

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=0ArjTKYTQS1lWcnNUWGGJrX3lZTkxDc3QxYmlqWlRXQ1E&hl=en>

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Chapter 1

Introduction

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

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

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

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

Chapter 2

Top-level relations: ANY

ANY: formal top node
DIM: dimension
 DIM:LEVEL: dimension: linguistic level
 DIM:TYPE: dimension: annotation type
RULE: generative type specification rule
TOPIC: annotation topic

Figure 2.1: The relations matching ANY-!DIM:LEVEL-!DIM:TYPE-!RULE-!TOPIC.

ANY *Formal top node.* The formal top node in the type hierarchy. The type hierarchy contains
[2] all the annotations (features and relations) used in the Copenhagen Dependency Treebanks; it also contains all other documentation for the treebank, including hierarchically organized topics in the annotation which describe how to annotate particular groups of linguistic constructions in the treebanks.

Subtypes: DIM RULE TOPIC.

DIM *Dimension* (long: DIMENSION). A dimension in the type hierarchy. The dimensions include
isa ANY the linguistic level (eg, syntax, morphology, semantics) and the annotation type (eg, primary
[3] dependency, secondary dependency, idiomatic construction)

Subtypes: DIM:LEVEL DIM:TYPE.

DIM:LEVEL *Dimension: linguistic level.* A dimension specifying the linguistic level of the relation. The
isa DIM classification of relations into linguistic levels is meant to give a rough classification of the
[8] relations that corresponds to standard use in linguistic theory. The classification is not an important feature in the underlying theory, and there are borderline cases where the distinction between the levels is somewhat fuzzy.

Subtypes: ALIGN ANA DISC MORPH ONT SEM SYN.

DIM:TYPE *Dimension: annotation type.* A dimension specifying the type of the annotation. Eg, a lexical
isa DIM feature or a directed bilexical relation.

[17] Subtypes: FEAT REL.

RULE *Generative type specification rule.* A generative type specification rule. Type specification
isa ANY rules specify how type names are created generatively using rules. A rule consists of a
[4] sequence of null-separated items which are either character sequences enclosed in double

quotes or type names; parts of a rule may be enclosed in parentheses and followed by an optional repetition operator: "*" (0 or more times), "+" (1 or more times), or "?" (0 or 1 times). When specifying the super types for a generated type, \$1 refers to the part of the type name matched within the first pair of parentheses, \$2 the part within the second pairs of parentheses, etc. Generated types may be used as super types.

For example, the rule "<"PRIM">" generates all relation names formed by enclosing any relation name from the "PRIM" hierarchy in angle brackets. "<"PRIM("PRIM)*">" generates all relation names formed by enclosing a "-"separated sequence of "PRIM" relation names in angle brackets.

Subtypes: "("REL)" "*"DISC "<"PRIM("PRIM)*":"INTEGER">" "@"adverb "["PRIM]" "assoc-"QUALIA "QUALIA "σ"(PRIM) "§"(PRIM) (PRIM)/ATTR"INTEGER (REL)"&"(REL) (REL)"|(REL) (SEMREL)"#" DISC "*" PRIM"/"CONNECTOR PRIM"/("CONNECTOR)" PRIM{"SEMREL"}".

TOPIC *Annotation topic.* A topic in the annotation guidelines. A topic describes how a particular linguistic construction is annotated in the treebanks, as an aid for the human annotators and users of the CDT treebanks. If a linguistic relation is very closely associated to one or more topics (eg, "gobj" for genitive constructions), the topics should be added as super types for the relation, so that the relations and the topics are properly linked in the annotation manual.

Subtypes: %ALIGN %DISC %MORPH %SEM %SYN.

2.1 Linguistic level dimension: DIM:LEVEL

DIM:LEVEL: dimension: linguistic level
 ALIGN: alignment level
 ANA: anaphor level
 DISC: discourse level
 MORPH: morphology level
 ONT: ontology level
 SEM: semantic level
 SYN: syntax level

Figure 2.2: The relations matching DIM:LEVEL-!SYNTAX-!MORPHOLOGY-!DISCOURSE-!ANAPHORA-!SEMANTICS-!ALIGNMENT-!ONTOLOGY-!RULE-!TOPICS.

DIM:LEVEL *Dimension: linguistic level.* A dimension specifying the linguistic level of the relation. The classification of relations into linguistic levels is meant to give a rough classification of the relations that corresponds to standard use in linguistic theory. The classification is not an important feature in the underlying theory, and there are borderline cases where the distinction between the levels is somewhat fuzzy.

Subtypes: ALIGN ANA DISC MORPH ONT SEM SYN.

ALIGN *Alignment level* (long: ALIGNMENT). The alignment level. Ie, alignment relations, or lexical features associated with alignments.

[15] Subtypes: ALIGNREL.

ANA *Anaphor level* (long: ANAPHORA). The level of anaphora. Ie, relations between anaphora and their antecedents, or lexical features associated with anaphora.

[14]

Subtypes: ANAREL anaphor.

DISC *Discourse level* (long: DISCOURSE). The discourse level. Ie, relations between segments in different sentences, or lexical features associated with discourse units.

[11] Subtypes: "σ"(PRIM) DISCOTHER DISCPRAG DISCSEM.

MORPH *Morphology level* (long: MORPHOLOGY). The morphological level. Ie, relations between two word segments within a single word, or lexical features associated with morphemes.

[9] Subtypes: "§"(PRIM) MORPHCOMP MORPHDERIV.

ONT *Ontology level* (long: ONTOLOGY). The ontological level. Ie, relations between lexical elements construed as ontological units, or lexical features associated with ontological units.

[13] Subtypes: ONTOCLASS.

SEM *Semantic level* (long: SEMANTICS). The semantic level. Ie, relations between lexical elements construed as functors, arguments, and modifiers, or lexical features associated with semantic units.

Subtypes: SEMREL.

SYN *Syntax level* (long: SYNTAX). The syntactic level. Ie, relations between two segments within a sentence, but not within a single word, or lexical features associated with syntactic units.

[10] Subtypes: SYNADJ SYNCOMP.

2.2 Annotation type dimension: DIM:TYPE

DIM:TYPE: dimension: annotation type

FEAT: lexical feature

REL: directed billexical relation

+: segment concatenation

GAP: gapping dependent

"<"PRIM(":"PRIM)"*":"INTEGER">": gapping dependent

IDIOM: idiomatic relation

(SEMREL)"#": idiomatic relation pattern

LAND: landing relation

fill: licensed filler

land: landed lexical element

PRIM: primary dependency relation

ADJ: adjunct relation

COMP: complement relation

"@adverb: valency-bound adverbial

PRIM{"SEMREL"}": primary+semantic relation pattern

SEC: secondary dependency relation

"["PRIM"]": secondary relation pattern

Figure 2.3: The relations matching DIM:TYPE-!SYNTAX-!MORPHOLOGY-!DISCOURSE-!ANAPHORA-!SEMANTICS-!ALIGNMENT-!ONTOLOGY-!TOPICS.

DIM:TYPE *Dimension: annotation type*. A dimension specifying the type of the annotation. Eg, a lexical feature or a directed billexical reiation.

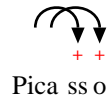
[17]

Subtypes: FEAT REL.

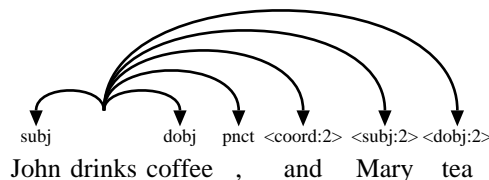
FEAT *Lexical feature* (long: FEATURE). A lexical feature. Ie, an annotation that describes a particular property of a lexical element.
isa DIM:TYPE
[18] Subtypes: ONTOCLASS.

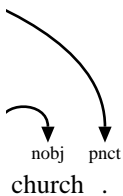
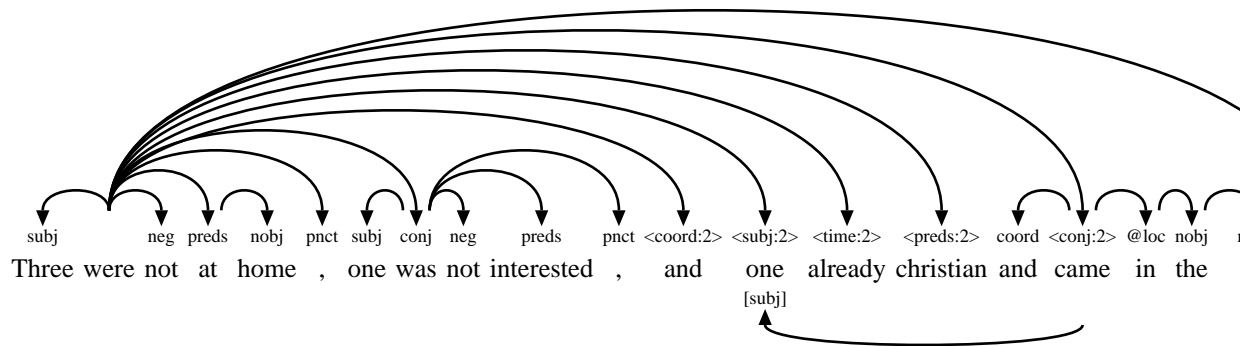
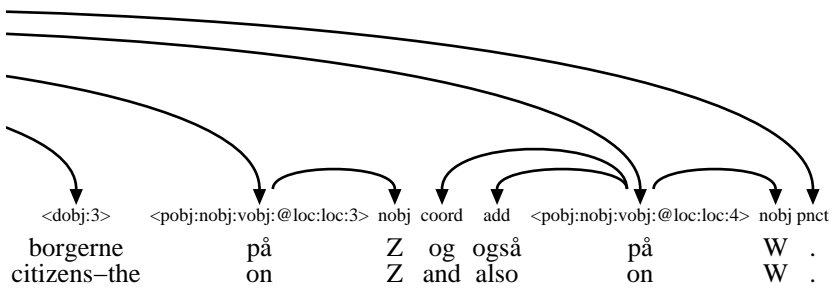
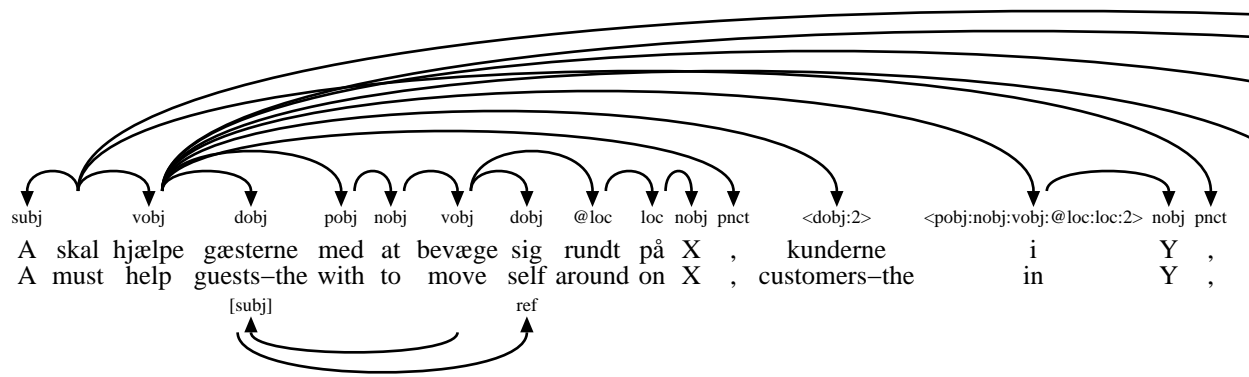
REL *Directed billexical relation* (long: RELATION). A directed billexical relation. Ie, a directed relation that goes from one lexical element (the parent, head, governor, nucleus, stem, antecedent) to a dependent lexical element (the child, dependent, satellite, affix, anaphor).
isa DIM:TYPE
[19] Subtypes: + ALIGNREL ANAREL GAP IDIOM LAND PRIM PRIM"{"SEMREL"}" SEC SEMREL.

+ *Segment concatenation* (long: CONCATENATION). A concatenation relation. The relation is used to correct segmentation errors, and specifies that two nodes should have been analyzed as subsegments of the same lexical unit. The relation always goes from a node to its immediately following neighbour in the segmentation.
isa REL
[33] Related types: IDIOM.

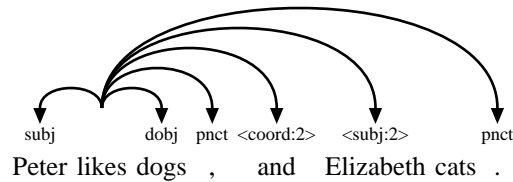


GAP *Gapping dependent* (long: GAPPING). A relation between a gapping dependent in a secondary conjunct and the head of the first conjunct. In gapping coordinations, the secondary conjuncts have an elided head, so the remaining material in the secondary conjuncts is analyzed as gapping dependents of the head of the first conjunct instead. In Discontinuous Grammar, the first conjunct is assumed to generate a gapping filler for each gapping conjunct which encodes a copy of the entire tree associated with the first conjunct, and the gapping dependent is analyzed as a primary dependent of this gapping filler; any node within the copied tree may function as the primary governor of the gapping dependent, but the gapping filler always functions as the landing site for the gapping dependent, and the gapping dependent functions as an anaphoric element that must identify a phrase within the copied tree that it replaces.
isa REL
[23] Subtypes: "<"PRIM(":"PRIM)*":"INTEGER">".





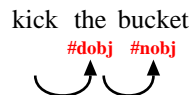
"<PRIM(:PRIM)*":INTEGER" dependent. First conjunct->gapping dependent
 isa GAP RULE
 [355]



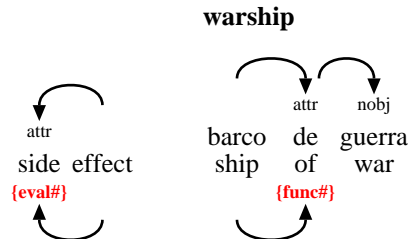
IDIOM *Idiomatic relation.* An idiomatic relation. The relation links independent lexical elements that jointly form an idiomatic lexical unit, ie, a unit where the meaning of the whole cannot be described as a semantic composition of its parts.

Subtypes: (SEMREL)"#".

Related types: +.



(SEMREL)"#" Idiom relation pattern. A semantic relation can be marked as idiomatic by putting a trailing "#" after the semantic relation name. The idiom marker is only used with semantic relations, not with syntactic relations.



LAND *Landing relation* (long: LANDING). A relation between a lexical element and its landing site. Landing relations are not annotated explicitly in the Copenhagen Dependency Treebanks. In Discontinuous Grammar, the word order is determined by a projective surface tree. The projective surface tree can be derived from the deep tree by defining the landing site for a node as the lowest transitive governor in the deep tree that deeply dominates all nodes between the node and the transitive governor. The resulting set of landing relations can be shown to form a projective tree. In this tree, a global word order uniquely corresponds to a local ordering of all the landed nodes at each landing site.

Subtypes: fill land.

fill *Licensed filler.* A landing relation from a filler licenser to a phonetically empty filler that it licenses. The filler licenser is viewed as the landing site for the filler. Filler relations are never annotated explicitly in the CDT treebanks, 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 licenser" lexeme, and which functions as an anaphoric element that requires a "filler source" as its antecedent. For example, the relative verb in a relative construction acts as filler licenser for a filler that essentially provides a copy of the relativized noun; in control constructions, the controlling verb passes on a copy of the controlled complement to the subordinate verb; and in gapping coordinations, the first conjunct licenses one or more gapping fillers that function as the elided heads of the gapped conjuncts.

land *Landed lexical element*. A landing relation for lexical elements. This relation is used when the landed node is a lexical element rather than a filler. Landing relations are not annotated explicitly in the CDT annotation, but follow implicitly from the other annotation.

Related types: LAND.

PRIM *Primary dependency relation* (long: PRIMARY). A primary dependency relation. Ie, a billexical relation which specifies the primary head associated with each lexical element in the analysis at the level of syntax, discourse, and morphology. The primary dependencies in a well-formed analysis must form a deep tree, which may be non-projective. The deep tree provides the primary interface to the underlying compositional semantics. In particular, the deep tree defines the application order in the compositional semantics by inducing a unique functor-argument tree for each modifier scope, ie, for each ordering of the adjuncts at all nodes in the analysis.

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 adjunct relations licensed by the adjunct, along with the associated semantic interpretation mechanisms and selectional restrictions on the licensed governors. In the compositional semantics, the adjunct acts as a modifier, ie, a functor that as its argument takes the semantic representation corresponding to the governor along with the governor's arguments and lower-scoped adjuncts.

