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

Contents

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
isa super
[12]

The notation in the left margin indicates that we now describe the relation relation; it has immediate super type super and is defined in row 12 in the spreadsheet. When 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

Annotation topics: TOPICS

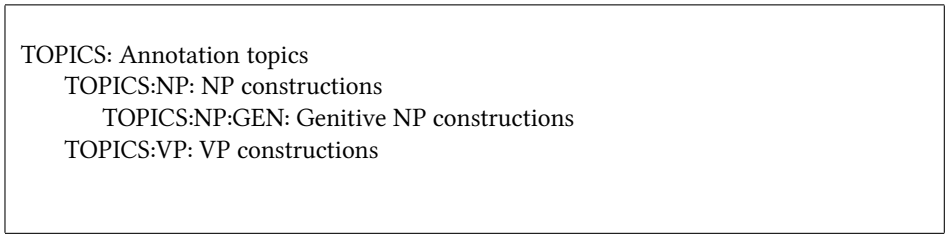


Figure 2.1: The relations matching TOPICS-DIM.

TOPICS *Annotation topics.* A detailed description of the annotation of specific constructions, to aid in the annotation and the understanding of the annotation in the treebanks.
isa ANY
[10]
Subtypes: TOPICS:NP TOPICS:VP.

TOPICS:NP *NP constructions.* A detailed description of how different NP constructions are annotated.
isa TOPICS
[375]
Subtypes: TOPICS:NP:GEN.

TOPICS:NP:GEN *Genitive NP constructions.*
isa TOPICS:NP Subtypes: gobj.
[376] Related types: gobj pobj.

TOPICS:VP *VP constructions.*
isa TOPICS
[379]

Chapter 3

Top-level relations: ANY

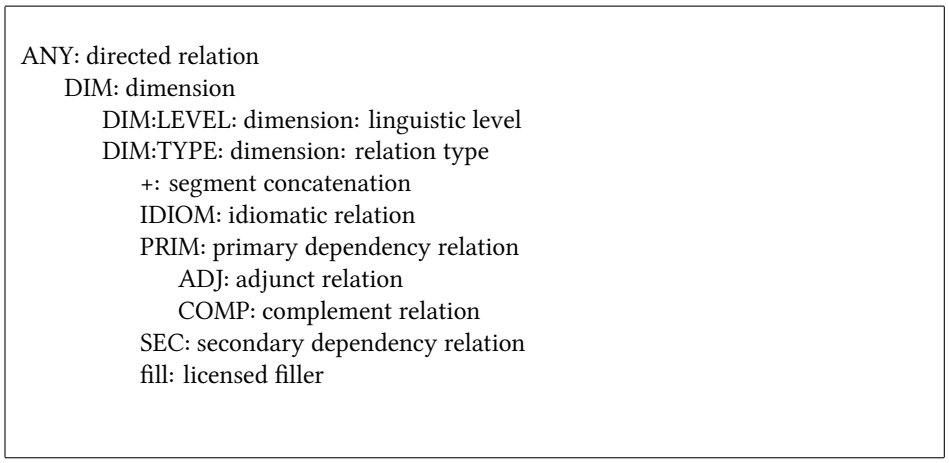


Figure 3.1: The relations matching ANY-TOPICS-SYNTAX-MORPHOLOGY-DISCOURSE-ANAPHORA-SEMANTICS-ALIGNMENT-RULE.

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

Subtypes: DIM RULE TOPICS.

DIM isa ANY [5] *Dimension* (long: DIMENSION). A dimension in the hierarchy. Eg, linguistic level and relation type.

Subtypes: DIM:LEVEL DIM:TYPE.

DIM:LEVEL isa DIM [6] *Dimension: linguistic level.* Dimension specifying the linguistic level of the relation. The classification of relations into linguistic levels is slightly arbitrary (there will be 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 isa DIM [7] *Dimension: relation type.* Dimension specifying the type of the relation.

Subtypes: + IDIOM PRIM SEC fill.

+ isa DIM:TYPE [31] *Segment concatenation* (long: CONCATENATION). A concatenation relation between two adjacent segments. This relation is used if an indecomposable lexeme has mistakenly been seg-

mented into two segments. Lexicalized complex expressions are instead marked as IDIOM relations with the ”#” suffix.

Related types: IDIOM.

IDIOM *Idiomatic relation.* An idiomatic relation. Ie, a relation between tokens in a complex lexicalized expression that form a single lexical unit.
isa DIM:TYPE
[32]

Subtypes: PRIM”#”.

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

Subtypes: ADJ COMP.

ADJ *Adjunct relation* (long: ADJUNCT). A primary adjunct relation. The relation is licensed by the adjunct, ie, the lexical entry of the adjunct specifies the permissible adjunct 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.
isa PRIM
[26]

Subtypes: DISCOTHER DISCPRAG DISCSEM SYNADJ.

COMP *Complement relation* (long: COMPLEMENT). A primary complement relation. The relation is licensed by the governor, ie, the lexical entry of the governor specifies the 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.
isa PRIM
[25]

Subtypes: ”@”adverb SYNCOMP.

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

Subtypes: ”[”PRIM”]” ”{”SEM”}”.

fill *Licensed filler.* A relation from a filler licensor to a phonetically empty filler that it licenses. Filler relations are never annotated explicitly in the CDT annotation, but play an important role in the underlying linguistic theory, Discontinuous Grammar. In DG, a ”filler” is a phonetically empty constituent which is licensed lexically by a ”filler licensor” lexeme (eg, the relative verb in a relative construction acts as filler licensor for a filler that essentially provides a copy of the relativized noun, and in control constructions, the controlling verb passes on a copy of the controlled complement to the subordinate verb).
isa DIM:TYPE
[29]

Chapter 4

Syntactic relations: SYNTAX

SYN: syntax level

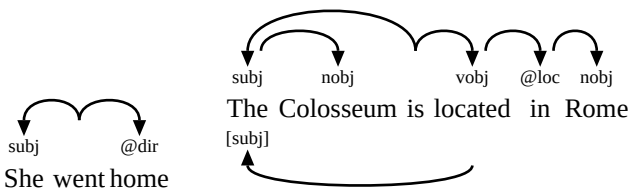
Figure 4.1: The relations matching SYNTAX-SYNCOMP-SYNADJ-TOPICS.

SYN isa DIM:LEVEL [16]
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.
Subtypes: SYNADJ SYNCOMP.

4.1 Complement relations: SYNCOMP

SYNCOMP isa COMP SYN [74]
Syntactic complement. A syntactic complement role. Complements are lexically licensed by their governors. In the functor-argument structure, they act as functors with the complements as arguments.
Subtypes: @space @time aobj avobj dobj fobj gobj iobj nobj numa numm part pobj possd possr pred qobj robj subj vobj.

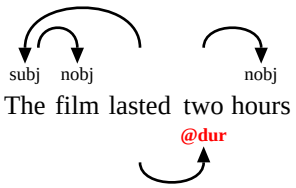
@space isa SYNCOMP [83]
Valency-bound location/direction adverbial.
Related types: dir loc.



@time isa SYNCOMP [99]
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.
Related types: cont dur ext hab prec succ.

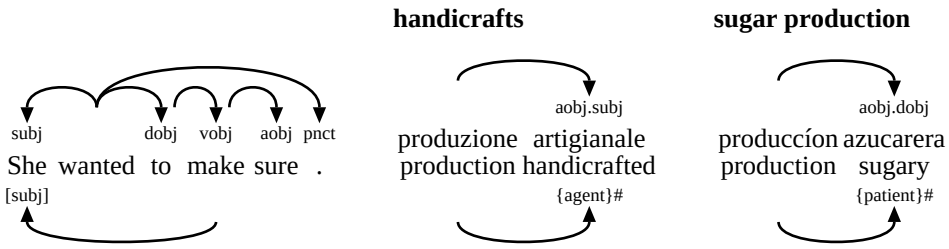
SYNCOMP: syntactic complement
- @space: valency-bound location/direction adverbial
- @time: valency-bound time adverbial
- aobj: adjectival object
- avobj: adverbial object
- dobj: direct object
- fobj: filler object
- gobj: genitive object
- iobj: indirect object
- nobj: nominal object
- numa: additive 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 4.2: The relations matching SYNCOMP.



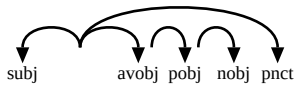
aobj isa SYNCOMP [90] *Adjectival object.* If the adverbial object is part of a NP which nucleus is deverbal, the following annotation possibilities are available: aobj.subj{SEMROLE} aobj.dobj{SEMROLE} aobj.pobj{SEMROLE} aobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient, experient, location.

Related types: avobj.



avobj isa SYNCOMP [91] *Adverbial object.*

Related types: aobj part.

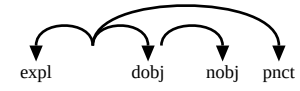


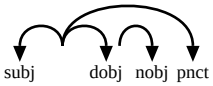
dobj isa SYNCOMP [79]

Direct object. A direct object relation. In languages with case, the direct object is typically accusative-marked.

Related types: iobj robj.

Confusion$_1$: pnct$_{100\%}$.

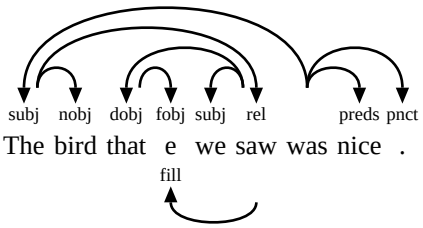




fobj isa SYNCOMP [92]

Filler object. Filler objects are never annotated explicitly in the CDT annotation. In Discontinuous Grammar, a ”filler” is a phonetically empty constituent which is licensed lexically by a ”filler licensor” lexeme (eg, the relative verb in a relative construction acts as filler licensor for a filler that essentially provides a copy of the relativized noun). A ”filler object” is reserved for the special case where a particular word (eg, a relative pronoun) must consume a filler (eg, the filler created by the relative verb). That is, most of the constructions which include a ”ref” relation in the CDT involve the use of a filler object in the detailed theoretical account in Discontinuous Grammar.

Related types: fill ref.

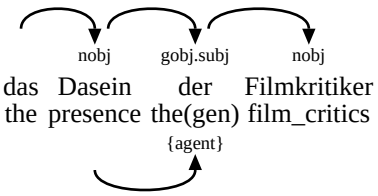


gobj isa SYNCOMP TOPICS:NP:GEN [81]

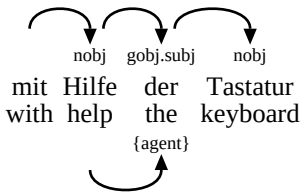
Genitive object. If the genitve object is part of a NP which nucleus is deverbal, the following annotation possibilities are available: gobj.subj{SEMROLE} gobj.dobj{SEMROLE} gobj.pobj{SEMROLE} gobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient, experient, location.

Related types: SEMROLE attrg.

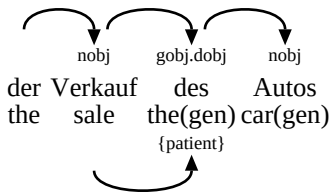
the presence of film critics



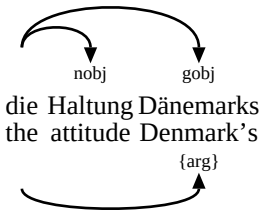
with help from the keyboard



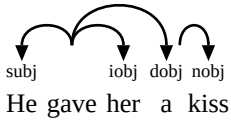
the sale of the car



Denmark's attitude



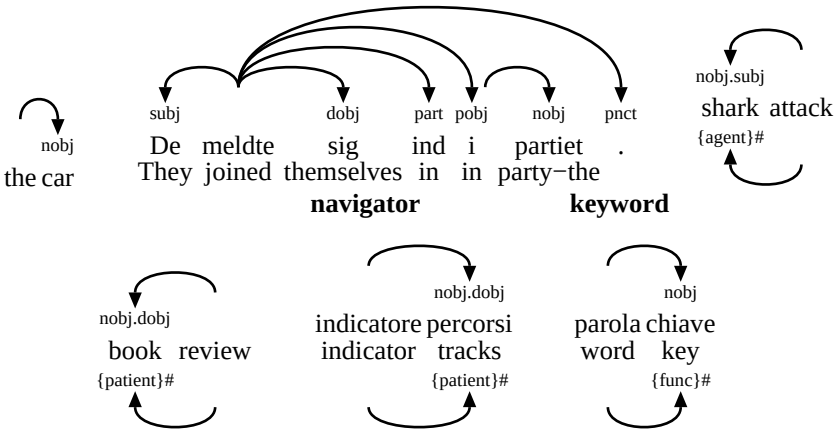
iobj *Indirect object.*
isa SYNCOMP Related types: dobj.
[82]



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

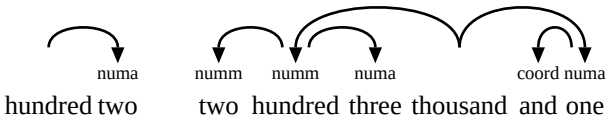
Confusion$_1$: pnct$_{100\%}$.

They joined the party.



numa *Additive numeral complement.* An additive numeral complement relation. Numerals license
isa SYNCOMP one additive and one numeral complement, both optional. The numerical value associated
[93] with the expression is the value M * N + A, where M is the numerical value of the multiplicative complement, A is the numerical value of the additive complement, and N is the numerical value associated with the lexical numeral itself. Eg, "two hundred four" has value "2 * 100 + 4", "two hundred four thousand" has value "(2 * 100 + 4) * 1000", and "two hundred four thousand and twenty three" has value "(2 * 100 + 4) * 1000 + (20 + (3))".

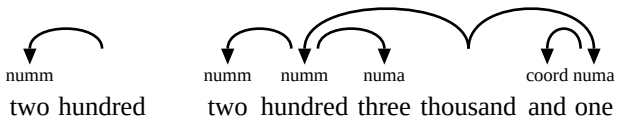
Related types: numm.



numm isa SYNCOMP [94]

Multiplicative numeral complement. An multiplicative numeral complement relation. Numerals license one additive and one numeral complement, both optional. The numerical value associated with the expression is the value M * N + A, where M is the numerical value of the multiplicative complement, A is the numerical value of the additive complement, and N is the numerical value associated with the lexical numeral itself. Eg, "two hundred four" has value "2 * 100 + 4", "two hundred four thousand" has value "(2 * 100 + 4) * 1000", and "two hundred four thousand and twenty three" has value "(2 * 100 + 4) * 1000 + (20 + (3))".

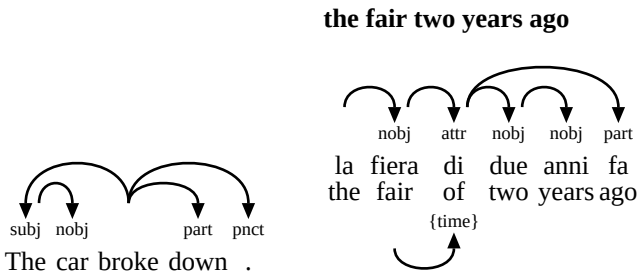
Related types: numa.



part isa SYNCOMP [95]

Verbal particle. Verbal particle.

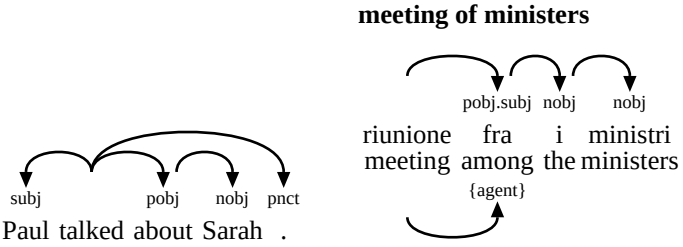
Related types: avobj.

