

The inventory of linguistic relations used in the Copenhagen Dependency Treebanks

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Abstract

This manual describes the inventory of linguistic relations used in the Copenhagen Dependency Treebanks, a set of parallel treebanks for Danish, English, German, Italian, and Spanish annotated with respect to syntax, morphology, discourse, coreference, and translational equivalence. The manual is generated automatically from the CDT project's online relation spreadsheet.¹

¹<http://spreadsheets.google.com/ccc?key=0ArjTKYTQS1lWcnNUWGJrX3lZTkxDc3QxYmlqWlRXQ1E&hl=en>

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Chapter 1

Introduction

This manual describes the relations used in the Copenhagen Dependency Treebanks. The relations are ordered in a hierarchy, where each relation may have zero or more immediate super types, and zero or more immediate subtypes. The relations are presented in detail in the following chapters, grouped by linguistic level and general relation type. Every time a relation is introduced, its name is written in the left margin, with an indication of its immediate super types and the row in the online CDT spreadsheet in which the relation was defined. An example is shown below.

relation The notation in the left margin indicates that we now describe the relation **relation**;
isa **super** it has immediate super type **super** and is defined in row 12 in the spreadsheet. When
[12] describing a relation, we also lists its other properties, if relevant, including its:

- *long name*: we use short names in the annotation for brevity, but long names are sometimes more descriptive, so we provide these as an alias for the short relation name;
- *deprecated names*: when renaming relations, the old name is listed as a deprecated name for backwards compatibility, but it should be avoided in future annotation;
- *immediate subtypes*: the relation names that have been specified as the immediate subtypes of the relation;
- *related types*: lists the relations that are closely related to this relation, in some way or another, and which you might want to consult for clarification or additional information;
- *examples*: small annotated text examples that illustrate how the relation is used;

In PDF versions of this document, relation names are clickable so that you can navigate through the relation hierarchy by clicking on the relation names.

Chapter 2

Top-level relations: ANY

ANY: directed relation
DIM: dimension
 DIM:LEVEL: dimension: linguistic level
 DIM:TYPE: dimension: relation type
 +: segment concatenation
 IDIOM: idiomatic relation
 PRIM: primary dependency relation
 ADJ: adjunct relation
 COMP: complement relation
 SEC: secondary dependency relation

Figure 2.1: The relations matching ANY-SYNTAX-MORPHOLOGY-DISCOURSE-ANAPHORA-SEMANTICS-ALIGNMENT-RULE.

ANY *Directed relation.* An arbitrary directed relation between two tokens. The arrow
[4] goes from parent (head, governor, nucleus) to child (dependent, satellite).

Subtypes: DIM RULE.

DIM *Dimension* (long: DIMENSION). A dimension in the hierarchy. Eg, linguistic level and
isa ANY relation type.

[5] Subtypes: DIM:LEVEL DIM:TYPE.

DIM:LEVEL *Dimension: linguistic level.* Dimension specifying the linguistic level of the relation.
isa DIM The classification of relations into linguistic levels is slightly arbitrary (there will be
[6] borderline cases where there is no single natural classification), and does not carry
any deep linguistic significance. It is more a question about linguistic convention
and research tradition than about any deep underlying difference between relations.

Subtypes: ALIGN ANA DISC MORPH SEM SYN.

DIM:TYPE *Dimension: relation type.* Dimension specifying the type of the relation.

isa DIM Subtypes: + IDIOM PRIM SEC.
[7]

+ *Segment concatenation* (long: CONCATENATION). A concatenation relation between
isa DIM:TYPE two adjacent segments. This relation is used if an indecomposable lexeme has mis-
[30]

takenly been segmented into two segments. Lexicalized complex expressions are instead marked as IDIOM relations with the "#" suffix.

Related types: IDIOM.

IDIOM *Idiomatic relation*. Idiomatic relation. Ie, relations between tokens in a complex
isa DIM:TYPE lexicalized expression.
[31] Subtypes: PRIM"#".

PRIM *Primary dependency relation* (long: PRIMARY). A primary dependency relation. Ie, a
isa DIM:TYPE relation which specifies the primary head (the governor) of a token (the dependent).
[24]
Subtypes: ADJ COMP.

ADJ *Adjunct relation* (long: ADJUNCT). A primary adjunct relation. The relation is licensed
isa PRIM by the adjunct, ie, the lexical entry of the adjunct specifies the permissible adjunct
[26] frames for the adjunct (ie, the permissible adjunct roles and the restrictions on
the governor, eg, with respect to word class). In the compositional semantics, the
adjunct acts as functor with the governor as argument.
Subtypes: DISCOTHER DISCPRAG DISCSEM SYNADJ.

COMP *Complement relation* (long: COMPLEMENT). A primary complement relation. The
isa PRIM relation is licensed by the governor, ie, the lexical entry of the governor specifies the
[25] complement frames that it allows (the complement frame specifies the permissible
complement roles, and the lexical restrictions on the complements, eg, with respect
to word class). In the compositional semantics, the complements act as arguments
with the governor as functor.
Subtypes: "@"adverb SYNCOMP.

SEC *Secondary dependency relation* (long: SECONDARY). A secondary dependency relation.
isa DIM:TYPE Eg, the secondary dependency relation in filler-gap constructions such as relatives
[27] without a relative pronoun (the relativized noun is a secondary dependent of the
relative verb), raising and control constructions, and elliptic coordinations.
Subtypes: "["PRIM"]" "{"SEM"}".

Chapter 3

Syntactic relations: SYNTAX

SYN: syntax level

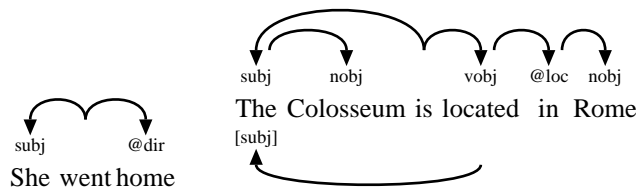
Figure 3.1: The relations matching SYNTAX-SYNCOMP-SYNADJ.

SYN *Syntax level* (long: SYNTAX). A relation at the syntactic level. Ie, a relation between two segments within a sentence, but not within a single word.
 isa DIM:LEVEL [16]
 Subtypes: SYNADJ SYNCOMP.

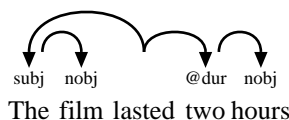
3.1 Complement relations: SYNCOMP

SYNCOMP *Syntactic complement.*
 isa COMP SYN Subtypes: @space @time aobj avobj dobj fobj gobj iobj nobj numa numm part pobj possd possr [71]
 pred qobj robj subj vobj.

@space *Valency-bound location/direction adverbial.*
 isa SYNCOMP Related types: dir loc. [80]



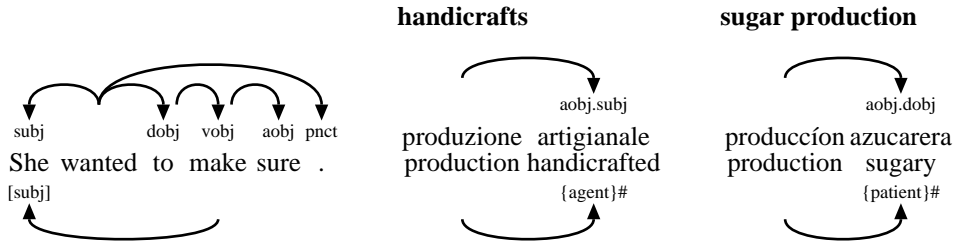
@time *Valency-bound time adverbial.* A valency bound time expression. Formerly analyzed as locative object, but we have decided to provide a general mechanism (@) for converting adverbial relations into valency-bound relations.
 isa SYNCOMP Related types: cont dur ext hab prec succ. [96]



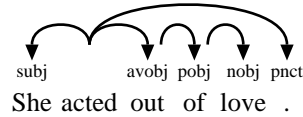
SYNCOMP: syntactic complement
 @space: valency-bound location/direction adverbial
 @time: valency-bound time adverbial
 aobj: adjectival object
 avobj: adverbial object
 dobj: direct object
 fobj: filler object
 gobj: genitive object
 iobj: indirect object
 nobj: nominal object
 numa: additive numeral complement
 numm: multiplicative numeral complement
 part: verbal particle
 pobj: prepositional object
 possd: possessed complement
 possr: possessor complement
 pred: predicative
 predo: object predicative
 preds: subject predicative
 qobj: quotational object
 robj: reflexive object
 subj: subject
 expl: expletive subject
 vobj: verbal object

Figure 3.2: The relations matching SYNCOMP.

aobj *Adjectival object.* If the adverbial object is part of a NP which nucleus is de-
 isa SYNCOMP verbal, the following annotation possibilities are available: aobj.subj{SEMROLE}
 [87] aobj.dobj{SEMROLE} aobj.pobj{SEMROLE} aobj.iobj{SEMROLE} The relevant
 semantic roles in this context are agent, patient, recipient, experient, location.
 Related types: avobj.

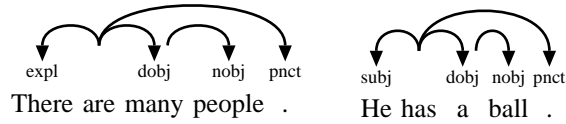


avobj *Adverbial object.*
 isa SYNCOMP Related types: aobj part.
 [88]



dobj *Direct object.*
 isa SYNCOMP
 [76]

Related types: iobj robj.
 Confusion₁: pnct_{100%} .

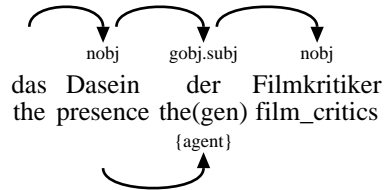


fobj *Filler object.* NO LONGER IN USE; see gapping constructions.
 isa SYNCOMP [89] Related types: GAP.

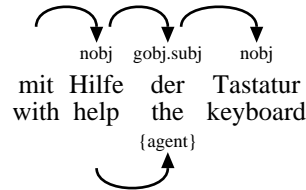
N/A

gobj *Genitive object.* If the genitive object is part of a NP which nucleus is deverbal, the following annotation possibilities are available: gobj.subj{SEMROLE} gobj.dobj{SEMROLE} gobj.pobj{SEMROLE} gobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient, experient, location.
 Related types: SEMROLE attrg.

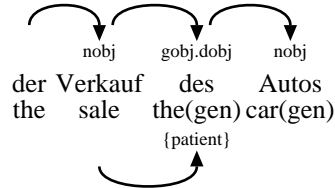
the presence of film critics



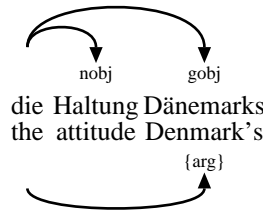
with help from the keyboard



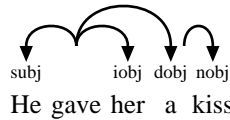
the sale of the car



Denmark's attitude

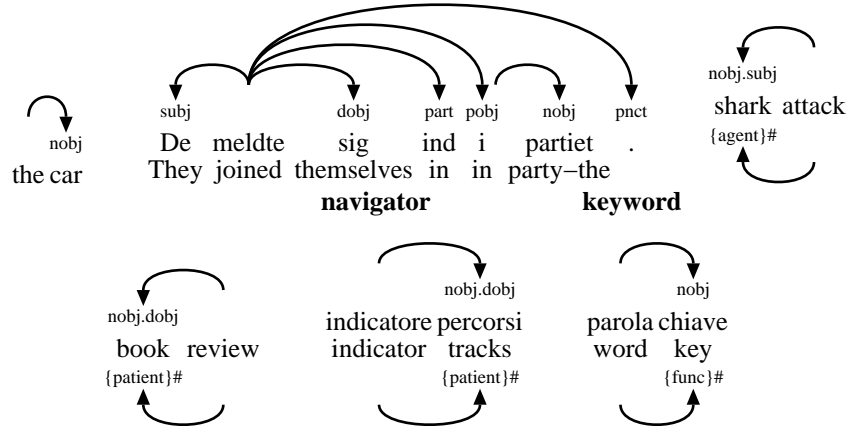


iobj *Indirect object.*
 isa SYNCOMP [79] Related types: dobj.



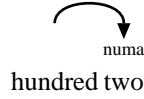
nobj *Nominal object.* If the nominal object is part of a NP which nucleus is deverbal, the following annotation possibilities are available: nobj.subj{SEMROLE} nobj.dobj{SEMROLE} nobj.pobj{SEMROLE} nobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient, experient, location.
 Confusion₁: pnct_{100%} .

They joined the party.



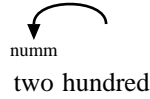
numa *Additive numeral complement.*

isa SYNCOMP Related types: numm.
[90]



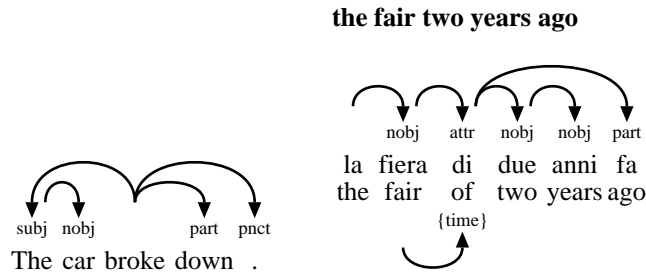
numm *Multiplicative numeral complement.*

isa SYNCOMP Related types: numa.
[91]



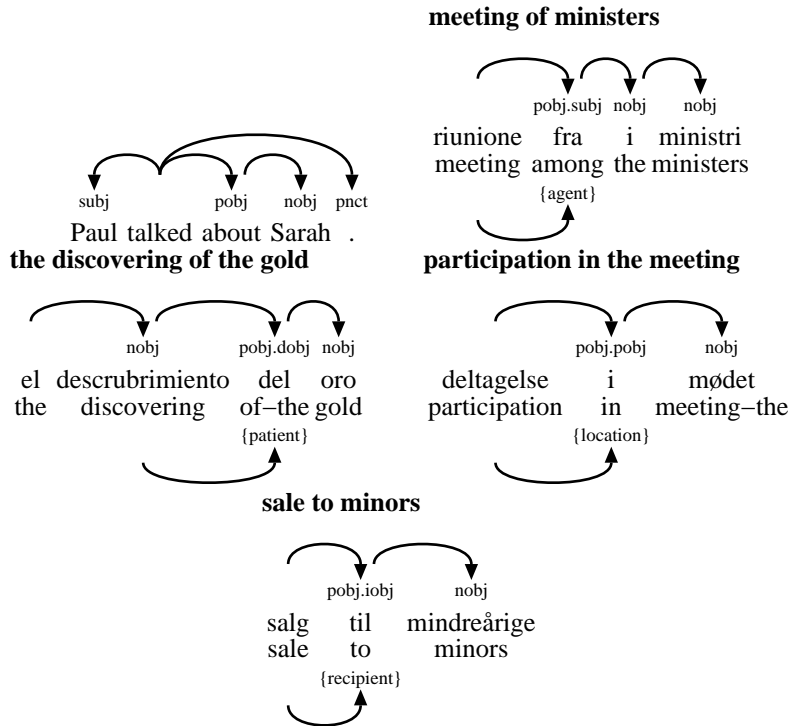
part *Verbal particle.* Verbal particle.

isa SYNCOMP Related types: avobj.
[92]

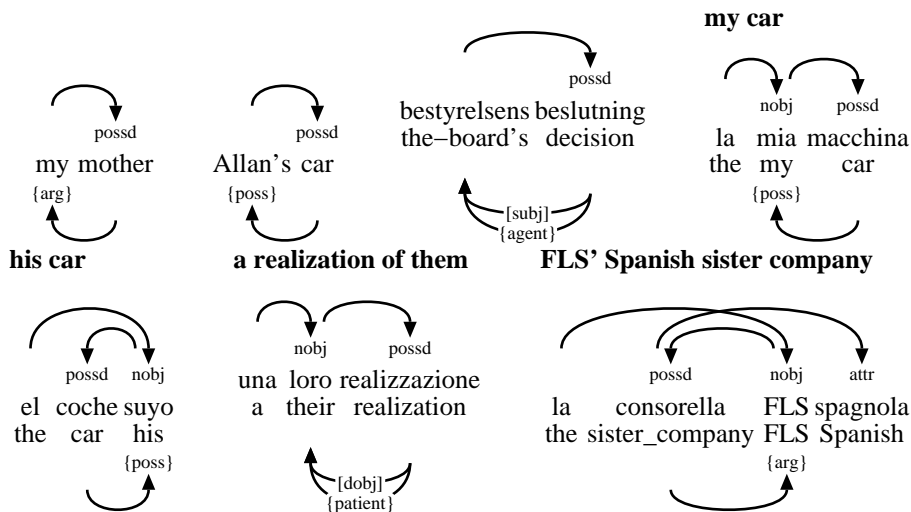


pobj *Prepositional object.* If the prepositional object is part of a NP which nucleus is

deverbal, the following annotation possibilities are available: pobj.subj{SEMROLE} pobj.dobj{SEMROLE} pobj.pobj{SEMROLE} pobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient, experient, location. Related types: SEMROLE avobj.



possd *Possessed complement.* The possessed complement in a possessive construction. Possession is understood in a syntactic sense as any construction with a clitic genitive marker, not necessarily as possession in a narrow semantic sense. A better name may be chosen for this relation in the future.
 Related types: "{\$PRIM}" SEMROLE poss possr.