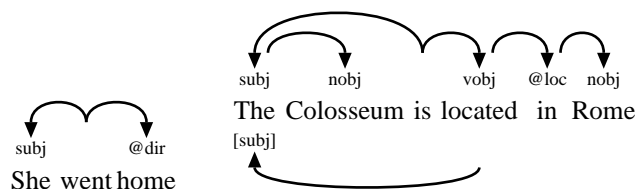
Subtypes: DISCOTHER DISCPRAG DISCSEM SYNADJ.

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, along with the associated semantic interpretation mechanisms and selectional restrictions associated with each complement role. In the compositional semantics, the complements act as arguments with the governor as their functor.

Subtypes: "@adverb SYNCOMP.

"@adverb *Valency-bound adverbial*. A complement relation which can be interpreted as an obligatory, valency-bound adverbial relation.

Related types: cont dir dur ext hab loc prec succ time.



PRIM{"SEMREL"} *Primary+semantic relation pattern*.

isa REL RULE

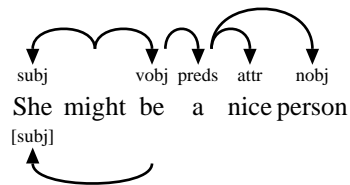
SEC *Secondary dependency relation* (long: SECONDARY). A secondary dependency relation. Intuitively, if a node functions as a dependent of more than one word (eg, in verbal chains, raising and control constructions, relatives, and elliptic coordinations), the dependency relation that determines the word order is encoded as a primary relation, and the remaining dependency relations are encoded as secondary dependency relations. In terms the underlying linguistic theory in Discontinuous Grammar, the secondary relations in the CDT annotation encode that the child node in the secondary dependency functions as the filler source for a filler

that functions as a primary dependent of the parent node. Since the CDT annotation does not include filler nodes, there is no explicit annotation of the filler and its associated filler licensor and filler source, and the filler licensor must be reconstructed from the secondary dependency by means of heuristic rules.

Subtypes: "[PRIM]"

Related types: fill fsrc.

"[PRIM]" *Secondary relation pattern.* The secondary relation corresponding to a primary relation is formed by enclosing the primary relation name in square brackets.



Chapter 3

Syntactic relations: SYNTAX

SYN: syntax level
SYNADJ: syntactic adjunct
SYNCOMP: syntactic complement

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

SYN *Syntax level* (long: SYNTAX). The syntactic level. Ie, relations between two segments within a sentence, but not within a single word, or lexical features associated with syntactic units.
isa DIM:LEVEL
[10] Subtypes: SYNADJ SYNCOMP.

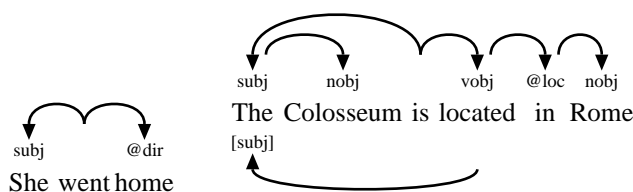
SYNADJ *Syntactic adjunct*. An adjunct role at the syntactic level. This relation type is used to group a large class of adjunct roles that only apply at the syntactic level.
isa ADJ SYN
[103] Subtypes: ADVERB app attr attrg conj coord correl fpred mod name pnt rel voc xtop.

SYNCOMP *Syntactic complement*. A complement role at the syntactic level. This relation type is used to group a large class of complement roles that only apply at the syntactic level.
isa COMP SYN
[75] Subtypes: @space @time aobj avobj dobj fobj gobj iobj nobj numa numm part pobj possd possr pred qobj robj subj vobj.

3.1 Complement relations: SYNCOMP

SYNCOMP *Syntactic complement*. A complement role at the syntactic level. This relation type is used to group a large class of complement roles that only apply at the syntactic level.
isa COMP SYN
[75] Subtypes: @space @time aobj avobj dobj fobj gobj iobj nobj numa numm part pobj possd possr pred qobj robj subj vobj.

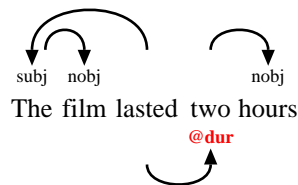
@space *Valency-bound location/direction adverbial*.
isa SYNCOMP
[84] Related types: dir loc.



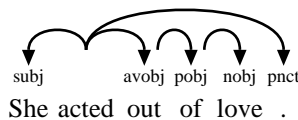
SYNCOMP: syntactic complement
 @space: valency-bound location/direction adverbial
 @time: valency-bound time adverbial
 avobj: adverbial object
 dobj: direct object
 fobj: filler object
 gobj: genitive object
 iobj: indirect object
 nobj: nominal object
 numa: additive numeral complement
 numm: multiplicative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

Figure 3.2: The relations matching SYNCOMP-TOPIC.

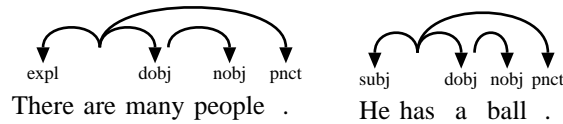
@time *Valency-bound time adverbial.* A valency bound time expression. Formerly analyzed as
 isa SYNCOMP locative object, but we have decided to provide a general mechanism (@) for converting
 [100] adverbial relations into valency-bound relations.
 Related types: cont dur ext hab prec succ.



avobj *Adverbial object.*
 isa SYNCOMP Related types: aobj part.
 [92] Confusion₄: quant_{50%} loc_{25%} avobj_{25%} .

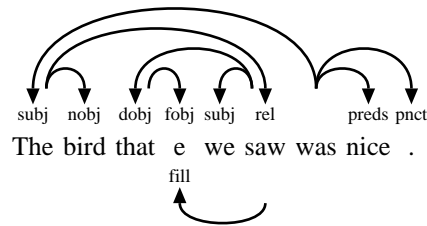


dobj *Direct object.* A direct object relation. In languages with case, the direct object is typically
 isa SYNCOMP accusative-marked.
 [80] Related types: iobj robj.
 Confusion₉₃: dobj_{86%} dobj_{86%} dobj_{86%} dobj_{86%} dobj_{86%} dobj_{86%} dobj_{86%} dobj_{86%} .



fobj *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.

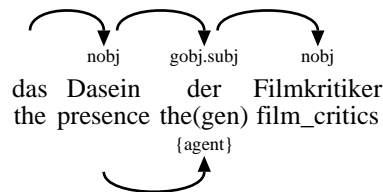
Related types: fill ref.



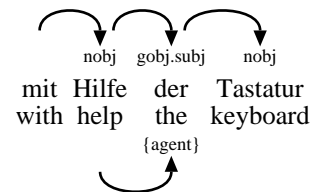
gobj *Genitive object*. If the genitive object is part of a NP which nucleus is deverbal, the following annotation possibilities are available: gobj.subj{SEMROLE} gobj.dobj{SEMROLE} gobj.pobj{SEMROLE} gobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient, experient,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

Related types: SEMROLE attrg.

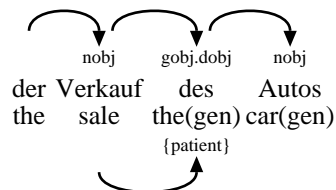
the presence of film critics



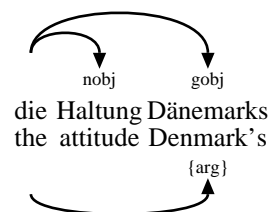
with help from the keyboard



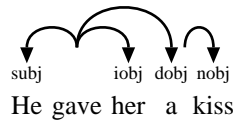
the sale of the car



Denmark's attitude



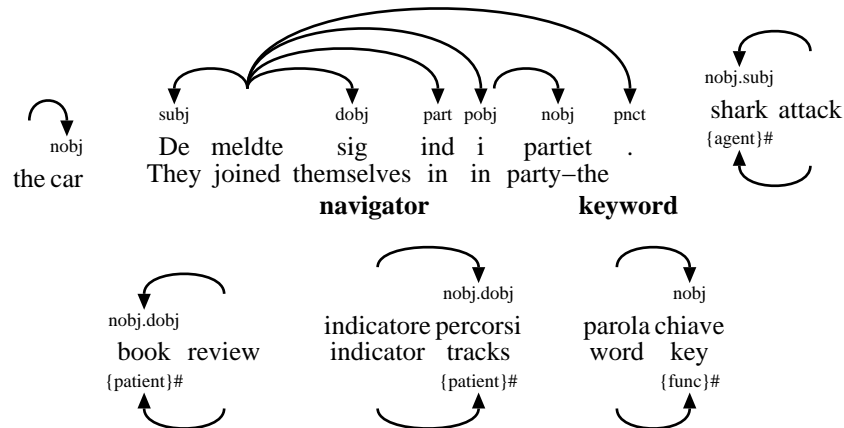
iobj *Indirect object*.
Related types: dobj.
[83] Confusion₂: dobj_{100%} .



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

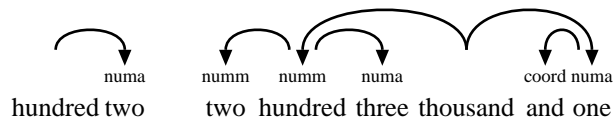
Confusion₄₈₈: name_{1%} pobj_{1%} pobj_{1%} pobj_{1%} pobj_{1%} pobj_{1%} pobj_{1%} pobj_{1%} pobj_{1%} pobj_{1%} pobj_{1%} pobj_{1%} pobj_{1%} pobj_{1%} pobj_{1%} .

They joined the party.



numa *Additive numeral complement*. An additive 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 " $(2 * 100 + 4) * 1000 + (20 + (3))$ ".

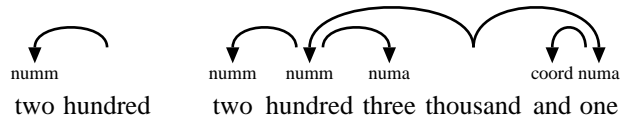
Related types: numm.



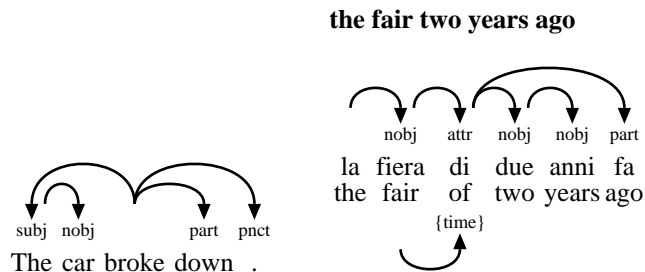
numm *Multiplicative numeral complement*. An multiplicative numeral complement relation. Numerals license one additive and one numeral complement, both optional. The numerical value associated with the expression is the value $M * N + A$, where M is the numerical value of the multiplicative complement, 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.

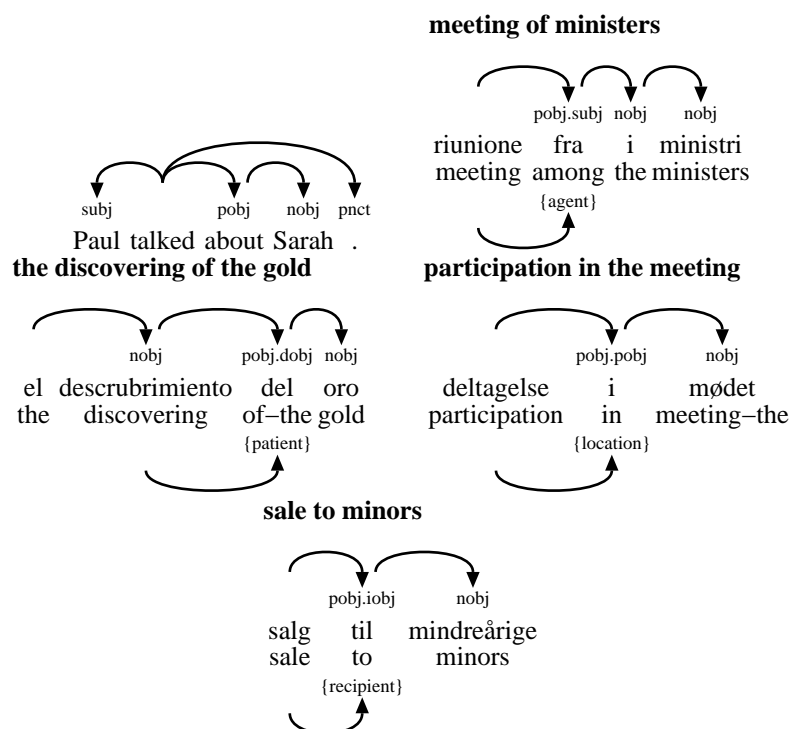
Confusion₁: numm_{100%} .



part *Verbal particle.* Verbal particle.
 isa SYNCOMP Related types: avobj.
 [96] Confusion₃: .



pobj *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.
 Confusion₁₀₉: pobj55% pobj55% pobj55% pobj55% pobj55% pobj55% pobj55% pobj55% pobj55% pobj55% pobj55% pobj55% pobj55%

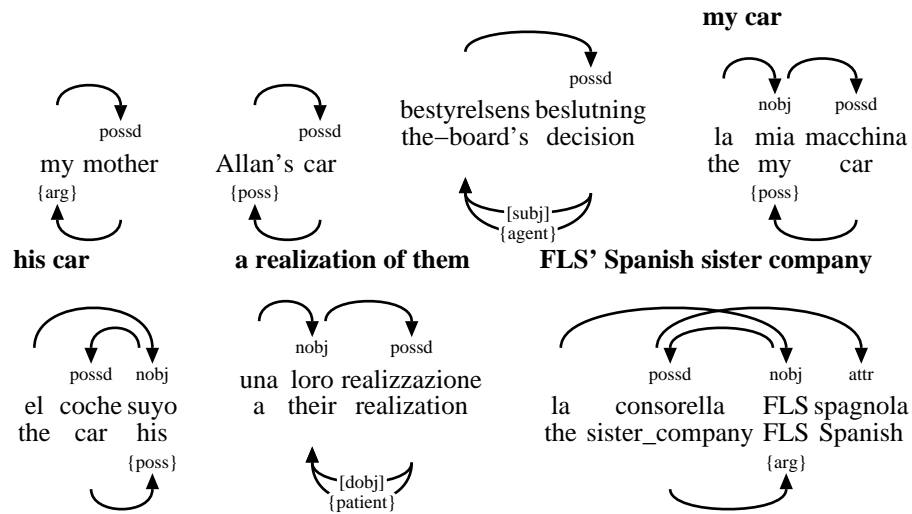


possd *Possessed complement.* The possessed complement in a possessive construction. Possession is understood in a syntactic sense as any construction with a clitic genitive marker, not necessarily as possession in a narrow semantic sense. A better name may be chosen for this relation in the future.

[97]

Related types: "{\$PRIM"}" SEMROLE poss possr.

Confusion₃₀: possd_{90%} possd_{90%} possd_{90%} .



possr *Possessor complement.* NO LONGER IN USE

The possessor complement in a possessive construction. Possession is understood in a syntactic sense as any construction with a clitic genitive marker, not necessarily as possession in a narrow semantic sense. A better name may be chosen for this relation in the future.

[98]

Related types: poss possd.

N/A

pred *Predicative.*

Subtypes: predo preds.

Related types: predo preds.

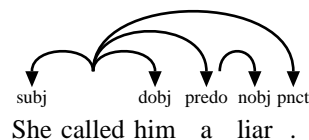
[85]

predo *Object predicative.*

Related types: preds.

Confusion₁: dobj_{100%} .

[87]

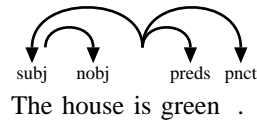


preds *Subject predicative.*

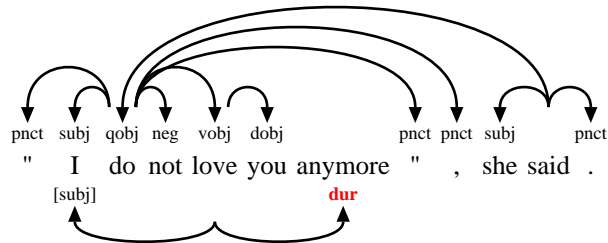
Related types: predo.

Confusion₄₃: preds_{86%} preds_{86%} preds_{86%} preds_{86%} preds_{86%} preds_{86%} .

