QUANTITY}}$



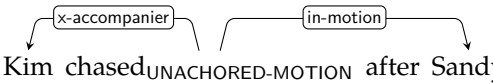
(323) The butter is high$_{\text{QUANTITY}}$ in price$_{\text{QUALITY}}$

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

For example, in (324-a), *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 (324-b), prefer it.



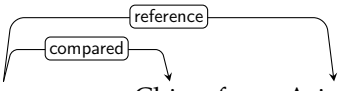
(324) a. Kim chased$_{\text{UNACHORED-MOTION}}$ Sandy around the block



b. Kim chased$_{\text{UNACHORED-MOTION}}$ after Sandy

3.5 Symmetric Argument Pairs

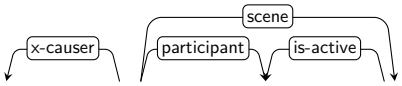
Some predicates have a pair of arguments that are semantically symmetric. In such cases, assign the first role to the syntactically less oblique argument.



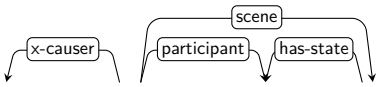
(325) distinguish$_{\text{COMPARISON}}$ China from Arizona

3.6 SCENE or STATE/QUALITY/...?

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.

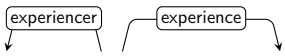


(326) Kim made$_{\text{SCENE-INIT}}$ Sandy dance$_{\text{ACTIVITY}}$

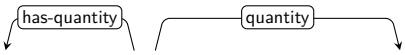


(327) Kim made$_{\text{SCENE-INIT}}$ Sandy tired$_{\text{STATE}}$

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



(328) I lived$_{\text{EXPERIENCE}}$ my life



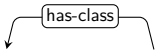
(329) They number$_{\text{QUANTITY}}$ in the thousands

3.7 Participant Nouns

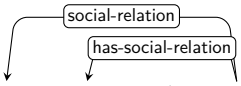
Some nouns denote a person who participates in a specific type of scene in a specific role. In such cases, use the most appropriate frame for that scene. For example, in a narrative where the narrator has just been criticized by a stranger, you could annotate as follows:

(330) 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:



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



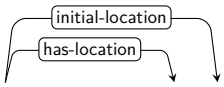
(332) He is our teacher$_{\text{SOCIAL-RELATION}}$

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

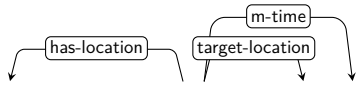
3.8 Particle Verbs

We follow the PARSEME classification of particle verbs into spatial, semi-non-compositional, and fully non-compositional ones (Savary et al., 2017; Ramisch et al., 2018, 2020; Savary et al., 2023).

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



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

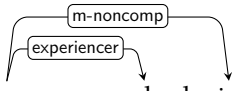


(335) You may go$_{\text{LOCATION-INIT}}$ in now

In semi-non-compositional particle verbs, where the particle adds a partially predictable but nonspatial meaning to the verb, use an appropriate role.

(336) eat$_{\text{INGESTION}}$ up the cookies (implies *eat* the cookies)

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



(337) do$_{\text{EXPERIENCE}}$ somebody in (does not imply *do* somebody)

4 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 super-frame:

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

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

5 TODO

The butter is high in price: high has SCENE-like arguments (participant butter and price scene), but also expresses a QUANTITY. SCENE-QUANTITY?

A whole section on sentence adverbs: lieber (MESSAGE), sowieso (CONDITION), ungeachtet (CONCESSION), erstmals (TIME), unvermindert (QUANTITY-CONTINUATION)

Speaker-oriented adverbs: MESSAGE? erstaunlicherweise, geheimnisvollerweise, glücklicherweise, möglicherweise, notwendigerweise, tragischerweise, unglaublicherweise (MESSAGE-INIT-NEG?), unglücklicherweise, zweckmäSSigerweise?

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.

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.

Ramisch, C., Cordeiro, S. R., Savary, A., Vincze, V., Barbu Mititelu, V., Bhatia, A., Buljan, M., Candito, M., Gantar, P., Giouli, V., Güngör, T., Hawwari, A., Iñurrieta, U., Kovalevskaitė, J., Krek, S., Lichte, T., Liebeskind, C., Monti, J., Parra Escartín, C., QasemiZadeh, B., Ramisch, R., Schneider, N., Stoyanova, I., Vaidya, A., and Walsh, A. (2018). Edition 1.1 of the PARSEME shared task on automatic identification of verbal multiword expressions. In Savary, A., Ramisch, C., Hwang, J. D., Schneider, N., Andresen, M., Pradhan, S., and Petruck, M. R. L., editors, *Proceedings of the Joint Workshop on Linguistic Annotation, Multiword Expressions and Constructions (LAW-MWE-CxG-2018)*, pages 222–240, Santa Fe, New Mexico, USA. Association for Computational Linguistics.

Ramisch, C., Savary, A., Guillaume, B., Waszczuk, J., Candito, M., Vaidya, A., Barbu Mititelu, V., Bhatia, A., Iñurrieta, U., Giouli, V., Güngör, T., Jiang, M., Lichte, T., Liebeskind, C., Monti, J., Ramisch, R., Stymne, S., Walsh, A., and Xu, H. (2020). Edition 1.2 of the PARSEME shared task on semi-supervised identification of verbal multiword expressions. In Markantonatou, S., McCrae, J., Mitrović, J., Tiberius, C., Ramisch, C., Vaidya, A., Osenova, P., and Savary, A., editors, *Proceedings of the Joint Workshop on Multiword Expressions and Electronic Lexicons*, pages 107–118, online. Association for Computational Linguistics.

Savary, A., Ben Khelil, C., Ramisch, C., Giouli, V., Barbu Mititelu, V., Hadj Mohamed, N., Krstev, C., Liebeskind, C., Xu, H., Stymne, S., Güngör, T., Pickard, T., Guillaume, B., Bejček, E., Bhatia, A., Candito, M., Gantar, P., Iñurrieta, U., Gatt, A., Kovalevskaite, J., Lichte, T., Ljubešić, N., Monti, J., Parra Escartín, C., Shamsfard, M., Stoyanova, I., Vincze, V., and Walsh, A. (2023). PARSEME corpus release 1.3. In Bhatia, A., Evang, K., Garcia, M., Giouli, V., Han, L., and Taslimipoor, S., editors, *Proceedings of the 19th Workshop on Multiword Expressions (MWE 2023)*, pages 24–35, Dubrovnik, Croatia. Association for Computational Linguistics.

Savary, A., Ramisch, C., Cordeiro, S., Sangati, F., Vincze, V., QasemiZadeh, B., Candito, M., Cap, F., Giouli, V., Stoyanova, I., and Doucet, A. (2017). The PARSEME shared task on automatic identification of verbal multiword expressions. In Markantonatou, S., Ramisch, C., Savary, A., and Vincze, V., editors, *Proceedings of the 13th Workshop on Multiword Expressions (MWE 2017)*, pages 31–47, Valencia, Spain. Association for Computational Linguistics.