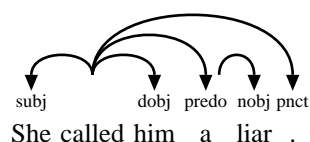
possr *Possessor complement.* NO LONGER IN USE
 The possessor complement in a possessive construction. Possession is understood in a syntactic sense as any construction with a clitic genitive marker, not necessarily as possession in a narrow semantic sense. A better name may be chosen for this relation in the future.
 Related types: poss possd.

N/A

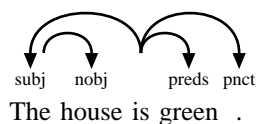
pred *Predicative.*
 isa SYNCOMP Subtypes: predo preds.
 [81] Related types: predo preds.

V->predicative, P->predicative

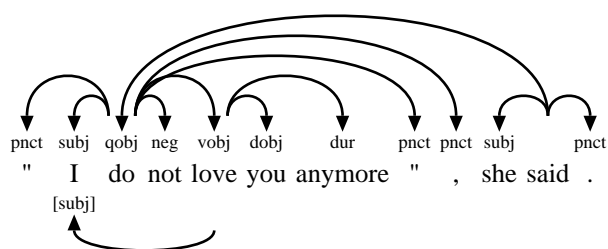
predo *Object predicative.*
 isa pred Related types: preds.
 [83]



preds *Subject predicative.*
 isa pred Related types: predo.
 [82]

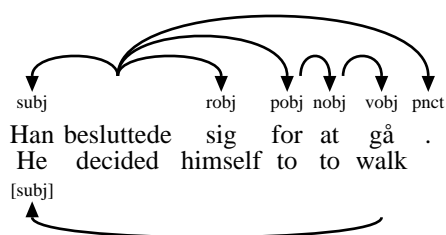


qobj *Quotational object.* A phrase or discourse segment functioning as directly quoted speech, typically by an attribution verb. Indirect speech is analyzed as "dobj" or "nobj".
 isa SYNCOMP [95]
 Related types: xpl.

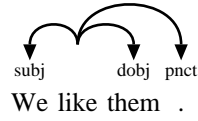


robj *Reflexive object.*
 isa SYNCOMP Related types: dobj.
 [85]

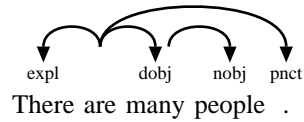
He decided to walk.



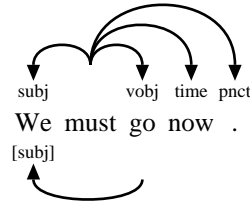
subj *Subject.* A subject relation.
 isa SYNCOMP Subtypes: expl.
 [74] Related types: expl.



expl *Expletive subject.*
 isa subj Related types: subj.
 [75]



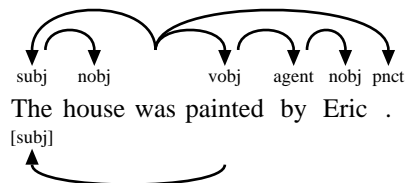
vobj *Verbal object.*
 isa SYNCOMP Related types: "["\$PRIM"]".
 [84]



3.2 Adverbial adjunct relations: ADVERB

ADVERB *Adverbial* (deprecated other). V/N/P->adverbial
 isa SYNADJ Subtypes: agent ben cause comp conc concom cond cons degr exem man neg other prg source space
 [135] struct time.

agent *Agent adverbial.* The passivized agent in passives.
 isa ADVERB
 [173]

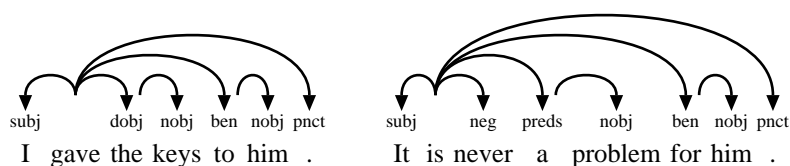


ben *Benefactive adverbial.* Free dative
 isa ADVERB Related types: pobj.
 [172]

ADVERB: adverbial

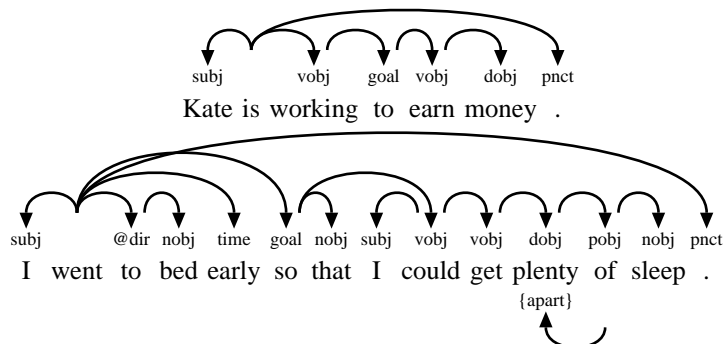
- agent: agent adverbial
- ben: benefactive adverbial
- cause: causation adverbial
 - goal: goal adverbial
 - reas: reason adverbial
- comp: comparison adverbial
- conc: concession adverbial
- concom:
- cond: condition adverbial
- cons: consequence adverbial
- degr: degree adverbial
- exem: example adverbial
- man: manner adverbial
 - accom: companionship adverbial
 - inst: instrument adverbial
- neg: negation adverbial
- other: other adverbial
- prg: pragmatic adverbial
 - att: attitude adverbial
 - discmark: sentence-initial discourse marker
 - epi: epistemic adverbial
 - eval: evaluation adverbial
 - focal: focalizer adverbial
 - pcond: pragmatic condition adverbial
- source: source attribution adverbial
- space: space adverbial
 - dir: direction adverbial
 - loc: location adverbial
- struct: text-structuring or connective adverbial
 - add: additive adverbial
 - bg: background adverbial
 - contr: contrast adverbial
 - elab: elaboration adverbial
- time: time adverbial
 - cont: contemporaneity adverbial
 - dur: duration adverbial
 - ext: extent/frequency adverbial
 - hab: habituality adverb
 - prec: precedence adverbial
 - succ: succession adverbial

Figure 3.3: The relations matching ADVERB.

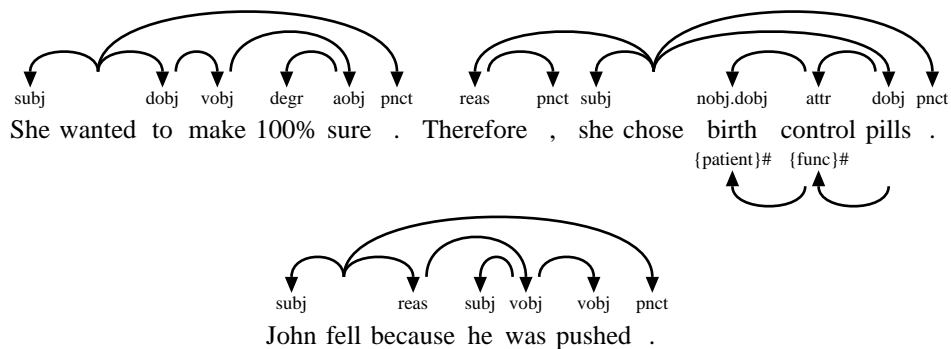


cause *Causation adverbial.* Causation adverbial. Describes why the event occurred.
 isa ADVERB
 Subtypes: goal reas.
 [161]

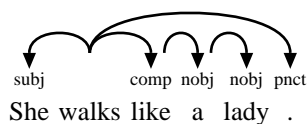
goal *Goal adverbial*. Describes the intended goal of the event/action.
 isa cause Related types: reas.
 [162]



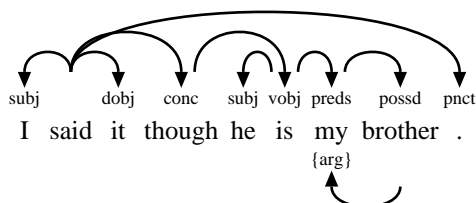
reas *Reason adverbial*. Describes the cause of the event/action.
 isa cause Related types: goal.
 [163]



comp *Comparison adverbial* (deprecated compare). Comparison
 isa ADVERB
 [167]

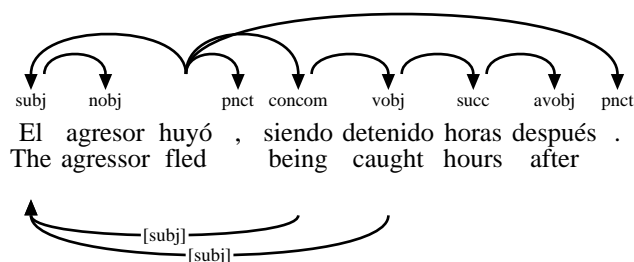


conc *Concession adverbial*. Describes the concession of the event/action.
 isa ADVERB
 [166]

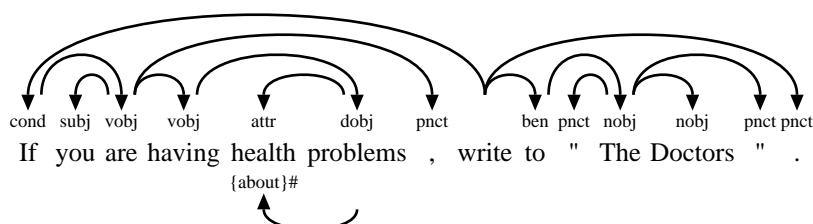


concom . Gerunds in Romance
 isa ADVERB Related types: vobj.
 [170]

The agressor fled and/but got caught hours later.

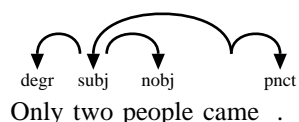


cond *Condition adverbial.* Describes the condition of the event/action.
 isa ADVERB [165] Related types: pcond.

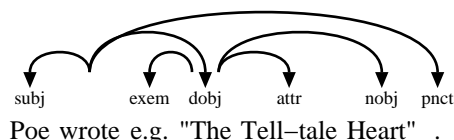


cons *Consequence adverbial.* Describes the consequence of the event/action.
 isa ADVERB [164] Related types: xtop.

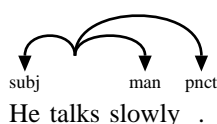
degr *Degree adverbial.* Modifies the object or verbal by degree
 isa ADVERB [171] Related types: focal.



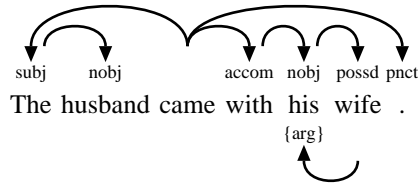
exem *Example adverbial* (deprecatd ex). Exemplification; subordinated the object which is added to a list.
 isa ADVERB [169]



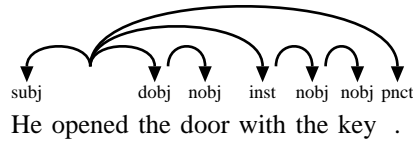
man *Manner adverbial.* The way things are done
 isa ADVERB [158] Subtypes: accom inst.
 Related types: fpredo.



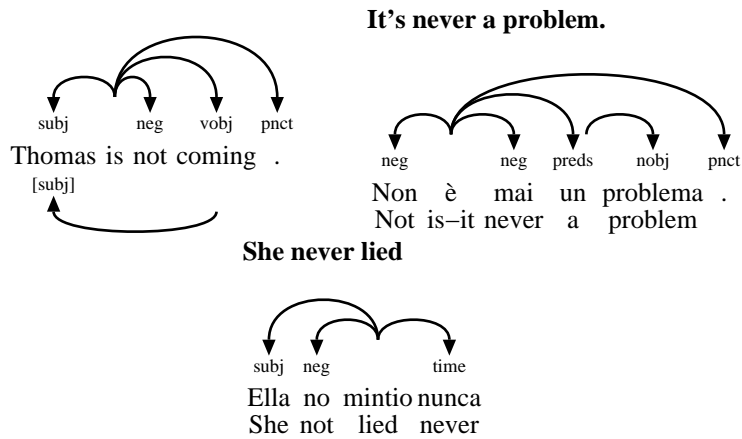
accom *Companionship adverbial* (deprecated **comp**). Companionship
 isa man Related types: man.
 [159]



inst *Instrument adverbial*. Instrument/means
 isa man Related types: man.
 [160]



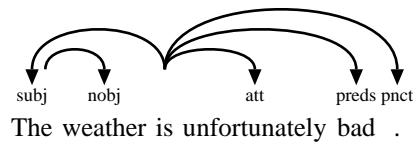
neg *Negation adverbial*. Negation of a verbal
 isa ADVERB
 [174]



other *Other adverbial*.
 isa ADVERB

prg *Pragmatic adverbial*. Sentence level.
 isa ADVERB Subtypes: att discmark epi eval focal pcond.
 [136]

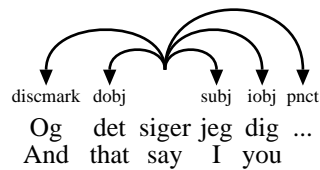
att *Attitude adverbial*. Regarding attitude
 isa prg Related types: epi eval.
 [140]



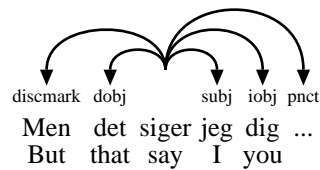
discmark *Sentence-initial discourse marker.* Discourse marker

isa prg
[142]

And I'm telling you...

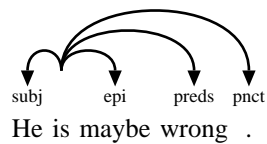


But I'm telling you...



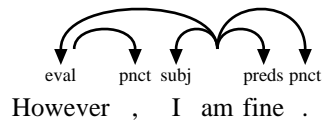
epi *Epistemic adverbial.* Regarding the level of truth in the expression

isa prg
[139]



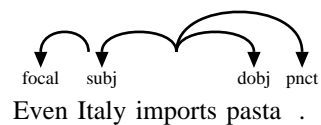
eval *Evaluation adverbial.* Evaluating adverbials

isa prg
[141]



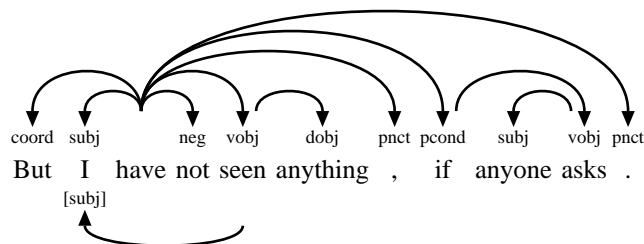
focal *Focalizer adverbial.* Focalization of a noun

isa prg
[137]



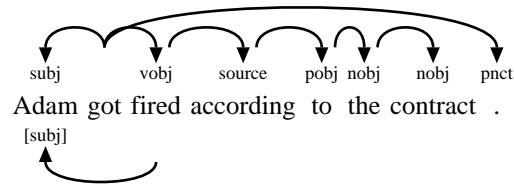
pcond *Pragmatic condition adverbial* (deprecated prgcond). Pragmatic condition

isa prg
[138]



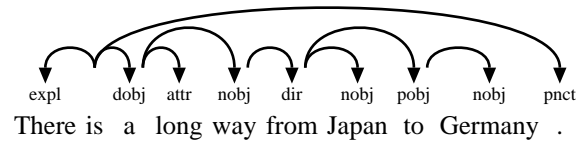
source *Source attribution adverbial.* Reference/source

isa ADVERB
[168]

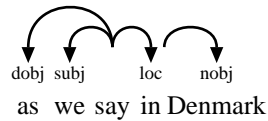


space *Space adverbial.* Space adverbials
 isa ADVERB
 [155] Subtypes: dir loc.

