

The inventory of linguistic relations used in the Copenhagen Dependency Treebanks

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Abstract

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

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

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Chapter 1

Introduction

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

relation The notation in the left margin indicates that we now describe the relation `relation`; 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 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 the standard terminology in linguistic theory. The classification is intended for human use. It is not an important feature in the underlying linguistic 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.* Generative type specification rules specify how type names
isa ANY are created generatively using rules. A rule consists of a sequence of null-separated items
[4] 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: "assoc-"QUALIA "QUALIA RuleAnd RuleAttr RuleAttrD RuleAttrH RuleDisc RuleExpConn RuleGap RuleIdiom RuleImpConn RuleMorph RuleOblAdv RuleOr RulePar RuleSec.

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 annotators and human 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 the standard terminology in linguistic theory. The classification is intended for human use. It is not an important feature in the underlying linguistic 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 includes alignment relations as well as lexical features associated with alignments.

[15] Subtypes: ALIGNREL.

ANA *Anaphor level* (long: ANAPHORA). The anaphor level includes relations between anaphora and their antecedents, as well as lexical features associated with anaphora.

[14] Subtypes: ANAREL anaphor.

- DISC** *Discourse level* (long: DISCOURSE). The discourse level includes relations between segments in different sentences, as well as lexical features associated with discourse units.
[11] Subtypes: DISCOTHER DISCPRAG DISCSEM RuleDisc.
- MORPH** *Morphology level* (long: MORPHOLOGY). The morphological level includes relations between two word segments within a single word, as well as lexical features associated with morphemes.
[9] Subtypes: MORPHCOMP MORPHDERIV RuleMorph.
- ONT** *Ontology level* (long: ONTOLOGY). The ontological level includes relations between lexical elements construed as ontological units, as well as lexical features associated with ontological units.
[13] Subtypes: ONTOCLASS.
- SEM** *Semantic level* (long: SEMANTICS). The semantic level includes relations between lexical elements construed as functors, arguments, and modifiers, as well as lexical features associated with semantic units.
[12] Subtypes: SEMREL.
- SYN** *Syntax level* (long: SYNTAX). The syntactic level includes relations between two segments within a sentence, but not within a single word, as well as 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 bilexical relation
 +: segment concatenation
 IDIOM: idiomatic relation
 RuleIdiom: idiomatic relation pattern
 LAND: landing relation
 fill: licensed filler
 land: landed lexical element
 PRIM: primary dependency relation
 ADJ: adjunct relation
 COMP: complement relation
 RuleOblAdv: valency-bound adverbial
 SEC: secondary dependency relation
 RuleSec: secondary relation pattern
 repl: replacement in gapping coordination

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 bilexical relation.
[17]

Subtypes: FEAT REL.

FEAT *Lexical feature* (long: FEATURE). A lexical feature. Ie, an annotation that describes a particular property of a lexical element.

[18] Subtypes: ONTOCLASS.

REL *Directed bilexical relation* (long: RELATION). A directed bilexical 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).

[19]

Subtypes: + ALIGNREL ANAREL IDIOM LAND PRIM 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.

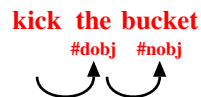


IDIOM *Idiomatic relation*. An idiomatic relation. The relation links independent lexical elements that jointly form an idiomatic lexical unit, ie, a unit where the meaning of the whole cannot be described as a semantic composition of its parts.

isa REL
[32]

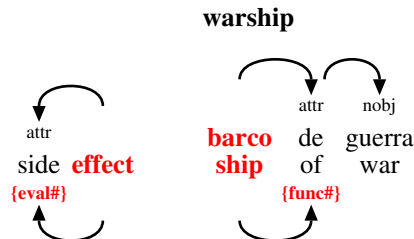
Subtypes: RuleIdiom.

Related types: +.



RuleIdiom *Idiomatic relation pattern* (long: (SEMREL)"#"). 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.

isa IDIOM RULE
[363]



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

[25]

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.

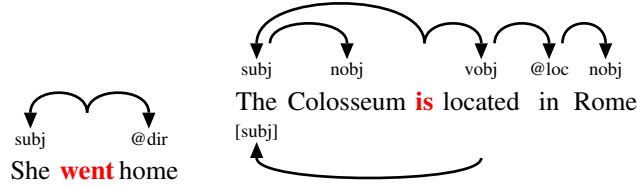
Subtypes: DISCOTHER DISCPRAG DISCSEM SYNADJ.

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: RuleOblAdv SYNCOMP.

RuleOblAdv *Valency-bound adverbial* (long: "@ADVERB). An adverbial relation can be marked as obligatory by putting "@" in front of the relation name.

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



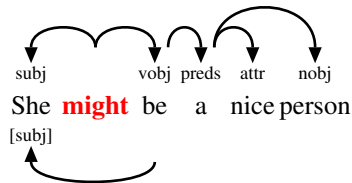
SEC *Secondary dependency relation* (long: SECONDARY). A secondary dependency relation. Intuitively, if a node functions as a dependent of more than one word (eg, in verbal chains, raising and control constructions, relatives, and elliptic coordinations), the dependency relation that determines the word 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: RuleSec ref repl.