[86]

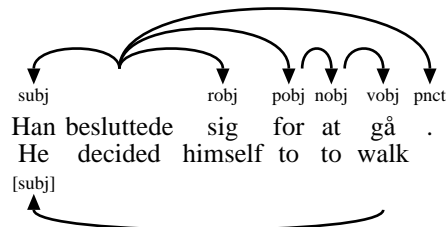


qobj *Quotational object.* A phrase or discourse segment functioning as directly quoted speech, typically by an attribution verb. Indirect speech is analyzed as "dobj" or "nobj".
 isa SYNCOMP
 [99] Related types: xpl.
 Confusion₅: qobj_{100%} .

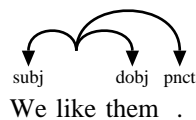


robj *Reflexive object.*
 isa SYNCOMP Related types: dobj.
 [89]

He decided to walk.



subj *Subject.* A subject relation. In languages with case, subjects are usually nominative-marked. Agent-roles are often encoded as subjects, but not necessarily so (eg, in passive constructions).
 isa SYNCOMP
 [78]
 Subtypes: expl.
 Related types: expl.
 Confusion₁₇₁: .

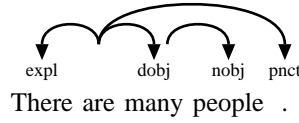


expl *Expletive subject.* An expletive subject relation. The expletive subject is typically a situational place adverbial like "there" or time adverbial like "now", and is only possible for verbs that support the expletive alternation. The expletive alternation applies to all verbs that do not have a 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

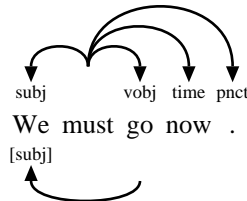
object role (with the restriction that only indefinites are allowed in this direct object role), and letting the subject role be filled by a situational place or time adverbial.

Related types: subj.

Confusion₄: expl_{100%} .



vobj *Verbal object.*
 isa SYNCOMP Related types: "["\$PRIM"]".
 [88] Confusion₁₁₆: .



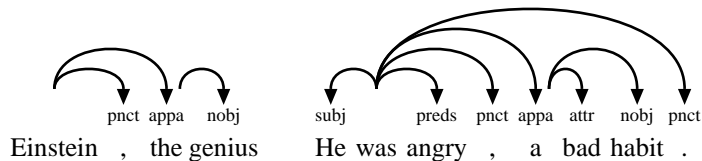
3.2 Non-adverbial adjunct relations: SYNADJ

SYNADJ *Syntactic adjunct.* An adjunct role at the syntactic level. This relation type is used to group a large class of adjunct roles that only apply at the syntactic level.
 [103] Subtypes: ADVERB app attr attrg conj coord correl fpred mod name pnct rel voc xtop.

ADVERB *Adverbial.* V/N/P->adverbial
 isa SYNADJ Subtypes: agent cause conc concom cond cons exem man neg other prg quant resem source space time.
 [139]

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

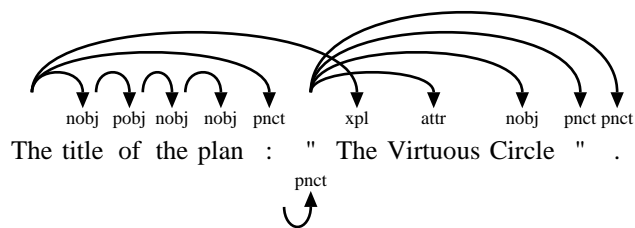
appa *Parenthetic apposition (comma).*
 isa app Subtypes: xpl.
 [115] Related types: appr xpl.
 Confusion₅: appa_{100%} .



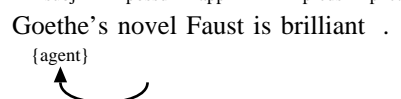
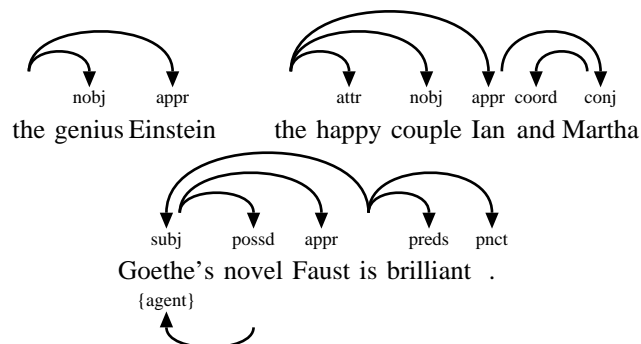
xpl *Explication.* Explication of an NP or VP.
 isa appa Related types: qobj.
 [128] Confusion₂: xpl_{100%} .

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

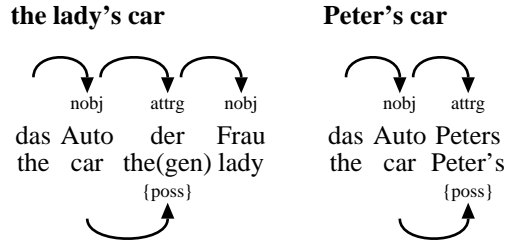
Figure 3.3: The relations matching SYNADJ-!ADVERB-TOPIC.



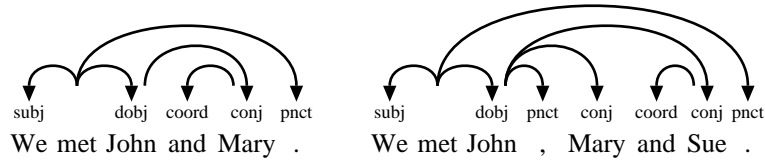
appr *Restrictive apposition (no comma).*
 isa app Related types: appa.
 [116] Confusion₅: appr_{100%} .



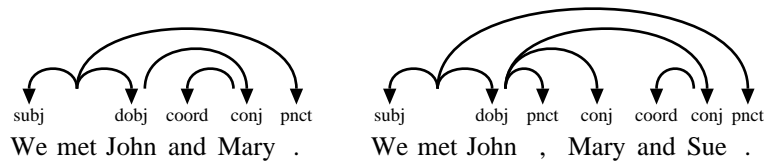
attrg *Genitive attributive.*
 isa SYNADJ Related types: SEMROLE gobj.
 [113]



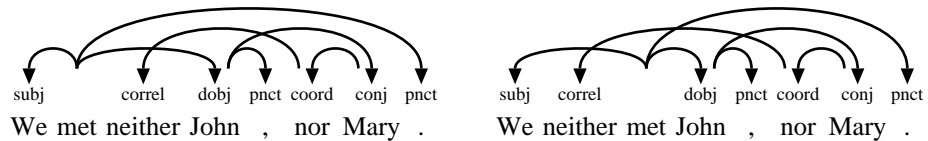
conj *Conjunct relation.* A dependency relation relating the conjuncts in a coordination. Secondary conjuncts are analyzed as "conj"-dependents of the first conjunct. Coordinators are analyzed as dependents of the secondary conjuncts.
 Related types: coord correl.
 Confusion₉₃: .



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.
 Related types: conj correl discmark.
 Confusion₆₆: contr_{3%} contr_{3%} .



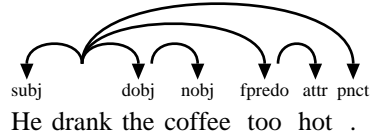
correl *Correlative coordinator relation.*
 Related types: conj coord.
 Confusion₄: correl_{50%} focal_{25%} subj_{25%} .



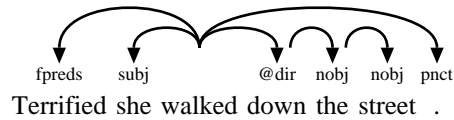
fpred *Free predicative.*
 Subtypes: fpredo fpreds.
 Related types: fpredo fpreds.
 [109]

V->free predicative

fpredo *Free direct-object predicative.*
isa fpred Related types: fpreds man.
[111]



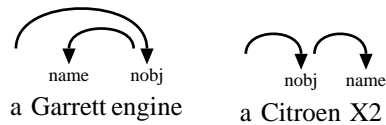
fpreds *Free subject predicative.*
isa fpred Related types: fpredo.
[110]



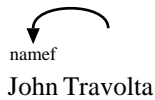
mod *Modifier/adverbial.* Deprecated name for adverbials
isa SYNADJ Subtypes: modp.
[134]

modp *Parenthetic modifier.* Deprecated name for parenthetic modifiers
isa mod Related types: {elab}.
[136] Confusion₃: .

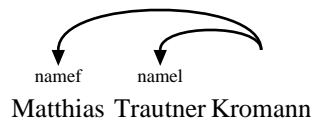
name *Part of name.* Part of a name.
isa SYNADJ Subtypes: namef name1 title.
[122] Confusion₁₇: .



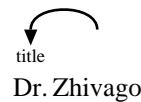
namef *First name.* A first name.
isa name Related types: name1 title.
[123] Confusion₂₁: namef_{100%} .



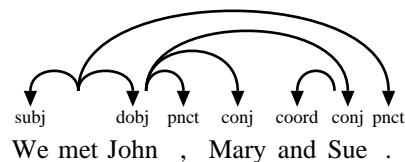
name1 *Last name.* A second last name
isa name Related types: namef title.
[124] Confusion₄: name1_{100%} .



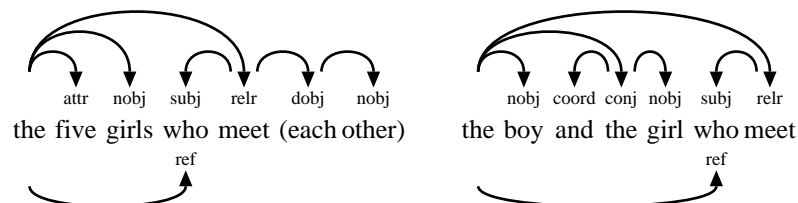
title *Person title.* A title in a name. If the title is determined by an article, eg. the director
 isa name Smith, the title must be annotated as "nobj" and the name as "appr".
 [125] Related types: namef namel.
 Confusion₆: nobj_{50%} title_{50%} .



punct *Punctuation.*
 isa SYNADJ Confusion₂₇₅: .
 [107]



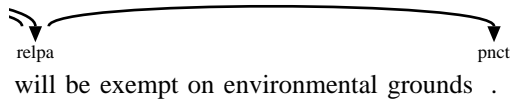
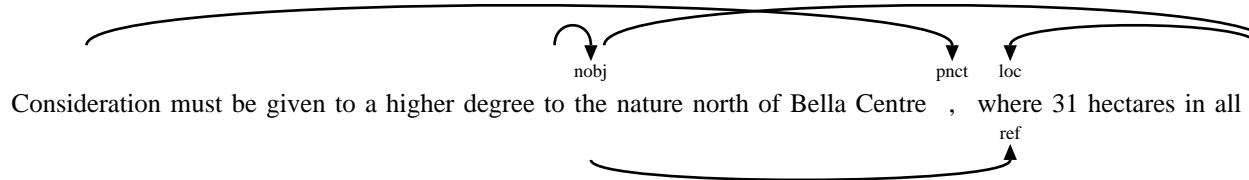
rel *Relative clause.* A relation between a relative clause and a relativized NP/VP. The finite verb
 isa SYNADJ in the relative clause is analyzed as a "rel" dependent of the head of the relativized NP/VP
 [117] (ie, the determiner if present, otherwise the noun). If there is a relative pronoun, it 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,
 isa rel it: il che, cosa che
 [120] Related types: relpa relr.

V->V

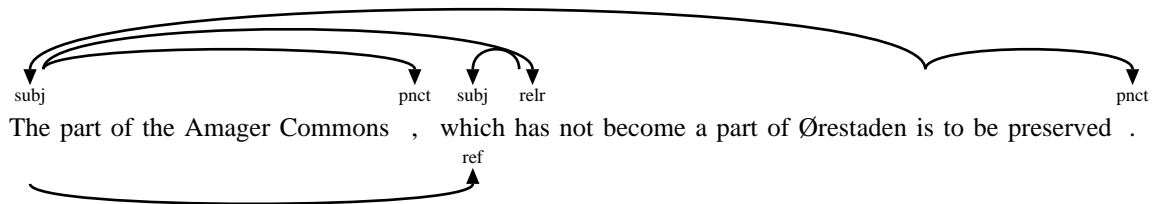
relpa *Parenthetic relative clause.*
 isa rel Related types: relelab relr.
 [119] Confusion₁₁: .



relr *Restrictive relative clause.*

isa rel Related types: relelab relpa.

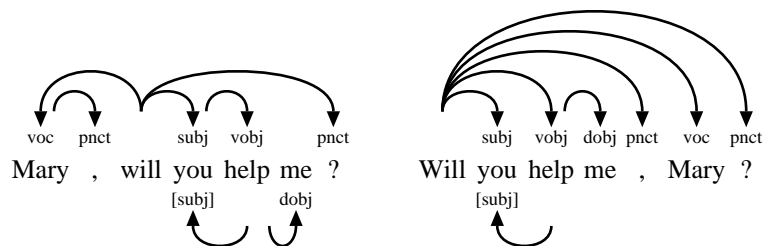
[118] Confusion₂₃: .



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

isa SYNADJ

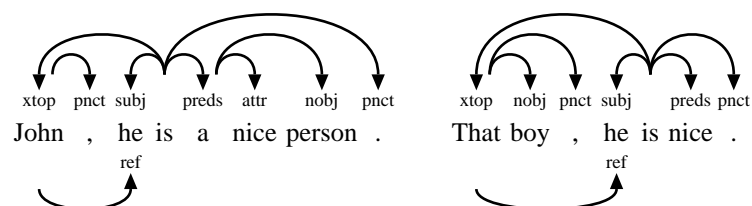
[127]



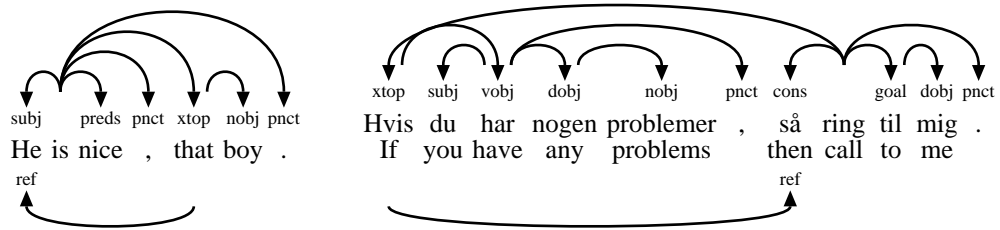
xtop *External topic with resuming pronoun.* An external topic is a sentence-initial NP whose only function is to provide the antecedent for a pronoun later in the sentence. Eg in "John, he is a nice person". Here "John" is the "xtop" of "is", and "he" is the subject of "is".

[121]

Related types: cons ref xtop.



If you are having any problems, call me.



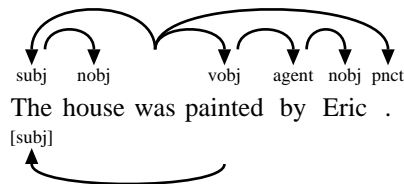
3.3 Adverbial adjunct relations: ADVERB

ADVERB: adverbial

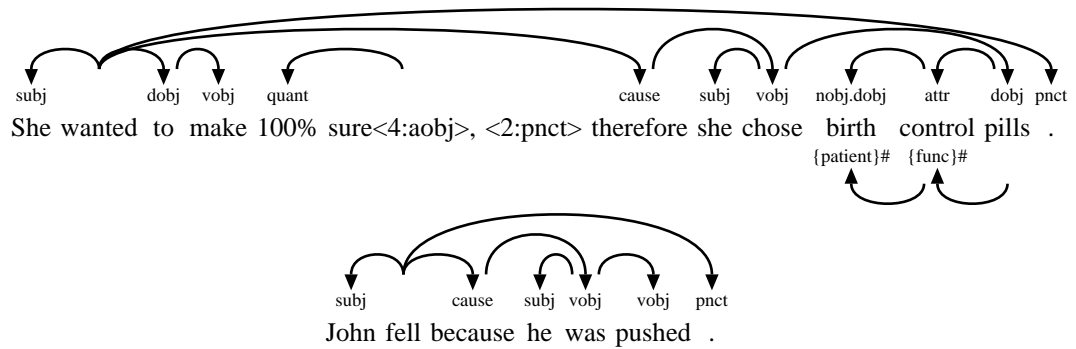
- agent: agent adverbial
- cause: causation adverbial
 - goal: goal adverbial
- conc: concession adverbial
- concom:
- cond: condition adverbial
- cons: consequence adverbial
- exem: example adverbial
- man: manner adverbial
 - accom: companionship adverbial
 - inst: instrument adverbial
- neg: negation 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
- source: source attribution adverbial
- space: space adverbial
 - dir: direction adverbial
 - loc: location adverbial
- time: time adverbial
 - iter: habituality adverb

Figure 3.4: The relations matching ADVERB-TOPIC.