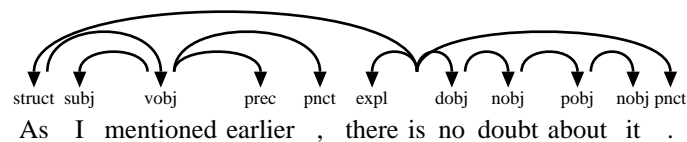
dir *Direction adverbial.* Movement from one place to another; direction
 isa space
 [157] Related types: loc.



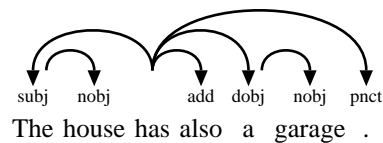
loc *Location adverbial.* Location
 isa space
 [156] Related types: dir.



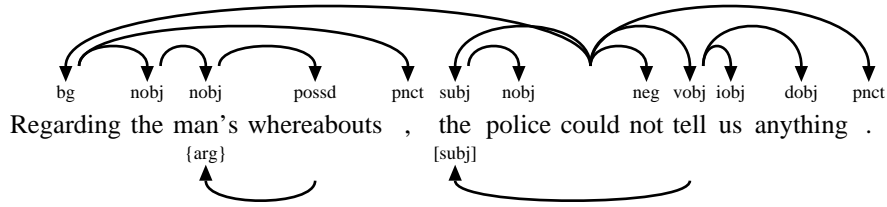
struct *Text-structuring or connective adverbial.* Connectives and text structuring adverbials
 isa ADVERB
 [143] Subtypes: add bg contr elab.
 Related types: bg contr.



add *Additive adverbial.* Additive information
 isa struct
 [147]

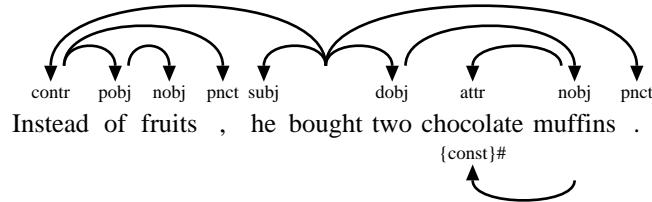


bg *Background adverbial.* Background information
 isa struct
 [144] Related types: struct.



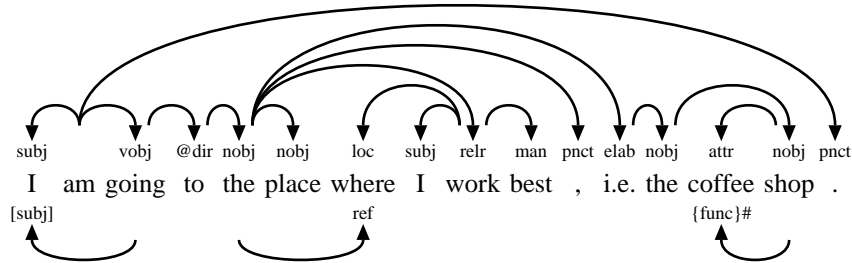
contr *Contrast adverbial*. Opposition

isa struct Related types: struct.
[145]



elab *Elaboration adverbial*. More detailed description

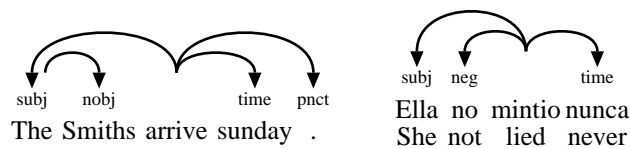
isa struct
[146]



time *Time adverbial*. Time relating adverbials

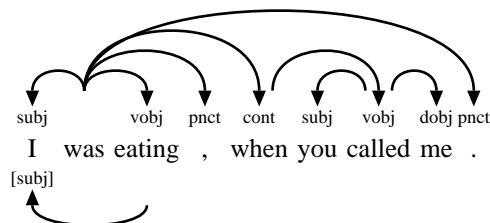
isa ADVERB Subtypes: cont dur ext hab prec succ.
[148]

She never lied

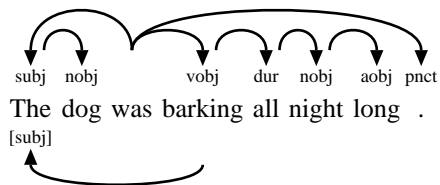


cont *Contemporaneity adverbial*. Contemporaneity

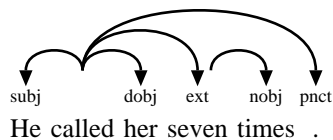
isa time Related types: time.
[152]



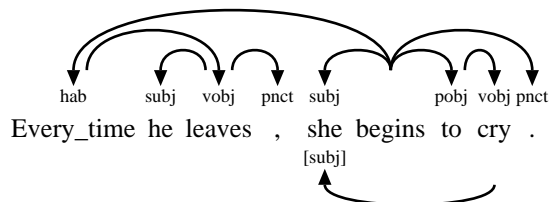
dur *Duration adverbial*. Duration
 isa time Related types: ext hab.
 [149]



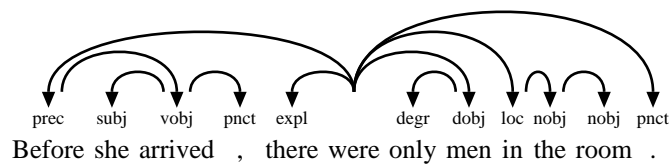
ext *Extent/frequency adverbial* (deprecated freq). Frequency; extention
 isa time Related types: dur hab.
 [154]



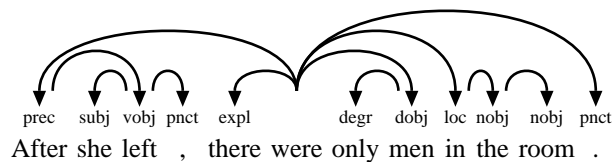
hab *Habituality adverb*. Habitual; repeated habit
 isa time Related types: dur ext.
 [153]



prec *Precedence adverbial*. Precedence
 isa time
 [150]



succ *Succession adverbial*. Succession
 isa time
 [151]



SYNADJ: syntactic adjunct
 GAP: gapping dependent
 "<"PRIM...":"INTEGER">": gapping dependent
 app: apposition
 appa: parenthetic apposition (comma)
 xpl: explication
 appr: restrictive apposition (no comma)
 attr: attributive
 attrg: genitive attributive
 conj: conjunct relation
 coord: coordinator relation
 correl: correlative coordinator relation
 fpred: free predicative
 fpredo: free direct-object predicative
 fpreds: free subject predicative
 mod: modifier/adverbial
 modp: parenthetic modifier
 name: part of name
 namef: first name
 namel: last name
 title: person title
 pnct: punctuation
 rel: relative clause
 relelab: elaborating relative clause
 relpa: parenthetic relative clause
 relr: restrictive relative clause
 voc: vocative
 xtop: external topic with resuming pronoun

Figure 3.4: The relations matching SYNADJ-ADVERB.

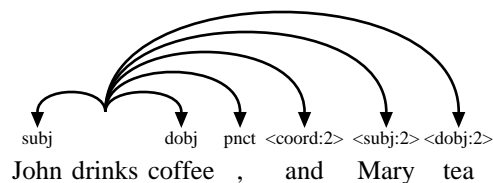
3.3 Other adjunct relations: SYNADJ

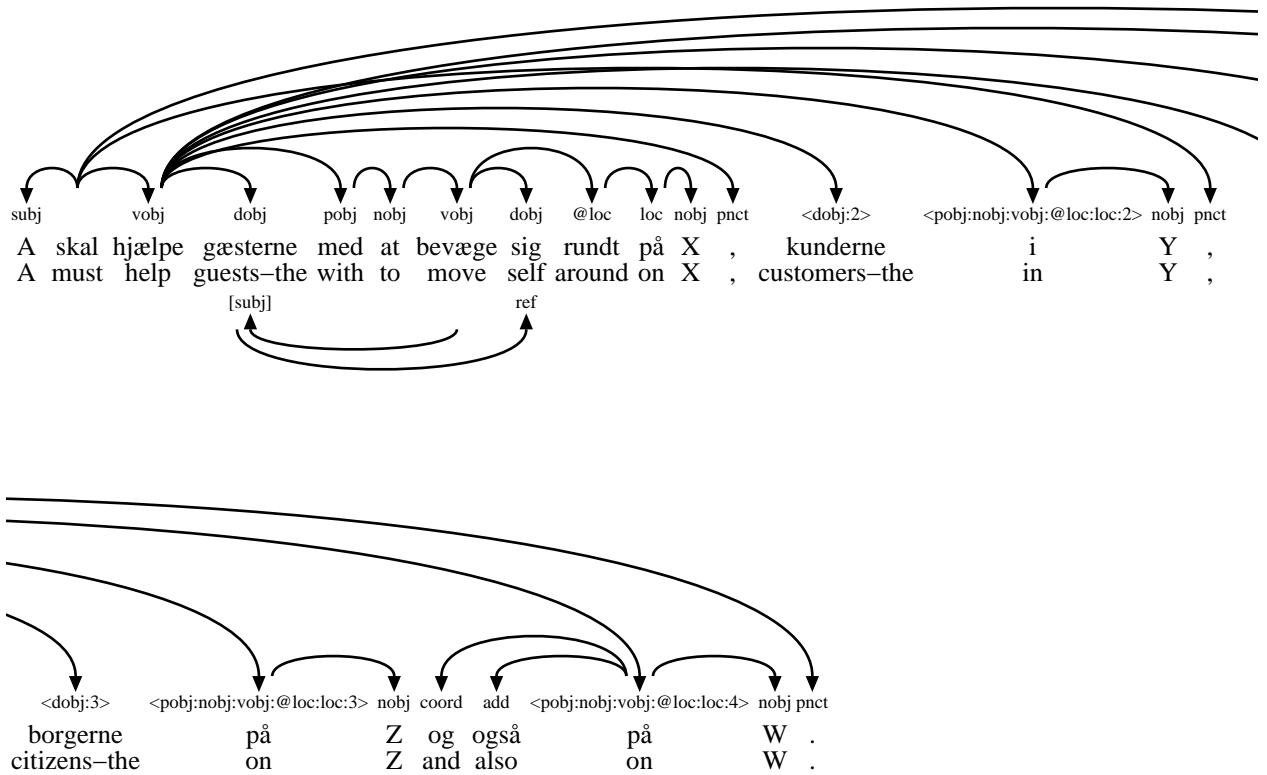
SYNADJ *Syntactic adjunct.*

isa ADJ SYN [72] Subtypes: ADVERB GAP app attr attrg conj coord correl fpred mod name pnct rel voc xtop.

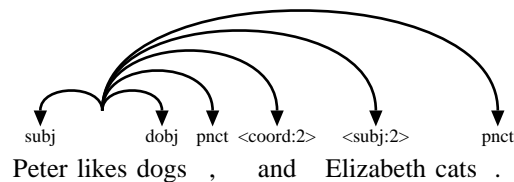
GAP *Gapping dependent* (long: GAPPING). A relation between a gapping dependent in a secondary conjunct and the head of the first conjunct. In gapping coordinations, the secondary conjuncts have an elided head, so the remaining material in the secondary conjuncts is instead analyzed as gapping dependents of the head of the first conjunct. In the final CDT annotation, the annotation of gapping dependents will eventually be used to insert a phonetically empty head for the gapped conjuncts, and the gapping dependents will be attached to this gapped head.

Subtypes: "<"PRIM...":"INTEGER">".



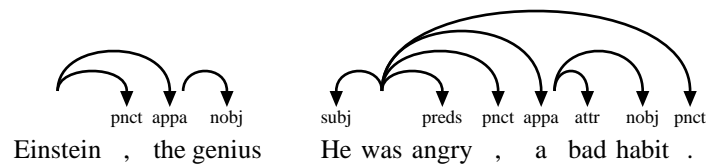


PRIM...": "INTEGER"> *gapping dependent*. First conjunct->gapping dependent
 isa GAP RULE
 [361]

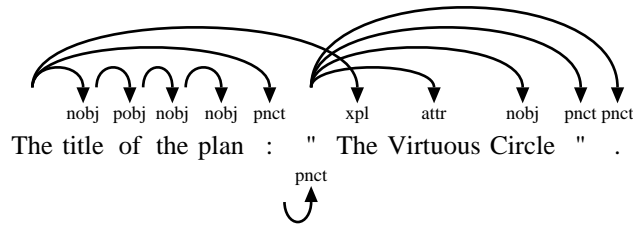


app *Apposition*. An appositional relation between two phrases, typically NPs. The head of the first NP in the apposition is always analyzed as the head of the second NP.
 isa SYNADJ
 [110] Subtypes: appa appr.
 Related types: appa appr.

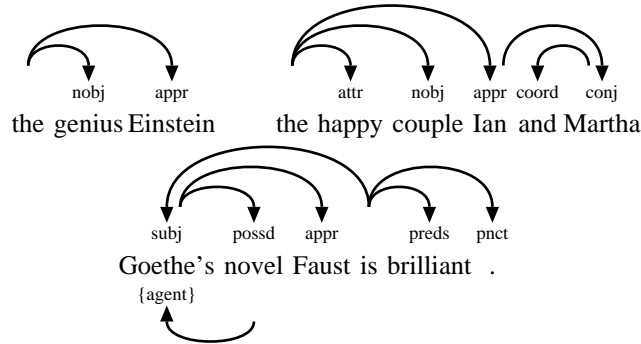
appa *Parenthetic apposition (comma)*.
 isa app
 [111] Subtypes: xpl.
 Related types: appr xpl.



xpl *Explication*. Explication of an NP or VP.
 isa appa
 [124] Related types: qobj.

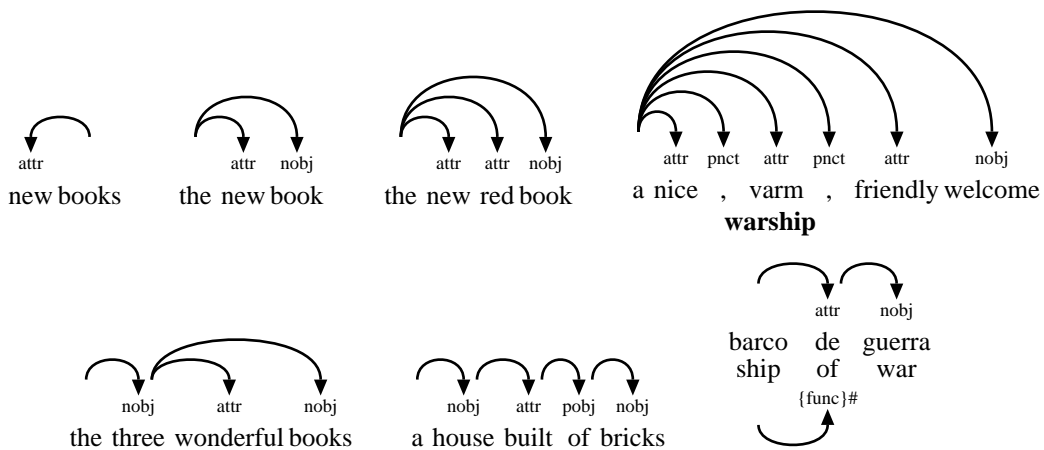


appr *Restrictive apposition (no comma).*
 isa app Related types: appa.
 [112]

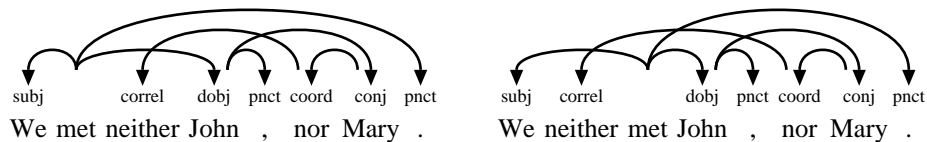


attr *Attributive* (deprecated attrdatrr). An attributive relation, typically between an adjective and a noun/determiner. In Germanic languages, adjectives are assumed to modify the determiner (because of the strong/weak congruence between determiner and adjective), or the noun if no determiner is present; in Romance languages, adjectives are assumed to modify the noun even if there is a determiner, and the determiner is only analyzed as the head if no noun is present (eg, in partitive constructions). The only exception to this rule is when the adjective and the noun form a compound, in which case the adjective is always analyzed as a "attr#" dependent of the lexical noun in both Germanic and Romance languages, even if a determiner is present.