Related types: fill fsrc.

RuleSec *Secondary relation pattern* (long: "[PRIM]"). A secondary relation name is formed by enclosing a primary relation name in square brackets.

Related types: SEC.



repl *Replacement in gapping coordination*. A relation that encodes a constituent in the first conjunct replaced by a gapping dependent. The relation goes from the head of the replaced constituent to the head of the gapping dependent. The extraction path for the gapping dependent is defined as the path from the replaced constituent to the head of the first conjunct.

Related types: gapd.

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 includes relations between two segments within a sentence, but not within a single word, as well as lexical features associated with syntactic units.
isa DIM:LEVEL [10]
Subtypes: SYNADJ SYNCOMP.

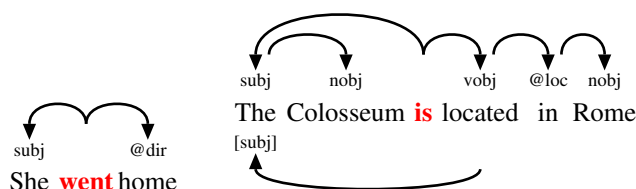
SYNADJ *Syntactic adjunct*. An adjunct role at the syntactic level. This relation type is used to group a large class of adjunct roles that only apply at the syntactic level.
isa ADJ SYN [104]
Subtypes: ADVERB app attr attrg conj coord correl fpred gapd mod name pnct rel voc xtop.

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 [76]
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 [76]
Subtypes: @space @time aobj avobj dobj fobj gobj iobj nobj numa numm part pobj possd possr pred qobj robj subj vobj.

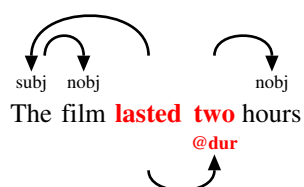
@space *Valency-bound location/direction adverbial*.
isa SYNCOMP Related types: dir loc.
[85]



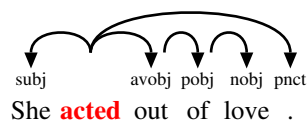
SYNCOMP: syntactic complement
 @space: valency-bound location/direction adverbial
 @time: valency-bound time adverbial
 avobj: adverbial object
 dobj: direct object
 fobj: filler object
 gobj: genitive object
 iobj: indirect object
 nobj: nominal object
 numa: additive numeral complement
 numm: multiplicative 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.

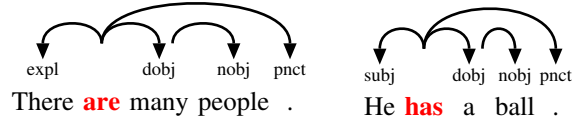
@time *Valency-bound time adverbial.* A valency bound time expression. Formerly analyzed as
 isa SYNCOMP locative object, but we have decided to provide a general mechanism (@) for converting
 [101] adverbial relations into valency-bound relations.
 Related types: cont dur ext hab prec succ.



avobj *Adverbial object.*
 isa SYNCOMP Related types: aobj part.
 [93] Confusion₂₀: avobj_{50%} part_{15%} other_{10%} quant_{10%} aobj_{5%} loc_{5%} pobj_{5%} .

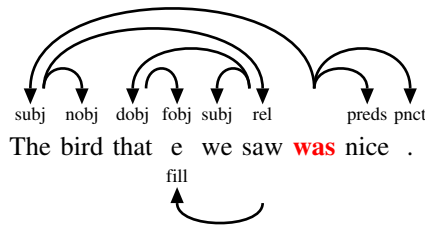


dobj *Direct object.* A direct object relation. In languages with case, the direct object is typically
 isa SYNCOMP accusative-marked.
 [81] Related types: iobj robj.
 Confusion₃₄₈: pobj_{2%} pobj_{2%} pobj_{2%} pobj_{2%} pobj_{2%} pobj_{2%} pobj_{2%} pobj_{2%} pobj_{2%} pobj_{2%} .



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 licenser" lexeme (eg, the relative verb in a relative construction acts as filler licenser 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.

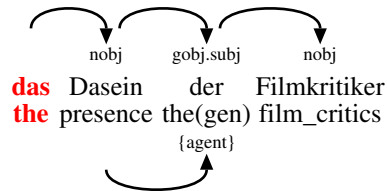
Related types: fill ref.



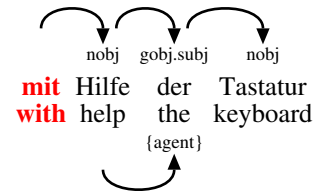
gobj *Genitive object*. If the genitive object is part of a NP which nucleus is deverbal, the following annotation possibilities are available: gobj.subj{SEMROLE} gobj.dobj{SEMROLE} gobj.pobj{SEMROLE} gobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient, experient,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

Related types: SEMROLE attrg.