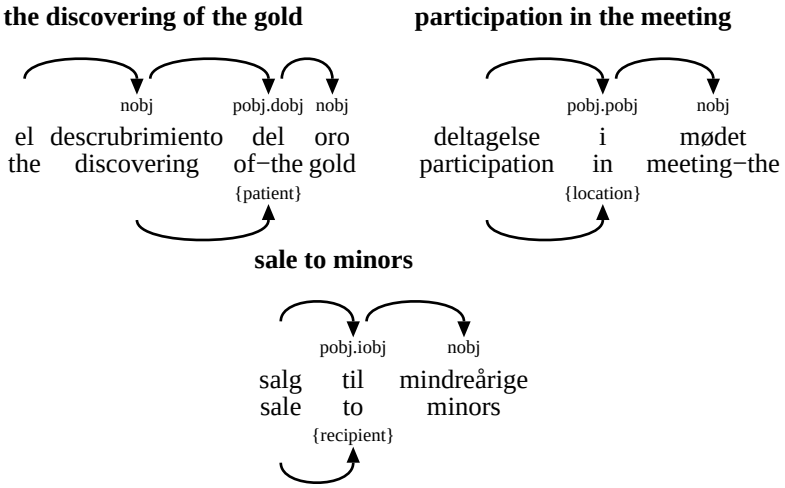


pobj isa SYNCOMP [80]

Prepositional object. A prepositional object relation. The governor may be a verb, noun, adjective, adverbial, or another preposition. The preposition is analyzed as the head of the prepositional object itself. If the prepositional object is part of a deverbal NP (ie, an NP where the nucleus is derived from a verb), the CDT annotation specifies the underlying role of the NP within the PP by adding a "." followed by the underlying role to the relation, e.g., "pobj.subj" (the NP in the PP would act as subject in the underlying V), "pobj.dobj", "pobj.pobj", and "pobj.iobj"; in these cases, the semantic role "{SEMROLE}" must be annotated as well (the most relevant semantic roles in this context are "agent", "patient", "recipient", "experient", "location").

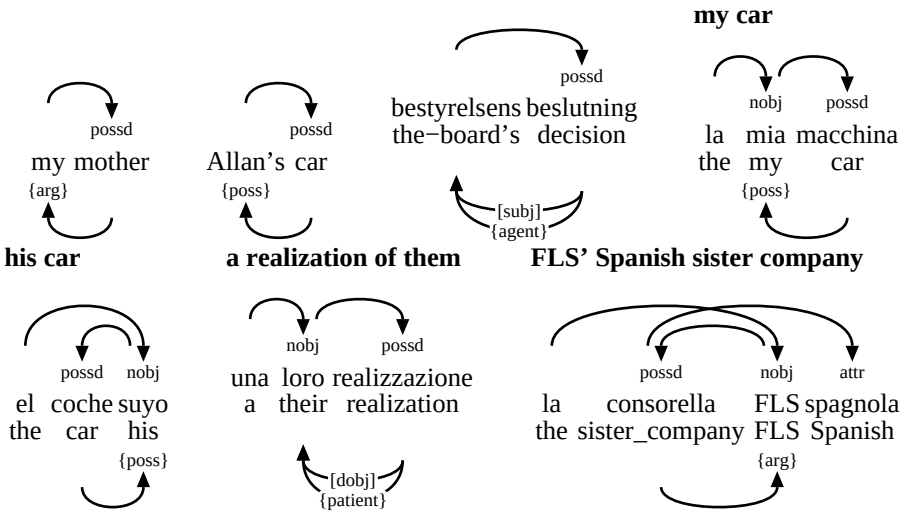
Related types: SEMROLE avobj.





possd *Possessed complement.* The possessed complement in a possessive construction. Possession
isa SYNCOMP is understood in a syntactic sense as any construction with a clitic genitive marker, not nec-
[96] essarily 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.



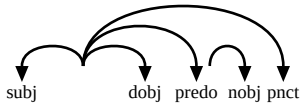
possr *Possessor complement.* NO LONGER IN USE
isa SYNCOMP
[97] The possessor complement in a possessive construction. Possession is understood in a syntactic sense as any construction with a clitic genitive marker, not necessarily as possession in a narrow semantic sense. A better name may be chosen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

Related types: poss possd.

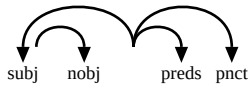
N/A

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

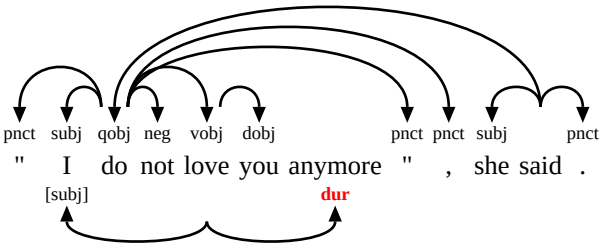
predo *Object predicative.*
isa pred Related types: preds.
[86]



preds *Subject predicative.*
isa pred Related types: predo.
[85]

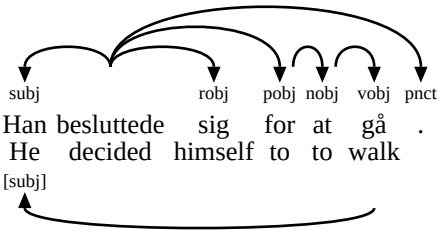


qobj *Quotational object.* A phrase or discourse segment functioning as directly quoted speech,
isa SYNCOMP typically by an attribution verb. Indirect speech is analyzed as ”dobj” or ”nobj”.
[98] Related types: xpl.



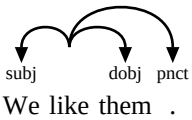
robj *Reflexive object.*
isa SYNCOMP Related types: dobj.
[88]

He decided to walk.

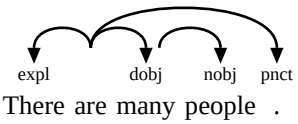


subj *Subject.* A subject relation. In languages with case, subjects are usually nominative-marked.
isa SYNCOMP Agent-roles are often encoded as subjects, but not necessarily so (eg, in passive constructions).
[77]

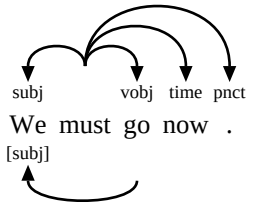
Subtypes: expl.
Related types: expl.



expl isa subj [78]
Expletive subject. An expletive subject relation. The expletive subject is typically a situational place adverbial like ”there” or time adverbial like ”now”, and is only possible for verbs that support the expletive alternation. The expletive alternation applies to all verbs that do not have a direct object (this observation, due to Richard Hudson, can be used as a test to distinguish between direct and indirect objects in verbs that take a single object). The alternation creates a new lexicalization of the verb by demoting the original subject to the vacant direct object role (with the restriction that only indefinites are allowed in this direct object role), and letting the subject role be filled by a situational place or time adverbial.
Related types: subj.



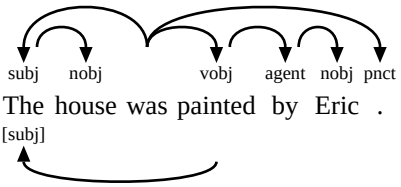
vobj isa SYNCOMP [87]
Verbal object.
Related types: "["$PRIM"]".



4.2 Adverbial adjunct relations: ADVERB

ADVERB isa SYNADJ [138]
Adverbial (deprecated other). V/N/P->adverbial
Subtypes: agent cause conc concom cond cons exem man neg other prg quant resem source space time.

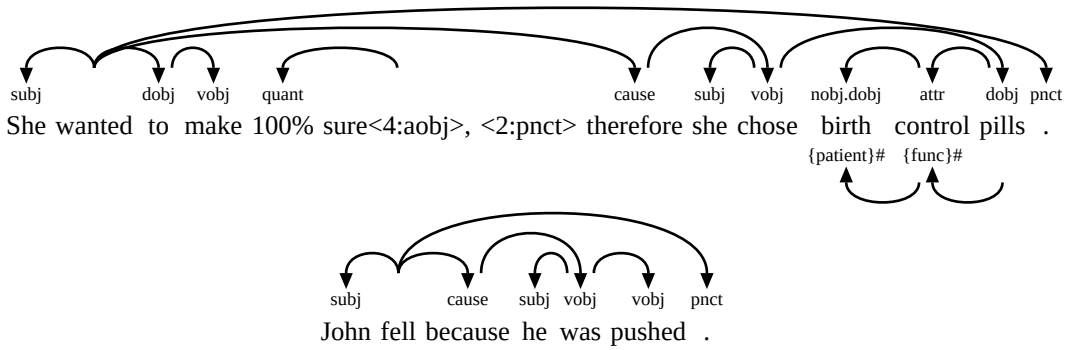
agent isa ADVERB [166]
Agent adverbial. The passivized agent in passives.



cause isa ADVERB [156]
Causation adverbial. Causation adverbial. Describes why the event occurred.
Subtypes: goal.

ADVERB: adverbial
- agent: agent adverbial
- cause: causation adverbial
  - goal: goal adverbial
- conc: concession adverbial
- concom:
- cond: condition adverbial
- cons: consequence adverbial
- exem: example adverbial
- man: manner adverbial
  - accom: companionship adverbial
  - inst: instrument adverbial
- neg: negation adverbial
- other: other adverbial
- prg: pragmatic adverbial
  - discmark: sentence-initial discourse marker
  - epi: epistemic adverbial
  - eval: evaluation adverbial
  - focal: focalizer adverbial
  - scene: pragmatic condition and structural adverbial
    - add: additive adverbial
    - contr: contrast adverbial
    - elab: elaboration adverbial
- quant: degree adverbial
- resem: comparison adverbial
  - ""QUALIA: resemblance wrt. $qualia relation
- source: source attribution adverbial
- space: space adverbial
  - dir: direction adverbial
  - loc: location adverbial
- time: time adverbial
  - iter: habituality adverb

Figure 4.3: The relations matching ADVERB.

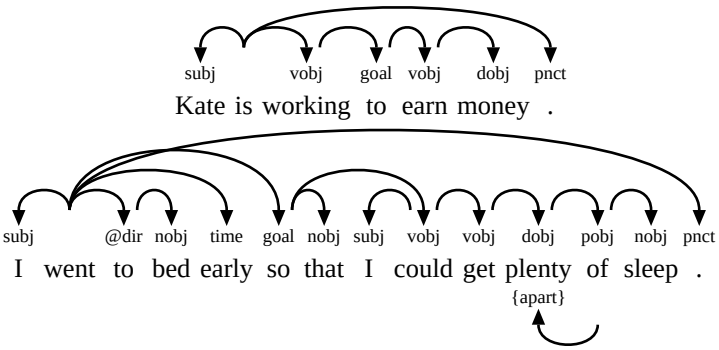


goal *Goal adverbial.* Describes the intended goal of the event/action.

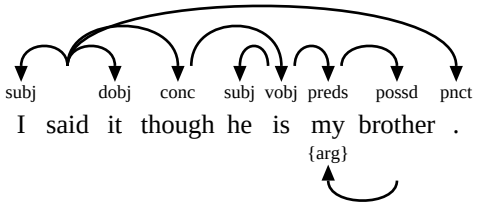
isa cause

Related types: reas.

[157]

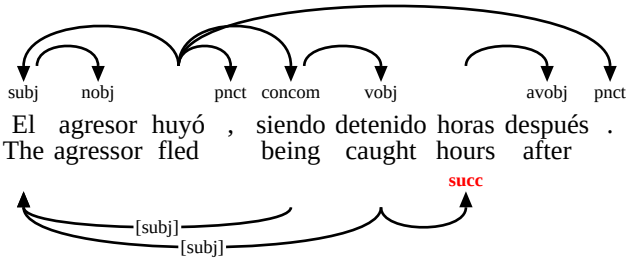


conc *Concession adverbial* (long: concession). Describes the concession of the event/action.
isa ADVERB
[160]

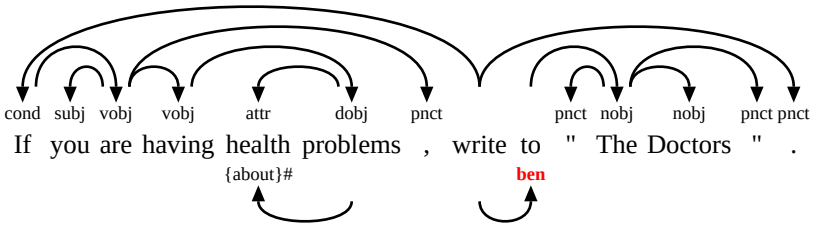


concom . Gerunds in Romance
isa ADVERB Related types: vobj.
[164]

The agressor fled and/but got caught hours later.

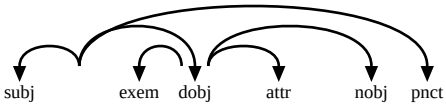


cond *Condition adverbial* (long: condition). Describes the condition of the event/action.
isa ADVERB Related types: pcond.
[159]

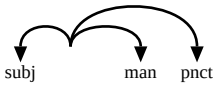


cons *Consequence adverbial* (long: consequence). Describes the consequence of the event/action.
isa ADVERB Related types: xtop.
[158]

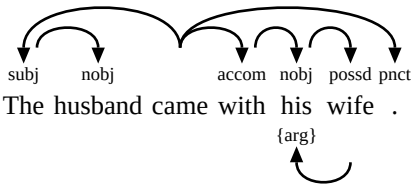
exem *Example adverbial* (long: exemplification, deprecated ex). Exemplification; subordinated the object
isa ADVERB which is added to a list.
[163]



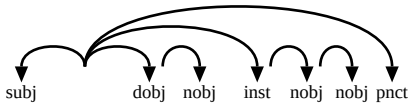
man *Manner adverbial* (long: manner). The way things are done
isa ADVERB Subtypes: accom inst.
[153] Related types: fpredo.



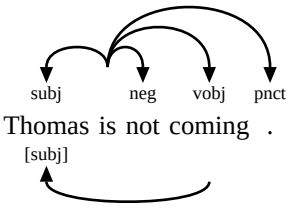
accom *Companionship adverbial* (long: accompainship, deprecated comp). Companionship
isa man Related types: man.
[154]



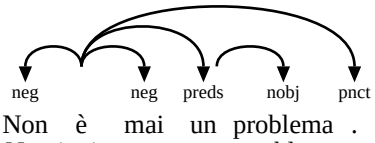
inst *Instrument adverbial* (long: instrument). Instrument/means
isa man Related types: man.
[155]



neg *Negation adverbial.* Negation of a verbal
isa ADVERB
[167]



It's never a problem.



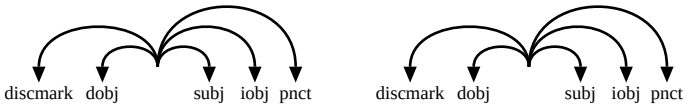
She never lied

other *Other adverbial.*
isa ADVERB
[168]

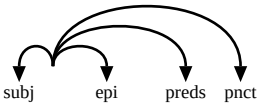
prg *Pragmatic adverbial* (long: pragmatic). Sentence level.
isa ADVERB
Subtypes: discmark epi eval focal scene.
[139]

discmark *Sentence-initial discourse marker* (long: discoursemarker). Discourse marker
isa prg
Related types: coord.
[144]

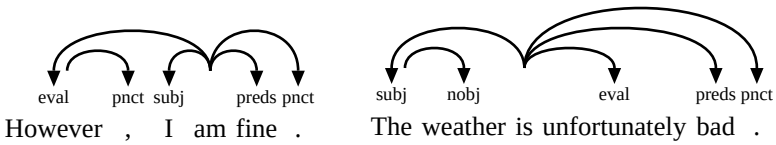
And I'm telling you... **But I'm telling you...**



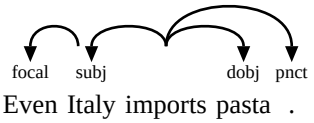
epi *Epistemic adverbial* (long: epistemic). Regarding the level of truth in the expression
isa prg
Related types: eval.
[142]



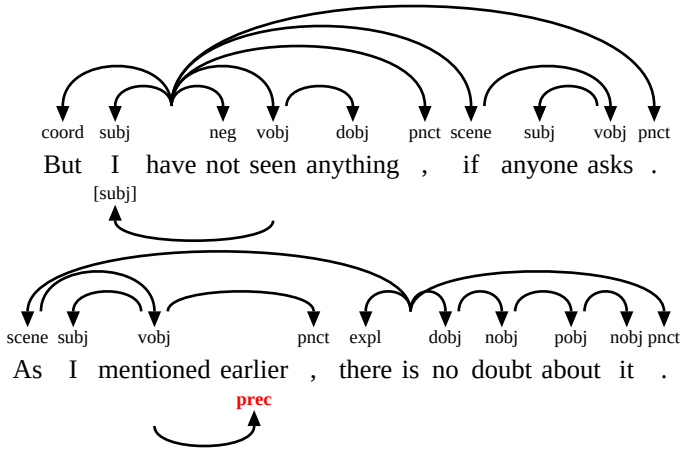
eval *Evaluation adverbial* (long: evaluation, deprecated evalatt). Evaluating and attitude adverbials
isa prg
Related types: epi.
[143]



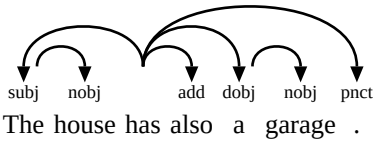
focal *Focalizer adverbial* (long: focalizator). Focalization of a noun
isa prg
Related types: quant.
[140]



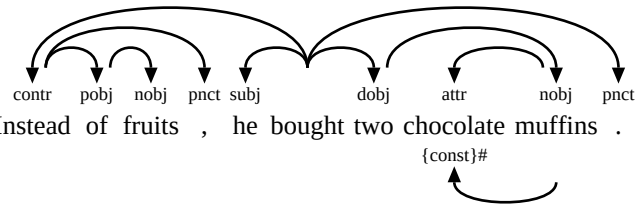
scene *Pragmatic condition and structural adverbial* (deprecated prgcondpcondbgstruct). Setting the scene
isa prg
Subtypes: add contr elab.
Related types: cond.
[141]



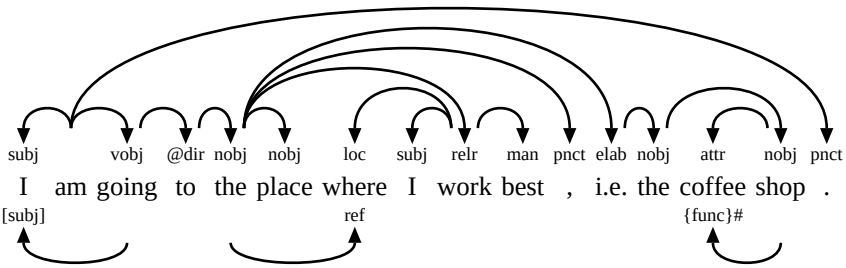
add *Additive adverbial* (long: additive). Additive information
isa scene
[147]



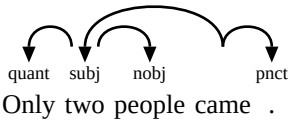
contr *Contrast adverbial* (long: contrast). Opposition
isa scene
[145]
Related types: struct.