Related types: SEMROLE attrg pobj.



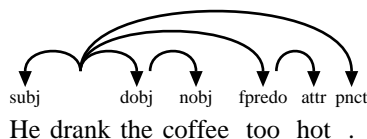
correl *Correlative coordinator relation.*
 isa SYNADJ Related types: conj coord.
 [102]



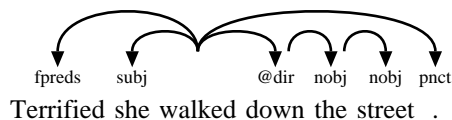
fpred *Free predicative.*
 isa SYNADJ Subtypes: fpredo fpreds.
 [105] Related types: fpredo fpreds.

V→free predicative

fpredo *Free direct-object predicative.*
 isa fpred Related types: fpreds man.
 [107]



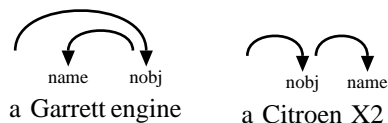
fpreds *Free subject predicative.*
 isa fpred Related types: fpredo.
 [106]



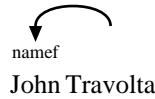
mod *Modifier/adverbial.* Deprecated name for adverbials
 isa SYNADJ Subtypes: modp.
 [130]

modp *Parenthetic modifier.* Deprecated name for parenthetic modifiers
 isa mod

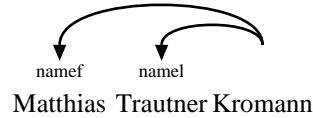
name *Part of name.* Part of a name.
 isa SYNADJ Subtypes: namef namel title.
 [118]



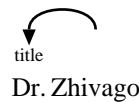
namef *First name.* A first name.
 isa name Related types: namel title.
 [119]



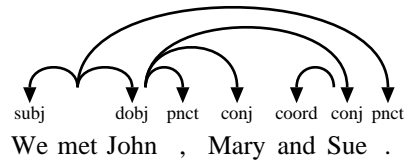
namef *Last name.* A second last name
 isa name Related types: namef title.
 [120]



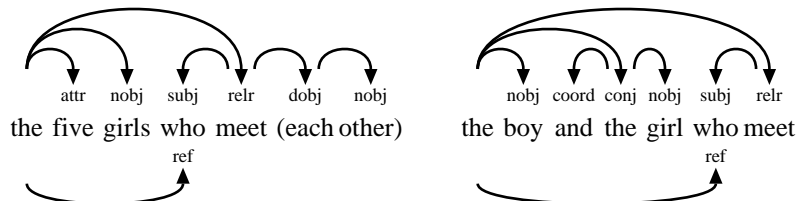
title *Person title.* A title in a name. If the title is determined by an article, eg. the director Smith, the title must be annotated as "nobj" and the name as "appr".
 isa name Related types: namef namel.
 [121]



pnct *Punctuation.*
 isa SYNADJ Confusion2: nobj_{50%} dobj_{50%} .
 [103]



rel *Relative clause.* A relation between a relative clause and a relativized NP/VP. The finite verb in the relative clause is analyzed as a "rel" dependent of the head of the relativized NP/VP (ie, the determiner if present, otherwise the noun). If there is a relative pronoun, it receives an incoming "ref" arrow from the head of the relativized NP/VP; otherwise, the head of the relativized NP/VP must function as a secondary dependent of some word within the relative clause (often the relative verb itself).
 Subtypes: relelab relpa relr.
 Related types: relelab relpa relr.



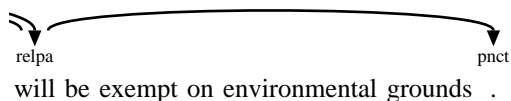
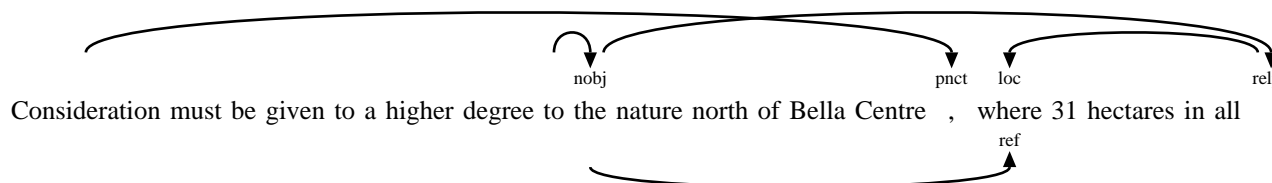
relelab *Elaborating relative clause.* Ledsætning med sætningsantecedent i hovedsætning; da:
 isa rel hvilken, it: il che, cosa che
 [116] Related types: relpa relr.

V->V

relpa *Parenthetic relative clause.*

isa rel Related types: relelab relr.

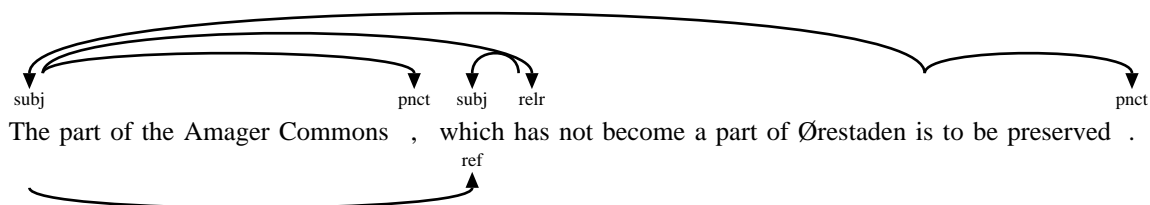
[115]



relr *Restrictive relative clause.*

isa rel Related types: relelab relpa.

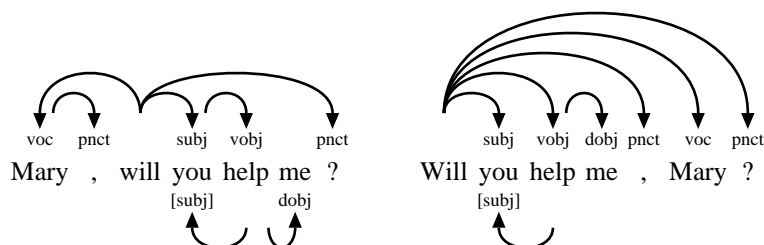
[114]



voc *Vocative.* Vocative specification. The person to whom the statement is directed.

isa SYNADJ

[123]



xtop *External topic with resuming pronoun.* An external topic is a sentence-initial NP

isa SYNADJ whose only function is to provide the antecedent for a pronoun later in the sentence.

[117]

Eg in "John, he is a nice person". Here "John" is the "xtop" of "is", and "he" is the subject of "is".

Related types: cons ref xtop.



Chapter 4

Morphological relations: MORPHOLOGY

MORPH: morphology level
"§"PRIM: morphology specification

Figure 4.1: The relations matching MORPHOLOGY-MORPHCOMP-MORPHDERIV.

MORPH *Morphology level* (long: MORPHOLOGY). A relation at the morphological level. Ie, a relation between two word segments within a single word.
isa DIM:LEVEL [15]
Subtypes: "§"PRIM MORPHCOMP MORPHDERIV.

"§"PRIM *Morphology specification.*
isa MORPH RULE [364]

4.1 Compositional relations: MORPHCOMP

MORPHCOMP: compositional semantic relations
ABOUT: noun-noun compound (about)
AGENT: noun-noun compound (agentive)
CONST: noun-noun compound (constitutive)
EVAL: noun-noun compound (evaluative)
FUNC: noun-noun compound (function)
ORIGIN: noun-noun compound (origin)
OTHER: noun-noun compound (other)
POS: noun-noun compound (position)
POSS: noun-noun compound (possession)
RESEM: noun-noun compound (resemblance)
TIME:MC: noun-noun compound (time)

Figure 4.2: The relations matching MORPHCOMP.

MORPHCOMP *Compositional semantic relations.* A semantic relation is created between two (or more) elements which could potentially be used as stems. (A compound contains at least two roots.)
 isa MORPH [259]
 Subtypes: ABOUT AGENT CONST EVAL FUNC ORIGIN OTHER POS POSS RESEM TIME:MC.

ABOUT *Noun-noun compound (about).* Non-head has an aboutness meaning wrt. head.
 isa MORPHCOMP [351]
 (theme: skattelov 'tax law' = lov –[skat]te/ABOUT)

AGENT *Noun-noun compound (agentive).* Non-head has an agentive meaning wrt. head.
 isa MORPHCOMP [343]
 (agent: politikontrol 'police control' = kontrol –politi/AGENT)

CONST *Noun-noun compound (constitutive).* Non-head has a constitutive meaning wrt. head.
 isa MORPHCOMP [342]
 (constitutive: træbord 'wooden table' = bord –træ/CONST)

EVAL *Noun-noun compound (evaluative).* Non-head has an evaluative meaning wrt. head.
 isa MORPHCOMP [349]
 coche de lujo 'luksusbil'

FUNC *Noun-noun compound (function).* Non-head has a functional meaning wrt. head.
 isa MORPHCOMP [345]
 (function: krigsskib 'war ship' = skib –[krig]s/FUNC)

ORIGIN *Noun-noun compound (origin).* Non-head has a meaning of origin wrt. head.
 isa MORPHCOMP [344]
 (origin: rørsukker 'cane sugar' = sukker –rør/ORIGIN)

OTHER *Noun-noun compound (other).* If in doubt about the meaning relation between head and non-head.
 isa MORPHCOMP [352]

POS *Noun-noun compound (position).* Non-head has a locative meaning wrt. head.
 isa MORPHCOMP [347]
 (position: loftlampe 'ceiling lamp' = lampe –loft/POS)

POSS *Noun-noun compound (possession).* Non-head has a possessive meaning wrt. head.
 isa MORPHCOMP [346]

(possession: politibil = bil –politi/POSS

RESEM *Noun-noun compound (resemblance).* Denotations of head and non-head resemble each other.
isa MORPHCOMP [350]

silla de tijeras 'saksestol' [klapstol], válvula de mariposa 'sommerfugleventil'

TIME:MC *Noun-noun compound (time).* Non-head has a temporal meaning wrt. head.
isa MORPHCOMP [348]

(time: oktoberregn 'October rain' = regn –oktober/TIME)

4.2 Derivational relations: MORPHDERIV

MORPHDERIV: derivational semantic relations

Figure 4.3: The relations matching MORPHDERIV-PREFIX-SUFFIX.

MORPHDERIV *Derivational semantic relations.* A semantic relation is created between a base and an affix
isa MORPH [258]
Subtypes: PREFIX SUFFIX.

4.2.1 Prefix relations: PREFIX

PREFIX *Semantic relations appearing with prefixes.* A semantic relation is created between a base and a prefix.
isa MORPHDERIV [261]
Subtypes: ASPEC GRAD LOC MOD NEG PRE:other TIME§ TRANS.

ASPEC *Aspectual dimension.* Prefix conveys an aspectual dimension in a broad sense.
isa PREFIX [278]
Subtypes: ASPEC:cause ASPEC:iter ASPEC:reflex ASPEC:resul ASPEC:rev ASPEC:term.

ASPEC:cause *Causation.* Prefix conveys causation.
isa ASPEC [281]

(causative: acallar 'silence' = callar –a/ASPEC:cause)

ASPEC:iter *Iteration.* Prefix conveys iteration.
isa ASPEC [280]

(iterative: redefine = define –re/ASPEC:iter)

ASPEC:reflex *Reflexivity.* Prefix conveys reflexivity.
isa ASPEC [282]

PREFIX: semantic relations appearing with prefixes
 ASPEC: aspectual dimension
 ASPEC:cause: causation
 ASPEC:iter: iteration
 ASPEC:reflex: reflexivity
 ASPEC:resul: result
 ASPEC:rev: reversion
 ASPEC:term: termination
 GRAD: graduation
 GRAD:qual: quality
 GRAD:size: size
 LOC: location
 LOC:dir: direction
 LOC:pos: position
 LOC:proce: origin
 MOD: modification
 MOD:cuant: quantification
 MOD:man: manner
 MOD:qual: qualification
 NEG: negation
 NEG:oppo: opposition
 NEG:priv: privation
 PRE:other: other prefix relation
 TIME§: time
 TRANS: transitivity

Figure 4.4: The relations matching PREFIX.

(reflexive: autopilot = pilot –auto/ASPEC:reflex)

ASPEC:resul *Result.* Prefix conveys result.

isa ASPEC
 [284]

(resultative: fastnagle 'rivet' = nagle –fast/ASPEC:resul)

ASPEC:rev *Reversion.* Prefix conveys reversion.

isa ASPEC
 [279]

(reversion: deactivate = activate –de/ASPEC:rev)

ASPEC:term *Termination.* Prefix conveys termination.

isa ASPEC
 [283]

(terminative: oplåse 'open' = låse –op/ASPEC:term)

GRAD *Graduation.* Prefix conveys graduation in a broad sense.

isa PREFIX
 Subtypes: GRAD:qual GRAD:size.
 [275]

GRAD:qual *Quality.* Prefix conveys quality.

isa GRAD
 [277]

(quality: supercomputer = computer –super/GRAD:qual)

GRAD:size *Size.* Prefix conveys size.

isa GRAD

[276]

(size/quantity: minibar = bar –mini/GRAD:size)

LOC *Location.* Prefix expresses location in a broad sense.

isa PREFIX

[264]

Subtypes: LOC:dir LOC:pos LOC:proce.

LOC:dir *Direction.* Prefix expresses direction.

isa LOC

[266]

(direction/origin: deverbal = verbal –de/LOC:dir)

LOC:pos *Position.* Prefix expresses position.

isa LOC

[265]

(position: intramural = mural –intra/LOC:pos)

LOC:proce *Origin.* Prefix conveys origin.

isa LOC

[267]

(origin: extraer: = traer –ex/LOC:proce)

MOD *Modification.* Prefix conveys modification in a broad sense.

isa PREFIX

[286]

Subtypes: MOD:cuant MOD:man MOD:qual.

MOD:cuant *Quantification.* Prefix conveys quantification.

isa MOD

[287]

(quantification: multicultural = cultural –multi/MOD:quant)

MOD:man *Manner.* Prefix conveys manner.

isa MOD

[288]

(manner: maleducado = educado –mal/MOD:man)

MOD:qual *Qualification.* Prefix conveys qualification.

isa MOD

[289]

(qualification: paleochristian = christian –paleo/MOD:qual)

NEG *Negation.* Prefix conveys negation in a broad sense.

isa PREFIX

[272]

Subtypes: NEG:oppo NEG:priv.