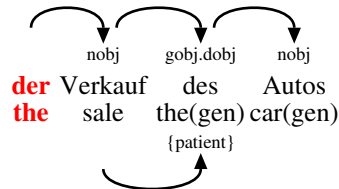
the presence of film critics



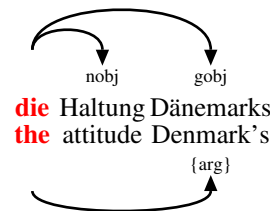
with help from the keyboard



the sale of the car

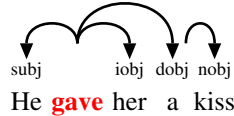


Denmark's attitude



iobj *Indirect object*.
Related types: dobj.

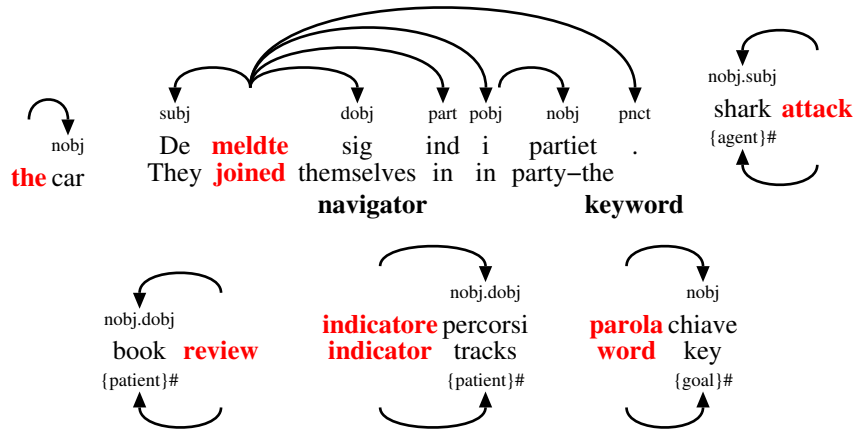
[84] Confusion₁₀: iobj_{50%} dobj_{40%} robj_{10%} .



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.

Confusion₁₄₃₆: .

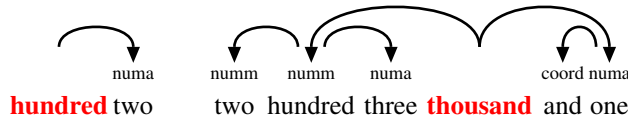
They joined the party.



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.

Confusion₁: nobj_{100%} .



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 " $(2 * 100 + 4) * 1000 + (20 + (3))$ ".

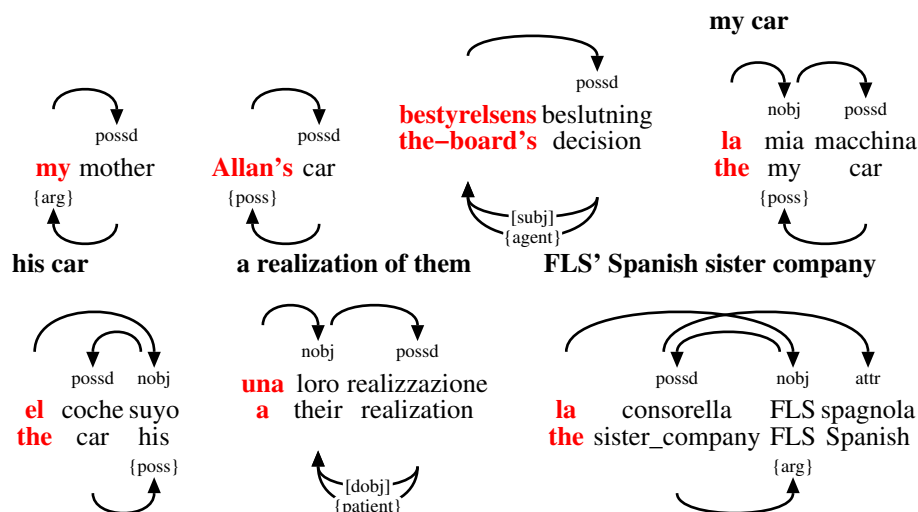
Related types: numa.

Confusion₂: numm_{100%} .

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

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

Confusion₁₀₉: .



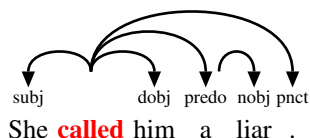
possr *Possessor complement.* NO LONGER IN USE
The possessor complement in a possessive construction. Possession is understood in a syntactic sense as any construction with a clitic genitive marker, not necessarily as possession in a narrow semantic sense. A better name may be chosen for this relation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

Related types: poss possd.

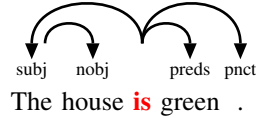
N/A

pred *Predicative.*
Subtypes: predo preds.
Related types: predo preds.