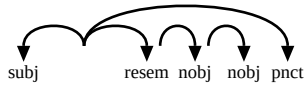
elab *Elaboration adverbial* (long: elaboration). More detailed description
isa scene
[146]



quant *Degree adverbial* (long: quantification, deprecated degr). Modifies the object or verbal by degree
isa ADVERB
[165]
Related types: focal.

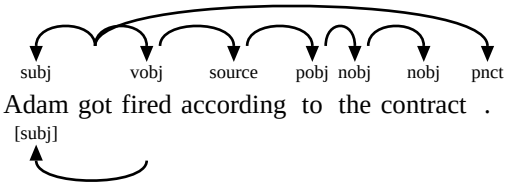


resem *Comparison adverbial* (long: resemblance, deprecated comparecomp). Comparison
isa ADVERB Subtypes: ""QUALIA.
[161]



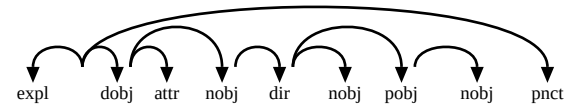
""QUALIA *Resemblance wrt. $qualia relation.*
isa RULE resem
[44]

source *Source attribution adverbial.* Reference/source
isa ADVERB
[162]

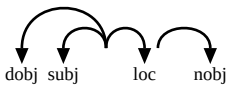


space *Space adverbial.* Space adverbials
isa ADVERB Subtypes: dir loc.
[150]

dir *Direction adverbial* (long: direction). Movement from one place to another; direction
isa space Related types: loc.
[152]

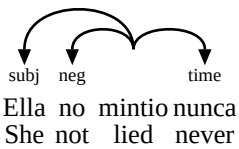


loc *Location adverbial* (long: location). Location
isa space Related types: dir.
[151]

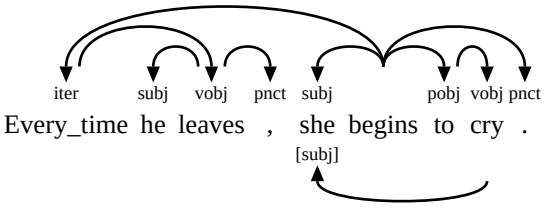


time *Time adverbial.* Time relating adverbials
isa ADVERB Subtypes: iter.
[148]

She never lied



iter *Habituality adverb* (deprecated hab). Habitual; repeated habit
isa time Related types: dur ext.
[149]



4.3 Other adjunct relations: SYNADJ

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

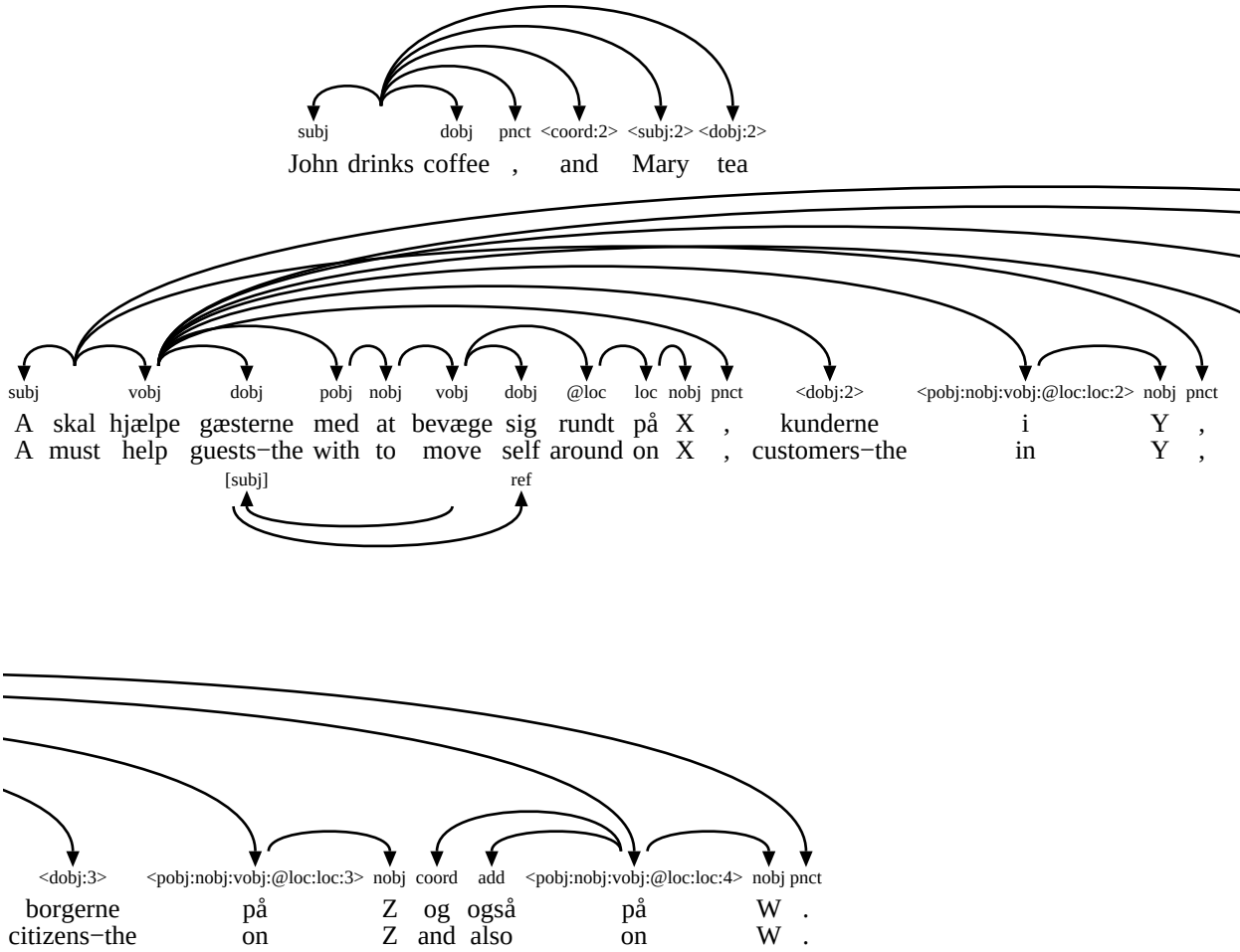
Figure 4.4: The relations matching SYNADJ-ADVERB.

SYNADJ *Syntactic adjunct.* A syntactic adjunct role. Adjuncts license their governors. In the functor-argument structure, they act as modifiers (ie, functors) which as their argument take the governor along with its complements and lower-scoped adjuncts.
isa ADJ SYN
[75]

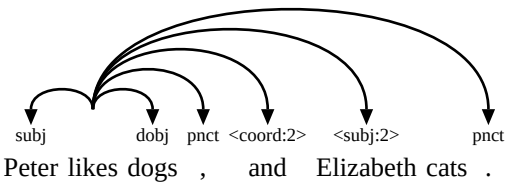
Subtypes: ADVERB GAP app attr attrg conj coord correl fpred mod name pnct rel voc xtop.

GAP *Gapping dependent* (long: GAPPING). A relation between a gapping dependent in a secondary
isa SYNADJ conjunct and the head of the first conjunct. In gapping coordinations, the secondary con-
[28] juncts 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
[350]

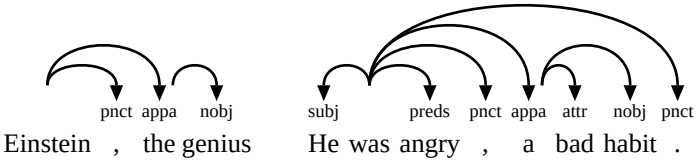


app *Apposition.* An appositional relation between two phrases, typically NPs. The head of the
isa SYNADJ first NP in the apposition is always analyzed as the head of the second NP.
[113]

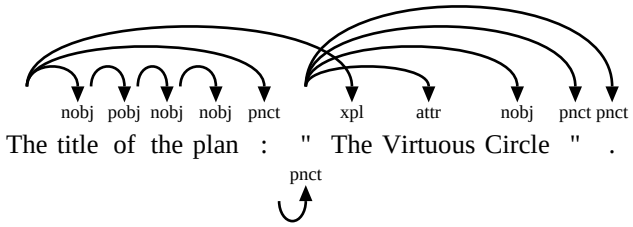
Subtypes: appa appr.

Related types: appa appr.

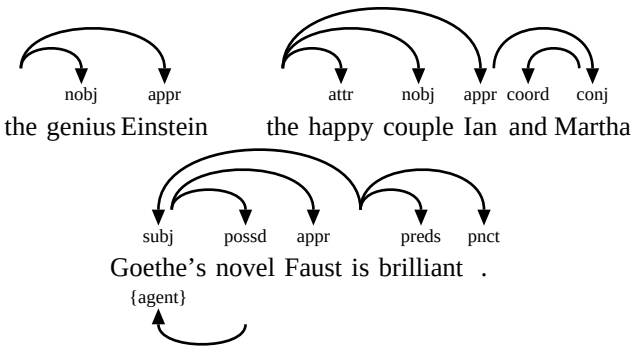
appa *Parenthetic apposition (comma).*
isa app Subtypes: xpl.
[114] Related types: appr xpl.



xpl *Explication.* Explication of an NP or VP.
isa appa Related types: qobj.
[127]

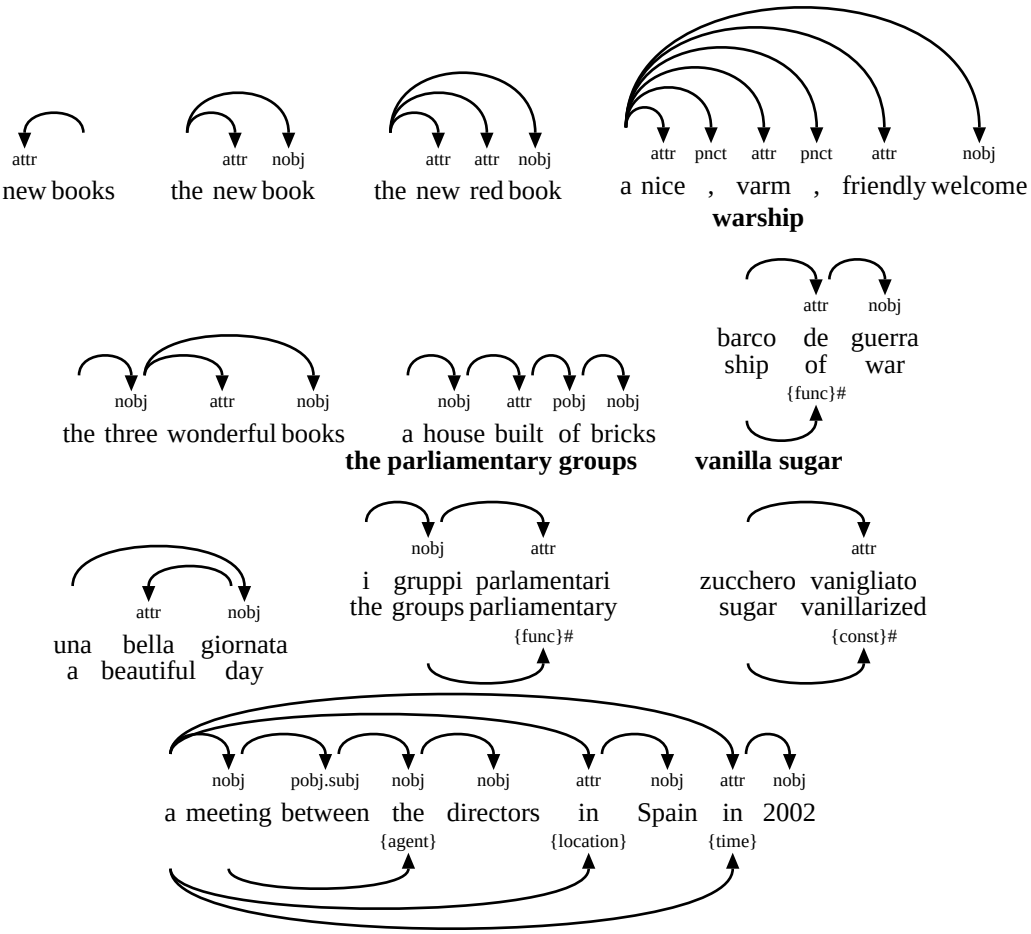


appr *Restrictive apposition (no comma).*
isa app Related types: appa.
[115]

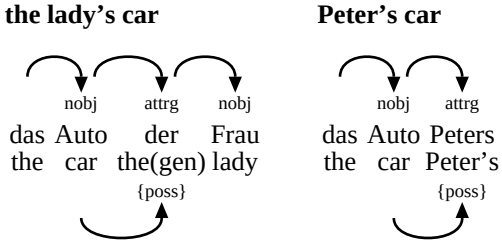


attr *Attributive* (deprecated attrdattrr). An attributive relation, typically between an adjective and a
isa SYNADJ noun/determiner. In Germanic languages, adjectives are assumed to modify the determiner
[111] (because of the strong/weak congruence between determiner and adjective), or the noun if no 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.

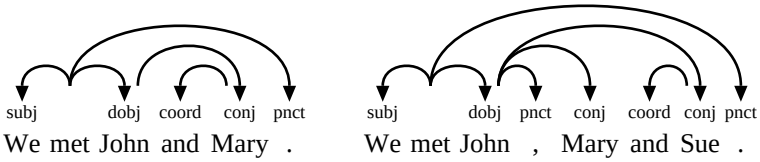


attrg *Genitive attributive.*
isa SYNADJ Related types: SEMROLE gobj.
[112]

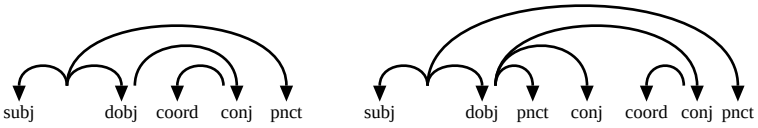


conj *Conjunct relation.* A dependency relation relating the conjuncts in a coordination. Secondary
isa SYNADJ conjuncts are analyzed as "conj"-dependents of the first conjunct. Coordinators are analyzed
[103] as dependents of the secondary conjuncts.