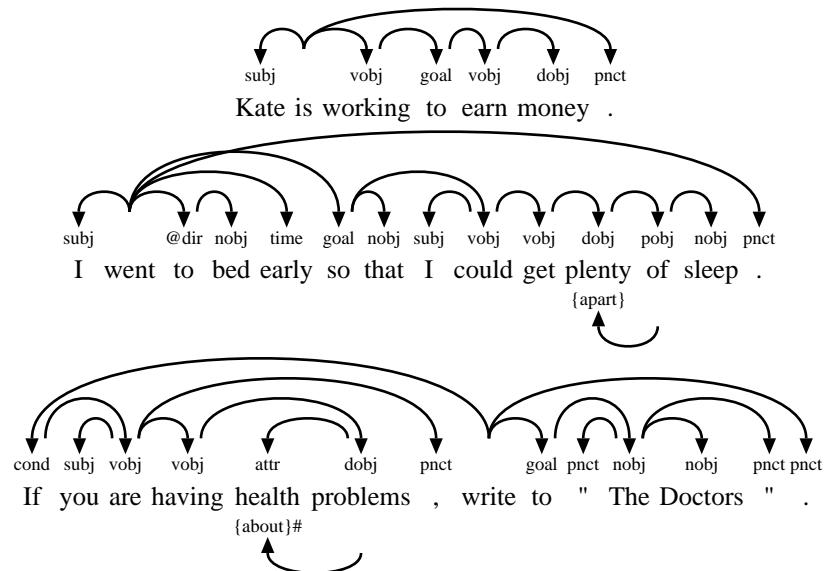
ADVERB *Adverbial*. V/N/P->adverbial
 isa SYNADJ Subtypes: agent cause conc concom cond cons exem man neg other prg quant resem source space time.
 [139]
agent *Agent adverbial*. The passivized agent in passives.
 isa ADVERB Confusion₁: agent_{100%} .
 [167]



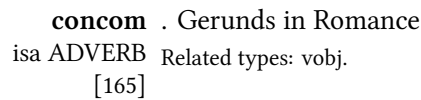
cause *Causation adverbial*. Causation adverbial. Describes why the event occurred.
 isa ADVERB Subtypes: goal.
 [157] Confusion₆: .



goal *Goal adverbial* (deprecated ben). Describes the intended goal of the event/action. Also used in connection with free datives.
 isa cause
 [158] Related types: reas.
 Confusion₉: .



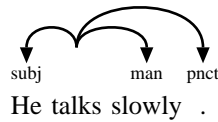
conc *Concession adverbial*. Describes the concession of the event/action.
 isa ADVERB Confusion₃: .
 [161]



cond *Condition adverbial*. Describes the condition of the event/action.
 isa ADVERB Related types: pcond.
 [160] Confusion₂: cond_{100%}.



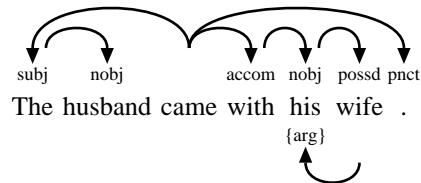
27



accom *Companionship adverbial* (deprecated comp). Companionship

isa man Related types: man.

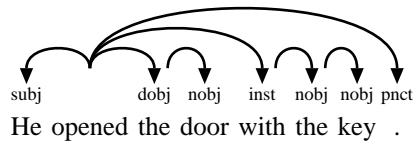
[155] Confusion₅: man_{60%} accom_{40%} .



inst *Instrument adverbial*. Instrument/means

isa man Related types: man.

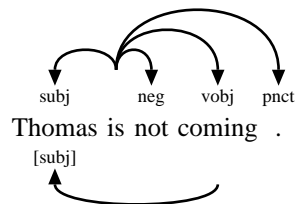
[156] Confusion₉: .



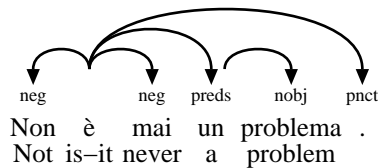
neg *Negation adverbial*. Negation of a verbal

isa ADVERB Confusion₁₄: .

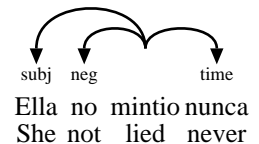
[168]



It's never a problem.



She never lied



other *Other adverbial*.

isa ADVERB Confusion₉: .

[169]

prg *Pragmatic adverbial* (long: pragmatic). Sentence level.

isa ADVERB Subtypes: discmark epi eval focal scene.

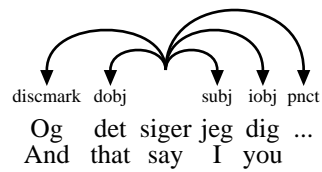
[140]

discmark *Sentence-initial discourse marker* (long: discoursemarker). Discourse marker

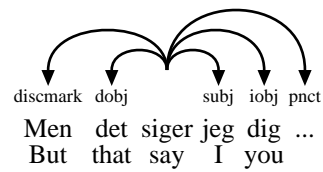
isa prg Related types: coord.

[145] Confusion₄: contr_{75%} add_{25%} .

And I'm telling you...



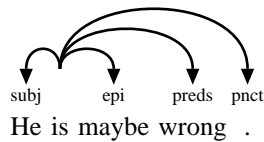
But I'm telling you...



epi *Epistemic adverbial* (long: epistemic). Regarding the level of truth in the expression

isa prg Related types: eval.

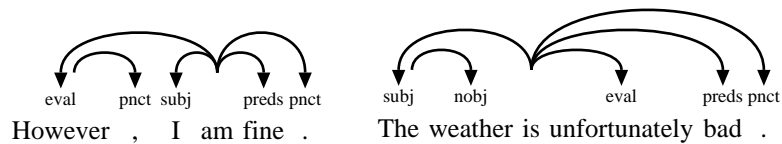
[143] Confusion₅: epi_{60%} man_{40%} .



eval *Evaluation adverbial* (long: evaluation, deprecated evalatt). Evaluating and attitude adverbials

isa prg Related types: epi.

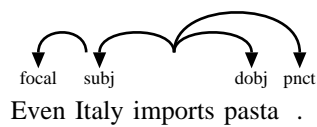
[144] Confusion₉: .



focal *Focalizer adverbial* (long: focalizator). Focalization of a noun

isa prg Related types: quant.

[141] Confusion₇: .



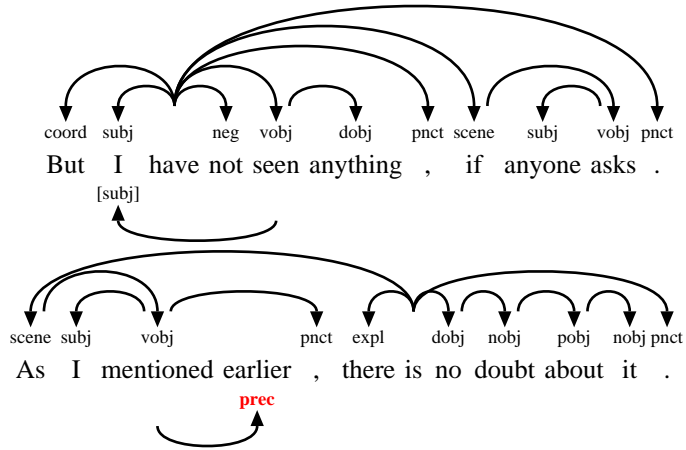
scene *Pragmatic condition and structural adverbial* (deprecated prgcondpcondbgstruct). Setting the

isa prg scene

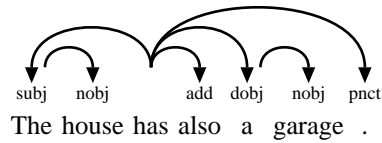
[142] Subtypes: add contr elab.

Related types: cond.

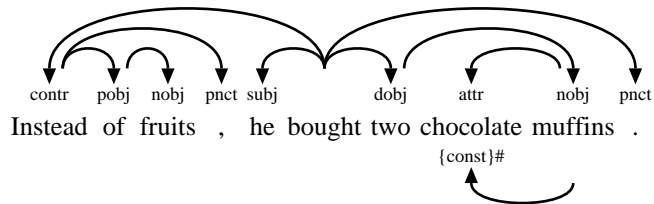
Confusion₃: .



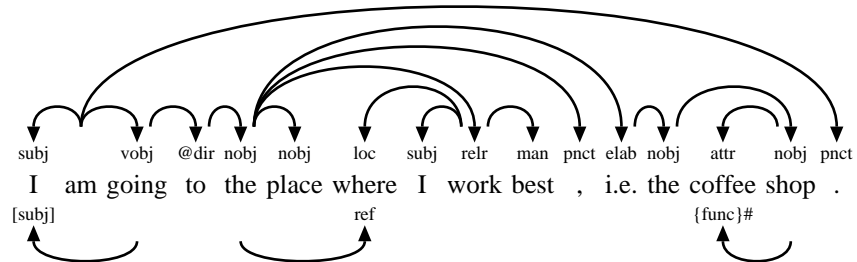
add *Additive adverbial* (long: additive). Additive information
 isa scene Confusion₁₁: .
 [148]



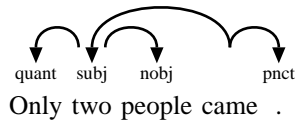
contr *Contrast adverbial* (long: contrast). Opposition
 isa scene Related types: struct.
 [146] Confusion₇: .



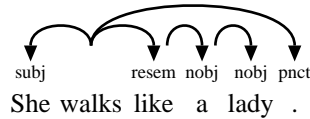
elab *Elaboration adverbial* (long: elaboration). More detailed description
 isa scene
 [147]



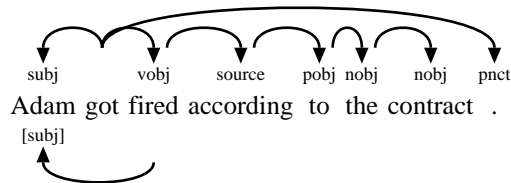
quant *Degree adverbial* (long: quantification, deprecated degr). Modifies the object or verbal by degree
 isa ADVERB Related types: focal.
 [166] Confusion₃₅: .



resem *Comparison adverbial*. (deprecated comparecomp). Comparison
 isa ADVERB Confusion₁: preds_{100%} .
 [162]

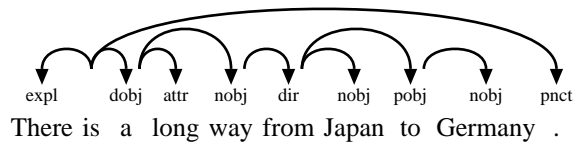


source *Source attribution adverbial*. Reference/source
 isa ADVERB Confusion₄: pobj_{75%} man_{25%} .
 [163]

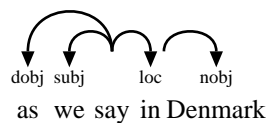


space *Space adverbial*. Space adverbials
 isa ADVERB Subtypes: dir loc.
 [151]

dir *Direction adverbial*. Movement from one place to another; direction
 isa space Related types: loc.
 [153] Confusion₁₅: pobj_{40%} pobj_{40%} pobj_{40%} pobj_{40%} pobj_{40%} .

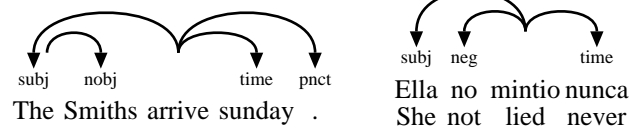


loc *Location adverbial*. Location
 isa space Related types: dir.
 [152] Confusion₄₅: .

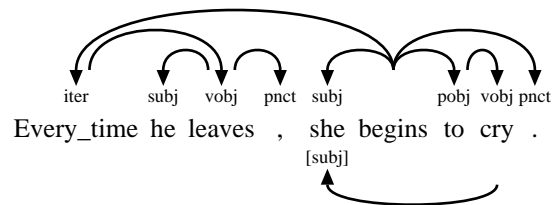


time *Time adverbial*. Time relating adverbials
 isa ADVERB Subtypes: iter.
 [149] Confusion₃₆: .

She never lied



iter *Habituality adverb* (deprecatd hab). Habitual; repeated habit
 isa time Related types: dur ext.
 [150] Confusion₂: time_{100%} .



Chapter 4

Morphological relations: MORPHOLOGY

MORPH: morphology level
"§"(PRIM): morphology specification
MORPHCOMP: compositional semantic relations
MORPHDERIV: derivational semantic relations

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

MORPH *Morphology level* (long: MORPHOLOGY). The morphological level. Ie, relations between two word segments within a single word, or lexical features associated with morphemes.
isa DIM:LEVEL [9]
Subtypes: "§"(PRIM) MORPHCOMP MORPHDERIV.

"§"(PRIM) *Morphology specification.*
isa MORPH RULE

MORPHCOMP *Compositional semantic relations.* A semantic relation is created between two (or more) elements which could potentially be used as stems. (A compound contains at least two roots.)
isa MORPH [258]

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

MORPHDERIV *Derivational semantic relations.* A semantic relation is created between a base and an affix
isa MORPH Subtypes: PREFIX SUFFIX.
[257]

4.1 Compositional relations: MORPHCOMP

MORPHCOMP *Compositional semantic relations.* A semantic relation is created between two (or more) elements which could potentially be used as stems. (A compound contains at least two roots.)
isa MORPH [258]

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

\$ABOUT *Noun-noun compound (about).* Non-head has an aboutness meaning wrt. head.
isa MORPHCOMP [345]

MORPHCOMP: compositional semantic relations
 §ABOUT: noun-noun compound (about)
 §AGENT:MC: noun-noun compound (agentive)
 §CONST: noun-noun compound (constitutive)
 §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)

Figure 4.2: The relations matching MORPHCOMP-TOPIC.

(theme: skattelov 'tax law' = lov –[skat]te/ABOUT)

§AGENT:MC *Noun-noun compound (agentive)*. Non-head has an agentive meaning wrt. head.
 isa MORPHCOMP
 [337]

(agent: politikontrol 'police control' = kontrol –politi/AGENT)

§CONST *Noun-noun compound (constitutive)*. Non-head has a constitutive meaning wrt. head.
 isa MORPHCOMP
 [336]

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

§EVAL *Noun-noun compound (evaluative)*. Non-head has an evaluative meaning wrt. head.
 isa MORPHCOMP
 [343]

coche de lujo 'luksusbil'

§FUNC *Noun-noun compound (function)*. Non-head has a functional meaning wrt. head.
 isa MORPHCOMP
 [339]

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

§LOC *Noun-noun compound (position)*. Non-head has a locative meaning wrt. head.
 isa MORPHCOMP
 [341]

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

§OTHER *Noun-noun compound (other)*. If in doubt about the meaning relation between head and non-head.
 isa MORPHCOMP
 [346]

§POSS *Noun-noun compound (possession)*. Non-head has a possessive meaning wrt. head.
 isa MORPHCOMP
 [340]

(possession: politibil = bil –politi/POSS)

§RESEM *Noun-noun compound (resemblance).* Denotations of head and non-head resemble each other.
 isa MORPHCOMP [344]

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

§SOURCE *Noun-noun compound (origin).* Non-head has a meaning of origin wrt. head.
 isa MORPHCOMP [338]

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

§TIME:MC *Noun-noun compound (time).* Non-head has a temporal meaning wrt. head.
 isa MORPHCOMP [342]

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

4.2 Derivational relations: MORPHDERIV

MORPHDERIV: derivational semantic relations
 PREFIX: semantic relations appearing with prefixes
 SUFFIX: semantic relations appearing with suffixes

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

MORPHDERIV *Derivational semantic relations.* A semantic relation is created between a base and an affix
 isa MORPH Subtypes: PREFIX SUFFIX.
 [257]

PREFIX *Semantic relations appearing with prefixes.* A semantic relation is created between a base and a prefix.
 isa MORPHDERIV [260]
 Subtypes: \$AGENT \$ITER \$MOD \$NEG \$PRE:other \$SPACE \$TELIC \$TIME \$TRANS.

SUFFIX *Semantic relations appearing with suffixes.* A semantic relation is created between a base and a suffix.
 isa MORPHDERIV [261]
 Subtypes: \$AUG \$DENUM \$DER \$DERan:qual \$DERna \$DERnn \$DERv \$DIMIN \$PEJ.