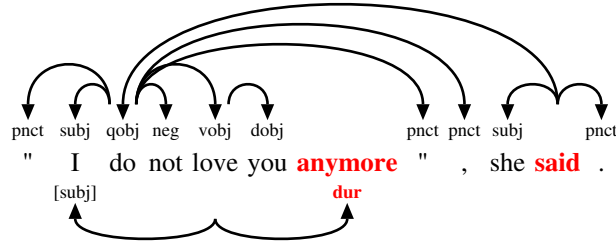
predo *Object predicative.*
Related types: preds.
Confusion₁₀: preds_{30%} inst_{20%} attr_{10%} fpredo_{10%} predo_{10%} dobj_{10%} vobj_{10%} .



preds *Subject predicative.*
Related types: predo.
Confusion₂₁₅: vobj_{7%} vobj_{7%} vobj_{7%} vobj_{7%} vobj_{7%} vobj_{7%} vobj_{7%} vobj_{7%} vobj_{7%} vobj_{7%} vobj_{7%} vobj_{7%} .

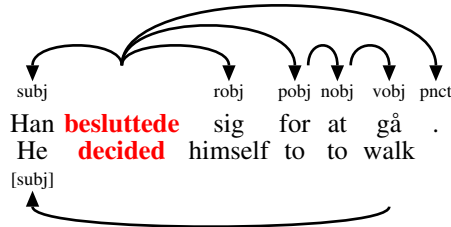


qobj *Quotational object*. A phrase or discourse segment functioning as directly quoted speech, typically by an attribution verb. Indirect speech is analyzed as "dobj" or "nobj".
 isa SYNCOMP
 [100] Related types: xpl.
 Confusion₃₃: conj_{3%} dismark_{3%} dismark_{3%} .

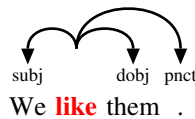


robj *Reflexive object*.
 isa SYNCOMP Related types: dobj.
 [90] Confusion₆: .

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
 [79]
 Subtypes: expl.
 Related types: expl.
 Confusion₅₉₂: subj_{98%} subj_{98%} subj_{98%} subj_{98%} subj_{98%} subj_{98%} subj_{98%} subj_{98%} .

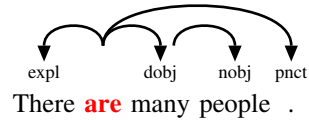


expl *Expletive subject*. An expletive subject relation. The expletive subject is typically a situational place adverbial like "there" or time adverbial like "now", and is only possible for verbs that support the expletive alternation. The expletive alternation applies to all verbs that do not have a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

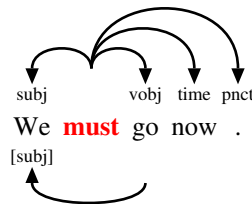
Confusion₂₀: expl_{95%} subj_{5%} .



vobj *Verbal object.*

isa SYNCOMP Related types: "["\$PRIM"]".

[89] Confusion₄₃₉: .



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.

[104] Subtypes: ADVERB app attr attrg conj coord correl fprel gapd mod name punct rel voc xtop.

ADVERB *Adverbial.* V/N/P->adverbial

isa SYNADJ Subtypes: agent cause conc concom cond cons event exem man neg other prg quant resem source space time.

[140]

appa *Apposition.* An appositional relation between two phrases, typically NPs. The head of the first NP in the apposition is always analyzed as the head of the second NP.

isa SYNADJ Subtypes: appa appr.

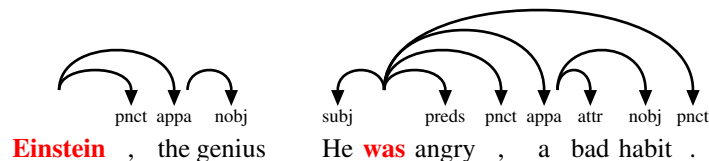
[115] Related types: appa appr.

appa *Parenthetical apposition (comma).*

isa app Subtypes: xpl.

[116] Related types: appr xpl.

Confusion₁₆: .



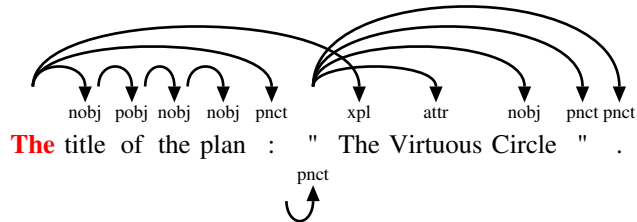
xpl *Explication.* Explication of an NP or VP.

isa appa Related types: qobj.

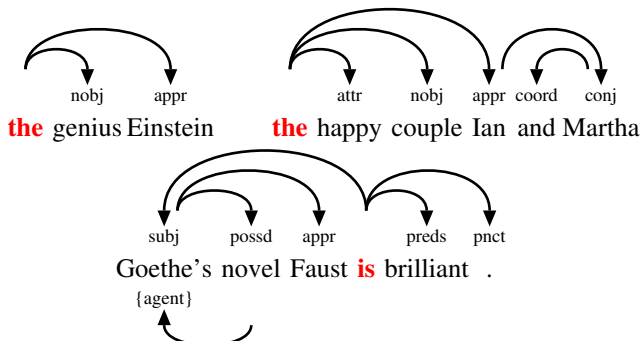
[129] Confusion₉: .