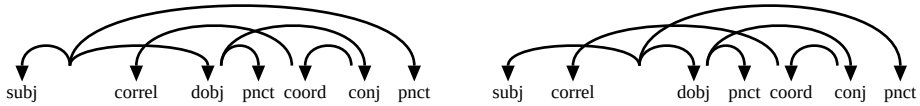
Related types: coord correl.



coord *Coordinator relation.* A dependency relation between a coordinating conjunction and a secondary conjunct. The coordinator is analyzed as a dependent of the secondary conjunct. Secondary conjuncts are in turn analyzed as ”conj”-dependents of the first conjunct.
isa SYNADJ
[104]
Related types: conj correl discmark.



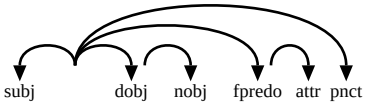
correl *Correlative coordinator relation.*
isa SYNADJ
[105]
Related types: conj coord.



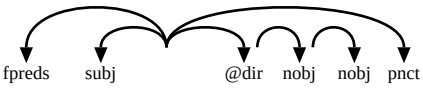
fpred *Free predicative.*
isa SYNADJ
[108]
Subtypes: fpredo fpreds.
Related types: fpredo fpreds.

V−>free predicative

fpredo *Free direct-object predicative.*
isa fpred
[110]
Related types: fpreds man.



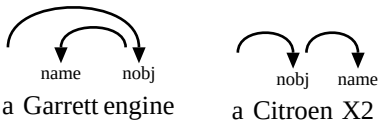
fpreds *Free subject predicative.*
isa fpred
[109]
Related types: fpredo.



mod *Modifier/adverbial.* Deprecated name for adverbials
isa SYNADJ
[133]
Subtypes: modp.

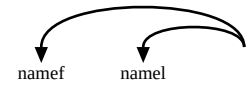
modp *Parenthetic modifier.* Deprecated name for parenthetic modifiers
isa mod
[135]
Related types: {elab}.

name *Part of name.* Part of a name.
isa SYNADJ
[121]
Subtypes: namef namel title.



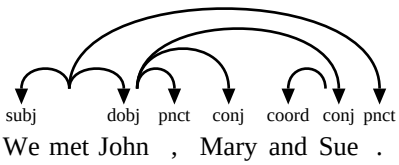
namef *First name.* A first name.
isa name Related types: namel title.
[122]

namel *Last name.* A second last name
isa name Related types: namef title.
[123]

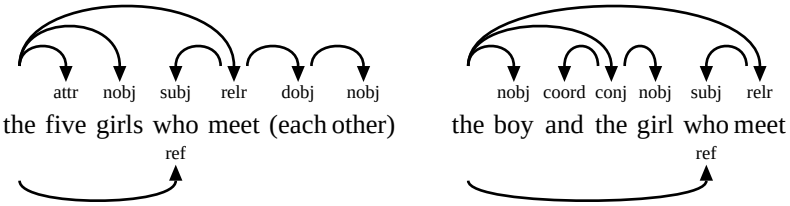


title *Person title.* A title in a name. If the is the title is determinated by an article, eg. the director
isa name Smith, the title must be annotated as ”nobj” and the name as ”appr”.
[124] Related types: namef namel.

pnct *Punctuation.*
isa SYNADJ Confusion$_2$: nobj$_{50\%}$ dobj$_{50\%}$.
[106]



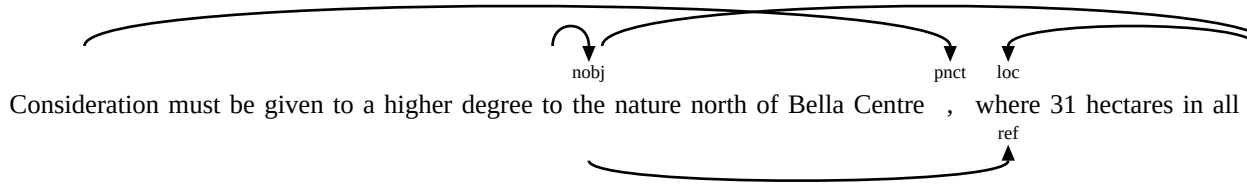
rel *Relative clause.* A relation between a relative clause and a relativized NP/VP. The finite verb
isa SYNADJ in the relative clause is analyzed as a ”rel” dependent of the head of the relativized NP/VP
[116] (ie, the determiner if present, otherwise the noun). If there is a relative pronoun, it receives 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.

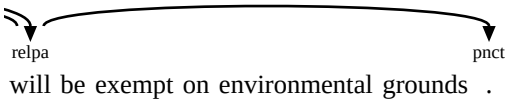


relelab *Elaborating relative clause.* Ledsætning med sætningsantecedent i hovedsætning; da: hvilket, it: il che, cosa che
isa rel
[119]
Related types: relpa relr.

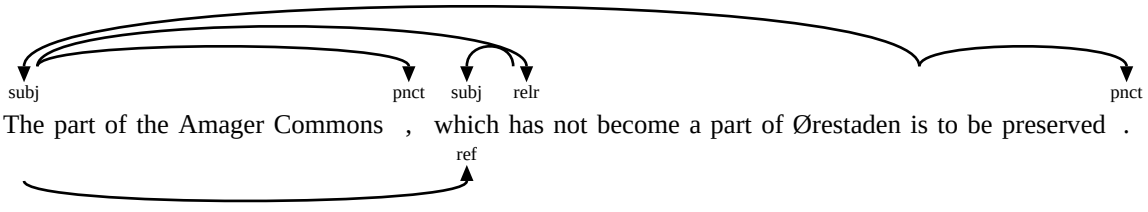
V–>V

relpa *Parenthetic relative clause.*
isa rel
[118]
Related types: relelab relr.

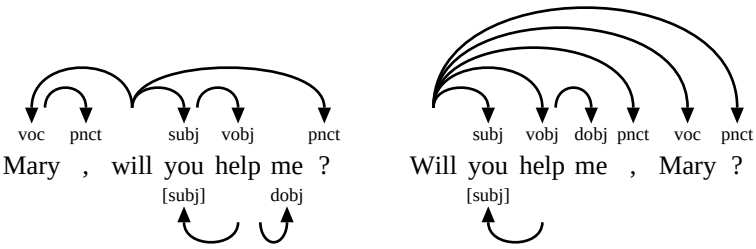




relr *Restrictive relative clause.*
isa rel
[117]
Related types: relelab relpa.



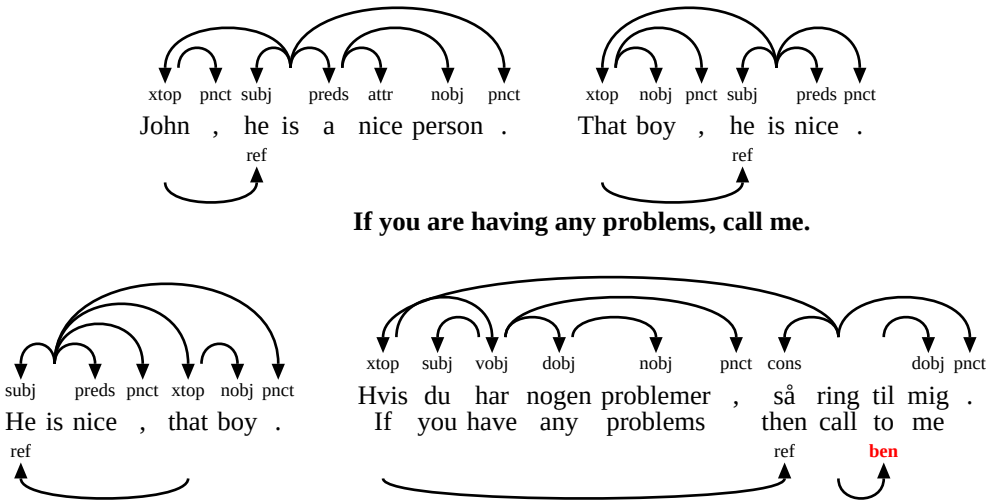
voc *Vocative.* Vocative specification. The person to whom the statement is directed.
isa SYNADJ
[126]



xtop isa SYNADJ [120]

External topic with resuming pronoun. An external topic is a sentence-initial NP whose only function is to provide the antecedent for a pronoun later in the sentence. 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 5

Morphological relations: MORPHOLOGY

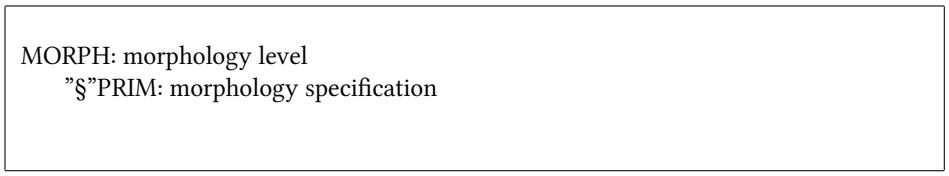


Figure 5.1: The relations matching MORPHOLOGY-MORPHCOMP-MORPHDERIV-TOPICS.

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

”§”PRIM isa MORPH RULE [353] *Morphology specification.*

5.1 Compositional relations: MORPHCOMP

MORPHCOMP isa MORPH [253] *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.)

Subtypes: ABOUT AGENT CONST EVAL FUNC LOC OTHER POSS RESEM SOURCE TIME:MC.

ABOUT isa MORPHCOMP [340] *Noun-noun compound (about).* Non-head has an aboutness meaning wrt. head.

(theme: skattelov ’tax law’ = lov −[skat]te/ABOUT)

AGENT isa MORPHCOMP [332] *Noun-noun compound (agentive).* Non-head has an agentive meaning wrt. head.
Subtypes: AGENT.

(agent: politikontrol ’police control’ = kontrol −politi/AGENT)

CONST isa MORPHCOMP [331] *Noun-noun compound (constitutive).* Non-head has a constitutive meaning wrt. head.
Subtypes: CONST:apart CONST:elab CONST:exem CONST:rest.

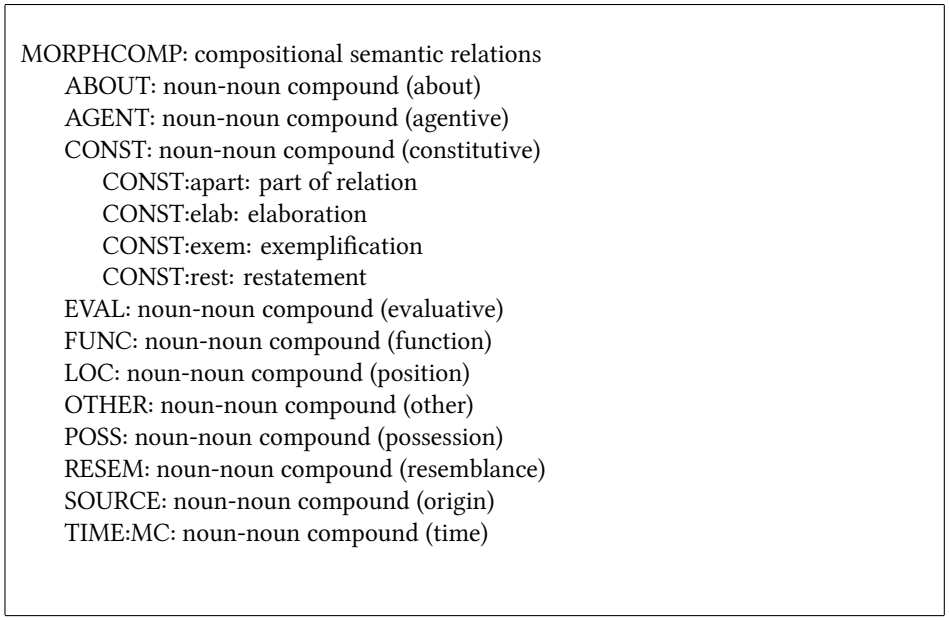


Figure 5.2: The relations matching MORPHCOMP.

(constitutive: træbord 'wooden table' = bord −træ/CONST)

CONST:apart *Part of relation.* S is a part of N
isa CONST
[213]
Typical connectives: [da] Herunder, Heri.

CONST:elab *Elaboration* (deprecated ELAB:spec,ELAB:exp). S elaborates and expans knowledge of N; may be difficult to distinguish from CONJ
isa CONST
[212]
Typical connectives: [it] Cioè.
Related types: CONJ.

CONST:exem *Exemplification.* S gives examples of elements or phenomena mentioned in N
isa CONST
[211]
Typical connectives: [en] For example.

CONST:rest *Restatement.* S states N again in a different way
isa CONST
[214]
Typical connectives: [da] Dvs.; [it] Ossia, In altre parole, Cioè; [en] In other words, Or.

EVAL *Noun-noun compound (evaluative).* Non-head has an evaluative meaning wrt. head.
isa MORPHCOMP
[338]

coche de lujo 'luksusbil'

FUNC *Noun-noun compound (function).* Non-head has a functional meaning wrt. head.
isa MORPHCOMP
[334]

(function: krigsskib 'war ship' = skib −[krig]s/FUNC)

LOC *Noun-noun compound (position).* Non-head has a locative meaning wrt. head.
isa MORPHCOMP
[336]

(position: loftlampe 'ceiling lamp' = lampe −loft/POS)

OTHER isa MORPHCOMP [341] *Noun-noun compound (other).* If in doubt about the meaning relation between head and non-head.

POSS isa MORPHCOMP [335] *Noun-noun compound (possession).* Non-head has a possessive meaning wrt. head.

(possession: politibil = bil −politi/POSS

RESEM isa MORPHCOMP [339] *Noun-noun compound (resemblance).* Denotations of head and non-head resemble each other.

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

SOURCE isa MORPHCOMP [333] *Noun-noun compound (origin).* Non-head has a meaning of origin wrt. head.

(origin: rørsukker 'cane sugar' = sukker −rør/ORIGIN)

TIME:MC isa MORPHCOMP [337] *Noun-noun compound (time).* Non-head has a temporal meaning wrt. head.

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

5.2 Derivational relations: MORPHDERIV

MORPHDERIV: derivational semantic relations

Figure 5.3: The relations matching MORPHDERIV-PREFIX-SUFFIX.

MORPHDERIV isa MORPH [252] *Derivational semantic relations.* A semantic relation is created between a base and an affix

Subtypes: PREFIX SUFFIX.

5.2.1 Prefix relations: PREFIX

PREFIX isa MORPHDERIV [255] *Semantic relations appearing with prefixes.* A semantic relation is created between a base and a prefix.

Subtypes: MOD NEG PRE:other SPACE TIME§ TRANS.

MOD isa PREFIX [274] *Modification.* Prefix conveys modification in a broad sense.

Subtypes: MOD:eval MOD:qual MOD:quant.

MOD:eval isa MOD [276] *Evaluation* (deprecated MOD:man). Prefix conveys evaluation

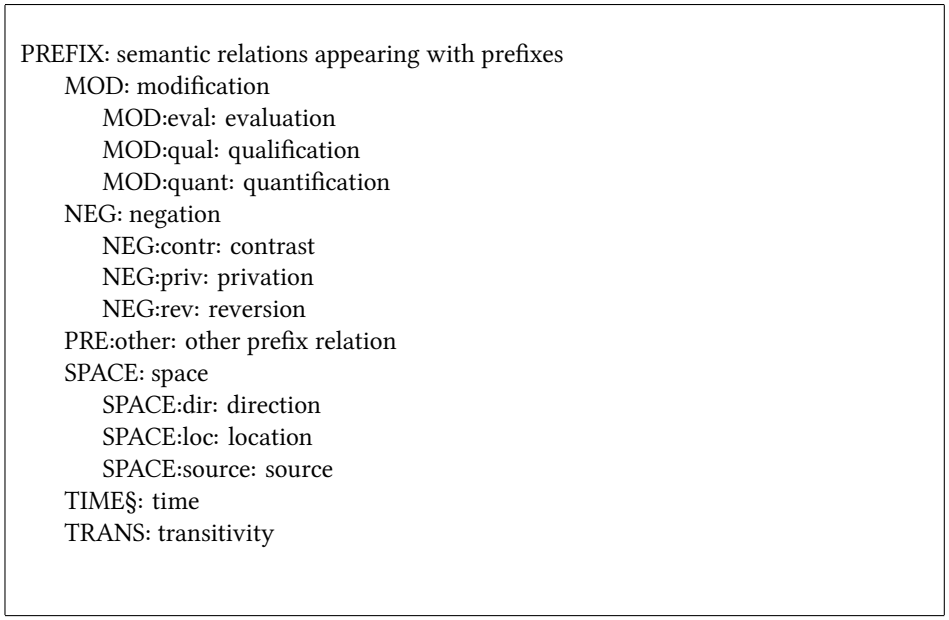


Figure 5.4: The relations matching PREFIX.