NEG:oppo *Opposition.* Prefix conveys opposition.

isa NEG

[273]

(opposition: antihero = hero –anti/NEG:oppo)

NEG:priv *Privation.* Prefix conveys privation.

isa NEG

[274]

(privation: desalt = salt –de/NEG:priv)

PRE:other *Other prefix relation.* If in doubt about the meaning conveyed by the prefix

isa PREFIX

TIMES

[290]

Time. Prefix conveys time in a broad sense.

isa PREFIX

TRANS

[298]

Transitivity. Prefix conveys transitivity.

isa PREFIX

[285]

(transitivising: påsejle 'collide': sejle –på/TRANS)

4.2.2 Suffix relations: SUFFIX

SUFFIX *Semantic relations appearing with suffixes.* A semantic relation is created between a base and a suffix.

isa MORPHDERIV

[262]

Subtypes: AUG DENOM DENUM DER DEV DEVN DIMIN NOPRED PEJ QUAL.

AUG *Augmentation.* Suffix conveys augmentation.

isa SUFFIX

[291]

(augmentative: perrazo 'big dog' = perro +azo/AUG)

DENOM *Noun-adjective derivation.* Suffix creates denominal adjectives in a broad sense.

isa SUFFIX

[327]

Subtypes: DENOM:disp DENOM:eff DENOM:other DENOM:poss DENOM:rel DENOM:resem.

DENOM:disp *Noun-adjective derivation (disposition).* Suffix creates denominal adjectives that express disposition.

isa DENOM

[335]

"que tiene afición por N" (mujeriego – "que afición por las mujeres" 'kvindeglad/som er glad for kvinder')

DENOM:eff *Noun-adjective derivation (effect).* Suffix creates denominal adjectives that express an effect.

isa DENOM

[336]

"que causa simpatía" (simpático – "que causa simpatía" 'sympatisk/som vækker sympati')

DENOM:other *Noun-adjective derivation (other).* If in doubt about the meaning conveyed by the suffix

isa DENOM

[337]

DENOM:poss *Noun-adjective derivation (possession).* Suffix creates denominal adjectives that express possession.

isa DENOM

[334]

"que posee/tiene/lleva N" (barbudo – "que lleva barba" 'skægget/som bærer skæg')

DENOM:rel *Noun-adjective derivation (relational).* Suffix creates denominal adjectives with a relational meaning.
isa DENOM [328]

Subtypes: DENOM:rel.deono DENOM:rel.norm.

DENOM:rel.deono *Noun-adjective derivation (naming).* Suffix creates relational adjectives with the meaning of "naming".
isa DENOM:rel [330]

Subtypes: DENOM:rel.deono.pers DENOM:rel.deono.place.

DENOM:rel.deono.pers *Noun-adjective derivation (naming persons).* Suffix creates relational adjectives with the meaning of "naming" persons.
isa DENOM:rel.deono [331]

Cervantino 'som har at gøre med Cervantes'

DENOM:rel.deono.place *Noun-adjective derivation (naming places).* Suffix creates relational adjectives with the meaning of "naming" of places.
isa DENOM:rel.deono [332]

Madrialeño 'som har at gøre med/kommer fra Madrid'

DENOM:rel.norm *Noun-adjective derivation (normal).* Suffix creates relational adjectives with a "normal" meaning aspect.
isa DENOM:rel [329]

(denominal adjective: presidential = president +ial/DENOM:rel.norm)

DENOM:resem *Noun-adjective derivation (resemblance).* Suffix creates denominal adjectives that express resemblance.
isa DENOM [333]

"que se parece a N" (sanchopancesco – "que se parece a Sancho Panza" 'sanchopanzask/som ligner Sancho Panza')

DENUM *Adjective-numeral derivation.* Suffix creates denumeral adjectives in a broad sense.
isa SUFFIX [338]

Subtypes: DENUM:mult DENUM:ord DENUM:part.

DENUM:mult *Adjective-multiplicative derivation.* Suffix creates multiplicative numerals.
isa DENUM [341]

"kardinal=cinco – multiplikativ=quíntuplo" 'fem/femdobbelte'

DENUM:ord *Adjective-ordinal derivation.* Suffix creates ordinals.
isa DENUM [339]

"kardinal=dos – ordinal=segundo" 'to/anden'

DENUM:part *Adjective-partitive derivation.* Suffix creates partitive numerals.

isa DENUM
[340]

"kardinal=doce – partitiv=doceavo" 'tolv/tolvtedel'

DER *Verb derivation.* Suffix triggers a derivation

isa SUFFIX
[294]

Subtypes: DER:av DER:nv DER:vv.

DER:av *Adjective-verb derivation.* Suffix triggers a derivation from an adjective to a verb.

isa DER
[296]

(adjective->verb derivation: darken = dark +en/DER:av)

DER:nv *Noun-verb derivation.* Suffix triggers a derivation from a noun to a verb.

isa DER
[295]

(noun->verb derivation: salar 'to salt' = sal +ar/DER:nv)

DER:vv *Verb-verb derivation.* Suffix triggers a derivation from a verb to another verb.

isa DER
[297]

(verb->verb derivation: adormecer 'lull to sleep' = dormir +[a][ecer]/DER:vv)

DEV (long: DEVERB).

isa SUFFIX
[318]

Subtypes: DEVA.

DEVA *Verb-adjective derivation* (long: DEVERBA). Suffix creates deverbal adjectives in a broad sense.

isa DEV
[319]

Subtypes: DEVA:act DEVA:pas.part.

DEVA:act *Verb-adjective derivation (active)* (long: DEVERB:act.pure). Suffix creates active adjectives.

isa DEVA
[320]

Subtypes: DEVA:act.disp DEVA:act.poten DEVA:pas.

DEVA:act.disp *Verb-adjective derivation (pure)* (long: DEVERB:act.disp). Suffix creates active adjectives with the meaning aspect "pure".

isa DEVA:act
[321]

"que V" (conmovedor – "que conmueve" 'gribende/der griber')

DEVA:act.poten *Verb-adjective derivation (disposition)* (long: DEVERB:act.poten). Suffix creates active adjectives with the meaning aspect "disposition".

isa DEVA:act
[322]

"que suele V, que tiende a V" (adulón – "que suele adular, que tiende a adular" 'smigre/som plejer eller har

tendens til at være krybende

DEVA:pas *Verb-adjective derivation (potentiality)* (long: DEVERB:pas). Suffix creates active ad-
 isa DEVA:act jectives with the meaning aspect "potentiality".
 [323] Subtypes: DEVA:pas.deon DEVA:pas.poten.

(deverbal adjective: transportable = transport+able/DEVERB:pas.poten)

DEVA:pas.deon *Verb-adjective derivation (passive potentiality)* (long: DEVERB:pas.deon). Suffix creates
 isa DEVA:pas passive adjectives with the meaning aspect "potentiality".
 [326]

"que puede {ser PP/Vse}" (transportable – "máquina que puede {ser transportada/transportarse}

'transportabel/maskine som kan blive transporteret/transporteres

DEVA:pas.poten *Verb-adjective derivation (passive participles)* (long: DEVERB:pas.poten). Suffix creates
 isa DEVA:pas passive adjectives with the form of participles.
 [325]

"que {ha sido/está/es} PP" (comprado – "hombre que {ha sido/está/es} comprado 'mand som er blevet/er/bliver

købt"

DEVA:pas.part *Verb-adjective derivation (passive)* (long: DEVERB:pas.part). Suffix creates passive ad-
 isa DEVA jectives.
 [324]

DEVN *Verb-noun derivation* (long: DEVERBN, deprecated PRED). Suffix creates deverbal nouns
 isa SUFFIX in a broad sense.
 [298] Subtypes: DEVN:agent DEVN:core DEVN:exper DEVN:inst DEVN:loc DEVN:other DEVN:recip
 DEVN:result.

DEVN:agent *Verb-noun derivation (agent)*. Suffix creates deverbal nouns absorbing the agent
 isa DEVN role.
 [299]

(agent derivation: singer = sing +er/PRED:agent)

DEVN:core *Verb-noun derivation (core)*. Suffix creates deverbal nouns expressing a nominalized
 isa DEVN version of the situation denoted by the original verb.
 [301]

(core derivation: exploitation = exploit@V +ation/PRED:core)

DEVN:exper *Verb-noun derivation (experiencer).* Suffix creates deverbal nouns absorbing the
isa DEVN experiencer role.
[300]

(experiencer derivation: admirer = admire +r/PRED:exper)

DEVN:inst *Verb-noun derivation (instrument).* Suffix creates deverbal nouns expressing the
isa DEVN instrument related to the meaning of the original noun.
[305]

(instrument derivation: exprimidor 'saftpresser' = exprimir +dor/PRED:inst)

DEVN:loc *Verb-noun derivation (location).* Suffix creates deverbal nouns expressing the loca-
isa DEVN tion related to the meaning of the original noun.
[304]

(locative derivation: comedor 'spisestue' = comer +dor/PRED:loc)

DEVN:other *Verb-noun derivation (other).* If in doubt about the meaning conveyed by the suffix
isa DEVN
[306]

DEVN:recip *Verb-noun derivation (recipient).* Suffix creates deverbal nouns absorbing the recip-
isa DEVN ient role
[303]

(recipient derivation: beneficiario 'den begunstigde' = beneficiar +ario/PRED:recip)

DEVN:result *Verb-noun derivation (patient).* Suffix creates deverbal nouns absorbing the patient
isa DEVN role.
[302]

(result derivation: hallazgo 'fund' = hallar +azgo/PRED:result)

DIMIN *Diminution.* Suffix conveys diminution.
isa SUFFIX
[292]

(diminutive: viejecito 'little old man' = viejo +ecito/DIM)

NOPRED *Noun-noun derivation.* Suffix creates non-predicative nouns (from other nouns) in
isa SUFFIX a broad sense.
[308]
Subtypes: NOPRED:agent NOPRED:capac NOPRED:cont NOPRED:loc NOPRED:other NO-
NOPRED:result NOPRED:script NOPRED:set NOPRED:temp.

NOPRED:agent *Noun-noun derivation (agent).* Suffix creates non-predicative nouns expressing an
isa NOPRED agent role.
[309]

(agent derivation: miller = mill +er/NOPRED:agent)

NOPRED:capac *Noun-noun derivation (capacity).* Suffix creates non-predicative nouns expressing a capacity.
isa NOPRED
[314]

(capacity derivation: cestada 'kurvfuld' = cesta +ada/NOPRED:capac)

NOPRED:cont *Noun-noun derivation (container).* Suffix creates non-predicative nouns expressing a container.
isa NOPRED
[311]

(container derivation: azucarero 'sugar bowl' = azucar +ero/NOPRED:cont)

NOPRED:loc *Noun-noun derivation (location).* Suffix creates non-predicative nouns expressing a location.
isa NOPRED
[315]

(locative derivation: arenal 'sandet strækning' = arena +al/NOPRED:loc)

NOPRED:other *Noun-noun derivation (other).* If in doubt about the meaning conveyed by the suffix
isa NOPRED
[317]

NOPRED:result *Noun-noun derivation (result).* Suffix creates non-predicative nouns expressing a result.
isa NOPRED
[310]

(result derivation: puñalada 'knivstik' = puñal +ada/NOPRED:result)

NOPRED:script *Noun-noun derivation (script).* Suffix creates non-predicative nouns expressing a script/notion related to the original noun.
isa NOPRED
[316]

(script derivation: pontaje 'brobetaling' = puente +aje/NOPRED:script)

NOPRED:set *Noun-noun derivation (set).* Suffix creates non-predicative nouns expressing a set.
isa NOPRED
[313]

(set derivation: perrada 'hundekobbel' = perro +ada/NOPRED:set)

NOPRED:temp *Noun-noun derivation (temporal).* Suffix creates non-predicative nouns expressing a temporal aspect.
isa NOPRED
[312]

(temporal derivation: temporada 'tidsrum/sæson' = tiempo +ada/NOPRED:temp)

PEJ *Pejoration.* Suffix conveys a pejorative sense.
isa SUFFIX
[293]

(pejorative: vinacho 'bad vine' = vino +acho/PEJ)

QUAL *Adjective derivation.* Suffix creates deadjectival nouns.
isa SUFFIX
[307]

(deadjectival noun: bitterness = bitter +ness/QUAL)

SUFFIX: semantic relations appearing with suffixes

- AUG: augmentation
- DENOM: noun-adjective derivation
 - DENOM:disp: noun-adjective derivation (disposition)
 - DENOM:eff: noun-adjective derivation (effect)
 - DENOM:other: noun-adjective derivation (other)
 - DENOM:poss: noun-adjective derivation (possession)
 - DENOM:rel: noun-adjective derivation (relational)
 - DENOM:rel.deono: noun-adjective derivation (naming)
 - DENOM:rel.deono.pers: noun-adjective derivation (naming persons)
 - DENOM:rel.deono.place: noun-adjective derivation (naming places)
 - DENOM:rel.norm: noun-adjective derivation (normal)
 - DENOM:resem: noun-adjective derivation (resemblance)
- DENUM: adjective-numeral derivation
 - DENUM:mult: adjective-multiplicative derivation
 - DENUM:ord: adjective-ordinal derivation
 - DENUM:part: adjective-partitive derivation
- DER: verb derivation
 - DER:av: adjective-verb derivation
 - DER:nv: noun-verb derivation
 - DER:vv: verb-verb derivation
- DEV:
 - DEVA: verb-adjective derivation
 - DEVA:act: verb-adjective derivation (active)
 - DEVA:act.disp: verb-adjective derivation (pure)
 - DEVA:act.poten: verb-adjective derivation (disposition)
 - DEVA:pas: verb-adjective derivation (potentiality)
 - DEVA:pas.deon: verb-adjective derivation (passive potentiality)
 - DEVA:pas.poten: verb-adjective derivation (passive participles)
 - DEVA:pas.part: verb-adjective derivation (passive)
 - DEVN: verb-noun derivation
 - DEVN:agent: verb-noun derivation (agent)
 - DEVN:core: verb-noun derivation (core)
 - DEVN:exper: verb-noun derivation (experiencer)
 - DEVN:inst: verb-noun derivation (instrument)
 - DEVN:loc: verb-noun derivation (location)
 - DEVN:other: verb-noun derivation (other)
 - DEVN:recip: verb-noun derivation (recipient)
 - DEVN:result: verb-noun derivation (patient)
- DIMIN: diminution
- NOPRED: noun-noun derivation
 - NOPRED:agent: noun-noun derivation (agent)
 - NOPRED:capac: noun-noun derivation (capacity)
 - NOPRED:cont: noun-noun derivation (container)
 - NOPRED:loc: noun-noun derivation (location)
 - NOPRED:other: noun-noun derivation (other)
 - NOPRED:result: noun-noun derivation (result)
 - NOPRED:script: noun-noun derivation (script)
 - NOPRED:set: noun-noun derivation (set)
 - NOPRED:temp: noun-noun derivation (temporal)
- PEJ: pejoration
- QUAL: adjective derivation

Figure 4.5: The relations matching SUFFIX.

Chapter 5

Discourse relations: DISCOURSE

DISC: discourse level
"⌘"PRIM: discourse specification
DISCOTHER:
 JOINT: no clear relation
 PREP: preparation
 REP: repaired

Figure 5.1: The relations matching DISCOURSE-DISCFUNC-DISCSEM.

DISC *Discourse level* (long: DISCOURSE). A relation at the discourse level. Ie, a relation
isa DIM:LEVEL between segments in different sentences or clauses.
[17] Subtypes: "⌘"PRIM DISCOTHER DISCPRAG DISCSEM.

"⌘"PRIM *Discourse specification*. A primary syntactic relation that has been used as a dis-
isa DISC RULE course relation for stylistic purposes.
[363]

DISCOTHER .
isa ADJ DISC Subtypes: JOINT PREP REP.
[208]

JOINT *No clear relation*. The dependent text segment adds a completely new content
isa DISCOTHER without any clear discourse relation to the governing segment
[256] Confusion₄: CONJ_{50%} JOINT_{50%} .

PREP *Preparation* (deprecated STRUCT:prep). Dependent text segment "prepares" for the
isa DISCOTHER following and governing text, e.g. headings, titles
[254] Confusion₄: PREP_{100%} .