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
 gapd: gapping dependent
 RuleGap: gapping dependent
 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
 reldr: restrictive relative clause
 voc: vocative
 xtop: external topic with resuming pronoun

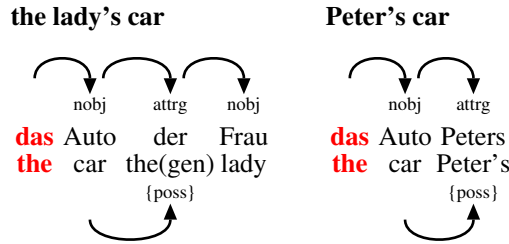
Figure 3.3: The relations matching SYNADJ-!ADVERB-TOPIC.



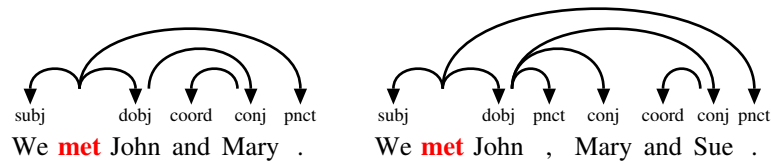
appr *Restrictive apposition (no comma).*
 isa app Related types: appa.
 [117] Confusion₁₅: nobj_{10%} nobj_{10%} nobj_{10%} nobj_{10%} .



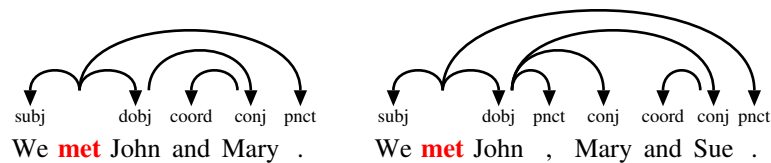
attrg *Genitive attributive.*
 isa SYNADJ Related types: SEMROLE gobj.
 [114]



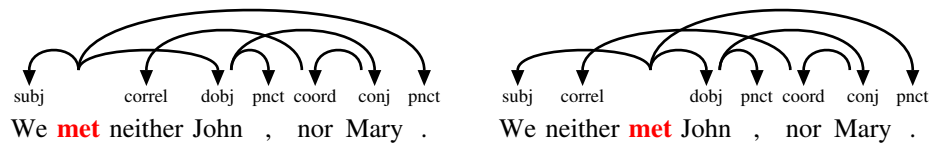
conj *Conjunct relation.* A dependency relation relating the conjuncts in a coordination. Secondary conjuncts are analyzed as "conj"-dependents of the first conjunct. Coordinators are analyzed as dependents of the secondary conjuncts.
 Related types: coord correl.
 Confusion₂₅₄: .



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.
 Confusion₁₉₃: contr_{1%} qobj_{1%} qobj_{1%} qobj_{1%} .



correl *Correlative coordinator relation.*
 Related types: conj coord.
 Confusion₅: correl_{60%} focal_{20%} subj_{20%} .



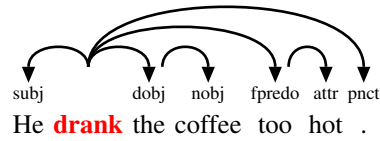
fpred *Free predicative.*
 Subtypes: fpredo fpreds.
 Related types: fpredo fpreds.

V->free predicative

fpredo *Free direct-object predicative.*

isa fpred Related types: fpreds man.

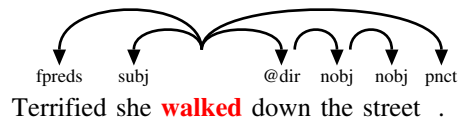
[112] Confusion₆: .



fpreds *Free subject predicative.*

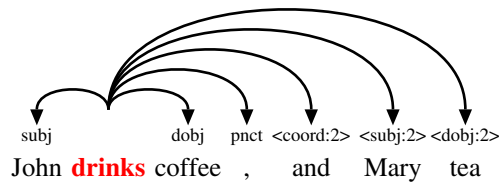
isa fpred Related types: fpredo.