4.2.1 Prefix relations: PREFIX

PREFIX *Semantic relations appearing with prefixes.* A semantic relation is created between a base and a prefix.
 isa MORPHDERIV [260]
 Subtypes: \$AGENT \$ITER \$MOD \$NEG \$PRE:other \$SPACE \$TELIC \$TIME \$TRANS.

§AGENT *Agentive (deprecated ASPEC:cause+reflex).* Prefix conveys agentive action.
 isa PREFIX [276]

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

PREFIX: semantic relations appearing with prefixes

- \$AGENT: agentive
- \$ITER: iteration
- \$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
- \$TELIC: telic
- \$TIME: time
 - \$TIME:post: temporal succession
 - \$TIME:pre: temporal precedence
- \$TRANS: transitivity

Figure 4.4: The relations matching PREFIX-TOPIC.

\$ITER *Iteration* (deprecated ASPEC:iter). Prefix conveys iteration.

isa PREFIX

[275]

(iterative: redefine = define –re/ITER)

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

isa PREFIX

[279]

Subtypes: \$MOD:eval \$MOD:qual \$MOD:quant.

\$MOD:eval *Evaluation* (deprecated MOD:man). Prefix conveys evaluation

isa \$MOD

[281]

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

\$MOD:qual *Qualification* (deprecated MOD:qual+MOD:rel+GRAD:qual). Prefix conveys qualification.

isa \$MOD

[282]

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

\$MOD:quant *Quantification* (deprecated MOD:cuant+GRAD:size). Prefix conveys quantification.

isa \$MOD

[280]

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

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

isa PREFIX

[271]

Subtypes: \$NEG:contr \$NEG:priv \$NEG:rev.

\$NEG:contr *Contrast* (deprecated NEG:oppo). Prefix conveys contrast.

isa \$NEG

[272]

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

\$NEG:priv *Privation*. Prefix conveys privation.

isa \$NEG
[273]

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

\$NEG:rev *Reversion* (deprecated ASPEC:rev). Prefix conveys reversion.

isa \$NEG
[274]

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

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

isa PREFIX

\$SPACE *Space* (deprecated LOC). Prefix expresses space in a broad sense.

isa PREFIX Subtypes: \$SPACE:dir \$SPACE:loc \$SPACE:source.
[263]

\$SPACE:dir *Direction* (deprecated LOC:dir). Prefix expresses direction.

isa \$SPACE
[265]

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

\$SPACE:loc *Location* (deprecated LOC:pos). Prefix expresses location.

isa \$SPACE
[264]

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

\$SPACE:source *Source* (deprecated LOC:proce). Prefix conveys source.

isa \$SPACE
[266]

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

\$TELIC *Telic* (deprecated ASPEC:term+resul). Prefix conveys termination or result.

isa PREFIX
[277]

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

\$TIME *Time*. Prefix conveys time in a broad sense.

isa PREFIX Subtypes: \$TIME:post \$TIME:pre.
[268]

\$TIME:post *Temporal succession* (deprecated TIME:succ). Prefix conveys succession.

isa \$TIME
[270]

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

\$TIME:pre *Temporal precedence* (deprecated TIME:prec). Prefix conveys precedence.

isa \$TIME
[269]

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

\$TRANS *Transitivity*. Prefix conveys transitivity.

isa PREFIX
[278]

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

4.2.2 Suffix relations: SUFFIX

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

[261] Subtypes: \$AUG \$DENUM \$DER \$DERan:qual \$DERna \$DERnn \$DERv \$DIMIN \$PEJ.

\$AUG *Augmentation.* Suffix conveys augmentation.

isa SUFFIX

[284]

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

\$DENUM *Adjective-numeral derivation.* Suffix creates denumeral adjectives in a broad sense.

isa SUFFIX

[332]

Subtypes: \$DENUM:apart \$DENUM:ord \$DENUM:quant.

\$DENUM:apart *Adjective-partitive derivation* (deprecated \$DENUM:part). Suffix creates partitive numerals.

isa \$DENUM

[334]

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

\$DENUM:ord *Adjective-ordinal derivation.* Suffix creates ordinals.

isa \$DENUM

[333]

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

\$DENUM:quant *Adjective-multiplicative derivation.* Suffix creates multiplicative numerals.

isa \$DENUM

[335]

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

\$DER *Verb derivation.* Suffix triggers a derivation

isa SUFFIX

[287]

Subtypes: \$DERadvv \$DERav \$DERnv \$DERva \$DERvn \$DERvv.

\$DERadvv *Adverb-verb derivation.* Suffix triggers a derivation from an adverb to a verb

isa \$DER

[291]

\$DERav *Adjective-verb derivation* (deprecated \$DER:av). Suffix triggers a derivation from an adjective
isa \$DER to a verb.

[289]

(adjective->verb derivation: darken = dark +en/\$DERav)

\$DERnv *Noun-verb derivation* (deprecated \$DER:nvPRED). Suffix triggers a derivation from a noun to a
isa \$DER verb.

[288]

Subtypes: \$DERvn:agent \$DERvn:core \$DERvn:exper \$DERvn:inst \$DERvn:loc \$DERvn:other \$DERvn:patient
\$DERvn:recip.

(noun->verb derivation: salar 'to salt' = sal +ar/\$DERnv)

\$DERvn:agent *Verb-noun derivation (agent).* Suffix creates deverbal nouns absorbing the agent role.

isa \$DERnv

[293]

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

\$DERvn:core *Verb-noun derivation (core)*. Suffix creates deverbal nouns expressing a nominalized version of the situation denoted by the original verb.
isa \$DERnv [295]

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

\$DERvn:exper *Verb-noun derivation (experiencer)*. Suffix creates deverbal nouns absorbing the experiencer role.
isa \$DERnv [294]

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

\$DERvn:inst *Verb-noun derivation (instrument)*. Suffix creates deverbal nouns expressing the instrument related to the meaning of the original noun.
isa \$DERnv [299]

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

\$DERvn:loc *Verb-noun derivation (location)*. Suffix creates deverbal nouns expressing the location related to the meaning of the original noun.
isa \$DERnv [298]

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

\$DERvn:other *Verb-noun derivation (other)*. If in doubt about the meaning conveyed by the suffix
isa \$DERnv

\$DERvn:patient *Verb-noun derivation (patient)*. Suffix creates deverbal nouns absorbing the patient role.
isa \$DERnv [300]
[296]

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

\$DERvn:recip *Verb-noun derivation (recipient)*. Suffix creates deverbal nouns absorbing the recipient role
isa \$DERnv [297]

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

\$DERva *Verb-adjective derivation (deprecated \$DERV)*. Suffix creates deverbal adjectives in a broad sense.
isa \$DER [313]

Subtypes: \$DERva:act \$DERva:pas \$DERva:pas.part.

\$DERva:act *Verb-adjective derivation (active)* (deprecated DEVERB:act.pure). Suffix creates active adjectives.
isa \$DERva [314]

Subtypes: \$DERva:act.disp \$DERva:act.epi.

\$DERva:act.disp *Verb-adjective derivation (pure)* (deprecated DEVERB:act.disp). Suffix creates active adjectives with the meaning aspect "pure".
isa \$DERva:act [315]

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

§DERva:act.epi *Verb-adjective derivation (disposition)* (deprecated DEVERB:act.poten). Suffix creates active adjectives with the meaning aspect "disposition".
isa §DERva:act [316]

"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 adjectives with the meaning aspect "potentiality".
isa §DERva [317] 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 passive adjectives with the meaning aspect "potentiality".
isa §DERva:pas [320]

"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 [319]

"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
 [318]

\$DERvn *Verb-noun derivation* (deprecated PREDDEVERBN). Suffix creates deverbal nouns in a broad sense.
 isa \$DER
 [292]

\$DERvv *Verb-verb derivation* (deprecated \$DER:vv). Suffix triggers a derivation from a verb to another verb.
 isa \$DER
 [290]

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

\$DERan:qual *Adjective derivation* (deprecated QUAL). Suffix creates deadjectival nouns.
 isa SUFFIX
 [301]

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

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

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

\$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
 [325]

Cervantino 'som har at gøre med Cervantes'

\$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
 [326]

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

\$DERna:disp *Noun-adjective derivation (disposition)* (deprecated DENOM:disp). Suffix creates denominal adjectives that express disposition.
 isa \$DERna
 [329]

"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
 [331]

\$DERna:poss *Noun-adjective derivation (possession)* (deprecated DENOM:poss). Suffix creates denominal adjectives that express possession.
 isa \$DERna
 [328]

"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.

[322] Subtypes: §DERna:rel.norm.

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

[323]

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

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

[327]

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

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

[330]

"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.

[302]

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.

[303]

(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.

[310]

(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.

[308]

(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
[305]

(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
[309]

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

§DERnn:other *Noun-noun derivation (other)* (deprecated NOPRED:other). If in doubt about the meaning conveyed by the suffix
isa §DERnn
[311]

§DERnn:quant *Noun-noun derivation (quantification)* (deprecated NOPRED:set). Suffix creates non-predicative nouns expressing a quantification.
isa §DERnn
[307]

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

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

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

§DERnn:time *Noun-noun derivation (time)* (deprecated NOPRED:temp). Suffix creates non-predicative nouns expressing a temporal aspect.
isa §DERnn
[306]

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

§DERv (deprecated DEVERB).
isa SUFFIX

§DIMIN *Diminution*. Suffix conveys diminution.
isa SUFFIX
[285]

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

§PEJ *Pejoration*. Suffix conveys a pejorative sense.
isa SUFFIX
[286]

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

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: verb derivation
 §DERadvv: adverb-verb derivation
 §DERav: adjective-verb derivation
 §DERnv: noun-verb derivation
 §DERvn:agent: verb-noun derivation (agent)
 §DERvn:core: verb-noun derivation (core)
 §DERvn:exper: verb-noun derivation (experiencer)
 §DERvn:inst: verb-noun derivation (instrument)
 §DERvn:loc: verb-noun derivation (location)
 §DERvn:other: verb-noun derivation (other)
 §DERvn:patient: verb-noun derivation (patient)
 §DERvn:recip: verb-noun derivation (recipient)
 §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)
 §DERvn: verb-noun derivation
 §DERvv: verb-verb derivation
 §DERan:qual: adjective derivation
 §DERna: noun-adjective derivation
 §DERna:deono: noun-adjective derivation (naming)
 §DERna:deono.pers: noun-adjective derivation (naming persons)
 §DERna:deono.place: noun-adjective derivation (naming places)
 §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: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)
 §DERv:
 §DIMIN: diminution
 §PEJ: pejoration

Figure 4.5: The relations matching SUFFIX-TOPIC.

Chapter 5

Discourse relations: DISCOURSE

DISC: discourse level
"α"(PRIM): discourse specification
DISCOTHER:
 JOINT: no clear relation
 REP: repaired
 SCENE: scene
DISCPRAG: pragmatic and illocutionary discourse relations
DISCSEM: semantic discourse relations

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

DISC *Discourse level* (long: DISCOURSE). The discourse level. Ie, relations between segments in different sentences, or lexical features associated with discourse units.
isa DIM:LEVEL
[11] Subtypes: "α"(PRIM) DISCOTHER DISCPRAG DISCSEM.

"α"(PRIM) *Discourse specification*. A primary syntactic relation that has been used as a discourse relation for stylistic purposes.
isa DISC RULE
[357]

DISCOTHER .
isa ADJ DISC Subtypes: JOINT REP SCENE.
[205]

JOINT *No clear relation*. The dependent text segment adds a completely new content without any clear discourse relation to the governing segment
isa DISCOTHER
[255] Confusion₂: JOINT_{100%} .

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
[254]

SCENE *Scene* (deprecated STRUCT:prepPREP). Dependent text segment expresses the scene of the following and governing text, e.g. headings, titles
isa DISCOTHER
[253] Confusion₄: SCENE_{100%} .

DISCPRAG *Pragmatic and illocutionary discourse relations* (deprecated DISCFUNC). The dependent text segment expresses a change in speech act or pragmatic function (speaker's intention) wrt the governing segment; the label indicates the speech act or function of the dependent segment;
isa ADJ DISC
[204]

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.

DISCSEM *Semantic discourse relations*. The relations hold between the propositions of the governing and dependent text segments and are defined in semantic terms; relations are mono- or multi-nuclear; the four “prg”-subtypes express changes of speech act like the DISCPRAG, however the semantic relations are so dominant that they should determine the main type of the relation

isa ADJ DISC
[203]

Subtypes: AGENTIVE CONC COND CONJ CONST CONTR DISJ FORMAL TELIC TIME.

5.1 Functional relations: DISCFUNC

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 5.2: The relations matching DISCFUNC-TOPIC.

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

isa ADJ DISC
[204]

Subtypes: ANSW CONSOL DIREC EXPR INTACT QUEST.

ANSW *Answer*. Governing text segment contains question or problem, dependent text segment answer or solution

isa DISCPRAG
[242]

Confusion₁: ANSW_{100%} .

CONSOL *Consolidation* (deprecated SUPPORT?).

isa DISCPRAG Subtypes: CONSOL:inst CONSOL:motiv CONSOL:source.
[248]

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

isa CONSOL
[250]

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

isa CONSOL
[251]

Confusion₁: AGENTIVE:expl_{100%} .

CONSOL:source *Justification* (deprecated JUSTCONSOL:just). S expresses a source that justifies N wrt its content
 isa CONSOL (reason for mentioning it or sim.) thereby strengthening it argumentatively
 [249] Typical connectives: [da] Fordi, Eftersom.
 Confusion₁: CONJ:elab_{100%} .

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

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

INTACT *Interactional signals.*
 isa DISCPRAG Subtypes: INTACT:attn INTACT:inter.
 [245]

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

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

QUEST *Question .* The dependent text segment contains a question with or without an answer
 isa DISCPRAG
 [241]

5.2 Semantic relations: DISCSEM

DISCSEM *Semantic discourse relations.* The relations hold between the propositions of the governing and dependent text segments and are defined in semantic terms; relations are mono- or multi-nuclear; 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
 [203] Subtypes: AGENTIVE CONC COND CONJ CONST CONTR DISJ FORMAL TELIC TIME.

AGENTIVE *Cause relation (discourse).* S expresses "bringing about" or cause in a broad sense
 isa DISCSEM Subtypes: AGENTIVE:expl AGENTIVE:reas AGENTIVE:subj.
 [207]

AGENTIVE:expl *Explanation relation in discourse.* An explanation relation. The satellite explains the nucleus.
 isa AGENTIVE The relation is more general and elaborating than "reason".
 [208] Typical connectives: [da] Nemlig; [it] Infatti; [en] In fact, Indeed.
 Related types: reason.
 Confusion₆: .

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
 CONST: constitutive elaboration
 CONST:apart: part of relation
 CONST:elab: elaboration
 CONST:exem: exemplification
 CONST:rest: restatement
 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
 TELIC: consequence/result/conclusion relation (discourse)
 TELIC:cons.dir: direct, physical consequence, result
 TELIC:cons.sbj: pragmatic/personal conclusion, deduction
 TELIC:goal: goal relation (discourse)
 TIME: temporal relation
 TIME:cont: contemporaneity
 TIME:post: temporal succession
 TIME:pre: temporal precedence

Figure 5.3: The relations matching DISCSEM-TOPIC.

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

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

[209] Confusion₁: qobj_{100%} .

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

isa AGENTIVE

[210] Typical connectives: Because, In fact, Indeed.

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

isa DISCSEM

[223] Confusion₂: CONJ:add_{50%} CONC_{50%} .

COND *Condition.*

isa DISCSEM

CONJ *Conjunction.* Dependent text segment elaborates and expands knowledge of governing text segment or adds a new subject somehow related to it

isa DISCSEM

[230]

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

CONJ:add *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

isa CONJ

[231]

Confusion₄₁: .

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

isa CONJ

[232]

Confusion₂₇: CONJ:add_{42%} CONJ:add_{42%} CONJ:add_{42%} CONJ:add_{42%} CONJ:add_{42%} CONJ:add_{42%} CONJ:add_{42%} .

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

isa CONJ

[233]

CONST *Constitutive elaboration.* S adds more details on N or parts of N

isa DISCSEM

[215]

Subtypes: CONST:apart CONST:elab CONST:exem CONST:rest.

CONST:apart *Part of relation.* S is a part of N

isa CONST

[218]

Typical connectives: [da] Herunder, Heri.

CONST:elab *Elaboration* (deprecated ELAB:spec,ELAB:exp). S elaborates and expands knowledge of N; may be difficult to distinguish from CONJ

isa CONST

[217]

Typical connectives: [it] Cioè.