REP *Repaired* (deprecated STRCUT:rep). Dependent text segment is interrupted and unfin-
isa DISCOTHER ished and "repaired" by the following and governing text segments, which completes
[255] it

DISCPRAG:	pragmatic and illocutionary discourse relations
ANSW:	answer
CONSOL:	consolidation
CONSOL:enabl:	enablement
CONSOL:just:	justification
CONSOL:motiv:	motivation
DESCR:	description/evaluation
DESCR:eval:	positive/negative evaluation
DESCR:qual:	neutral description
DIREC:	directive act
EXPR:	expressive act
INTACT:	interactional signals
INTACT:attn:	attention
INTACT:inter:	interruption
QUEST:	question

Figure 5.2: The relations matching DISCFUNC.

5.1 Functional relations: DISCFUNC

DISCPRAG *Pragmatic and illocutionary discourse relations* (deprecated DISCFUNC). The dependent text segment expresses a change in speech act or pragmatic function (speaker's intention) wrt the governing segment; the label indicates the speech act or function of the dependent segment; regarding speaker's intentions and speech acts we consider the narrating asserting speech act as our default value.

Subtypes: ANSW CONSOL DESCR DIREC EXPR INTACT QUEST.

ANSW *Answer.* Governing text segment contains question or problem, dependent text segment answer or solution
 isa DISCPRAG [240]
 Confusion₁: ANSW_{100%} .

CONSOL *Consolidation* (deprecated SUPPORT?).
 isa DISCPRAG [249]
 Subtypes: CONSOL:enabl CONSOL:just CONSOL:motiv.

CONSOL:enabl *Enablement.* S enables reader or recipient to carry out the action mentioned in N; frequent in directive texts
 isa CONSOL [251]

CONSOL:just *Justification* (deprecated JUST). S justifies N wrt its content (reason for mentioning it or sim.) thereby strengthening it argumentatively
 isa CONSOL [250]
 Confusion₂: ELAB:exp_{50%} CAUSE:reas_{25%} CAUSE:expl_{25%} .

[da] Fordi, Eftersom

CONSOL:motiv *Motivation.* S motivates reader or recipient to carry out the action mentioned in N
 isa CONSOL [252]
 Confusion₁: CAUSE:expl_{100%} .

DESCR *Description/evaluation.* S expresses description or evaluation of N
 isa DISCPRAG [246]
 Subtypes: DESCR:eval DESCR:qual.

DESCR:eval *Positive/negative evaluation.* S expresses a personal and/or subjective positive or negative description of N
 isa DESCR [247] Confusion₂: CONJ_{50%} CAUSE:reas_{50%} .

DESCR:qual *Neutral description.* S expresses an objective and/or neutral description of N
 isa DESCR [248] Confusion₁: ELAB:exp_{100%} .

DIREC *Directive act.* Dependent text segment contains an order, command or request
 isa DISCPRAG [241] e.g. imperatives

EXPR *Expressive act.* Dependent text segment contains an expression of the speaker's attitudes or emotions, e.g. congratulations, excuses or thanks
 isa DISCPRAG [242] [en] I'm sorry!; My condolences!

INTACT *Interactional signals.*
 isa DISCPRAG [243] Subtypes: INTACT:attn INTACT:inter.

INTACT:attn *Attention.* S contains an attention signal
 isa INTACT [244] [da] Ja; Nâ; OK; [it] Sì; Beh; [en] Yeah, Oh, Really?

INTACT:inter *Interruption.* S contains an interruption signal
 isa INTACT [245] [da] Jamen; [it] Ma; [en] But... But

QUEST *Question .* The dependent text segment contains a question with or without an answer
 isa DISCPRAG [239]

5.2 Semantic relations: DISCSEM

DISCSEM *Semantic discourse relations.* The relations hold between the propositions of the governing and dependent text segments and are defined in semantic terms; relations are mono- or multinuclear; the four “prg”-subtypes express changes of speech act like the DISCPRAG, however the semantic relations are so dominant that they should determine the main type of the relation
 isa ADJ DISC [206] Subtypes: CAUSE CONC COND CONJ CONS CONTR DISJ ELAB TIME.

CAUSE *Cause relation (discourse).* S expresses cause in a broad sense
 isa DISCSEM [210] Subtypes: CAUSE:expl CAUSE:goal CAUSE:prg CAUSE:reas.

CAUSE:expl *Explanation relation (discourse).* S expresses explanation; a more general and elaborating explanation than "reason"
 isa CAUSE [211] Confusion₁₂: ELAB:exp_{25%} CAUSE:reas_{24%} CAUSE:expl_{17%} CONJ_{13%} CONSOL:motiv_{8%} vobj_{6%} conj_{4%} CONSOL:just_{4%} .

DISCSEM: semantic discourse relations
 CAUSE: cause relation (discourse)
 CAUSE:expl: explanation relation (discourse)
 CAUSE:goal: goal relation (discourse)
 CAUSE:prg: pragmatic cause
 CAUSE:reas: reason relation (discourse)
 CONC: concession
 COND: condition
 CONJ: conjunction
 CONJ:seq: sequence
 CONS: consequence/result/conclusion relation (discourse)
 CONS:dir: direct, physical consequence, result
 CONS:prg: pragmatic/personal conclusion, deduction
 CONTR: contrast
 CONTR:dir: direct contrast
 CONTR:prg: pragmatic contrast
 DISJ: disjunction
 DISJ:dir: direct disjunction
 DISJ:prg: pragmatic disjunction
 ELAB: elaboration
 ELAB:exem: exemplification
 ELAB:exp: expansion
 ELAB:part: part of relation
 ELAB:rest: restatement
 TIME: temporal relation
 TIME:cont: contemporaneity
 TIME:prec: temporal precedence
 TIME:prec§: temporal precedence
 TIME:succ: temporal succession
 TIME:succ§: temporal succession

Figure 5.3: The relations matching DISCSEM.

[da] Nemlig; [it] Infatti

CAUSE:goal *Goal relation (discourse).* S expresses goal, purpose, aim

isa CAUSE

[212]

[da] For (at)

CAUSE:prg *Pragmatic cause.* The speaker uses the cause as a personal argument to support a claim

isa CAUSE

[214]

CAUSE:reas *Reason relation (discourse).* S expresses a specific and concrete reason

isa CAUSE

[213]

Confusion₉: CAUSE:expl_{31%} vobj_{19%} ELAB:exp_{17%} DESCR:eval_{11%} CONS:dir_{11%} conj_{6%} CON-SOL:just_{6%} .

[da] Fordi, Eftersom

CONC *Concession.* S admits or acknowledges a fact wrt N, which may however not have the expected consequence or effect
 isa DISCSEM
 [215] Confusion₂: CONJ_{25%} ELAB:exp_{25%} CONC_{25%} CONTR:dir_{25%} .

COND *Condition.*
 isa DISCSEM

CONJ *Conjunction.* Dependent text segment adds a new subject somehow related to governing text segment; may be difficult to distinguish from ELAB:exp, but is relatively more independent from the governing segment than ELAB and would function better without the governing segment than ELAB
 isa DISCSEM
 [230] Subtypes: CONJ:seq.
 Related types: conj.
 Confusion₄₁: CONJ_{39%} ELAB:exp_{30%} CAUSE:expl_{4%} JOINT_{4%} CONTR:prg_{4%} CONS:dir_{4%} conj_{3%} rel_{2%} cont_{2%} qobj_{2%} DESCR:eval_{1%} CONS:prg_{1%} ELAB:exem_{1%} CONTR:dir_{1%} CONC_{1%} .

CONJ:seq *Sequence.* Dependent text segment is part of list or sequence linked to governing text segment as e.g. in recipes, sport results etc.
 isa CONJ
 [231]

CONS *Consequence/result/conclusion relation (discourse).* S expresses consequence, result or conclusion wrt N
 isa DISCSEM
 [217] Subtypes: CONS:dir CONS:prg.

CONS:dir *Direct, physical consequence, result.* Physical, objectively observed consequence or result
 isa CONS
 [218] Confusion₆: CONS:dir_{29%} CONJ_{25%} ELAB:rest_{17%} vobj_{13%} CAUSE:reas_{8%} CONS:prgs_% .

[da] Derfor, Af den grund

CONS:prg *Pragmatic/personal conclusion, deduction.* Personal, subjective conclusion or deduction
 isa CONS
 [219] Confusion₄: CONS:prg_{63%} CONJ_{13%} CONS:dir_{13%} ELAB:exp_{13%} .

[da] Derfor, Af den grund

CONTR *Contrast.*
 isa DISCSEM Subtypes: CONTR:dir CONTR:prg.
 [232] Confusion₁: CONTR:prg_{33%} conj_{33%} CONTR:dir_{33%} .

CONTR:dir *Direct contrast.* The contrast lies between the governing and dependent text segment
 isa CONTR
 [233] Confusion₆: CONTR:prg_{33%} expl_{17%} CONC_{17%} conj_{11%} CONJ_{8%} CONTR:dir_{8%} CONTR_{6%} .

[da] Men, Derimod

CONTR:prg *Pragmatic contrast.* The contrast lies between the dependent and an inferred text segment
 isa CONTR
 [234] Confusion₁₁: conj_{30%} CONTR:prg_{24%} CONTR:dir_{20%} CONJ_{14%} coord_{9%} CONTR_{3%} .

[da] Men

DISJ *Disjunction.*
isa DISCSEM Subtypes: DISJ:dir DISJ:prg.
[235]

[da] Eller

DISJ:dir *Direct disjunction.* The disjunction lies between the governing and dependent text
isa DISJ segment
[236]

DISJ:prg *Pragmatic disjunction.* The disjunction lies between the dependent and an inferred
isa DISJ text segment
[237]

ELAB *Elaboration.* S adds more information or detail on N
isa DISCSEM Subtypes: ELAB:exem ELAB:exp ELAB:part ELAB:rest.
[220]

ELAB:exem *Exemplification.* S gives examples of elements or phenomena mentioned in N
isa ELAB Confusion₁: CONJ_{50%} ELAB:exp_{50%} .
[221]

[en] For example

ELAB:exp *Expansion* (deprecated ELAB:spec). S develops and expands knowledge of N; may be
isa ELAB difficult to distinguish from CONJ
[222] Confusion₃₄: ELAB:exp_{35%} CONJ_{35%} CAUSE:expl_{9%} CONS:prg_{3%} CAUSE:reas_{3%} DESCR:qual_{3%}
CONSOL:just_{3%} ELAB:rest_{2%} qobj_{2%} xpl_{2%} ELAB:exem_{1%} CONC_{1%} .

[it] Cioè

ELAB:part *Part of relation.* S is a concrete part of N
isa ELAB
[223]

[da] Herunder, Heri

ELAB:rest *Restatement.* S states N again in a different way
isa ELAB Confusion₄: ELAB:rest_{38%} ELAB:exp_{33%} xpl_{17%} CONS:dir_{13%} .
[224]

[da] Dvs.; [it] Ossia, In altre parole, Cioè; [en] In other words, Or

TIME *Temporal relation* (deprecated CIRCUM). There is a clear temporal relation between N
isa DISCSEM and S
[225] Subtypes: TIME:cont TIME:prec TIME:prec\$ TIME:succ TIME:succ\$.

TIME:cont *Contemporaneity.* S is contemporary with N (now includes abolished TIME:dur)
isa TIME
[226]

[da] Samtidig, Mens, Så længe, Da

TIME:prec *Temporal precedence.* S precedes N
isa TIME
[227]
[en] Earlier, Some days before

TIME:prec§ *Temporal precedence.* Prefix conveys precedence.
isa TIME
[270]
(temporal precedence: prehistorical = historical –pre/TIME:prec)

TIME:succ *Temporal succession.* S succeeds N
isa TIME
[228]
[en] Later, Some time afterwards

TIME:succ§ *Temporal succession.* Prefix conveys succession.
isa TIME
[271]
(temporal succession: postmodernism = modernism –post/TIME:succ)

Chapter 6

Anaphor relations: ANAPHORA



Figure 6.1: The relations matching ANAPHORA-coref-assoc.

ANA *Anaphoric level* (long: ANAPHORA). An anaphoric relation. Ie, a relation between an
isa DIM:LEVEL anaphor (pronoun, definite description, etc.) and an antecedent which either is a
[20] coreferent, or which provides access to a coreferent via its qualia structure. The
relation goes from antecedent to anaphor.
Subtypes: anaphor.

anaphor .
isa ANA Subtypes: assoc coref.
[187]

6.1 Coreference relations: coref

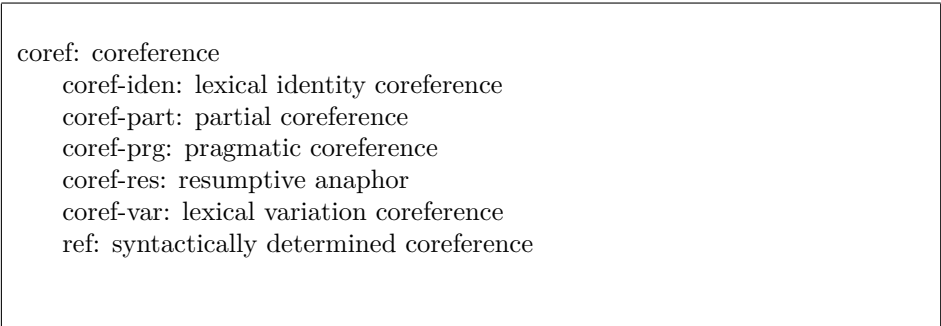


Figure 6.2: The relations matching coref.

coref *Coreference*. Anaphor denotes same entity as antecedent; all coreferential pronouns
isa anaphor are labelled this way
[188] Subtypes: coref-iden coref-part coref-prg coref-res coref-var ref.

coref-iden *Lexical identity coreference* (deprecated **coref-id**). A car -> the car // a yellow car -> the yellow car
 isa coref [190]

coref-part *Partial coreference*. Coreferential with a part of the antecedent
 isa coref [194]

coref-prg *Pragmatic coreference*. Takes up a statement and evaluates it with respect to speech act; I will be there tomorrow -> the threat / promise / warning / statement
 isa coref [192]

coref-res *Resumptive anaphor*.
 isa coref [193]

coref-var *Lexical variation coreference*. A car -> the vehicle // a yellow car -> the car
 isa coref [191]

ref *Syntactically determined coreference*. Syntactically determined coreference (eg, relative pronouns, external topics)
 isa coref [189]

antecedent->anaphor

6.2 Associative anaphor relations: assoc

assoc: associative anaphor
 "assoc-"QUALIA: associative anaphor wrt. qualia
 assoc-agentive: associative anaphor (agentive)
 assoc-const: associative anaphor (constitutive)
 assoc-formal: associative anaphor (formal)
 assoc-telic: associative anaphor (telic)

Figure 6.3: The relations matching **assoc**.

assoc *Associative anaphor*. Anaphor denotes entity which is associated with antecedent
 isa anaphor [195]
 Subtypes: "assoc-"QUALIA assoc-agentive assoc-const assoc-formal assoc-telic.

"assoc-"QUALIA *Associative anaphor wrt. qualia*. Anaphor denotes entity which is associated with antecedent
 isa RULE assoc [196]

assoc-agentive *Associative anaphor (agentive)* (deprecated **assoc-agent?**).
 isa assoc [198]

assoc-const *Associative anaphor (constitutive)* (deprecated **assoc-loc?**).
 isa assoc [197]

assoc-formal *Associative anaphor (formal)* (deprecated **assoc-form?**).
 isa assoc [199]

assoc-telic *Associative anaphor (telic)* (deprecated **assoc-scope?**).
 isa assoc [200]

Chapter 7

Semantic relations: SEMANTICS

SEM: semantic level

Figure 7.1: The relations matching SEMANTICS-QUALIA-SEMROLE.

SEM *Semantic level* (long: SEMANTICS). A relation at the semantic level. Ie, a relation
isa DIM:LEVEL between functors, arguments, and modifiers.
[18] Subtypes: QUALIA SEMROLE.