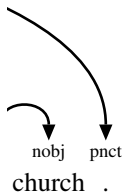
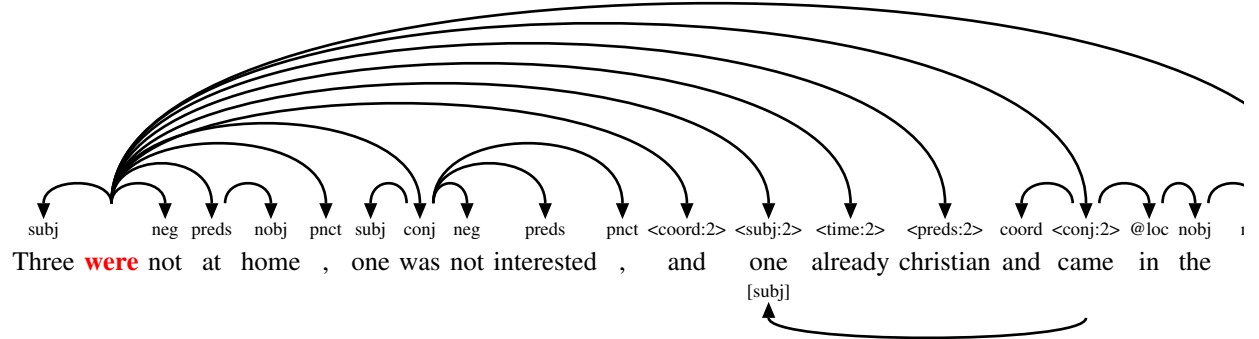
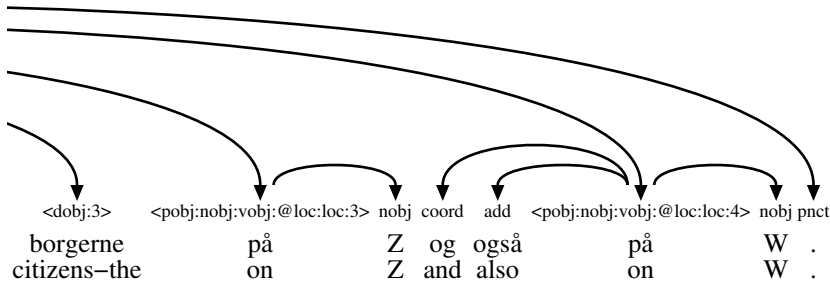
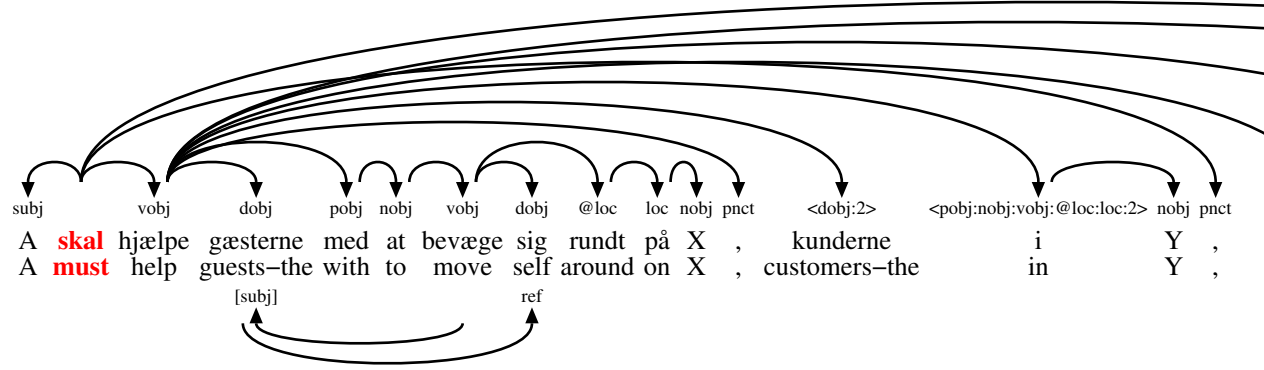
[111] Confusion₂: man_{50%} vobj_{50%} .



gapd *Gapping dependent* (long: GAPPING, deprecated GAP). 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, encoded with a "repl" relation.

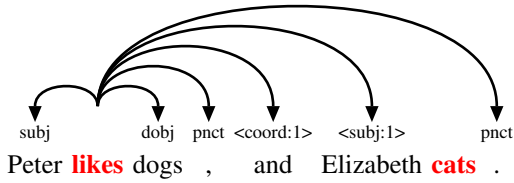
Subtypes: RuleGap.





RuleGap *Gapping dependent* (long: "<PRIM('PRIM)*":INTEGER>"). A gapping dependency relation is formed by using angled brackets to enclose a colon-separated list of primary relations followed by an integer that indicates the number of the gapped conjunct, starting with 1. The list of primary relations describes the path from the head of the gapped conjunct to the gapping dependent within the gapped conjunct, viewed as a copy of the tree structure within

the first conjunct.



mod *Modifier/adverbial*. Deprecated name for adverbials

isa SYNADJ Subtypes: modp.

[135] Confusion₁₀: attr_{60%} nobj_{10%} man_{10%} time_{10%} other_{10%} .

modp *Parenthetic modifier*. Deprecated name for parenthetic modifiers

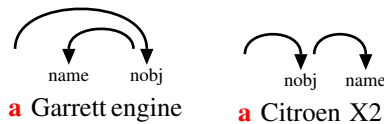
isa mod Related types: {elab}.

[137] Confusion₇: .

name *Part of name*. Part of a name.

isa SYNADJ Subtypes: namef name1 title.

[123] Confusion₂₀: name_{60%} nobj_{35%} attr_{5%} .



namef *First name*. A first name.

isa name Related types: name1 title.

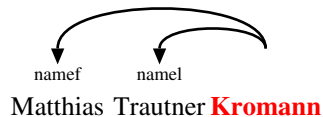
[124] Confusion₆₈: namef_{100%} .



name1 *Last name*. A second last name

isa name Related types: namef title.

[125] 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".

[126] Related types: namef name1.