(manner: maleducado = educado −mal/MOD:eval)

MOD:qual *Qualification* (deprecated MOD:qual+MOD:rel+GRAD:qual). Prefix conveys qualification.
isa MOD
[277]

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

MOD:quant *Quantification* (deprecated MOD:cuant+GRAD:size). Prefix conveys quantification.
isa MOD
[275]

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

NEG *Negation.* Prefix conveys negation in a broad sense.
isa PREFIX
Subtypes: NEG:contr NEG:priv NEG:rev.
[266]

NEG:contr *Contrast* (deprecated NEG:oppo). Prefix conveys contrast.
isa NEG
[267]

(opposition: antihero = hero −anti/NEG:contr)

NEG:priv *Privation.* Prefix conveys privation.
isa NEG
[268]

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

NEG:rev *Reversion* (deprecated ASPEC:rev). Prefix conveys reversion.
isa NEG
[269]

(reversion: deactivate = activate −de/NEG:rev)

PRE:other *Other prefix relation.* If in doubt about the meaning conveyed by the prefix
isa PREFIX
[278]

SPACE *Space* (deprecated LOC). Prefix expresses space in a broad sense.
isa PREFIX
Subtypes: SPACE:dir SPACE:loc SPACE:source.
[258]

SPACE:dir *Direction* (deprecated LOC:dir). Prefix expresses direction.
isa SPACE
[260]

(direction/origin: deverbal = verbal −de/SPACE:dir)

SPACE:loc *Location* (deprecated LOC:pos). Prefix expresses location.
isa SPACE
[259]

(position: intramural = mural −intra/SPACE:pos)

SPACE:source *Source* (deprecated LOC:proce). Prefix conveys source.
isa SPACE
[261]

(origin: extraer: = traer −ex/SPACE:source)

TIME§ *Time.* Prefix conveys time in a broad sense.
isa PREFIX
[263]

TRANS *Transitivity.* Prefix conveys transitivity.
isa PREFIX
[273]

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

5.2.2 Suffix relations: SUFFIX

SUFFIX *Semantic relations appearing with suffixes.* A semantic relation is created between a base
isa MORPHDERIV and a suffix.
[256]
Subtypes: AUG DENUM DER$v DERan:qual DERna DERnn DERnv DERv DIMIN PEJ.

AUG *Augmentation.* Suffix conveys augmentation.
isa SUFFIX
[279]

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

DENUM *Adjective-numeral derivation.* Suffix creates denumeral adjectives in a broad sense.
isa SUFFIX
Subtypes: DENUM:apart DENUM:ord DENUM:quant.
[327]

DENUM:apart *Adjective-partitive derivation* (deprecated DENUM:part). Suffix creates partitive numerals.
isa DENUM
[329]

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

DENUM:ord *Adjective-ordinal derivation.* Suffix creates ordinals.
isa DENUM
[328]

SUFFIX: semantic relations appearing with suffixes
- AUG: augmentation
- DENUM: adjective-numeral derivation
  - DENUM:apart: adjective-partitive derivation
  - DENUM:ord: adjective-ordinal derivation
  - DENUM:quant: adjective-multiplicative derivation
- DER$v: verb derivation
- DERan:qual: adjective derivation
- DERna: noun-adjective derivation
  - DERna:disp: noun-adjective derivation (disposition)
  - DERna:other: noun-adjective derivation (other)
  - DERna:poss: noun-adjective derivation (possession)
  - DERna:rel: noun-adjective derivation (relational)
    - DERna:deono: noun-adjective derivation (naming)
      - DERna.deono.place: noun-adjective derivation (naming places)
      - DERna:deono.pers: noun-adjective derivation (naming persons)
    - DERna:rel.norm: noun-adjective derivation (normal)
  - DERna:resem: noun-adjective derivation (resemblance)
  - DERna:telic: noun-adjective derivation (effect)
- DERnn: noun-noun derivation
  - DERnn:agent: noun-noun derivation (agent)
  - DERnn:assoc: noun-noun derivation (association)
  - DERnn:capac: noun-noun derivation (capacity)
  - DERnn:cont: noun-noun derivation (container)
  - DERnn:loc: noun-noun derivation (location)
  - DERnn:other: noun-noun derivation (other)
  - DERnn:quant: noun-noun derivation (quantification)
  - DERnn:telic: noun-noun derivation (telic)
  - DERnn:time: noun-noun derivation (time)
- DERnv: verb-noun derivation
  - DERnv:agent: verb-noun derivation (agent)
  - DERnv:core: verb-noun derivation (core)
  - DERnv:exper: verb-noun derivation (experiencer)
  - DERnv:inst: verb-noun derivation (instrument)
  - DERnv:loc: verb-noun derivation (location)
  - DERnv:other: verb-noun derivation (other)
  - DERnv:patient: verb-noun derivation (patient)
  - DERnv:recip: verb-noun derivation (recipient)
- DERv:
- DIMIN: diminution
- PEJ: pejoration

Figure 5.5: The relations matching SUFFIX.

"kardinal=dos − ordinal=segundo" ’to/anden’

DENUM:quant *Adjective-multiplicative derivation.* Suffix creates multiplicative numerals.
isa DENUM
[330]

"kardinal=cinco − multiplikativ=quíntuplo" ’fem/femdobbelte’

DER$v *Verb derivation.* Suffix triggers a derivation
isa SUFFIX
[282]

DERan:qual *Adjective derivation* (deprecated QUAL). Suffix creates deadjectival nouns.
isa SUFFIX
[296]

(deadjectival noun: bitterness = bitter +ness/DERan:qual)

DERna *Noun-adjective derivation* (deprecated DENOM). Suffix creates denominal adjectives in a broad sense.
isa SUFFIX
[316]
Subtypes: DERna:disp DERna:other DERna:poss DERna:rel DERna:resem DERna:telic.

DERna:disp *Noun-adjective derivation (disposition)* (deprecated DENOM:disp). Suffix creates denominal adjectives that express disposition.
isa DERna
[324]

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

DERna:other *Noun-adjective derivation (other)* (deprecated DENOM:other). If in doubt about the meaning conveyed by the suffix
isa DERna
[326]

DERna:poss *Noun-adjective derivation (possession)* (deprecated DENOM:poss). Suffix creates denominal adjectives that express possession.
isa DERna
[323]

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

DERna:rel *Noun-adjective derivation (relational)* (deprecated DENOM:rel). Suffix creates denominal adjectives with a relational meaning.
isa DERna
[317]
Subtypes: DERna:deono DERna:rel.norm.

DERna:deono *Noun-adjective derivation (naming)* (deprecated DENOM:rel.deono). Suffix creates relational adjectives with the meaning of "naming".
isa DERna:rel
[319]
Subtypes: DERna.deono.place DERna:deono.pers.

DERna.deono.place *Noun-adjective derivation (naming places)* (deprecated DENOM:rel.deono.place). Suffix creates relational adjectives with the meaning of "naming" of places.
isa DERna:deono
[321]

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

DERna:deono.pers *Noun-adjective derivation (naming persons)* (deprecated DENOM:rel.deono.pers). Suffix creates relational adjectives with the meaning of "naming" persons.
isa DERna:deono
[320]

Cervantino 'som har at gøre med Cervantes'

DERna:rel.norm *Noun-adjective derivation (normal)* (deprecated DENOM:rel.norm). Suffix creates relational adjectives with a "normal" meaning aspect.
isa DERna:rel
[318]

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

DERna:resem *Noun-adjective derivation (resemblance)* (deprecated DENOM:resem). Suffix creates denominal adjectives that express resemblance.
isa DERna
[322]

"que se parece a N" (sanchopancesco − "que se parece a Sancho Panza" 'sanchopanzask/som ligner Sancho Panz

DERna:telic *Noun-adjective derivation (effect)* (deprecated DENOM:eff). Suffix creates denominal adjectives that express an effect.
isa DERna
[325]

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

DERnn *Noun-noun derivation* (deprecated NOPRED). Suffix creates non-predicative nouns (from other nouns) in a broad sense.
isa SUFFIX
[297]
Subtypes: DERnn:agent DERnn:assoc DERnn:capac DERnn:cont DERnn:loc DERnn:other DERnn:quant DERnn:telic DERnn:time.

DERnn:agent *Noun-noun derivation (agent)* (deprecated NOPRED:agent). Suffix creates non-predicative nouns expressing an agent role.
isa DERnn
[298]

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

DERnn:assoc *Noun-noun derivation (association)* (deprecated NOPRED:script). Suffix creates non-predicative nouns expressing a script/notion related to the original noun.
isa DERnn
[305]

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

DERnn:capac *Noun-noun derivation (capacity)* (deprecated NOPRED:capac). Suffix creates non-predicative nouns expressing a capacity.
isa DERnn
[303]

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

DERnn:cont *Noun-noun derivation (container)* (deprecated NOPRED:cont). Suffix creates non-predicative nouns expressing a container.
isa DERnn
[300]

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

DERnn:loc *Noun-noun derivation (location)* (deprecated NOPRED:loc). Suffix creates non-predicative nouns expressing a location.
isa DERnn
[304]

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

DERnn:other isa DERnn [306] *Noun-noun derivation (other)* (deprecated NOPRED:other). If in doubt about the meaning conveyed by the suffix

DERnn:quant isa DERnn [302] *Noun-noun derivation (quantification)* (deprecated NOPRED:set). Suffix creates non-predicative nouns expressing a quantification.

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

DERnn:telic isa DERnn [299] *Noun-noun derivation (telic)* (deprecated NOPRED:result). Suffix creates non-predicative nouns expressing a telic result.

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

DERnn:time isa DERnn [301] *Noun-noun derivation (time)* (deprecated NOPRED:temp). Suffix creates non-predicative nouns expressing a temporal aspect.

(temporal derivation: temporada 'tidsrum/sæson' = tiempo +ada/DERnn:time)

DERnv isa SUFFIX [287] *Verb-noun derivation* (long: DEVERBN, deprecated PRED). Suffix creates deverbal nouns in a broad sense.

Subtypes: DERnv:agent DERnv:core DERnv:exper DERnv:inst DERnv:loc DERnv:other DERnv:patient DERnv:recip.

DERnv:agent isa DERnv [288] *Verb-noun derivation (agent).* Suffix creates deverbal nouns absorbing the agent role.

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

DERnv:core isa DERnv [290] *Verb-noun derivation (core).* Suffix creates deverbal nouns expressing a nominalized version of the situation denoted by the original verb.

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

DERnv:exper isa DERnv [289] *Verb-noun derivation (experiencer).* Suffix creates deverbal nouns absorbing the experiencer role.

(experiencer derivation: admirer = admire +r/DERnv:exper

DERnv:inst isa DERnv [294] *Verb-noun derivation (instrument).* Suffix creates deverbal nouns expressing the instrument related to the meaning of the original noun.

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

DERnv:loc *Verb-noun derivation (location).* Suffix creates deverbal nouns expressing the location related to the meaning of the original noun.
isa DERnv
[293]

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

DERnv:other *Verb-noun derivation (other).* If in doubt about the meaning conveyed by the suffix
isa DERnv
[295]

DERnv:patient *Verb-noun derivation (patient).* Suffix creates deverbal nouns absorbing the patient role.
isa DERnv
[291]

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

DERnv:recip *Verb-noun derivation (recipient).* Suffix creates deverbal nouns absorbing the recipient role
isa DERnv
[292]

(recipient derivation: beneficiario 'den begunstigede' = beneficiar +ario/DERnv:recip)

DERv (long: DEVERB, deprecated DEVERB).
isa SUFFIX
[307]

DIMN *Diminution.* Suffix conveys diminution.
isa SUFFIX
[280]

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

PEJ *Pejoration.* Suffix conveys a pejorative sense.
isa SUFFIX
[281]

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

Chapter 6

Discourse relations: DISCOURSE

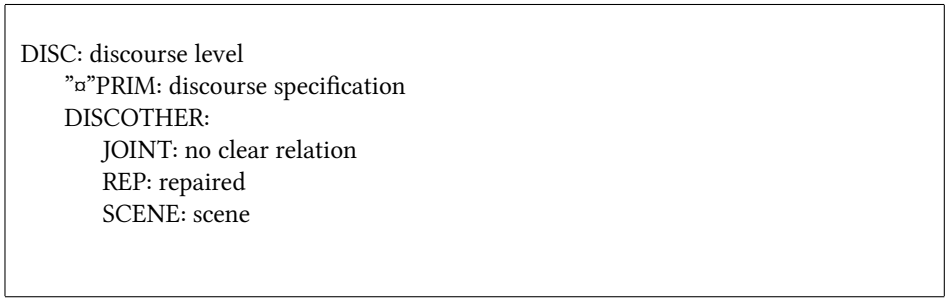


Figure 6.1: The relations matching DISCOURSE-DISCFUNC-DISCSEM-TOPICS.

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

”¤”PRIM *Discourse specification.* A primary syntactic relation that has been used as a discourse relation for stilistic purposes.
isa DISC RULE [352]

DISCOTHER .
isa ADJ DISC [200]
Subtypes: JOINT REP SCENE.

JOINT *No clear relation.* The dependent text segment adds a completely new content without any clear discourse relation to the governing segment
isa DISCOTHER [250]
Confusion_4: $\text{CONJ}_{50\%}$ $\text{JOINT}_{50\%}$.

REP *Repaired* (deprecated STRUCT:rep). Dependent text segment is interrupted and unfinished and ”repaired” by the following and governing text segments, which completes it
isa DISCOTHER [249]

SCENE *Scene* (deprecated STRUCT:prepPREP). Dependent text segment expresses the scene of the following and governing text, e.g. headings, titles
isa DISCOTHER [248]
Confusion_4: $\text{SCENE}_{100\%}$.

DISCPRAG: pragmatic and illocutionary discourse relations
- ANSW: answer
- CONSOL: consolidation
  - CONSOL:inst: instrumental
  - CONSOL:motiv: motivation
  - CONSOL:source: justification
- DIREC: directive act
- EXPR: expressive act
- INTACT: interactional signals
  - INTACT:attn: attention
  - INTACT:inter: interruption
- QUEST: question

Figure 6.2: The relations matching DISCFUNC.

6.1 Functional relations: DISCFUNC

DISCPRAG isa ADJ DISC [199] *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 DIREC EXPR INTACT QUEST.

ANSW isa DISCPRAG [237] *Answer.* Governing text segment contains question or problem, dependent text segment answer or solution

Confusion$_1$: ANSW$_{100\%}$.

CONSOL isa DISCPRAG [243] *Consolidation* (deprecated SUPPORT?).

Subtypes: CONSOL:inst CONSOL:motiv CONSOL:source.

CONSOL:inst isa CONSOL [245] *Instrumental* (deprecated CONSOL:enabl). S is instrumental in helping reader or recipient to carry out the action mentioned in N; frequent in directive texts

CONSOL:motiv isa CONSOL [246] *Motivation.* S motivates reader or recipient to carry out the action mentioned in N

Confusion$_1$: AGENTIVE:expl$_{100\%}$.

CONSOL:source isa CONSOL [244] *Justification* (deprecated JUSTCONSOL:just). S expresses a source that justifies N wrt its content (reason for mentioning it or sim.) thereby strengthening it argumentatively

Typical connectives: [da] Fordi, Eftersom.

Confusion$_1$: AGENTIVE:reas$_{50\%}$ AGENTIVE:expl$_{50\%}$.

DIREC isa DISCPRAG [238] *Directive act.* Dependent text segment contains an order, command or request

e.g. imperatives

EXPR isa DISCPRAG [239] *Expressive act.* Dependent text segment contains an expression of the speaker's attitudes or emotions, e.g. congratulations, excuses or thanks

[en] I'm sorry!; My condolences!

INTACT *Interactional signals.*
isa DISCPRAG Subtypes: INTACT:attn INTACT:inter.
[240]

INTACT:attn *Attention.* S contains an attention signal
isa INTACT
[241]

[da] Ja; Nå; OK; [it] Sì; Beh; [en] Yeah, Oh, Really?