Related types: CONJ.

CONST:exem *Exemplification.* S gives examples of elements or phenomena mentioned in N

isa CONST

[216]

Typical connectives: [en] For example.

Confusion₁: CONJ:add_{100%} .

CONST:rest *Restatement.* S states N again in a different way

isa CONST

[219]

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

Confusion₄: CONST:rest_{50%} CONST:rest_{50%} CONST:rest_{50%} .

CONTR *Contrast.*

isa DISCSEM

[234]

Subtypes: CONTR:dir CONTR:subj.

Confusion₁: CONTR:subj_{50%} conj_{50%} .

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

isa CONTR

[235]

Typical connectives: [da] Men, Derimod.

Confusion₂: expl_{50%} CONTR:dir_{50%} .

CONTR:subj *Subjective contrast* (deprecated CONTR:prg). The contrast lies between an explicit and a subjectively inferred text segment

isa CONTR

[236]

Typical connectives: [da] Men.

Confusion₁₀: conj_{40%} CONTR:subj_{25%} CONJ:add_{20%} coord_{10%} CONTR_{5%} .

DISJ *Disjunction.*

isa DISCSEM

[237]

Typical connectives: [da] Eller.

Subtypes: DISJ:dir DISJ:subj.

- DISJ:dir** *Direct disjunction*. The disjunction lies between the governing and dependent text segment
isa DISJ
- DISJ:subj** *Subjective disjunction* (deprecated DISJ:prg). The disjunction lies between the dependent and a
isa DISJ subjectively inferred text segment
[238]
[239]
- FORMAL** *Formal description*. S describes N, N may be a first-order or second-order entity
isa DISCSEM Subtypes: FORMAL:descr FORMAL:eval.
[220]
- FORMAL:descr** *Neutral description* (deprecated DESCR:qual). S expresses an objective and/or neutral description
isa FORMAL of N
[221] Confusion₁: CONJ:elab_{100%} .
- FORMAL:eval** *Positive/negative evaluation* (deprecated DESCR:eval). S expresses a personal and/or subjective
isa FORMAL positive or negative description of N
[222]
- TELIC** *Consequence/result/conclusion relation (discourse)*. S expresses purpose, function or conse-
isa DISCSEM quence wrt N
[211] Subtypes: TELIC:cons.dir TELIC:cons.sbj TELIC:goal.
- TELIC:cons.dir** *Direct, physical consequence, result* (deprecated TELIC:dir). Physical, objectively observed con-
isa TELIC sequence or result
[213] Typical connectives: [da] Derfor, Af den grund.
Confusion₃: .
- TELIC:cons.sbj** *Pragmatic/personal conclusion, deduction* (deprecated TELIC:subj). Subjective conclusion or de-
isa TELIC duction on behalf of the speaker
[214] Typical connectives: [da] Derfor, Af den grund.
Confusion₄: TELIC:cons.sbj_{75%} CONJ:add_{25%} .
- TELIC:goal** *Goal relation (discourse)*. S expresses goal, purpose, aim
isa TELIC Typical connectives: [da] For (at).
[212]
- TIME** *Temporal relation* (deprecated CIRCUM). There is a clear temporal relation between N and S
isa DISCSEM Subtypes: TIME:cont TIME:post TIME:pre.
[225]
- TIME:cont** *Contemporaneity*. S is contemporary with N (now includes abolished TIME:dur)
isa TIME Typical connectives: [da] Samtidig, Mens, Så længe, Da.
[226]
- TIME:post** *Temporal succession* (deprecated TIME:succ). S succeeds N
isa TIME Typical connectives: [en] Later, Some time afterwards.
[228]
- TIME:pre** *Temporal precedence* (deprecated TIME:prec). S precedes N
isa TIME Typical connectives: [en] Earlier, Some days before.
[227]

Chapter 6

Anaphor relations: ANAPHORA

ANA: anaphor level
ANAREL: anaphor-antecedent relation
anaphor:
 assoc: associative anaphor
 coref: coreference

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

ANA *Anaphor level* (long: ANAPHORA). The level of anaphora. Ie, relations between anaphora and their antecedents, or lexical features associated with anaphora.
isa DIM:LEVEL [14]
Subtypes: ANAREL anaphor.

ANAREL *Anaphor-antecedent relation*. An anaphor-antecedent relation. Ie, a relation between an anaphor (pronoun, definite description, etc.) and an antecedent that is either a coreferent or provides access to a coreferent via its qualia structure or some other semantic relation. The relation goes from antecedent to anaphor.
isa ANA REL [28]

anaphor . 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
isa ANA [181]
Subtypes: assoc coref.

assoc *Associative anaphor*. The anaphor denotes entity which is associated with the antecedent
isa anaphor [189]
Subtypes: "assoc-"QUALIA assoc-agentive assoc-const assoc-event assoc-exper assoc-formal assoc-inst assoc-loc assoc-patient assoc-telic assoc-time.

coref *Coreference*. Anaphor denotes same entity as antecedent; all coreferential pronouns are labelled this way
isa anaphor [182]
Subtypes: coref-iden coref-res coref-var ref.

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

Figure 6.2: The relations matching coref-TOPIC.

6.1 Coreference relations: coref

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

coref-iden *Coreferential NP with lexical identity* (deprecated coref-id).
 isa coref
 [184] (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.
 [186] Confusion₁: coref-res_{100%} .

coref-res.prg *Pragmatic coreference*. Takes up a statement and evaluates it with respect to speech act; I will be there tomorrow → the threat / promise / warning / statement
 isa coref-res
 [187]

coref-var *Coreferential NP with lexical variety*.
 isa coref
 [185] a car → the vehicle // a yellow car → the car

ref *Syntactically determined coreference*. Syntactically determined coreference (eg, relative pronouns, external topics)
 isa coref
 [183] Confusion₃₈: ref_{100%} .

antecedent→anaphor

6.2 Associative anaphor relations: assoc

assoc: associative anaphor
 "assoc-"QUALIA: associative anaphor wrt. qualia
 assoc-agentive: associative anaphor (agentive)
 assoc-const: associative anaphor (constitutive)
 assoc-event: associative anaphor (event)
 assoc-exper: associative anaphor (experiencer)
 assoc-formal: associative anaphor (formal)
 assoc-inst: associative anaphor (instrument)
 assoc-loc: associative locative anaphor
 assoc-patient: associative anaphor (patient)
 assoc-telic: associative anaphor (telic)
 assoc-time: associative anaphor (time)

Figure 6.3: The relations⁵² matching assoc-TOPIC.

assoc *Associative anaphor*. The anaphor denotes entity which is associated with the antecedent
 isa anaphor
 [189]

Subtypes: "assoc-"QUALIA assoc-agentive assoc-const assoc-event assoc-exper assoc-formal assoc-inst assoc-loc
assoc-patient assoc-telic assoc-time.

"assoc-"QUALIA *Associative anaphor wrt. qualia.* The anaphor denotes entity which is associated with the
isa RULE assoc antecedent
[190]

assoc-agentive *Associative anaphor (agentive)* (deprecated assoc-agent?). The anaphor is associated with the
isa assoc antecedent wrt its agentive qualia (creator, factory, producer, author, etc.); if the antecedent
[193] is a predicate or a predicative noun, the anaphor may be the semantic agent

a car → the factory; a piece of music → the composer; an operation → the surgeon; a crime → the perpetrator

assoc-const *Associative anaphor (constitutive)* (deprecated assoc-loc?). The anaphor is associated with the
isa assoc antecedent wrt its constitutive qualia (parts, material, etc.)
[191]

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-event *Associative anaphor (event).* The anaphor is a predicate noun or similar which expresses an
isa assoc event that can be associated with the antecedent or in which the antecedent plays a part
[200]

Iraq → the invasion, the war

assoc-exper *Associative anaphor (experiencer).* The antecedent is a predicate or predicative noun, and the
isa assoc anaphor is the semantic experiencer
[197]

an accident → the eye witness

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

a car → the size, the colour; a building → the height

assoc-inst *Associative anaphor (instrument).* The antecedent is a predicate or predicative noun, and the
isa assoc anaphor is the instrument
[198]

bread cutting → the knife: Jim cut the bread and left the knife in the sink; hanging act → the rope: Jim wanted

to hang himself but the rope broke

assoc-loc *Associative locative anaphor*. The anaphor is located in the antecedent

isa assoc

[195]

a village → the church, the inn, the train station; a kitchen → the refrigerator, the oven

assoc-patient *Associative anaphor (patient)*. The antecedent is a predicate or predicative noun, and the

isa assoc anaphor is the semantic patient

[196]

an operation → the patient; a crime → the victim

assoc-telic *Associative anaphor (telic)* (deprecated assoc-scope?). The anaphor is associated with antecedent

isa assoc wrt its telic qualia (purpose, function, result, consequence etc.)

[194]

a car → the driver, the passengers; a hotel → the guests, the receptionist; predicate or predicative noun e.g.

dancing → the dance

assoc-time *Associative anaphor (time)*. The antecedent is a predicate or predicative noun or it may be a

isa assoc more general narrative frame, the anaphor is a point in time linked to it

[199]

an event → the (following) morning, in the morning, during the night

Chapter 7

Semantic relations: SEMANTICS

SEM: semantic level
SEMREL: semantic role
QUALIA: qualia role
{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 7.1: The relations matching SEMANTICS-!QUALIA-!SEMROLE-TOPIC.

SEM *Semantic level* (long: SEMANTICS). The semantic level. Ie, relations between lexical elements
isa DIM:LEVEL [12] construed as functors, arguments, and modifiers, or lexical features associated with semantic units.

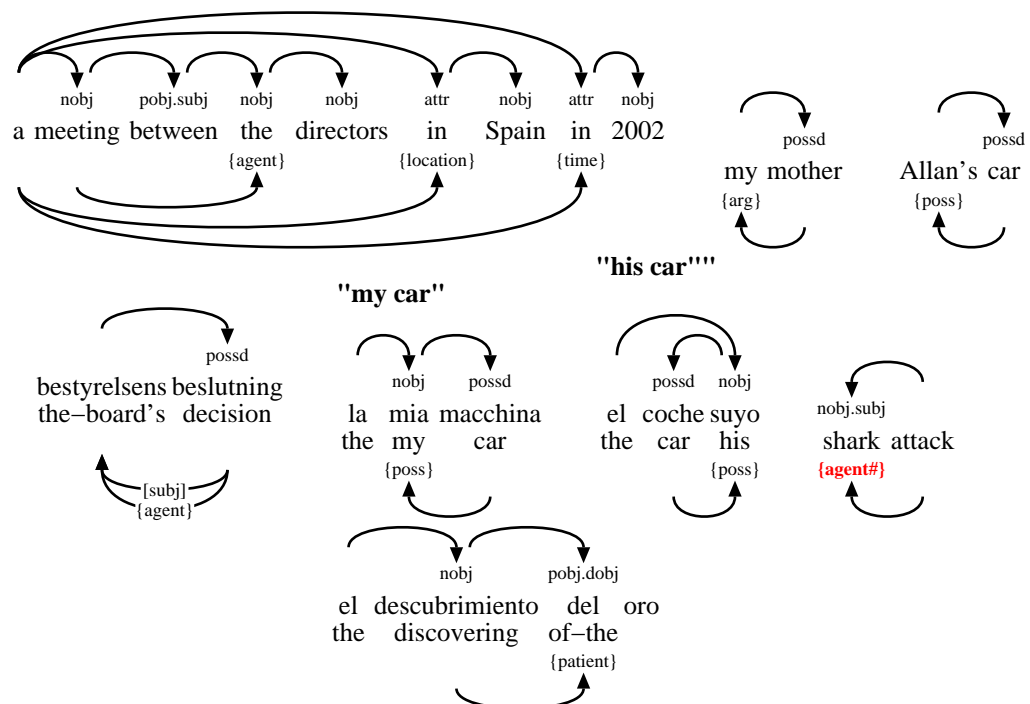
Subtypes: SEMREL.

SEMREL *Semantic role*. A semantic relation. The semantic relation specifies the argument role that
isa REL SEM [29] the child node fills with the parent node as its functor in the functor-argument structure,

and encodes the semantic head in phrases headed by a function word without independent semantic meaning. In the DTAG visualization, semantic roles are drawn below the words. Semantic relations are always specified in parallel with a syntactic relation, whose type is determined by the word class of the involved lexical elements. 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.

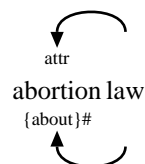
The DTAG annotation tool automatically replaces a relation with label "PRIM{SEMREL}" with two relations, one with label "PRIM" and one with label "{SEMREL}", so that relations of this form are drawn as two arrows. Relation names of this form are not strictly relation labels in their own right, merely shorthands in DTAG.

Subtypes: QUALIA {about} {agent} {apart} {arg} {cause} {class} {const} {elab} {eval} {experiencer} {form} {func} {goal} {iden} {location} {loc} {other} {patient} {poss} {quant} {recipient} {resem} {source} {time}.



QUALIA *Qualia role.* A qualia role. Ie, a semantic relation that links a lexeme to a qualia role associated with that lexeme. Eg, "music" to the act of "composing" (agentive), "listening" (telic), etc.
 [30] Subtypes: agentive const formal resemblance telic.

{about} . Used in noun phrases where the satellite indicates the content or genre of the nucleus, which typically denotes a semiotic artefact.
 [61] Confusion₁₃: .



{agent} *An object or a person that performs an action.* Used in noun phrases where the satellite is the object or the person that performs the volitional action indicated by the nucleus. Used in
 [50]

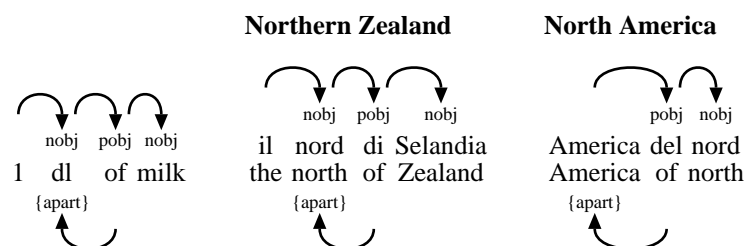
noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a subject.

Confusion₁₇: .



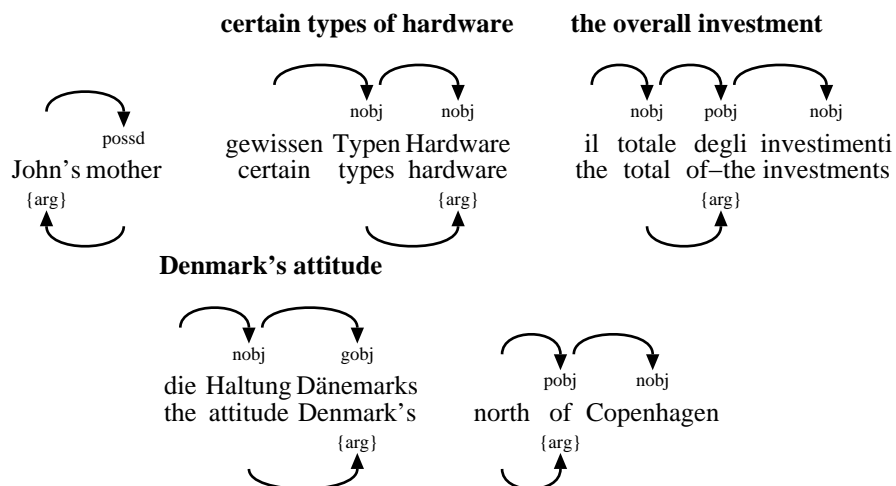
{apart} . Used in noun phrases where the satellite represents an arbitrary part of the nucleus. Please note that the semantic relation goes from the satellite to the nucleus in opposition to the main part of the other semantic roles.

Confusion₇: .



{arg} . Used in noun phrases where there is a deadjectival relation or another similar relationship between the nucleus and the satellite.

[67] Confusion₅₆: .



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

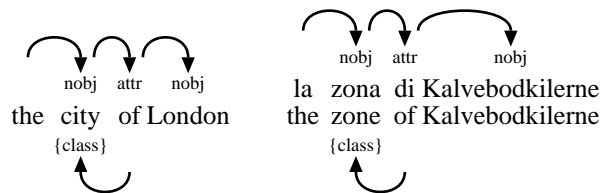
[53]

sultedød ildebrand?

{class} . 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 denotes the opposite 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}.