Confusion₁₅: nobj_{20%} nobj_{20%} .

title
Dr. **Zhivago**

punct *Punctuation.*
isa SYNADJ Confusion₉₀₇: .
[108]

subj dobj punct conj coord conj punct
We **met** John , Mary and Sue .

rel *Relative clause.* A relation between a relative clause and a relativized NP/VP. The finite verb in the relative clause is analyzed as a "rel" dependent of the head of the relativized NP/VP (ie, the determiner if present, otherwise the noun). If there is a relative pronoun, it receives an incoming "ref" arrow from the head of the relativized NP/VP; otherwise, the head of the relativized NP/VP must function as a secondary dependent of some word within the relative clause (often the relative verb itself).
Subtypes: relelab relpa relr.
Related types: relelab relpa relr.
Confusion₃: relr_{100%} .

attr nobj subj relr dobj nobj
the five girls who meet (each other)
ref

nobj coord conj nobj subj relr
the boy and the girl who meet
ref

relelab *Elaborating relative clause.* Ledsætning med sætningsantecedent i hovedsætning; da: hvilket,
isa rel it: il che, cosa che
[121] Related types: relpa relr.
Confusion₂: relr_{100%} .

V->V

relpa *Parenthetic relative clause* (deprecated relp).
isa rel Related types: relelab relr.
[120] Confusion₁₅: .

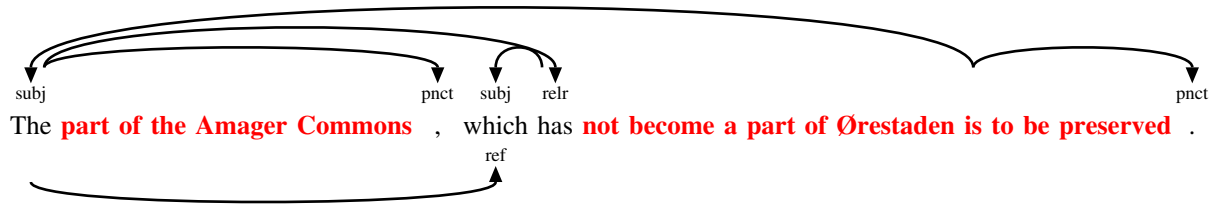
nobj punct loc
Consideration must be given to a higher degree to the nature north of Bella Centre , where 31 hectares in
ref

relpa punct
all will be exempt on environmental grounds .

relr *Restrictive relative clause.*

isa rel Related types: relelab relpa.

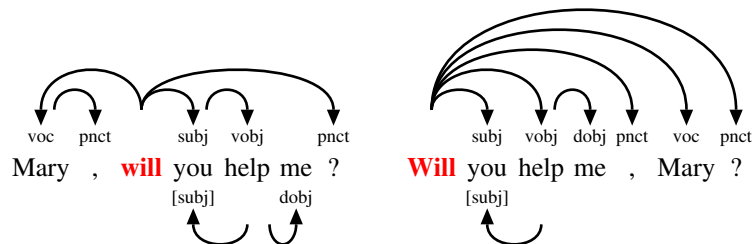
[119] Confusion₇₅: rel_{4%} rel_{4%} rel_{4%} rel_{4%} .



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

isa SYNADJ Confusion₁: voc_{100%} .

[128]

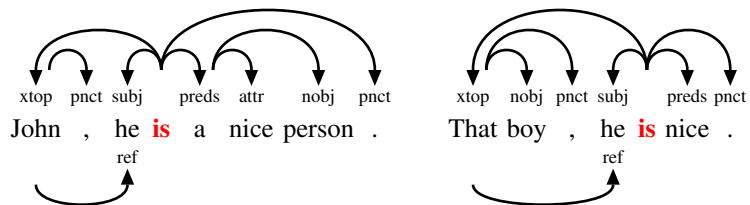


xtop *External topic with resuming pronoun.* An external topic is a sentence-initial NP whose only function is to provide the antecedent for a pronoun later in the sentence. Eg in "John, he is a nice person". Here "John" is the "x_{top}" of "is", and "he" is the subject of "is".

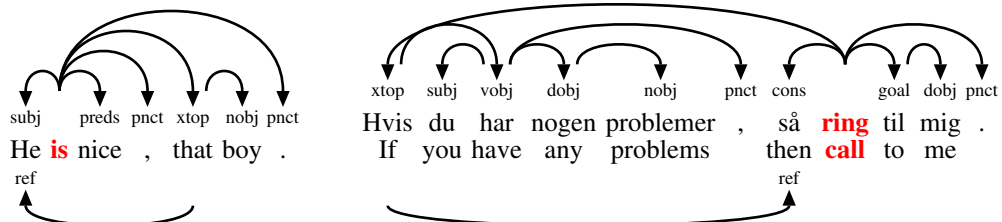
[122]

Related types: cons ref xtop.

Confusion₂: xtop_{100%} .



If you are having any problems, call me.



ADVERB: adverbial

- agent: agent adverbial
- cause: causation adverbial
 - goal: goal adverbial
- conc: concession adverbial
- concom:
- cond: condition adverbial
- cons: consequence adverbial
- event: Adverbial expressing an event
- 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.