INTACT:inter *Interruption.* S contains an interruption signal
isa INTACT
[242]

[da] Jamen; [it] Ma; [en] But... But

QUEST *Question* . The dependent text segment contains a question with or withour an answer
isa DISCPRAG
[236]

6.2 Semantic relations: DISCSEM

DISCSEM: semantic discourse relations
- AGENTIVE: cause relation (discourse)
  - AGENTIVE:expl: explanation relation in discourse
  - AGENTIVE:reas: reason relation (discourse)
  - AGENTIVE:sbj: subjective cause
- CONC: concession
- COND: condition
- CONJ: conjunction
  - CONJ:add: conjunction, addition
  - CONJ:elab: conjunction, elaboration
  - CONJ:seq: sequence
- CONTR: contrast
  - CONTR:dir: direct contrast
  - CONTR:sbj: subjective contrast
- DISJ: disjunction
  - DISJ:dir: direct disjunction
  - DISJ:sbj: subjective disjunction
- FORMAL: formal description
  - FORMAL:descr: neutral description
  - FORMAL:eval: positive/negative evaluation
- TIME: temporal relation
  - TIME:cont: contemporaneity
  - TIME:post: temporal succession
  - TIME:pre: temporal precedence

Figure 6.3: The relations matching DISCSEM.

DISCSEM *Semantic discourse relations.* The relations hold between the propositions of the governing
isa ADJ DISC and dependent text segments and are defined in semantic terms; relations are mono- or mult-
[198] inuclear; 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

Subtypes: AGENTIVE CONC COND CONJ CONTR DISJ FORMAL TIME.

AGENTIVE isa DISCSEM [202] *Cause relation (discourse).* S expresses ”bringing about” or cause in a broad sense

Subtypes: AGENTIVE:expl AGENTIVE:reas AGENTIVE:sbj.

AGENTIVE:expl isa AGENTIVE [203] *Explanation relation in discourse.* An explanation relation. The satellite explains the nucleus. The relation is more general and elaborating than ”reason”.

Typical connectives: [da] Nemlig; [it] Infatti; [en] In fact, Indeed.
Related types: reason.

Confusion$_{11}$: AGENTIVE:reas$_{30\%}$ CONJ$_{27\%}$ AGENTIVE:expl$_{18\%}$ CONSOL:motiv$_{9\%}$ vobj$_{6\%}$ conj$_{5\%}$ CONSOL:source$_{5\%}$.

AGENTIVE:reas isa AGENTIVE [204] *Reason relation (discourse).* S expresses a specific and concrete reason

Typical connectives: [da] Fordi, Eftersom; [en] Since, Because.

Confusion$_{7}$: AGENTIVE:expl$_{48\%}$ vobj$_{24\%}$ DESCR:eval$_{14\%}$ conj$_{7\%}$ CONSOL:source$_{7\%}$.

AGENTIVE:sbj isa AGENTIVE [205] *Subjective cause.* The speaker uses the cause as a subjective/personal argument to support a claim

Typical connectives: Because, In fact, Indeed.

CONC isa DISCSEM [218] *Concession.* S admits or acknowledges a fact wrt N, which may however not have the expected consequence or effect

Confusion$_{2}$: CONJ$_{50\%}$ CONC$_{25\%}$ CONTR:dir$_{25\%}$.

COND isa DISCSEM [219] *Condition.*

CONJ isa DISCSEM [225] *Conjunction.* Dependent text segment elaborates and expans knowledge of governing text segment or adds a new subject somehow related to it

Subtypes: CONJ:add CONJ:elab CONJ:seq.

Confusion$_{28}$: CONJ$_{60\%}$ AGENTIVE:expl$_{11\%}$ JOINT$_{5\%}$ CONTR:sbj$_{5\%}$ conj$_{5\%}$ rel$_{4\%}$ qobj$_{4\%}$ CONC$_{4\%}$ DESCR:eval$_{2\%}$ CONTR:dir$_{2\%}$.

CONJ:add isa CONJ [226] *Conjunction, addition.* Dependent text segment adds a new subject somehow related to the governing text segment; in cases of uncertainty between add and elab we do not specify the subtype

CONJ:elab isa CONJ [227] *Conjunction, elaboration* (deprecated ELAB:spec,ELAB:exp,CONST:elab). Dependent text segment elaborates and expans knowledge of governing text segment; in cases of uncertainty between add and elab we do not specify the subtype

CONJ:seq isa CONJ [228] *Sequence.* Dependent text segment is part of list or sequence linked to governing text segment as e.g. in recipes, sport results etc.

CONTR isa DISCSEM [229] *Contrast.*

Subtypes: CONTR:dir CONTR:sbj.

Confusion$_{1}$: CONTR:sbj$_{33\%}$ conj$_{33\%}$ CONTR:dir$_{33\%}$.

CONTR:dir isa CONTR [230] *Direct contrast.* The contrast lies between the governing and dependent text segment

Typical connectives: [da] Men, Derimod.

Confusion$_{6}$: CONTR:sbj$_{33\%}$ expl$_{17\%}$ CONC$_{17\%}$ conj$_{11\%}$ CONJ$_{8\%}$ CONTR:dir$_{8\%}$ CONTR$_{6\%}$.

CONTR:sbj isa CONTR [231] *Subjective contrast* (deprecated CONTR:prg). The contrast lies between an explicit and a subjectively inferred text segment

Typical connectives: [da] Men.

Confusion$_{11}$: conj$_{30\%}$ CONTR:sbj$_{24\%}$ CONTR:dir$_{20\%}$ CONJ$_{14\%}$ coord$_{9\%}$ CONTR$_{3\%}$.

DISJ isa DISCSEM [232] *Disjunction.*

Typical connectives: [da] Eller.

Subtypes: DISJ:dir DISJ:sbj.

DISJ:dir isa DISJ [233] *Direct disjunction.* The disjunction lies between the governing and dependent text segment

DISJ:sbj isa DISJ [234] *Subjective disjunction* (deprecated DISJ:prg). The disjunction lies between the dependent and a subjectively inferred text segment

FORMAL isa DISCSEM [215] *Formal description.* S describes N, N may be a first-order or second-order entity

Subtypes: FORMAL:descr FORMAL:eval.

FORMAL:descr isa FORMAL [216] *Neutral description* (deprecated DESCR:qual). S expresses an objective and/or neutral description of N

FORMAL:eval isa FORMAL [217] *Positive/negative evaluation* (deprecated DESCR:eval). S expresses a personal and/or subjective positive or negative description of N

Confusion$_{2}$: CONJ$_{50\%}$ AGENTIVE:reas$_{50\%}$.

TIME isa DISCSEM [220] *Temporal relation* (deprecated CIRCUM). There is a clear temporal relation between N and S

Subtypes: TIME:cont TIME:post TIME:pre.

TIME:cont isa TIME [221] *Contemporaneity.* S is contemporary with N (now includes abolished TIME:dur)

Typical connectives: [da] Samtidig, Mens, Så længe, Da.

TIME:post isa TIME [265] *Temporal succession* (deprecated TIME:succ). Prefix conveys succession.

(temporal succession: postmodernism = modernism −post/TIME:post)

TIME:pre isa TIME [264] *Temporal precedence* (deprecated TIME:prec). Prefix conveys precedence.

(temporal precedence: prehistorical = historical −pre/TIME:pre)

Chapter 7

Anaphor relations: ANAPHORA

Figure 7.1: The relations matching ANAPHORA-coref-assoc-TOPICS.

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

Subtypes: anaphor.

anaphor isa ANA [180] . This section concerns anaphors as well as cataphors; cataphors may by and large express the same relations with their postcedents as anaphors with their antecedents; the relations are therefore labelled identically and will be distinguished solely by the edge direction: from left to right (anaphors) or from right to left (cataphors); because of their much higher frequency, we shall limit ourselves to examples of anaphors

Subtypes: assoc coref.

7.1 Coreference relations: coref

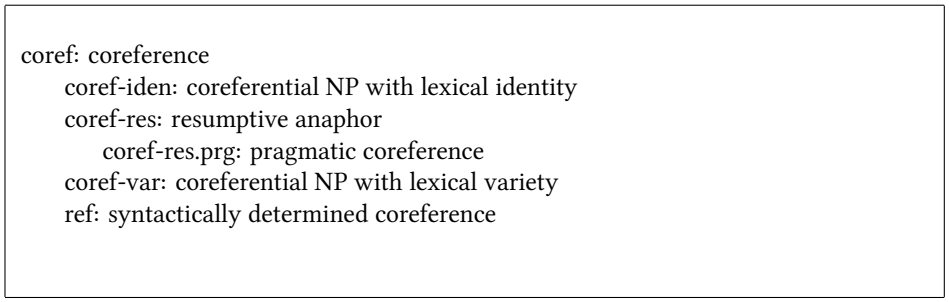


Figure 7.2: The relations matching coref.

coref isa anaphor [181] *Coreference*. Anaphor denotes same entity as antecedent; all coreferential pronouns are labelled this way

Subtypes: coref-iden coref-res coref-var ref.
Confusion$_1$: coref$_{100\%}$.

coref-iden *Coreferential NP with lexical identity* (deprecated coref-id).
isa coref
[183]

(antecedent−>anaphor) a car −> the car // a yellow car −> the yellow car

coref-res *Resumptive anaphor* (deprecated nowincludescoref-res.cause).
isa coref Subtypes: coref-res.prg.
[185] Confusion$_1$: coref-res$_{100\%}$.

coref-res.prg *Pragmatic coreference.* Takes up a statement and evaluates it with respect to speech act; I will
isa coref-res be there tomorrow -> the threat / promise / warning / statement
[186]

coref-var *Coreferential NP with lexical variety.*
isa coref
[184]

a car −> the vehicle // a yellow car −> the car

ref *Syntactically determined coreference.* Syntactically determined coreference (eg, relative pro-
isa coref nouns, external topics)
[182] Confusion$_{38}$: ref$_{100\%}$.

antecedent−>anaphor

7.2 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-formal.loc: associative locative anaphor
- assoc-telic: associative anaphor (telic)

Figure 7.3: The relations matching assoc.

assoc *Associative anaphor.* Anaphor denotes entity which is associated with antecedent
isa anaphor Subtypes: ”assoc-”QUALIA assoc-agentive assoc-const assoc-formal assoc-telic.
[188]

”assoc-”QUALIA *Associative anaphor wrt. qualia.* Anaphor denotes entity which is associated with antecedent
isa RULE assoc
[189]

assoc-agentive *Associative anaphor (agentive)* (deprecated assoc-agent?). Anaphor is associated with antecedent
isa assoc wrt its agentive qualia (creator, factory, producer, author, etc.)
[191]

a car −> the factory; a piece of music −> the composer

assoc-const *Associative anaphor (constitutive)* (deprecated assoc-loc?). Anaphor is associated with antecedent wrt its constitutive qualia (parts, material, etc.)
isa assoc
[190]

ex. a car −> the wheels, the numberplate, the driver's seat; a hotel −> the kitchen; a bunch of flowers −> the roses; a couple −> the man; the Italian partitive "ne", ex. some wine −> ne vuoi (un po')?

assoc-formal *Associative anaphor (formal).* Anaphor is associated with antecedent wrt its formal qualia (shape, dimension, colour, etc.)
isa assoc
[192]
Subtypes: assoc-formal.loc.

a car −> the size, the colour; a building −> the height

assoc-formal.loc *Associative locative anaphor.* The anaphor is located in the antecedent
isa assoc-formal
[193]

a village −> the church, the inn, the train station

assoc-telic *Associative anaphor (telic)* (deprecated assoc-scope?). Anaphor is associated with antecedent wrt its telic qualia (purpose, function, etc.)
isa assoc
[194]

a car −> the driver, the passengers; a hotel −> the guests, the receptionist

Chapter 8

Semantic relations: SEMANTICS

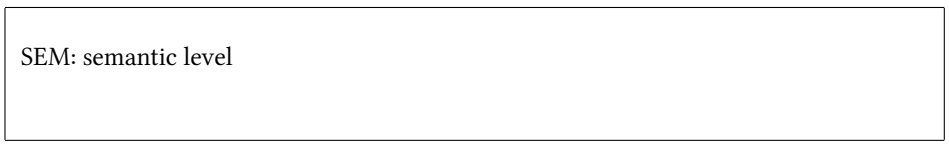


Figure 8.1: The relations matching SEMANTICS-QUALIA-SEMROLE-TOPICS.

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

8.1 Qualia relations: QUALIA

Figure 8.2: The relations matching QUALIA.

QUALIA isa SEM [33]
Qualia roles. A semantic qualia role. Ie, a relation that links a lexeme to a particular role associated with that lexeme. Eg, "music" to the act of "composing" (agentive), "performing" (telic), etc.
Subtypes: const formal telic.

const isa QUALIA [40]
Constitutive qualia. Relates to material or part-whole qualia

N->P.material/part

formal
isa QUALIA
[37]

Formal qualia. A qualia role that relates a lexeme to a hyperonym (super type) wrt. form, dimension, quality, shape, size, etc.

Subtypes: agentive.

agentive
isa formal
[38]

Agentive qualia. A qualia role that relates a lexeme to its agentive qualia, ie, the act that made it come into being.

N−>P.agent

telic
isa QUALIA
[41]

Telic qualia. Relates to purpose qualia

Subtypes: about.

about
isa telic
[42]

About qualia. Relates to hyponym (subtype)

8.2 Thematic role relations: SEMROLE

SEMROLE:
{about}:
{agent}: An object or a person that performs an action
{apart}:
{arg}:
{cause}:
{class}:
{const}:
{elab}:
{eval}:
{experiencer}: The receiver of an emotion or a physical impact
{form}:
{func}:
{goal}:
{iden}:
{location}: The location where something is situated or happens
{loc}:
{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}:
{quant}:
{recipient}: The receiver of something
{resem}:
{source}:
{time}:

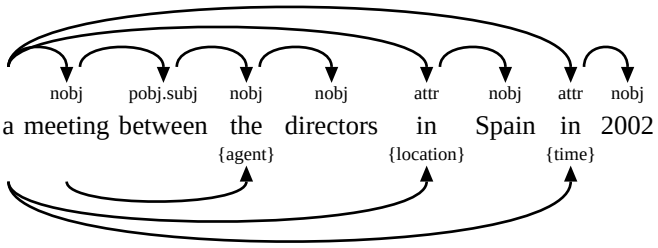
Figure 8.3: The relations matching SEMROLE.

SEMROLE
isa SEM
[47]

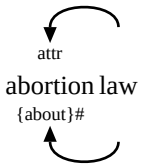
. A semantic relation. All the relations of the semantic roles run under the text line. The syntactic relation that runs over the text line is determined by the word class of the lemma

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} {cause} {class} {const} {elab} {eval} {experiencer} {form} {func} {goal} {iden} {location} {loc} {other} {patient} {poss} {quant} {recipient} {resem} {source} {time}.

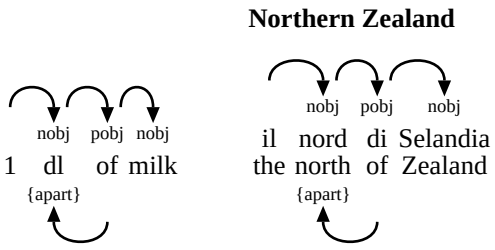


{about} . Used in noun phrases where the satellite indicates the content or genre of the nucleus.
isa SEMROLE
[60]

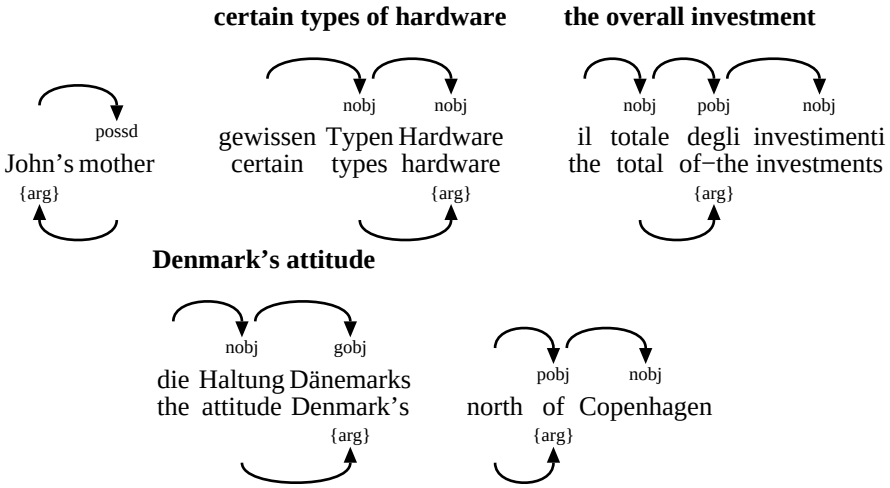


{agent} *An object or a person that performs an action.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a subject.
isa SEMROLE
[67] Confusion$_1$: {arg}$_{100\%}$.