7.1 Qualia relations: QUALIA

QUALIA: qualia roles
const: constitutive qualia
formal: formal qualia
 agentive: agentive qualia
 location: location qualia
resem: resemblance wrt. qualia role
 "*QUALIA: resemblance wrt. \$qualia relation
telic: telic qualia
 about: about qualia

Figure 7.2: The relations matching QUALIA.

QUALIA *Qualia roles.*

isa SEM Subtypes: const formal resem telic.
[32]

const *Constitutive qualia.* Relates to material or part-whole qualia
isa QUALIA
[39]

N->P.material/part

formal *Formal qualia.* Relates to hyperonym (super type) wrt. form, dimension, quality, shape, size.
 isa QUALIA [36]
 Subtypes: agentive location.

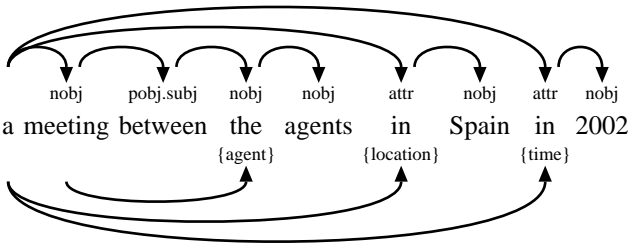
agentive *Agentive qualia.* Relates to agentive qualia
 isa formal
 [37]
 N->P.agent

location *Location qualia.*
 isa formal
 [38]
resem *Resemblance wrt. qualia role.* Resemblance wrt. some qualia role
 isa QUALIA Subtypes: ""QUALIA.
 [42]
 N->P.resem

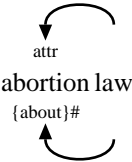
""QUALIA *Resemblance wrt. \$qualia relation.*
 isa RULE resem
 [39]
telic *Telic qualia.* Relates to purpose qualia
 isa QUALIA Subtypes: about.
 [40]
about *About qualia.* Relates to hyponym (subtype)
 isa telic
 [41]

7.2 Thematic role relations: SEMROLE

SEMROLE . A semantic relation. All the relations of the semantic roles run under the text line.
 isa SEM [46]
 The syntactic relation that runs over the text line is determined by the word class of the lemma in question. In NP constructions, the syntactic head of an adjunct is assumed to also act as the semantic head of the adjunct, ie, the semantic relation mirrors the syntactic relation in this respect.
 Subtypes: {about} {agent} {apart} {arg} {class} {const} {elab} {eval} {experiencer} {form} {func} {iden} {location} {origin} {other} {patient} {poss} {pos} {quant} {recipient} {resem} {time}.



{about} .
 isa SEMROLE
 [57]

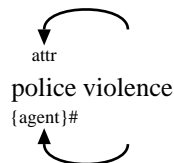


SEMROLE:

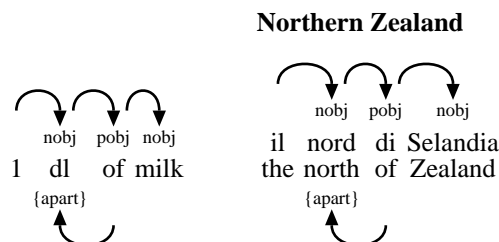
- {about}:
- {agent}: An object or a person that performs an action
- {apart}:
- {arg}:
- {class}:
- {const}:
- {elab}:
- {eval}:
- {experiencer}: The receiver of an emotion or a physical impact
- {form}:
- {func}:
- {iden}:
- {location}: The location where something is situated or happens
- {origin}:
- {other}: No specific semantic role
- {patient}: An object or a person that is the subject of the action or the one who is located somewhere
- {poss}:
- {pos}:
- {quant}:
- {recipient}: The receiver of something
- {resem}:
- {time}:

Figure 7.3: The relations matching SEMROLE.

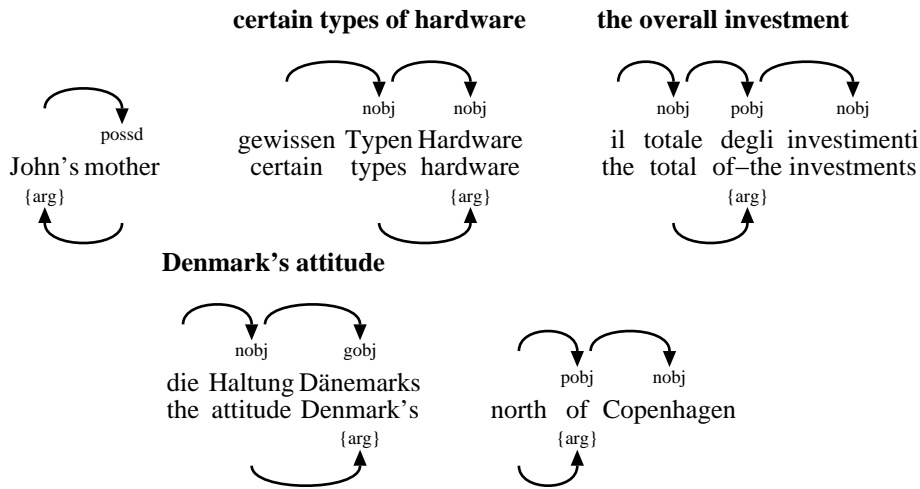
{agent} *An object or a person that performs an action.* Often generated by subject relation
 isa SEMROLE [64]



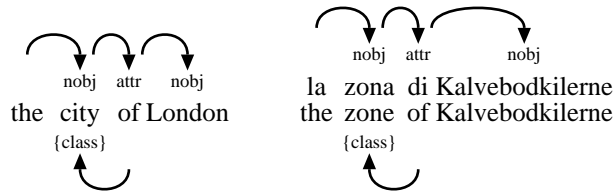
{apart} (long: arbitrarypart). Please note that the semantic relation goes from the satellite to the nucleus in opposition to the main part of the other semantic roles.
 isa SEMROLE [58]



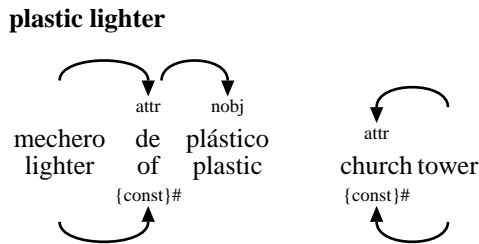
{arg} (long: argument).
 isa SEMROLE [63]



{class} . Please note that the semantic relation goes from the satellite to the nucleus in opposition to the main part of the other semantic roles.
 isa SEMROLE [59]

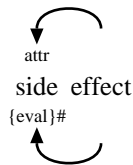


{const} (long: constituent).
 isa SEMROLE [48]



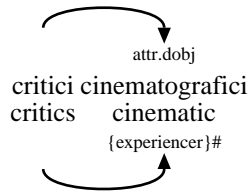
{elab} (long: elaboration). Often used together with parenthetical modifiers
 isa SEMROLE [47] Related types: modp.

{eval} (long: evaluation).
 isa SEMROLE [55]



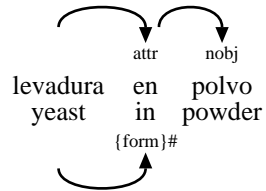
{experiencer} *The receiver of an emotion or a physical impact.* Often generated by direct object
 isa SEMROLE [66]

film critics

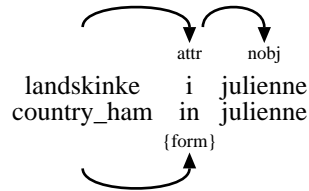


{form} .
isa SEMROLE
[61]

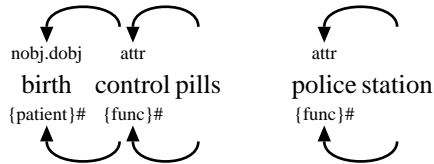
baking powder



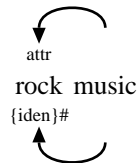
country ham in julienne strips



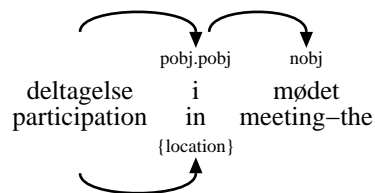
{func} (long: function).
isa SEMROLE
[51]



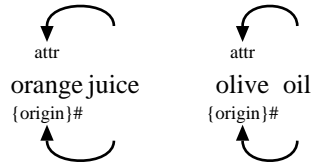
{iden} (long: identity).
isa SEMROLE
[62]



{location} *The location where something is situated or happens.* Often generated by prepositional object
isa SEMROLE
[68]

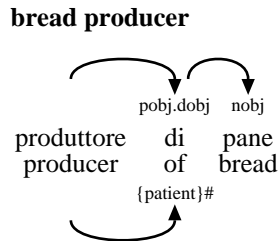


{origin} .
isa SEMROLE
[50]



{other} *No specific semantic role. Used when none of the other semantic roles are suitable or when in doubt.*
 isa SEMROLE [69]

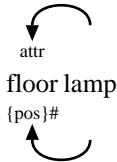
{patient} *An object or a person that is the subject of the action or the one who is located somewhere. Often generated by direct object*
 isa SEMROLE [65]



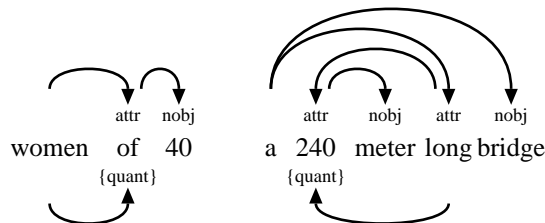
{poss} (long: possession).
 isa SEMROLE [52]



{pos} (long: position).
 isa SEMROLE [53]

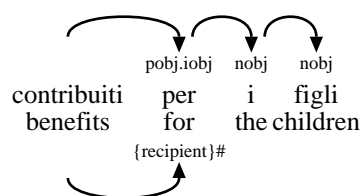


{quant} (long: quantity).
 isa SEMROLE [60]

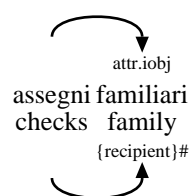


{recipient} *The receiver of something. Often generated by indirect object*
 isa SEMROLE [67]

child benefits

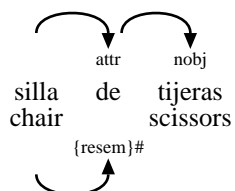


child maintenance

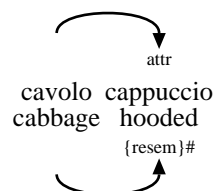


{resem} (long: resemblance).
isa SEMROLE
[56]

folding chair



spring cabbage



{time} .
isa SEMROLE
[54]



Chapter 8

Word alignment relations: **ALIGN**



ALIGN: alignment level

Figure 8.1: The relations matching **ALIGN**.

ALIGN *Alignment level* (long: **ALIGNMENT**). A relation at the word alignment level. Ie, an alignment relation that expresses a translational equivalence between two sets of words (and their associated phrases), either in terms of form or meaning. Null alignments - ie, a set of words in one text which does not correspond to any set of words in the other text - are encoded as a set of words that is aligned to itself.

isa DIM:LEVEL [19]

Chapter 9

Rule schemata for complex relations: RULE

```

RULE: relation rule
  ("ANY)": disambiguation
  "*"DISC: down-head in attribution
  "<"PRIM...":"INTEGER">": gapping dependent
  "@"adverb: valency-bound adverbial
  "["PRIM"]": pattern for secondary syntactic dependency relation formed
from primary syntactic dependency relation
  "assoc-"QUALIA: associative anaphor wrt. qualia
  "{"SEM"}": pattern for secondary semantic dependency relation formed
from primary semantic dependency relation
  ""QUALIA: resemblance wrt. $qualia relation
  "⋈"PRIM: discourse specification
  "$"PRIM: morphology specification
  ANY"&"ANY: both-and relation
  ANY|"ANY: either-or relation
  DISC"*: down-dependent in attribution
  PRIM"#": pattern for idiomatic primary dependency
  PRIM"/"CONNECTOR: explicit connector
  PRIM"/("CONNECTOR)": implicit connector
  PRIM"/ATTR"INTEGER: attribution
  PRIM{"THEM"}: pattern for primary dependency relation with the-
matic role

```

Figure 9.1: The relations matching RULE.

RULE *Relation rule.* Rule for specifying complex relations.

isa ANY [8] Subtypes: ("ANY") "*"DISC "<"PRIM...":"INTEGER">" "@"adverb "["PRIM"]" "assoc-"QUALIA
 "{"SEM"}" ""QUALIA "⋈"PRIM "\$"PRIM ANY"&"ANY ANY|"ANY DISC"* PRIM"# PRIM"/"CONNECTOR
 PRIM"/("CONNECTOR)" PRIM"/ATTR"INTEGER PRIM{"THEM"}.

("ANY)" *Disambiguation.*

isa RULE

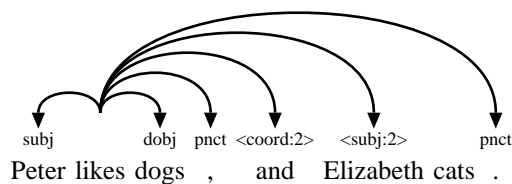
"*"DISC *Down-head in attribution.* The head in the relation is one step further down in the attribution chain

isa RULE [373]

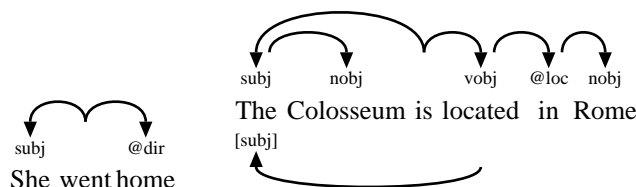
PRIM...": "INTEGER" > "gapping dependent. First conjunct->gapping dependent

isa GAP RULE

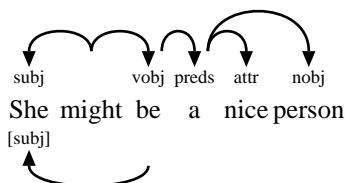
[361]



"@adverb *Valency-bound adverbial.* A complement relation which can be interpreted as an obligatory, valency-bound adverbial relation.
isa COMP RULE
[375] Related types: cont dir dur ext hab loc prec succ time.

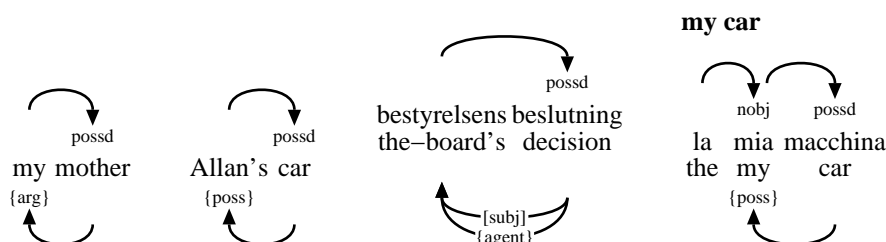


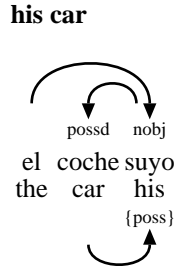
"["PRIM"]" *Pattern for secondary syntactic dependency relation formed from primary syntactic dependency relation.* Governor->secondary syntactic dependent; \$PRIM must be non-secondary
isa RULE SEC
[359] Related types: "{"\$PRIM"}".



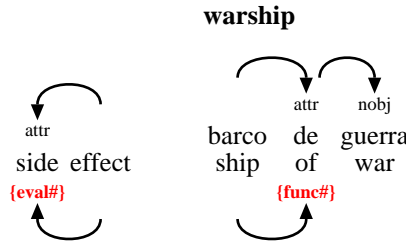
"assoc-"QUALIA *Associative anaphor wrt. qualia.* Anaphor denotes entity which is associated with antecedent
isa RULE assoc
[196]

"{"SEM"}" *Pattern for secondary semantic dependency reation formed from primary semantic dependency relation.* Governor->secondary semantic dependent; \$PRIM must be non-secondary
isa RULE SEC
[360] Related types: "["\$PRIM"]".