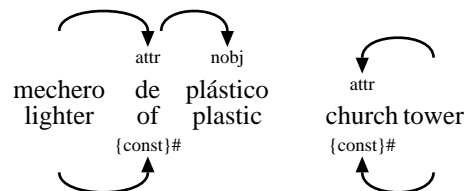
Confusion₁: {const}100% .



{const} . Used in noun phrases where the satellite represents a part, material or essential constituent of the nucleus.

[49] Confusion₂₁: .

plastic lighter

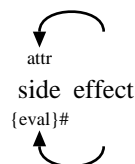


{elab} . Often used together with parenthetical modifiers

[48] Confusion₂: {loc}50% {elab}50% .

{eval} . 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.

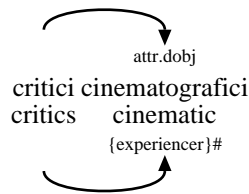
Confusion₁: {eval}100% .



{experiencer} *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

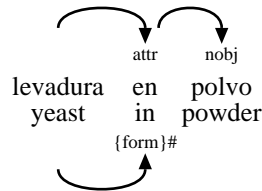
[70] Confusion₄: {agent}75% {patient}25% .

film critics

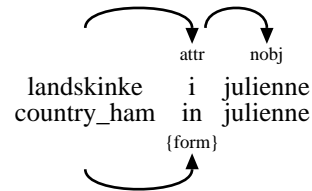


{form} . Used in noun phrases where the satellite indicates the shape or form of the nucleus.
isa SEMREL Confusion₂: {const}_{100%} .
[65]

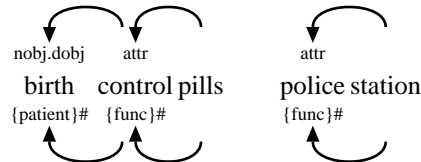
baking powder



country ham in julienne strips



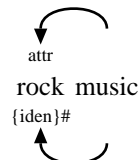
{func} . Used in noun phrases where the satellite determinates the function of the nucleus.
isa SEMREL Confusion₃₃: {const}_{3%} {patient}_{3%} {iden}_{3%} {other}_{3%} .
[55]



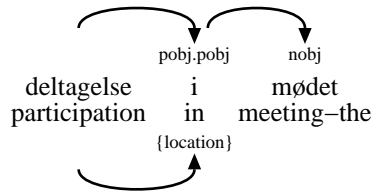
{goal} . Used in noun phrases where the satellite determinates the goal or the intention for which the nucleus is destined.
isa SEMREL [54]

{iden} . 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.
isa SEMREL [66]

Related types: {class}.
Confusion₁: {func}_{100%} .

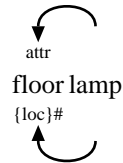


{location} *The location where something is situated or happens.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a prepositional object
isa SEMREL [72]
Confusion₁: {loc}_{100%} .



{loc} (deprecated {pos}). Used in noun phrases where the satellite indicates the location of the position or the location of nucleus.

[57] Confusion₃₁: .



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

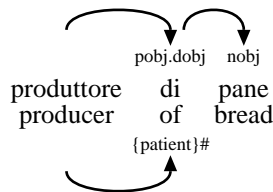
[73] Confusion₄: {arg}_{50%} {time}_{25%} {func}_{25%} .

{patient} *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.

[69] Often realized as a direct object

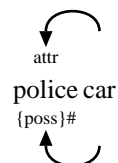
Confusion₂₂: .

bread producer



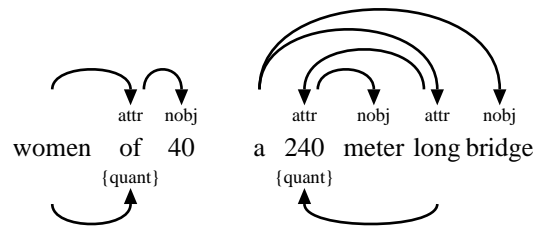
{poss} . Used in noun phrases where there is a possession relation between the nucleus and the satellite. Often the satellite is the owner or possessor of the nucleus.

[56] Confusion₁₀: {poss}_{60%} {loc}_{10%} {const}_{10%} {arg}_{10%} {patient}_{10%} .



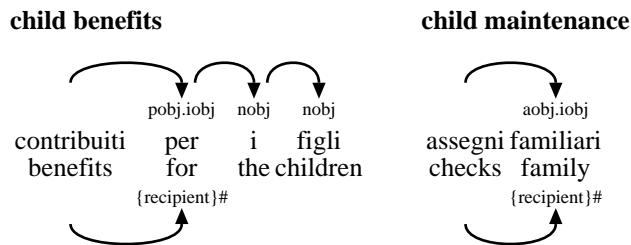
{quant} . Used in noun phrases where the satellite indicates the quantity in numbers or another countable unit of the nucleus.

[64] Confusion₁: {quant}_{100%} .



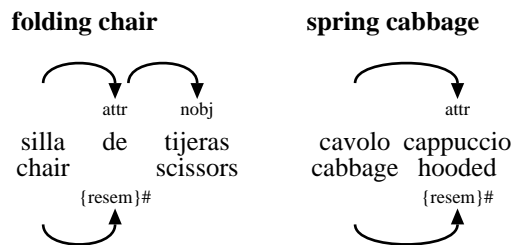
{recipient} *The receiver of something.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as an indirect object

[71] Confusion₁: {loc}_{100%} .



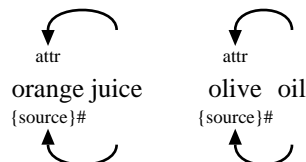
{resem} . Used in noun phrases where there is a resemblance between the nucleus and the satellite.

[60]



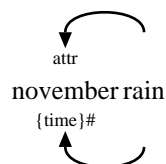
{source} (deprecated {origin}). Used in noun phrases where the satellite is the source from which the nucleus derives or is deduced.

[52] Confusion₂₁: .



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

[58] Confusion₁₁: .



7.1 Qualia relations: QUALIA

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

Figure 7.2: The relations matching QUALIA.

QUALIA *Qualia role.* A qualia role. Ie, a semantic relation that links a lexeme to a qualia role associated with that lexeme. Eg, "music" to the act of "composing" (agentive), "listening" (telic), etc.
 isa SEMREL [30]
 Subtypes: agentive const formal resemblance telic.

agentive *Agentive qualia.* A qualia role that relates a lexeme to its agentive qualia, ie, the act that made it come into being.
 isa QUALIA [39]

N->P.agent

const *Constitutive qualia.* Relates to material or part-whole qualia
 isa QUALIA [41]

N->P.material/part

formal *Formal qualia.* A qualia role that relates a lexeme to a hyperonym (super type) wrt. form, dimension, quality, shape, size, etc.
 isa QUALIA [38]
 Subtypes: location.

location *Location qualia.* A qualia role that relates a lexeme to its location qualia.
 isa formal [40]
resemblance *Resemblance wrt. qualia role.* Resemblance wrt. some qualia role
 isa QUALIA [44]
 Subtypes: ""QUALIA.

N->P.resem

""QUALIA *Resemblance wrt. \$qualia relation.*
 isa RULE resemblance [45]
telic *Telic qualia.* Relates to purpose qualia
 isa QUALIA [42]
 Subtypes: about.

about *About qualia.* Relates to hyponym (subtype)
 isa telic [43]

7.2 Thematic role relations: SEMROLE

Figure 7.3: The relations matching SEMROLE.

Chapter 8

Word alignment relations: ALIGNMENT

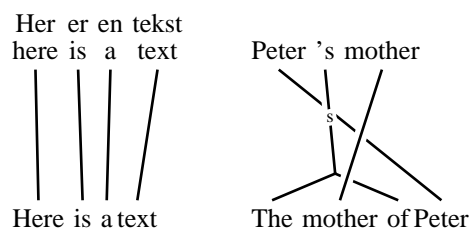
ALIGN: alignment level
ALIGNREL: alignment relation
"": unlabeled word alignment
f: fuzzy word alignment

Figure 8.1: The relations matching ALIGNMENT-TOPIC.

ALIGN *Alignment level* (long: ALIGNMENT). The alignment level. Ie, alignment relations, or lexical features associated with alignments.
isa DIM:LEVEL
[15] Subtypes: ALIGNREL.

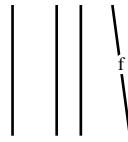
ALIGNREL *Alignment relation*. An alignment relation. An alignment relation encodes a translational equivalence between two sets of words (and their associated phrases), either in terms of form or meaning. Null alignments - ie, a set of words in one text which does not correspond to any set of words in the other text - are encoded as a set of words that is aligned to itself.
isa ALIGN REL
[31] 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 ALIGNREL
[375]



f *Fuzzy word alignment* (long: fuzzy). A semantically fuzzy word alignment.
isa ALIGNREL
[376]

Here is a car



Here is a vehicle

Chapter 9

Rule schemata for complex relations: RULE

RULE: generative type specification rule
"("REL)": disambiguation
""DISC: down-head in attribution
"<"PRIM(":"PRIM)*":"INTEGER">": gapping dependent
"@adverb: valency-bound adverbial
 "["PRIM"]": secondary relation pattern
"assoc-"QUALIA: associative anaphor wrt. qualia
""QUALIA: resemblance wrt. \$qualia relation
"α"(PRIM): discourse specification
"§"(PRIM): morphology specification
(PRIM)"/ATTR"INTEGER: attribution
(REL)"&"(REL): both-and relation
(REL)"|"(REL): either-or relation
(SEMREL)"#": idiomatic relation pattern
DISC"": down-dependent in attribution
PRIM"/"CONNECTOR: explicit connector
PRIM"/("CONNECTOR)": implicit connector
PRIM{"SEMREL"}: primary+semantic relation pattern

Figure 9.1: The relations matching RULE-TOPIC.

RULE *Generative type specification rule.* A generative type specification rule. Type specification rules specify how type names are created generatively using rules. A rule consists of a sequence of null-separated items which are either character sequences enclosed in double quotes or type names; parts of a rule may be enclosed in parentheses and followed by an optional repetition operator: "" (0 or more times), "+" (1 or more times), or "?" (0 or 1 times). When specifying the super types for a generated type, \$1 refers to the part of the type name matched within the first pair of parentheses, \$2 the part within the second pairs of parentheses, etc. Generated types may be used as super types.

For example, the rule "<"PRIM">" generates all relation names formed by enclosing any relation name from the "PRIM" hierarchy in angle brackets. "<"PRIM(":"PRIM)*">" generates all relation names formed by enclosing a ":"-separated sequence of "PRIM" relation names in angle brackets.

Subtypes: "("REL)" ""DISC "<"PRIM(":"PRIM)*":"INTEGER"> "@"adverb "["PRIM"]" "assoc-"QUALIA ""QUALIA

"α"(PRIM) "§"(PRIM) (PRIM)"/ATTR"INTEGER (REL)"&"(REL) (REL)"|"(REL) (SEMREL)"#" DISC"*" PRIM"/"CONNECTOR
PRIM"/("CONNECTOR")" PRIM{"SEMREL"}".

"("REL)" Disambiguation.

isa RULE

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

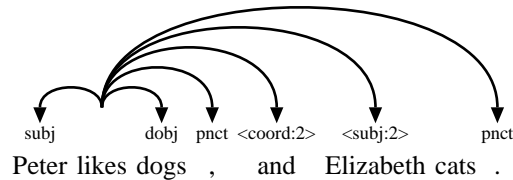
isa RULE chain

[367]

"<"PRIM(":"PRIM)*":"INTEGER" Gapping dependent. First conjunct->gapping dependent

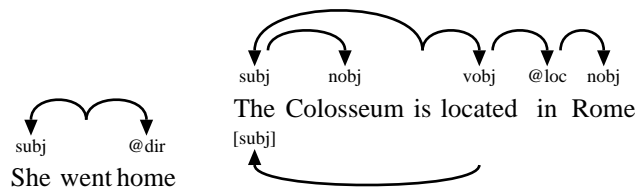
isa GAP RULE

[355]



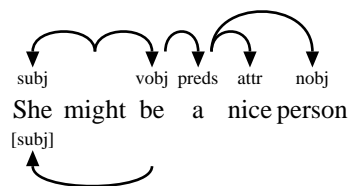
"@"adverb Valency-bound adverbial. A complement relation which can be interpreted as an obligatory, valency-bound adverbial relation.

[369] Related types: cont dir dur ext hab loc prec succ time.



"["PRIM]" Secondary relation pattern. The secondary relation corresponding to a primary relation is formed by enclosing the primary relation name in square brackets.

[353]



"assoc-"QUALIA Associative anaphor wrt. qualia. The anaphor denotes entity which is associated with the antecedent

[190]

"QUALIA Resemblance wrt. \$qualia relation.

isa RULE resemblance

"α"(PRIM) Discourse specification. A primary syntactic relation that has been used as a discourse relation for stylistic purposes.

[357]

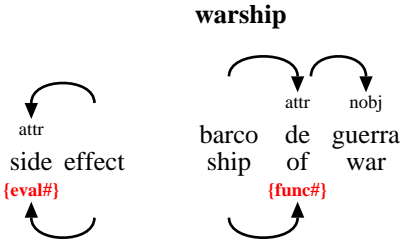
"§"(PRIM) Morphology specification.

isa MORPH RULE

(PRIM)"/ATTR"INTEGER Attribution. Specifies the person to whom the utterance is attributed (ATTR or ATTR1, ATTR2, ... when there is more than one person)

[356]

- (REL)"&"(REL) *Both-and relation.* Both relations hold
isa RULE
- (REL)"|"(REL)^[350] *Either-or relation.* One of the relations holds
isa RULE
- (SEMREL)"#"^[360] *Idiomatic relation pattern.* A semantic relation can be marked as idiomatic by putting a trailing "#"^[351] after the semantic relation name. The idiom marker is only used with semantic relations, not with syntactic relations.



- DISC^"" *Down-dependent in attribution.* The dependent in the relation is one step further down in the attribution chain
isa RULE
[368]

- PRIM^/"CONNECTOR *Explicit connector.* The discourse relation has explicit connector \$CONNECTOR
isa RULE
- PRIM^/("CONNECTOR)^[365] *Implicit connector.* The discourse relation has implicit connector \$CONNECTOR
isa RULE
- PRIM^{"SEMREL }"^[366] *Primary+semantic relation pattern.*
isa REL RULE
[352]

Chapter 10

Ontological relations: ONTOLOGY

ONT: ontology level
ONTOCLASS: ontological class
 ⊢top: ontological entity
 ⊢abstract: abstract entity
 ⊢concrete: concrete entity

Figure 10.1: The relations matching ONTOLOGY-TOPIC.

ONT *Ontology level* (long: ONTOLOGY). The ontological level. Ie, relations between lexical elements
isa DIM:LEVEL [13] construed as ontological units, or lexical features associated with ontological units.
Subtypes: ONTOCLASS.

ONTOCLASS *Ontological class*. A class in the ontology. The ontology encodes a classification of all lexical
isa FEAT ONT [405] elements with respect to their natural kind.
Subtypes: ⊢top.

⊢top *Ontological entity*.
isa ONTOCLASS [406] Subtypes: ⊢abstract ⊢concrete.

⊢abstract *Abstract entity*.
isa ⊢top
 ⊢concrete *Concrete entity*.
isa ⊢top [408]

Chapter 11

Relations misplaced outside the ANY hierarchy

MISPLACED: misplaced relation

Figure 11.1: The relations matching -ANY.

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

Chapter 12

Annotation topics:: TOPICS

Figure 12.1: The relations matching TOPICS-DIM.

Appendix A

Overview tables

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

ANY: formal top node
DIM: dimension
DIM:LEVEL: dimension: linguistic level
DIM:TYPE: dimension: annotation type
RULE: generative type specification rule
TOPIC: annotation topic

The relations matching ANY-!DIM:LEVEL-!DIM:TYPE-!RULE-!TOPIC.

DIM:LEVEL: dimension: linguistic level
ALIGN: alignment level
ANA: anaphor level
DISC: discourse level
MORPH: morphology level
ONT: ontology level
SEM: semantic level
SYN: syntax level

The relations matching DIM:LEVEL-!SYNTAX-!MORPHOLOGY-!DISCOURSE-
!ANAPHORA-!SEMANTICS-!ALIGNMENT-!ONTOLOGY-!RULE-!TOPICS.