{apart} (long: arbitrarypart). Used in noun phrases where the satellite represents an arbitary part of the nucleus. 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
[61]



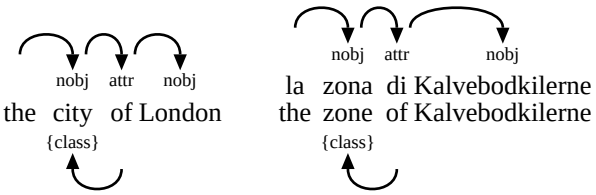
{arg} (long: argument). Used in noun phrases where there is a deadjectival relation or another similiar relationship between the nucleus and the satellite.
isa SEMROLE
[66] Confusion$_2$: {arg}$_{50\%}$ {agent}$_{50\%}$.



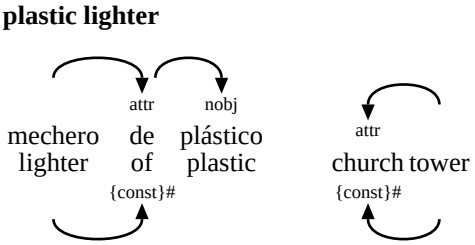
{cause} isa SEMROLE [52] . Used in noun phrases where there the satellite is the person or object that performs the non-volitional action indicated by the nucleus.

ildebrand sultedød

{class} isa SEMROLE [62] . Used in noun phrases where the satellite indicates the super type or classification of the nucleus. This is in opposition to the identity relation which denotates the opposit relationship between the two units. Please note that the semantic relation goes from the satellite to the nucleus in opposition to the main part of the other semantic roles.
Related types: {iden}.

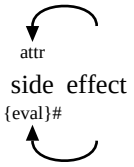


{const} isa SEMROLE [49] (long: constituent). Used in noun phrases where the satellite represents a part, material or essential constituent of the nucleus.



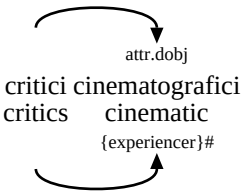
{elab} isa SEMROLE [48] (long: elaboration). Often used together with parenthetic modifiers
Related types: modp.

{eval} isa SEMROLE [58] (long: evaluation). Used in noun phrases where there is a descriptive relation between the nucleus and the satellite. The relation is often a subjective description from the writer who either evaluates the relationship in a positive or negative manner.



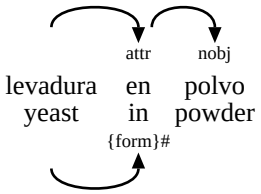
{experiencer} isa SEMROLE [69] *The receiver of an emotion or a physical impact.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a direct object

film critics

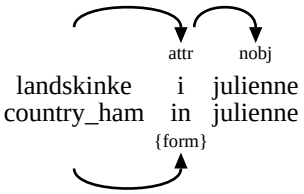


{form} isa SEMROLE [64] . Used in noun phrases where the satellite indicates the shape or form of the nucleus.

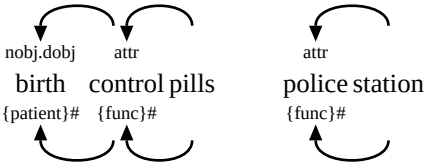
baking powder



country ham in julienne strips



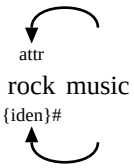
{func} isa SEMROLE [54] (long: function). Used in noun phrases where the satellite determinates the function of the nucleus.



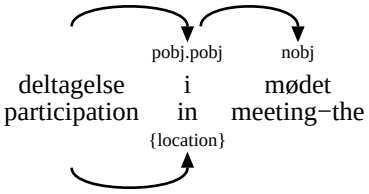
{goal} isa SEMROLE [53] . Used in noun phrases where the satellite determinates the goal or the intention for which the nucleus is destinated.

{iden} isa SEMROLE [65] (long: identity). Used in noun phrases where the satellite indicates the identity of the nucleus. In this case it is also possible to equate the satellite to the nucleus i.e. that the nucleus represents the super type of the satellite.

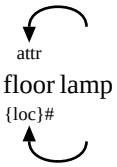
Related types: {class}.



{location} isa SEMROLE [71] *The location where something is situated or happens.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a prepositional object



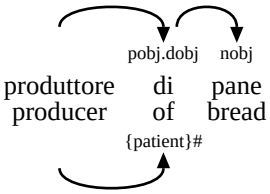
{loc} isa SEMROLE [56] (long: location, deprecated {pos}). Used in noun phrases where the satellite indicates the location of the position or the location of nucleus.



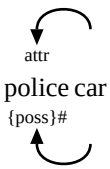
{other} isa SEMROLE [72] *No specific semantic role.* Used when none of the other semantic roles are suitable or when in doubt.

{patient} isa SEMROLE [68] *An object or a person that is the subject of the action or the one who is located somewhere.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a direct object

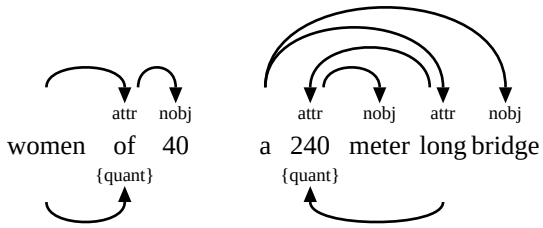
bread producer



{poss} isa SEMROLE [55] (long: possession). Used in noun phrases where there is a possession relation between the nucleus and the satellite. Often the satelitte is the owner or possessor of the nucleus.

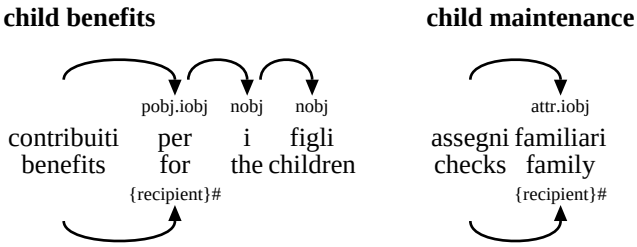


{quant} isa SEMROLE [63] (long: quantity). Used in noun phrases where the satellite indicates the quantity in numbers or another countable unit of the nucleus.



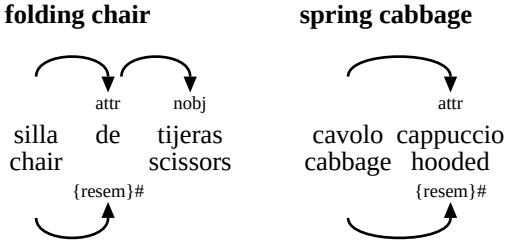
{recipient}
isa SEMROLE
[70]

The receiver of something. Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as an indirect object



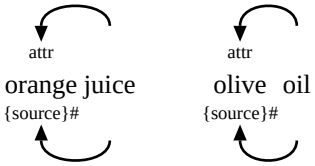
{resem}
isa SEMROLE
[59]

(long: resemblance). Used in noun phrases where there is a resemblance between the nucleus and the satellite.



{source}
isa SEMROLE
[51]

(deprecated {origin}). Used in noun phrases where the satellite is the source from which the nucleus derives or is deduced.



{time}
isa SEMROLE
[57]

. Used in noun phrases where the satellite indicates some kind of temporal aspect of the nucleus.

Chapter 9

Word alignment relations: ALIGN

ALIGN: alignment level
"": unlabeled word alignment
f: fuzzy word alignment

Figure 9.1: The relations matching ALIGN-TOPICS.

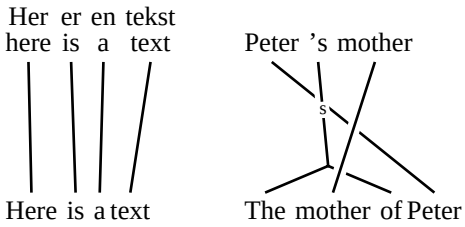
ALIGN *Alignment level* (long: ALIGNMENT). A relation at the word alignment level. Ie, an alignment relation that expresses a translational equivalence between two sets of words (and their iated phrases), either in terms of form or meaning. Null alignments - ie, a set of words in one text which does 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]

Subtypes: "" f.

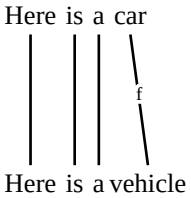
"" *Unlabeled word alignment* (long: align). An unlabeled word alignment is represented as a word alignment where the label is an empty string. It is used to represent the default word alignment, where there is full translational equivalence between the two sets of words.

isa ALIGN [370]



f *Fuzzy word alignment* (long: fuzzy). A semantically fuzzy word alignment.

isa ALIGN [371]



Chapter 10

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 realtion 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

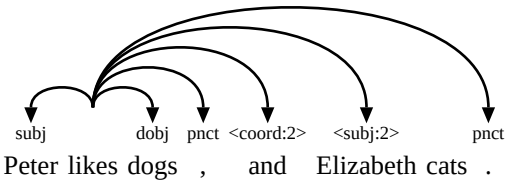
Figure 10.1: The relations matching RULE-TOPICS.

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”}”.

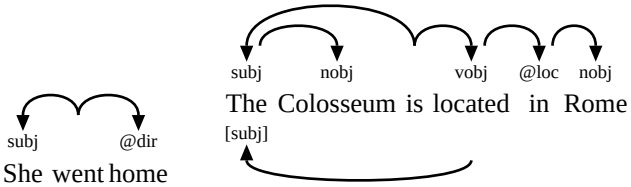
”(”ANY”)” *Disambiguation.*
isa RULE [6]

”*”DISC *Down-head in attribution.* The head in the relation is one step further down in the attribution chain
isa RULE [362]

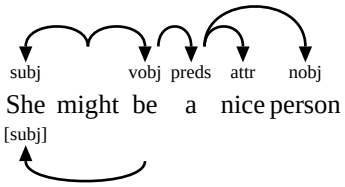
"<"PRIM...":"INTEGER">" *Gapping dependent.* First conjunct->gapping dependent
isa GAP RULE
[350]



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



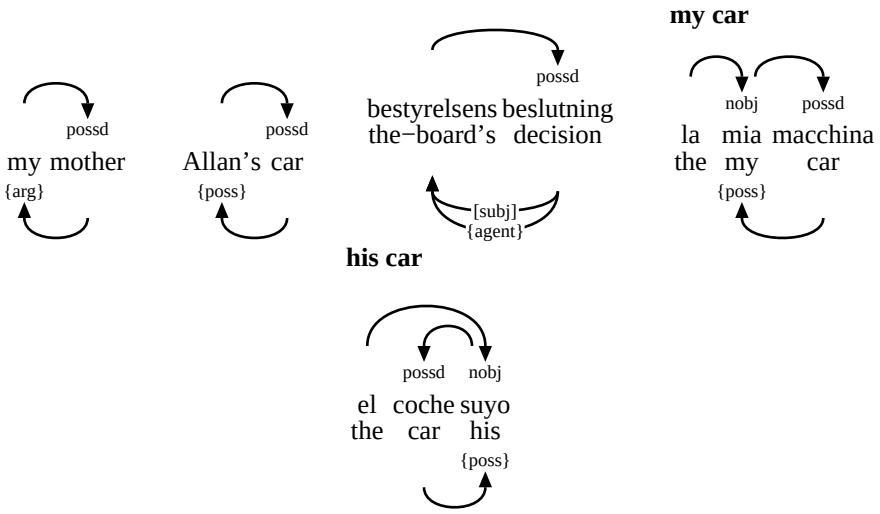
"["PRIM"]" *Pattern for secondary syntactic dependency relation formed from primary syntactic dependency relation.* Governor->secondary syntactic dependent; $PRIM must be non-secondary
isa RULE SEC
[348] Related types: "{"$PRIM"}".



"assoc-"QUALIA *Associative anaphor wrt. qualia.* Anaphor denotes entity which is associated with antecedent
isa RULE assoc
[189]

"{"SEM"}" *Pattern for secondary semantic dependency realtion formed from primary semantic dependency relation.* Governor->secondary semantic dependent; $PRIM must be non-secondary
isa RULE SEC
[349]

Related types: "["$PRIM"]".



”⁼QUALIA *Resemblance wrt. $qualia relation.*
isa RULE resem

”¤”PRIM *Discourse specification.* A primary syntactic relation that has been used as a discourse relation for stilistic purposes.
isa DISC RULE
[352]

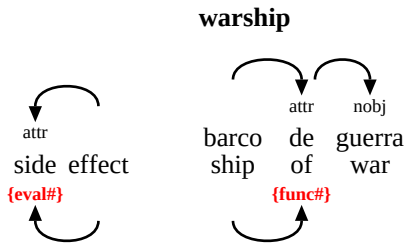
”§”PRIM *Morphology specification.*
isa MORPH RULE

ANY”&”ANY *Both-and relation.* Both relations hold
isa RULE
[354]

ANY”|”ANY *Either-or relation.* One of the relations holds
isa RULE
[355]

DISC *Down-dependent in attribution.* The dependent in the relation is one step further down in the attribution chain
isa RULE
[363]

PRIM”#” *Pattern for idiomatic primary dependency.* Head->dependent within idiom
isa IDIOM RULE
[346]

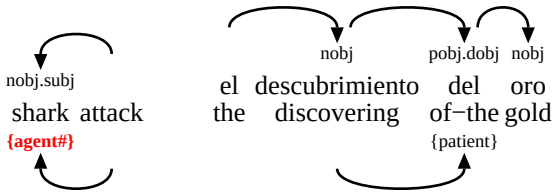


PRIM”/”CONNECTOR *Explicit connector.* The discourse relation has explicit connector $CONNECTOR
isa RULE
[360]

PRIM”/(”CONNECTOR”)” *Implicit connector.* The discourse relation has implicit connector $CONNECTOR
isa RULE
[361]

PRIM”/ATTR”INTEGER *Attribution.* Specifies the person to whom the utterance is attributed (ATTR or ATTR1, ATTR2, … when there is more than one person)
isa RULE
[351]

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
[347]



Chapter 11

Relations misplaced outside the ANY hierarchy

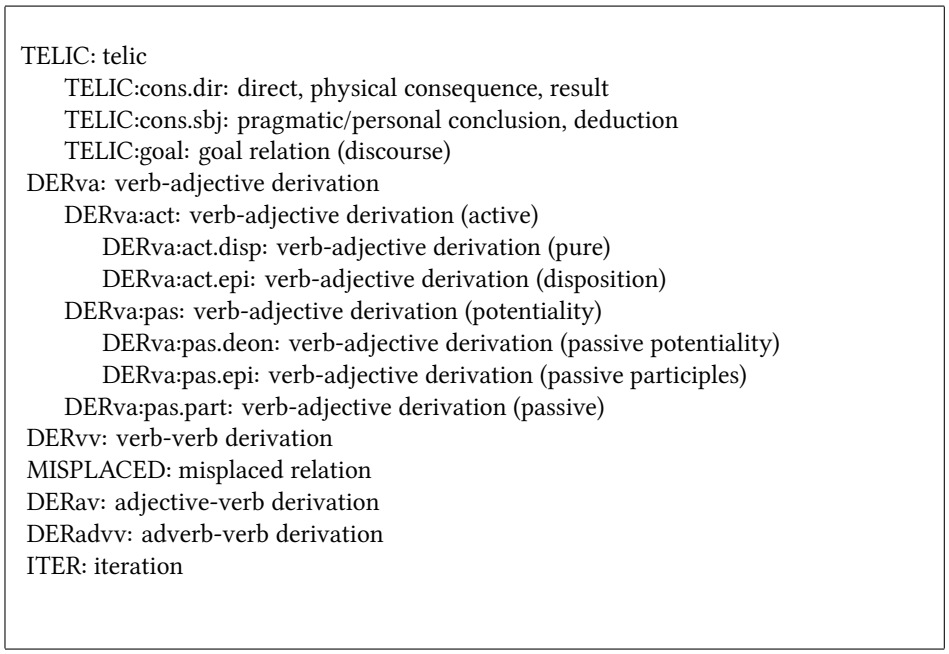


Figure 11.1: The relations matching -ANY.