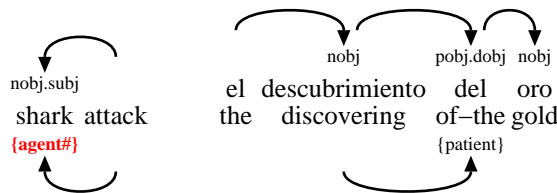




- "QUALIA** *Resemblance wrt. \$qualia relation.*
isa RULE resem [361]
- "PRIM** *Discourse specification. A primary syntactic relation that has been used as a discourse relation for stylistic purposes.*
isa DISC RULE [363]
- "§PRIM** *Morphology specification.*
isa MORPH RULE [364]
- "&"PRIM** *Both-and relation. Both relations hold*
isa RULE [365]
- "|"PRIM** *Either-or relation. One of the relations holds*
isa RULE [366]
- "DISC** *Down-dependent in attribution. The dependent in the relation is one step further down in the attribution chain*
isa RULE [374]
- "PRIM"#** *Pattern for idiomatic primary dependency. Head->dependent within idiom*
isa IDIOM RULE [357]

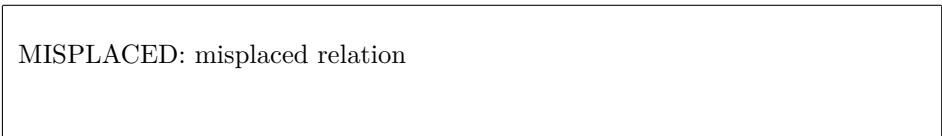


- "CONNECTOR** *Explicit connector. The discourse relation has explicit connector \$CONNECTOR*
isa RULE [371]
- "("CONNECTOR)"** *Implicit connector. The discourse relation has implicit connector \$CONNECTOR*
isa RULE [372]
- "ATTR"INTEGR** *Attribution. Specifies the person to whom the utterance is attributed (ATTR or ATTR1, ATTR2, ... when there is more than one person)*
isa RULE [362]
- "PRIM{"THEM"}"** *Pattern for primary dependency relation with thematic role. \$PRIM must be non-thematic; the thematic roles can be agent, patient, recipient, experient, location.*
isa RULE [358]



Chapter 10

Relations misplaced outside the ANY hierarchy



MISPLACED: misplaced relation

Figure 10.1: The relations matching -ANY.

MISPLACED *Misplaced relation.* A relation is misplaced if it fails to have ANY as a transitive
[9] super type. This should never happen, and the problem must be corrected if a
misplaced relation shows up here.

Appendix A

Overview tables

The tables in this section lists all the relations in the Copenhagen Dependency Treebanks, repeated from the preceding sections.

ANY: directed relation
DIM: dimension
DIM:LEVEL: dimension: linguistic level
DIM:TYPE: dimension: relation type
+: segment concatenation
IDIOM: idiomatic relation
PRIM: primary dependency relation
ADJ: adjunct relation
COMP: complement relation
SEC: secondary dependency relation

The relations matching ANY-SYNTAX-MORPHOLOGY-DISCOURSE-ANAPHORA-SEMANTICS-ALIGNMENT-RULE.

SYN: syntax level

The relations matching SYNTAX-SYNCOMP-SYNADJ.

SYNCOMP: syntactic complement
 @space: valency-bound location/direction adverbial
 @time: valency-bound time adverbial
 aobj: adjectival object
 avobj: adverbial object
 dobj: direct object
 fobj: filler object
 gobj: genitive object
 iobj: indirect object
 nobj: nominal object
 numa: additive numeral complement
 numm: multiplicative numeral complement
 part: verbal particle
 pobj: prepositional object
 possd: possessed complement
 possr: possessor complement
 pred: predicative
 predo: object predicative
 preds: subject predicative
 qobj: quotational object
 robj: reflexive object
 subj: subject
 expl: expletive subject
 vobj: verbal object

The relations matching SYNCOMP.

ADVERB: adverbial

- agent: agent adverbial
- ben: benefactive adverbial
- cause: causation adverbial
 - goal: goal adverbial
 - reas: reason adverbial
- comp: comparison adverbial
- conc: concession adverbial
- concom:
- cond: condition adverbial
- cons: consequence adverbial
- degr: degree adverbial
- exem: example adverbial
- man: manner adverbial
 - accom: companionship adverbial
 - inst: instrument adverbial
- neg: negation adverbial
- other: other adverbial
- prg: pragmatic adverbial
 - att: attitude adverbial
 - discmark: sentence-initial discourse marker
 - epi: epistemic adverbial
 - eval: evaluation adverbial
 - focal: focalizer adverbial
 - pcond: pragmatic condition adverbial
- source: source attribution adverbial
- space: space adverbial
 - dir: direction adverbial
 - loc: location adverbial
- struct: text-structuring or connective adverbial
 - add: additive adverbial
 - bg: background adverbial
 - contr: contrast adverbial
 - elab: elaboration adverbial
- time: time adverbial
 - cont: contemporaneity adverbial
 - dur: duration adverbial
 - ext: extent/frequency adverbial
 - hab: habituality adverbial
 - prec: precedence adverbial
 - succ: succession adverbial

The relations matching ADVERB.

SYNADJ: syntactic adjunct
 GAP: gapping dependent
 "<"PRIM..."INTEGER">": gapping dependent
 app: apposition
 appa: parenthetic apposition (comma)
 xpl: explication
 appr: restrictive apposition (no comma)
 attr: attributive
 attrg: genitive attributive
 conj: conjunct relation
 coord: coordinator relation
 correl: correlative coordinator relation
 fpred: free predicative
 fpredo: free direct-object predicative
 fpreds: free subject predicative
 mod: modifier/adverbial
 modp: parenthetic modifier
 name: part of name
 namef: first name
 namel: last name
 title: person title
 pnct: punctuation
 rel: relative clause
 relelab: elaborating relative clause
 relpa: parenthetic relative clause
 relr: restrictive relative clause
 voc: vocative
 xtop: external topic with resuming pronoun

The relations matching SYNADJ-ADVERB.

MORPH: morphology level
 "§"PRIM: morphology specification

The relations matching MORPHOLOGY-MORPHCOMP-MORPHDERIV.

MORPHCOMP: compositional semantic relations

ABOUT: noun-noun compound (about)
AGENT: noun-noun compound (agentive)
CONST: noun-noun compound (constitutive)
EVAL: noun-noun compound (evaluative)
FUNC: noun-noun compound (function)
ORIGIN: noun-noun compound (origin)
OTHER: noun-noun compound (other)
POS: noun-noun compound (position)
POSS: noun-noun compound (possession)
RESEM: noun-noun compound (resemblance)
TIME:MC: noun-noun compound (time)

The relations matching MORPHCOMP.

MORPHDERIV: derivational semantic relations

The relations matching MORPHDERIV-PREFIX-SUFFIX.

PREFIX: semantic relations appearing with prefixes

ASPEC: aspectual dimension
ASPEC:cause: causation
ASPEC:iter: iteration
ASPEC:reflex: reflexivity
ASPEC:resul: result
ASPEC:rev: reversion
ASPEC:term: termination
GRAD: graduation
GRAD:qual: quality
GRAD:size: size
LOC: location
LOC:dir: direction
LOC:pos: position
LOC:proce: origin
MOD: modification
MOD:cuant: quantification
MOD:man: manner
MOD:qual: qualification
NEG: negation
NEG:oppo: opposition
NEG:priv: privation
PRE:other: other prefix relation
TIME§: time
TRANS: transitivity

The relations matching PREFIX.

SUFFIX: semantic relations appearing with suffixes

- AUG: augmentation
- DENOM: noun-adjective derivation
 - DENOM:disp: noun-adjective derivation (disposition)
 - DENOM:eff: noun-adjective derivation (effect)
 - DENOM:other: noun-adjective derivation (other)
 - DENOM:poss: noun-adjective derivation (possession)
 - DENOM:rel: noun-adjective derivation (relational)
 - DENOM:rel.deono: noun-adjective derivation (naming)
 - DENOM:rel.deono.pers: noun-adjective derivation (naming persons)
 - DENOM:rel.deono.place: noun-adjective derivation (naming places)
 - DENOM:rel.norm: noun-adjective derivation (normal)
 - DENOM:resem: noun-adjective derivation (resemblance)
- DENUM: adjective-numeral derivation
 - DENUM:mult: adjective-multiplicative derivation
 - DENUM:ord: adjective-ordinal derivation
 - DENUM:part: adjective-partitive derivation
- DER: verb derivation
 - DER:av: adjective-verb derivation
 - DER:nv: noun-verb derivation
 - DER:vv: verb-verb derivation
- DEV:
 - DEVA: verb-adjective derivation
 - DEVA:act: verb-adjective derivation (active)
 - DEVA:act.disp: verb-adjective derivation (pure)
 - DEVA:act.poten: verb-adjective derivation (disposition)
 - DEVA:pas: verb-adjective derivation (potentiality)
 - DEVA:pas.deon: verb-adjective derivation (passive potentiality)
 - DEVA:pas.poten: verb-adjective derivation (passive participles)
 - DEVA:pas.part: verb-adjective derivation (passive)
 - DEVN: verb-noun derivation
 - DEVN:agent: verb-noun derivation (agent)
 - DEVN:core: verb-noun derivation (core)
 - DEVN:exper: verb-noun derivation (experiencer)
 - DEVN:inst: verb-noun derivation (instrument)
 - DEVN:loc: verb-noun derivation (location)
 - DEVN:other: verb-noun derivation (other)
 - DEVN:recip: verb-noun derivation (recipient)
 - DEVN:result: verb-noun derivation (patient)
- DIMIN: diminution
- NOPRED: noun-noun derivation
 - NOPRED:agent: noun-noun derivation (agent)
 - NOPRED:capac: noun-noun derivation (capacity)
 - NOPRED:cont: noun-noun derivation (container)
 - NOPRED:loc: noun-noun derivation (location)
 - NOPRED:other: noun-noun derivation (other)
 - NOPRED:result: noun-noun derivation (result)
 - NOPRED:script: noun-noun derivation (script)
 - NOPRED:set: noun-noun derivation (set)
 - NOPRED:temp: noun-noun derivation (temporal)
- PEJ: pejoration
- QUAL: adjective derivation

DISC: discourse level
"⌘"PRIM: discourse specification
DISCOTHER:
 JOINT: no clear relation
 PREP: preparation
 REP: repaired

The relations matching DISCOURSE-DISCFUNC-DISCSEM.

DISCPRAG: pragmatic and illocutionary discourse relations
ANSW: answer
CONSOL: consolidation
 CONSOL:enabl: enablement
 CONSOL:just: justification
 CONSOL:motiv: motivation
DESCR: description/evaluation
 DESCR:eval: positive/negative evaluation
 DESCR:qual: neutral description
DIREC: directive act
EXPR: expressive act
INTACT: interactional signals
 INTACT:attn: attention
 INTACT:inter: interruption
QUEST: question

The relations matching DISCFUNC.

DISCSEM: semantic discourse relations
 CAUSE: cause relation (discourse)
 CAUSE:expl: explanation relation (discourse)
 CAUSE:goal: goal relation (discourse)
 CAUSE:prg: pragmatic cause
 CAUSE:reas: reason relation (discourse)
 CONC: concession
 COND: condition
 CONJ: conjunction
 CONJ:seq: sequence
 CONS: consequence/result/conclusion relation (discourse)
 CONS:dir: direct, physical consequence, result
 CONS:prg: pragmatic/personal conclusion, deduction
 CONTR: contrast
 CONTR:dir: direct contrast
 CONTR:prg: pragmatic contrast
 DISJ: disjunction
 DISJ:dir: direct disjunction
 DISJ:prg: pragmatic disjunction
 ELAB: elaboration
 ELAB:exem: exemplification
 ELAB:exp: expansion
 ELAB:part: part of relation
 ELAB:rest: restatement
 TIME: temporal relation
 TIME:cont: contemporaneity
 TIME:prec: temporal precedence
 TIME:prec§: temporal precedence
 TIME:succ: temporal succession
 TIME:succ§: temporal succession

The relations matching DISCSEM.

ANA: anaphoric level
 anaphor:

The relations matching ANAPHORA-coref-assoc.

coref: coreference
 coref-iden: lexical identity coreference
 coref-part: partial coreference
 coref-prg: pragmatic coreference
 coref-res: resumptive anaphor
 coref-var: lexical variation coreference
 ref: syntactically determined coreference

The relations matching coref.

assoc: associative anaphor
"assoc-"QUALIA: associative anaphor wrt. qualia
assoc-agentive: associative anaphor (agentive)
assoc-const: associative anaphor (constitutive)
assoc-formal: associative anaphor (formal)
assoc-telic: associative anaphor (telic)

The relations matching assoc.

SEM: semantic level

The relations matching SEMANTICS-QUALIA-SEMROLE.

QUALIA: qualia roles
const: constitutive qualia
formal: formal qualia
agentive: agentive qualia
location: location qualia
resem: resemblance wrt. qualia role
"QUALIA: resemblance wrt. \$qualia relation
telic: telic qualia
about: about qualia

The relations matching QUALIA.

SEMROLE:

{about}:
{agent}: An object or a person that performs an action
{apart}:
{arg}:
{class}:
{const}:
{elab}:
{eval}:
{experiencer}: The receiver of an emotion or a physical impact
{form}:
{func}:
{iden}:
{location}: The location where something is situated or happens
{origin}:
{other}: No specific semantic role
{patient}: An object or a person that is the subject of the action or the one who is located somewhere
{poss}:
{pos}:
{quant}:
{recipient}: The receiver of something
{resem}:
{time}:

The relations matching SEMROLE.

ALIGN: alignment level

The relations matching ALIGN.

RULE: relation rule
 ("ANY)": disambiguation
 "*"DISC: down-head in attribution
 "<"PRIM...": "INTEGER">: gapping dependent
 "@"adverb: valency-bound adverbial
 "["PRIM"]": pattern for secondary syntactic dependency relation formed from primary syntactic dependency relation
 "assoc-"QUALIA: associative anaphor wrt. qualia
 "{"SEM"}": pattern for secondary semantic dependency relation formed from primary semantic dependency relation
 "\$QUALIA: resemblance wrt. \$qualia relation
 "⋈"PRIM: discourse specification
 "§"PRIM: morphology specification
 ANY"&"ANY: both-and relation
 ANY"|"ANY: either-or relation
 DISC"*": down-dependent in attribution
 PRIM"#": pattern for idiomatic primary dependency
 PRIM"/"CONNECTOR: explicit connector
 PRIM"/("CONNECTOR)": implicit connector
 PRIM"/ATTR"INTEGER: attribution
 PRIM{"THEM"}: pattern for primary dependency relation with thematic role

The relations matching RULE.

MISPLACED: misplaced relation

The relations matching -ANY.

Appendix B

Annotation status

B.1 All texts

	alignment	discourse	morphology	postag	syntax
none	1016	2098	2233		972
auto				1775	78
outdated-final	536				950
first	45	20	78		62
discussed	178	193			176
final				536	73

B.2 da texts

	discourse	morphology	postag	syntax
none	439	475		
auto				
outdated-final				502
first	12	61		24
discussed	85			3
final			536	7

B.3 da-de texts

	alignment
none	368
auto	
outdated-final	
first	45
discussed	
final	

B.4 da-en texts

	alignment
none	
auto	
outdated-final	536

first
discussed
final

B.5 da-es texts

	alignment	
none	332	
auto		
outdated-final		
first		
discussed	81	
final		

B.6 da-it texts

	alignment	
none	316	
auto		
outdated-final		
first		
discussed	97	
final		

B.7 de texts

	discourse	morphology	postag	syntax
none	405	413		347
auto			413	
outdated-final				
first	8			37
discussed				6
final				23

B.8 en texts

	discourse	morphology	postag	syntax
none	536	536		
auto			536	78
outdated-final				448
first				
discussed				4
final				6

B.9 es texts

	discourse	morphology	postag	syntax
none	388	398		343

auto			413
outdated-final			
first		15	1
discussed	25		65
final			4

B.10 it texts

	discourse	morphology	postag	syntax
none	330	411		282
auto			413	
outdated-final				
first		2		
discussed	83			98
final				33

Appendix C

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