DIM:TYPE: dimension: annotation type
 FEAT: lexical feature
 REL: directed bilexical relation
 +: segment concatenation
 GAP: gapping dependent
 "<"PRIM(":"PRIM)*":"INTEGER">": gapping dependent
 IDIOM: idiomatic relation
 (SEMREL)"#": idiomatic relation pattern
 LAND: landing relation
 fill: licensed filler
 land: landed lexical element
 PRIM: primary dependency relation
 ADJ: adjunct relation
 COMP: complement relation
 "@": adverb: valency-bound adverbial
 PRIM{"SEMREL"}": primary+semantic relation pattern
 SEC: secondary dependency relation
 "["PRIM"]": secondary relation pattern

The relations matching DIM:TYPE-!SYNTAX-!MORPHOLOGY-!DISCOURSE-!ANAPHORA-!SEMANTICS-!ALIGNMENT-!ONTOLOGY-!TOPICS.

SYN: syntax level
 SYNADJ: syntactic adjunct
 SYNCOMP: syntactic complement

The relations matching SYNTAX-!SYNCOMP-!SYNADJ-TOPIC.

SYNCOMP: syntactic complement
 @space: valency-bound location/direction adverbial
 @time: valency-bound time adverbial
 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-TOPIC.

SYNADJ: syntactic adjunct
 ADVERB: adverbial
 app: apposition
 appa: parenthetical apposition (comma)
 xpl: explication
 appr: restrictive apposition (no comma)
 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: parenthetical modifier
 name: part of name
 namef: first name
 namel: last name
 title: person title
 pnct: punctuation
 rel: relative clause
 relelab: elaborating relative clause
 relpa: parenthetical relative clause
 relr: restrictive relative clause
 voc: vocative
 xtop: external topic with resuming pronoun

The relations matching SYNADJ-!ADVERB-TOPIC.

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
source: source attribution adverbial
space: space adverbial
dir: direction adverbial
loc: location adverbial
time: time adverbial
iter: habituality adverb

The relations matching ADVERB-TOPIC.

MORPH: morphology level
"§"(PRIM): morphology specification
MORPHCOMP: compositional semantic relations
MORPHDERIV: derivational semantic relations

The relations matching MORPHOLOGY-!MORPHCOMP-!MORPHDERIV-TOPIC.

MORPHCOMP: compositional semantic relations
 \$ABOUT: noun-noun compound (about)
 \$AGENT:MC: noun-noun compound (agentive)
 \$CONST: noun-noun compound (constitutive)
 \$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-TOPIC.

MORPHDERIV: derivational semantic relations
 PREFIX: semantic relations appearing with prefixes
 SUFFIX: semantic relations appearing with suffixes

The relations matching MORPHDERIV-!PREFIX-!SUFFIX-TOPIC.

PREFIX: semantic relations appearing with prefixes
 \$AGENT: agentive
 \$ITER: iteration
 \$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
 \$TELIC: telic
 \$TIME: time
 \$TIME:post: temporal succession
 \$TIME:pre: temporal precedence
 \$TRANS: transitivity

The relations matching PREFIX-TOPIC.

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: verb derivation
 - \$DERadvv: adverb-verb derivation
 - \$DERav: adjective-verb derivation
 - \$DERnv: noun-verb derivation
 - \$DERvn:agent: verb-noun derivation (agent)
 - \$DERvn:core: verb-noun derivation (core)
 - \$DERvn:exper: verb-noun derivation (experiencer)
 - \$DERvn:inst: verb-noun derivation (instrument)
 - \$DERvn:loc: verb-noun derivation (location)
 - \$DERvn:other: verb-noun derivation (other)
 - \$DERvn:patient: verb-noun derivation (patient)
 - \$DERvn:recip: verb-noun derivation (recipient)
 - \$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)
 - \$DERvn: verb-noun derivation
 - \$DERvv: verb-verb derivation
- \$DERan:qual: adjective derivation
- \$DERna: noun-adjective derivation
 - \$DERna:deono: noun-adjective derivation (naming)
 - \$DERna:deono.pers: noun-adjective derivation (naming persons)
 - \$DERna:deono.place: noun-adjective derivation (naming places)
 - \$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: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)
- \$DERv:
- \$DIMIN: diminution
- \$PEJ: pejoration

The relations matching SUFFIX-TOPIC.

DISC: discourse level
"α"(PRIM): discourse specification
DISCOTHER:
 JOINT: no clear relation
 REP: repaired
 SCENE: scene
DISCPRAG: pragmatic and illocutionary discourse relations
DISCSEM: semantic discourse relations

The relations matching DISCOURSE-!DISCFUNC-!DISCSEM-TOPIC.

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-TOPIC.

DISCSEM: semantic discourse relations
 AGENTIVE: cause relation (discourse)
 AGENTIVE:expl: explanation relation in discourse
 AGENTIVE:reas: reason relation (discourse)
 AGENTIVE:subj: subjective cause
 CONC: concession
 COND: condition
 CONJ: conjunction
 CONJ:add: conjunction, addition
 CONJ:elab: conjunction, elaboration
 CONJ:seq: sequence
 CONST: constitutive elaboration
 CONST:apart: part of relation
 CONST:elab: elaboration
 CONST:exem: exemplification
 CONST:rest: restatement
 CONTR: contrast
 CONTR:dir: direct contrast
 CONTR:subj: subjective contrast
 DISJ: disjunction
 DISJ:dir: direct disjunction
 DISJ:subj: subjective disjunction
 FORMAL: formal description
 FORMAL:descr: neutral description
 FORMAL:eval: positive/negative evaluation
 TELIC: consequence/result/conclusion relation (discourse)
 TELIC:cons.dir: direct, physical consequence, result
 TELIC:cons.sbj: pragmatic/personal conclusion, deduction
 TELIC:goal: goal relation (discourse)
 TIME: temporal relation
 TIME:cont: contemporaneity
 TIME:post: temporal succession
 TIME:pre: temporal precedence

The relations matching DISCSEM-TOPIC.

ANA: anaphor level
 ANAREL: anaphor-antecedent relation
 anaphor:
 assoc: associative anaphor
 coref: coreference

The relations matching ANAPHORA-!coref-!assoc-TOPIC.

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-TOPIC.

assoc: associative anaphor
 "assoc-QUALIA: associative anaphor wrt. qualia
assoc-agentive: associative anaphor (agentive)
assoc-const: associative anaphor (constitutive)
assoc-event: associative anaphor (event)
assoc-exper: associative anaphor (experiencer)
assoc-formal: associative anaphor (formal)
assoc-inst: associative anaphor (instrument)
assoc-loc: associative locative anaphor
assoc-patient: associative anaphor (patient)
assoc-telic: associative anaphor (telic)
assoc-time: associative anaphor (time)

The relations matching assoc-TOPIC.

SEM: semantic level
 SEMREL: semantic role
 QUALIA: qualia role
 {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 SEMANTICS-!QUALIA-!SEMROLE-TOPIC.

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

The relations matching QUALIA.

The relations matching SEMROLE.

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

The relations matching ALIGNMENT-TOPIC.

RULE: generative type specification rule
"("REL)": disambiguation
""DISC: down-head in attribution
"<"PRIM(":"PRIM)*":"INTEGER">": gapping dependent
"@adverb: valency-bound adverbial
"["PRIM"]": secondary relation pattern
"assoc-"QUALIA: associative anaphor wrt. qualia
""QUALIA: resemblance wrt. \$qualia relation
"α"(PRIM): discourse specification
"§"(PRIM): morphology specification
(PRIM)"/ATTR"INTEGER: attribution
(REL)"&"(REL): both-and relation
(REL)"|"(REL): either-or relation
(SEMREL)"#": idiomatic relation pattern
DISC""": down-dependent in attribution
PRIM"/"CONNECTOR: explicit connector
PRIM"/("CONNECTOR)": implicit connector
PRIM{"SEMREL"}": primary+semantic relation pattern

The relations matching RULE-TOPIC.

ONT: ontology level
ONTOCLASS: ontological class
αtop: ontological entity
αabstract: abstract entity
αconcrete: concrete entity

The relations matching ONTOLOGY-TOPIC.

MISPLACED: misplaced relation

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
xpl	100%	2	xpl _{100%}
qobj	100%	5	qobj _{100%}
numm	100%	1	numm _{100%}
namel	100%	4	namel _{100%}
namef	100%	21	namef _{100%}
expl	100%	4	expl _{100%}
exem	100%	3	exem _{100%}
cond	100%	2	cond _{100%}
appr	100%	5	appr _{100%}
appa	100%	5	appa _{100%}
agent	100%	1	agent _{100%}
pnct	99%	275	pnct _{99%} nobj _{0%} dobj _{0%}
subj	97%	171	subj _{97%} nobj _{1%} correl _{0%} attr _{0%}
vobj	95%	116	vobj _{95%} nobj _{2%} conj _{0%} relr _{0%}
coord	95%	66	coord _{95%} contr _{3%} neg _{1%}
conj	95%	93	conj _{95%} attr _{2%} nobj _{1%} vobj _{1%}
nobj	92%	488	nobj _{92%} attr _{1%} name _{1%} pobj _{1%} title _{0%} vobj _{0%} time _{0%} dobj _{0%} subj _{0%} possd _{0%} conj _{0%} aobj _{0%} pnct _{0%} quant _{0%} preds _{0%} loc _{0%} modp _{0%}
neg	92%	14	neg _{92%} coord _{7%}

possd	90%	30	possd90% nobj6% attr3%
add	90%	11	add90% discmark9%
preds	86%	43	preds86% dobj4% nobj2% loc2% inst2% resem2%
dobj	86%	93	dobj86% pobj4% nobj2% preds2% iobj2% predo1% dir1% pnct1%
attr	80%	245	attr80% pobj9% nobj2% aobj1% conj0% time0% cause0% focal0% name0% possd0% subj0% man0% loc0% other0% inst0% modp0%
quant	77%	35	quant77% man5% avobj5% eval5% nobj2% time2%
time	72%	36	time72% iter5% man5% nobj5% attr5% scene2% quant2%
loc	71%	45	loc71% other6% dir4% pobj4% nobj2% preds2% avobj2% focal2% attr2% inst2%
part	66%	3	part66% dir33%
eval	66%	9	eval66% quant22% man11%
cons	66%	3	cons66% cause33%
relr	65%	23	relr65% relpa30% vobj4%
name	64%	17	name64% nobj29% attr5%
epi	60%	5	epi60% man40%
pobj	55%	109	pobj55% attr20% dir5% nobj4% dobj3% source2% goal2% loc1% man0% other0% inst0% cause0%
title	50%	6	nobj50% title50%
correl	50%	4	correl50% focal25% subj25%
inst	44%	9	inst44% loc11% scene11% preds11% attr11% pobj11%
goal	44%	9	goal44% pobj33% man11% scene11%
man	43%	30	man43% accom10% epi6% time6% other6% quant6% source3% attr3% goal3% aobj3% eval3% pobj3%
focal	42%	7	focal42% other14% correl14% loc14% attr14%
accom	40%	5	man60% accom40%
relpa	36%	11	relr63% relpa36%
modp	33%	3	nobj33% attr33% modp33%
dir	33%	15	pobj40% dir33% loc13% part6% dobj6%
conc	33%	3	contr66% conc33%
cause	33%	6	cause33% attr33% pobj16% cons16%
aobj	33%	9	attr44% aobj33% man11% nobj11%
avobj	25%	4	quant50% loc25% avobj25%
other	11%	9	loc33% man22% other11% focal11% attr11% pobj11%
source	0%	4	pobj75% man25%
scene	0%	3	goal33% time33% inst33%
resem	0%	1	preds100%
predo	0%	1	dobj100%
iter	0%	2	time100%
iobj	0%	2	dobj100%
discmark	0%	4	contr75% add25%
contr	0%	7	discmark42% conc28% coord28%
TOTAL	84%	2137	

B.2 Confusion table: semantics

R	A	N	Confusion list
quant	100%	1	quant100%

eval	100%	1	eval _{100%}
time	72%	11	time _{72%} source _{18%} other _{9%}
apart	71%	7	apart _{71%} loc _{14%} const _{14%}
poss	60%	10	poss _{60%} loc _{10%} const _{10%} arg _{10%} patient _{10%}
loc	58%	31	loc _{58%} func _{9%} arg _{6%} const _{3%} location _{3%} agent _{3%} elab _{3%} apart _{3%} recipient _{3%} about _{3%} poss _{3%}
source	57%	21	source _{57%} arg _{23%} time _{9%} const _{4%} agent _{4%}
patient	54%	22	patient _{54%} arg _{18%} about _{9%} func _{4%} poss _{4%} experiencer _{4%} agent _{4%}
elab	50%	2	loc _{50%} elab _{50%}
func	48%	33	func _{48%} arg _{24%} loc _{9%} about _{6%} const _{3%} patient _{3%} iden _{3%} other _{3%}
agent	35%	17	agent _{35%} arg _{29%} experiencer _{17%} loc _{5%} patient _{5%} source _{5%}
const	33%	21	const _{33%} arg _{28%} form _{9%} apart _{4%} loc _{4%} class _{4%} func _{4%} poss _{4%} source _{4%}
arg	33%	56	arg _{33%} func _{14%} const _{10%} agent _{8%} source _{8%} about _{7%} patient _{7%} loc _{3%} other _{3%} poss _{1%}
about	30%	13	arg _{30%} about _{30%} patient _{15%} func _{15%} loc _{7%}
recipient	0%	1	loc _{100%}
other	0%	4	arg _{50%} time _{25%} func _{25%}
location	0%	1	loc _{100%}
iden	0%	1	func _{100%}
form	0%	2	const _{100%}
experiencer	0%	4	agent _{75%} patient _{25%}
class	0%	1	const _{100%}
TOTAL	44%	260	

B.3 Confusion table: discourse

R	A	N	Confusion list
SCENE	100%	4	SCENE _{100%}
JOINT	100%	2	JOINT _{100%}
ANSW	100%	1	ANSW _{100%}
TELIC:cons.sbj	75%	4	TELIC:cons.sbj _{75%} CONJ:add _{25%}
CONTR:dir	50%	2	expl _{50%} CONTR:dir _{50%}
CONTR	50%	1	CONTR:sbj _{50%} conj _{50%}
CONST:rest	50%	4	CONST:rest _{50%} CONJ:elab _{33%} xpl _{16%}
CONC	50%	2	CONJ:add _{50%} CONC _{50%}
TELIC:cons.dir	44%	3	TELIC:cons.dir _{44%} CONJ:add _{33%} vobj _{22%}
CONJ:elab	40%	27	CONJ:add _{42%} CONJ:elab _{40%} CONST:rest _{4%} FOR- MAL:descr _{3%} CONSOL:source _{3%} qobj _{2%} xpl _{2%}
CONJ:add	37%	41	CONJ:add _{37%} CONJ:elab _{27%} qobj _{6%} CONTR:sbj _{4%} AGENTIVE:expl _{4%} conj _{3%} rel _{2%} TELIC:cons.sbj _{2%} time _{2%} TELIC:cons.dir _{2%} CONST:exem _{2%} CONC _{2%}
AGENTIVE:expl	33%	6	CONJ:add _{33%} AGENTIVE:expl _{33%} CONSOL:motiv _{16%} vobj _{16%}
CONTR:sbj	25%	10	conj _{40%} CONTR:sbj _{25%} CONJ:add _{20%} coord _{10%} CONTR _{5%}
xpl CONJ:elab	0%	1	xpl _{100%}
FORMAL:descr	0%	1	CONJ:elab _{100%}

CONST:exem	0%	1	CONJ:add _{100%}
CONSOL:source	0%	1	CONJ:elab _{100%}
CONSOL:motiv	0%	1	AGENTIVE:expl _{100%}
AGENTIVE:reas	0%	1	qobj _{100%}
TOTAL	40%	113	

B.4 Confusion table: anaphora

R	A	N	Confusion list
ref	100%	38	ref _{100%}
coref-res	100%	1	coref-res _{100%}
TOTAL	100%	39	

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	2097	2219		951
auto				1775	75
outdated-final	536				927
first	45	21	92	1	76
discussed	178	194	1		197
final				536	86

C.2 da texts

	discourse	morphology	postag	syntax
none	439	468		
auto				
outdated-final				500
first	12	68	1	10
discussed	86	1		21
final			536	6

C.3 de texts

	discourse	morphology	postag	syntax
none	405	412		327
auto			413	
outdated-final				
first	8	1		55
discussed				8
final				23

C.4 en texts

	discourse	morphology	postag	syntax
none	535	536		
auto			536	75
outdated-final				427

first	1	10
discussed		18
final		6

C.5 es texts

	discourse	morphology	postag	syntax
none	388	392		343
auto			413	
outdated-final				
first		21		1
discussed	25			65
final				4

C.6 it texts

	discourse	morphology	postag	syntax
none	330	411		281
auto			413	
outdated-final				
first		2		
discussed	83			85
final				47

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		

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