TELIC [272] *Telic* (deprecated ASPEC:term+resul). Prefix conveys termination or result.
Subtypes: TELIC:cons.dir TELIC:cons.sbj TELIC:goal.

(terminative: oplåse 'open' = låse −op/TELIC)

TELIC:cons.dir isa TELIC [208] *Direct, physical consequence, result* (deprecated TELIC:dir). Physical, objectively observed consequence or result
Typical connectives: [da] Derfor, Af den grund.

TELIC:cons.sbj isa TELIC [209] *Pragmatic/personal conclusion, deduction* (deprecated TELIC:sbj). Subjective conclusion or deduction on behalf of the speaker
Typical connectives: [da] Derfor, Af den grund.

TELIC:goal *Goal relation (discourse).* S expresses goal, purpose, aim
isa TELIC
[207] Typical connectives: [da] For (at).

DERva *Verb-adjective derivation* (deprecated DERV). Suffix creates deverbal adjectives in a broad sense.
[308]

Subtypes: DERva:act DERva:pas DERva:pas.part.

DERva:act *Verb-adjective derivation (active)* (deprecated DEVERB:act.pure). Suffix creates active adjectives.
isa DERva
[309] Subtypes: DERva:act.disp DERva:act.epi.

DERva:act.disp *Verb-adjective derivation (pure)* (deprecated DEVERB:act.disp). Suffix creates active adjectives
isa DERva:act with the meaning aspect ”pure”.
[310]

"que V" (conmovedor − "que conmueve" ’gribende/der griber’)

DERva:act.epi *Verb-adjective derivation (disposition)* (deprecated DEVERB:act.poten). Suffix creates active ad-
isa DERva:act jectives with the meaning aspect ”disposition”.
[311]

"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

DERva:pas *Verb-adjective derivation (potentiality)* (deprecated DEVERB:pas). Suffix creates active adjec-
isa DERva tives with the meaning aspect ”potentiality”.
[312] Subtypes: DERva:pas.deon DERva:pas.epi.

(deverbal adjective: transportable = transport +able/DERva:pas.epi)

DERva:pas.deon *Verb-adjective derivation (passive potentiality)* (deprecated DEVERB:pas.deon). Suffix creates
isa DERva:pas passive adjectives with the meaning aspect ”potentiality”.
[315]

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

’transportabel/maskine som kan blive transporteret/transporteres

DERva:pas.epi *Verb-adjective derivation (passive participles)* (deprecated DEVERB:pas.poten). Suffix creates passive adjectives with the form of participles.
isa DERva:pas
[314]

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

DERva:pas.part *Verb-adjective derivation (passive)* (deprecated DEVERB:pas.part). Suffix creates passive adjectives.
isa DERva
[313]

DERvv *Verb-verb derivation* (deprecated DER:vv). Suffix triggers a derivation from a verb to another verb.
[285]

(verb−>verb derivation: adormecer 'lull to sleep' = dormir −+[a][ecer]/DERvv)

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

DERav *Adjective-verb derivation* (deprecated DER:av). Suffix triggers a derivation from an adjective to a verb.
[284]

(adjective−>verb derivation: darken = dark +en/DERav)

DERadvv *Adverb-verb derivation.* Suffix triggers a derivation from an adverb to a verb
[286]

ITER *Iteration* (deprecated ASPEC:iter). Prefix conveys iteration.
isa ITER
Subtypes: ITER.
[270]

(iterative: redefine = define −re/ITER)

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
    - fill: licensed filler

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

SYN: syntax level

The relations matching SYNTAX-SYNCOMP-SYNADJ-TOPICS.

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
    cause: causation adverbial
        goal: goal adverbial
    conc: concession adverbial
    concom:
    cond: condition adverbial
    cons: consequence adverbial
    exem: example adverbial
    man: manner adverbial
        accom: companionship adverbial
        inst: instrument adverbial
    neg: negation adverbial
    other: other adverbial
    prg: pragmatic adverbial
        discmark: sentence-initial discourse marker
        epi: epistemic adverbial
        eval: evaluation adverbial
        focal: focalizer adverbial
        scene: pragmatic condition and structural adverbial
            add: additive adverbial
            contr: contrast adverbial
            elab: elaboration adverbial
    quant: degree adverbial
    resem: comparison adverbial
        ""QUALIA: resemblance wrt. $qualia relation
    source: source attribution adverbial
    space: space adverbial
        dir: direction adverbial
        loc: location adverbial
    time: time adverbial
        iter: habituality adverb
```

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-TOPICS.

MORPHCOMP: compositional semantic relations
- ABOUT: noun-noun compound (about)
- AGENT: noun-noun compound (agentive)
- CONST: noun-noun compound (constitutive)
  - CONST:apart: part of relation
  - CONST:elab: elaboration
  - CONST:exem: exemplification
  - CONST:rest: restatement
- EVAL: noun-noun compound (evaluative)
- FUNC: noun-noun compound (function)
- LOC: noun-noun compound (position)
- OTHER: noun-noun compound (other)
- POSS: noun-noun compound (possession)
- RESEM: noun-noun compound (resemblance)
- SOURCE: noun-noun compound (origin)
- 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
- MOD: modification
  - MOD:eval: evaluation
  - MOD:qual: qualification
  - MOD:quant: quantification
- NEG: negation
  - NEG:contr: contrast
  - NEG:priv: privation
  - NEG:rev: reversion
- PRE:other: other prefix relation
- SPACE: space
  - SPACE:dir: direction
  - SPACE:loc: location
  - SPACE:source: source
- TIME§: time
- TRANS: transitivity

The relations matching PREFIX.

SUFFIX: semantic relations appearing with suffixes
- AUG: augmentation
- DENUM: adjective-numeral derivation
  - DENUM:apart: adjective-partitive derivation
  - DENUM:ord: adjective-ordinal derivation
  - DENUM:quant: adjective-multiplicative derivation
- DER$v: verb derivation
- DERan:qual: adjective derivation
- DERna: noun-adjective derivation
  - DERna:disp: noun-adjective derivation (disposition)
  - DERna:other: noun-adjective derivation (other)
  - DERna:poss: noun-adjective derivation (possession)
  - DERna:rel: noun-adjective derivation (relational)
    - DERna:deono: noun-adjective derivation (naming)
      - DERna.deono.place: noun-adjective derivation (naming places)
      - DERna:deono.pers: noun-adjective derivation (naming persons)
    - DERna:rel.norm: noun-adjective derivation (normal)
  - DERna:resem: noun-adjective derivation (resemblance)
  - DERna:telic: noun-adjective derivation (effect)
- DERnn: noun-noun derivation
  - DERnn:agent: noun-noun derivation (agent)
  - DERnn:assoc: noun-noun derivation (association)
  - DERnn:capac: noun-noun derivation (capacity)
  - DERnn:cont: noun-noun derivation (container)
  - DERnn:loc: noun-noun derivation (location)
  - DERnn:other: noun-noun derivation (other)
  - DERnn:quant: noun-noun derivation (quantification)
  - DERnn:telic: noun-noun derivation (telic)
  - DERnn:time: noun-noun derivation (time)
- DERnv: verb-noun derivation
  - DERnv:agent: verb-noun derivation (agent)
  - DERnv:core: verb-noun derivation (core)
  - DERnv:exper: verb-noun derivation (experiencer)
  - DERnv:inst: verb-noun derivation (instrument)
  - DERnv:loc: verb-noun derivation (location)
  - DERnv:other: verb-noun derivation (other)
  - DERnv:patient: verb-noun derivation (patient)
  - DERnv:recip: verb-noun derivation (recipient)
- DERv:
- DIMIN: diminution
- PEJ: pejoration

The relations matching SUFFIX.

DISC: discourse level
- ”¤”PRIM: discourse specification
- DISCOTHER:
  - JOINT: no clear relation
  - REP: repaired
  - SCENE: scene

The relations matching DISCOURSE-DISCFUNC-DISCSEM-TOPICS.

DISCPRAG: pragmatic and illocutionary discourse relations
- ANSW: answer
- CONSOL: consolidation
  - CONSOL:inst: instrumental
  - CONSOL:motiv: motivation
  - CONSOL:source: justification
- 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
- AGENTIVE: cause relation (discourse)
  - AGENTIVE:expl: explanation relation in discourse
  - AGENTIVE:reas: reason relation (discourse)
  - AGENTIVE:sbj: subjective cause
- CONC: concession
- COND: condition
- CONJ: conjunction
  - CONJ:add: conjunction, addition
  - CONJ:elab: conjunction, elaboration
  - CONJ:seq: sequence
- CONTR: contrast
  - CONTR:dir: direct contrast
  - CONTR:sbj: subjective contrast
- DISJ: disjunction
  - DISJ:dir: direct disjunction
  - DISJ:sbj: subjective disjunction
- FORMAL: formal description
  - FORMAL:descr: neutral description
  - FORMAL:eval: positive/negative evaluation
- TIME: temporal relation
  - TIME:cont: contemporaneity
  - TIME:post: temporal succession
  - TIME:pre: temporal precedence

The relations matching DISCSEM.

ANA: anaphoric level
- anaphor:

The relations matching ANAPHORA-coref-assoc-TOPICS.

coref: coreference
- coref-iden: coreferential NP with lexical identity
- coref-res: resumptive anaphor
  - coref-res.prg: pragmatic coreference
- coref-var: coreferential NP with lexical variety
- 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-formal.loc: associative locative anaphor
- assoc-telic: associative anaphor (telic)

The relations matching assoc.

SEM: semantic level

The relations matching SEMANTICS-QUALIA-SEMROLE-TOPICS.

QUALIA: qualia roles
- const: constitutive qualia
- formal: formal qualia
  - agentive: agentive qualia
- telic: telic qualia
  - about: about qualia

The relations matching QUALIA.

SEMROLE:
{about}:
{agent}: An object or a person that performs an action
{apart}:
{arg}:
{cause}:
{class}:
{const}:
{elab}:
{eval}:
{experiencer}: The receiver of an emotion or a physical impact
{form}:
{func}:
{goal}:
{iden}:
{location}: The location where something is situated or happens
{loc}:
{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}:
{quant}:
{recipient}: The receiver of something
{resem}:
{source}:
{time}:

The relations matching SEMROLE.

ALIGN: alignment level
"": unlabeled word alignment
f: fuzzy word alignment

The relations matching ALIGN-TOPICS.

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 realtion 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-TOPICS.

TELIC: telic
TELIC:cons.dir: direct, physical consequence, result
TELIC:cons.sbj: pragmatic/personal conclusion, deduction
TELIC:goal: goal relation (discourse)
DERva: verb-adjective derivation
DERva:act: verb-adjective derivation (active)
DERva:act.disp: verb-adjective derivation (pure)
DERva:act.epi: verb-adjective derivation (disposition)
DERva:pas: verb-adjective derivation (potentiality)
DERva:pas.deon: verb-adjective derivation (passive potentiality)
DERva:pas.epi: verb-adjective derivation (passive participles)
DERva:pas.part: verb-adjective derivation (passive)
DERvv: verb-verb derivation
MISPLACED: misplaced relation
DERav: adjective-verb derivation
DERadvv: adverb-verb derivation
ITER: iteration

The relations matching -ANY.

Appendix B

Agreement and confusion tables

In the following tables, the columns are interpreted as follows:

- *Relation name R:* the name of the relation.
- *Agreement A:* the estimated level of agreement, defined as the probability that another annotator assigns the same label to the relation (this number may be inaccurate if N is small).
- *Relation count N:* the number of distinct multiply annotated tokens in the corpus that were annotated with the relation by at least one annotator.
- *Confusion table:* the relations that other annotators used, with a percentage that indicates the probability that each relation was used by the other annotator instead of R.

B.1 Confusion table: syntax

R	A	N	Confusion list
pnct	0%	2	$\mathsf{nobj}_{50\%}$ $\mathsf{dobj}_{50\%}$
nobj	0%	1	$\mathsf{pnct}_{100\%}$
dobj	0%	1	$\mathsf{pnct}_{100\%}$

B.2 Confusion table: semantics

R	A	N	Confusion list
arg	50%	2	$\mathsf{arg}_{50\%}$ $\mathsf{agent}_{50\%}$
agent	0%	1	$\mathsf{arg}_{100\%}$

B.3 Confusion table: discourse

R	A	N	Confusion list
SCENE	100%	4	SCENE$_{100\%}$
ANSW	100%	1	ANSW$_{100\%}$
CONJ	60%	28	CONJ$_{60\%}$ AGENTIVE:expl$_{11\%}$ JOINT$_{5\%}$ CONTR:sbj$_{5\%}$ conj$_{5\%}$ rel$_{4\%}$ qobj$_{4\%}$ CONC$_{4\%}$ DESCR:eval$_{2\%}$ CONTR:dir$_{2\%}$
JOINT	50%	4	CONJ$_{50\%}$ JOINT$_{50\%}$
CONTR	33%	1	CONTR:sbj$_{33\%}$ conj$_{33\%}$ CONTR:dir$_{33\%}$
CONC	25%	2	CONJ$_{50\%}$ CONC$_{25\%}$ CONTR:dir$_{25\%}$
CONTR:sbj	24%	11	conj$_{30\%}$ CONTR:sbj$_{24\%}$ CONTR:dir$_{20\%}$ CONJ$_{14\%}$ coord$_{9\%}$ CONTR$_{3\%}$
AGENTIVE:expl	18%	11	AGENTIVE:reas$_{30\%}$ CONJ$_{27\%}$ AGENTIVE:expl$_{18\%}$ CONSOL:motiv$_{9\%}$ vobj$_{6\%}$ conj$_{5\%}$ CONSOL:source$_{5\%}$
CONTR:dir	8%	6	CONTR:sbj$_{33\%}$ expl$_{17\%}$ CONC$_{17\%}$ conj$_{11\%}$ CONJ$_{8\%}$ CONTR:dir$_{8\%}$ CONTR$_{6\%}$
DESCR:eval	0%	2	CONJ$_{50\%}$ AGENTIVE:reas$_{50\%}$
CONSOL:source	0%	1	AGENTIVE:reas$_{50\%}$ AGENTIVE:expl$_{50\%}$
CONSOL:motiv	0%	1	AGENTIVE:expl$_{100\%}$
AGENTIVE:reas	0%	7	AGENTIVE:expl$_{48\%}$ vobj$_{24\%}$ DESCR:eval$_{14\%}$ conj$_{7\%}$ CONSOL:source$_{7\%}$

B.4 Confusion table: anaphora

R	A	N	Confusion list
ref	100%	38	ref$_{100\%}$
coref-res	100%	1	coref-res$_{100\%}$
coref	100%	1	coref$_{100\%}$

B.5 Confusion table: morphology

R	A	N	Confusion list

B.6 Confusion table: alignment

R	A	N	Confusion list

Appendix C

Annotation status

C.1 All texts

	alignment	discourse	morphology	postag	syntax
none	1016	2098	2226		971
auto				1775	75
outdated-final	536				943
first	45	20	84		63
discussed	178	193	1		175
final				536	84

C.2 da texts

	discourse	morphology	postag	syntax
none	439	473		
auto				
outdated-final				502
first	12	62		24
discussed	85	1		3
final			536	7

C.3 de texts

	discourse	morphology	postag	syntax
none	405	413		346
auto			413	
outdated-final				
first	8			38
discussed				6
final				23

C.4 en texts

	discourse	morphology	postag	syntax
none	536	536		
auto			536	75
outdated-final				441

first				
discussed				4
final				16

C.5 es texts

	discourse	morphology	postag	syntax
none	388	393		343
auto			413	
outdated-final				
first		20		1
discussed	25			65
final				4

C.6 it texts

	discourse	morphology	postag	syntax
none	330	411		282
auto			413	
outdated-final				
first		2		
discussed	83			97
final				34

C.7 da-de texts

	alignment
none	368
auto	
outdated-final	
first	45
discussed	
final	

C.8 da-en texts

	alignment
none	
auto	
outdated-final	536
first	
discussed	
final	

C.9 da-es texts

	alignment
none	332

auto	
outdated-final	
first	
discussed	81
final	

C.10 da-it texts

	alignment
none	316
auto	
outdated-final	
first	
discussed	97
final	

Appendix D

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