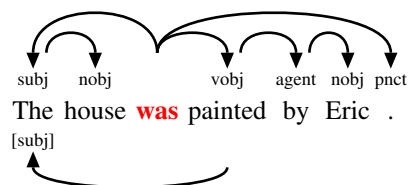
3.3 Adverbial adjunct relations: ADVERB

ADVERB *Adverbial*. V/N/P->adverbial

isa SYNADJ Subtypes: agent cause conc concom cond cons event exem man neg other prg quant resem source space time.
[140]

agent *Agent adverbial*. The passivized agent in passives.

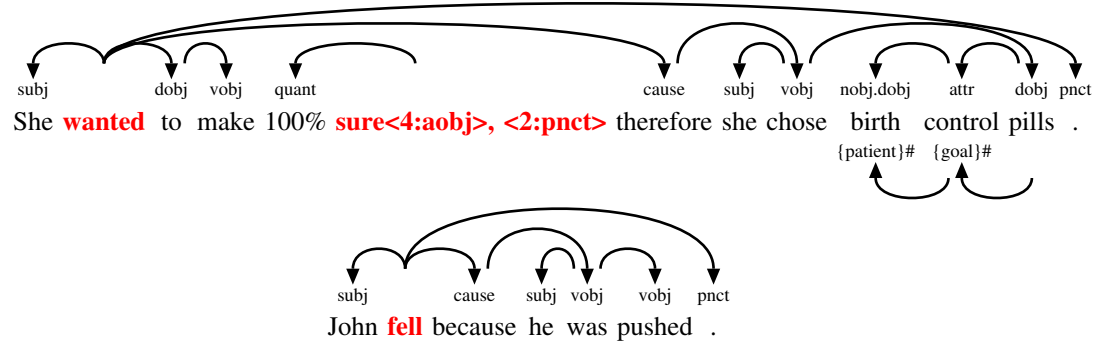
isa ADVERB Confusion₅: agent_{80%} attr_{20%} .
[169]



cause *Causation adverbial*. Causation adverbial. Describes why the event occurred.

isa ADVERB Subtypes: goal.
[159]

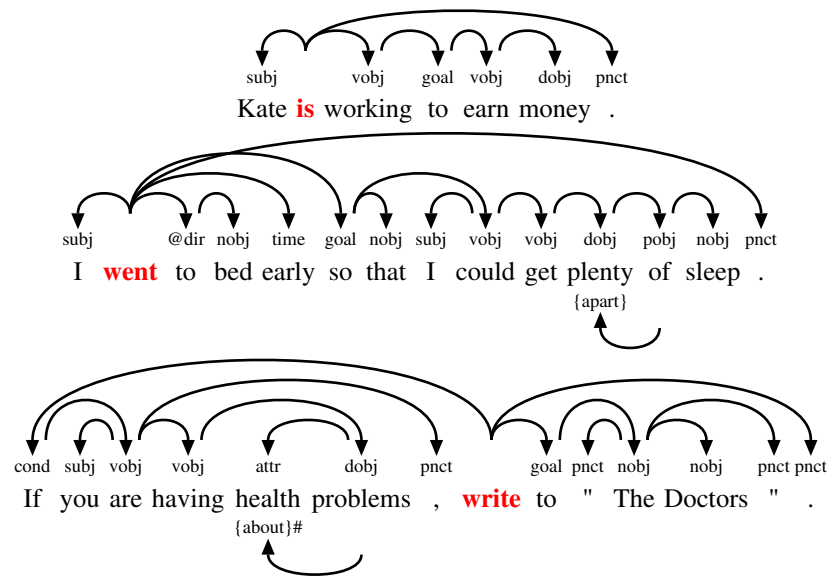
Confusion₂₅: cause_{76%} attr_{8%} conj_{4%} time_{4%} pobj_{4%} cons_{4%} .



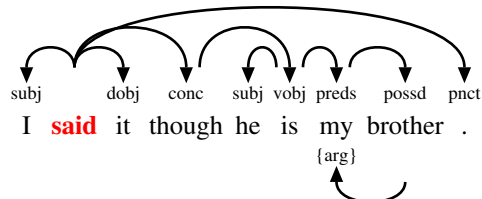
goal *Goal adverbial* (deprecated ben). Describes the intended goal of the event/action. Also used in isa cause connection with free datives.

[160] Related types: reas.

Confusion₃₆: .

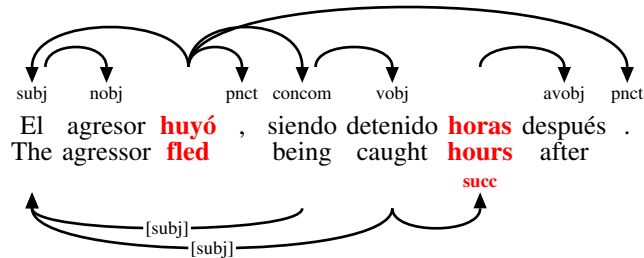


conc *Concession adverbial*. Describes the concession of the event/action.
isa ADVERB Confusions: contr_{25%} prg_{25%} prg_{25%} .
[163]

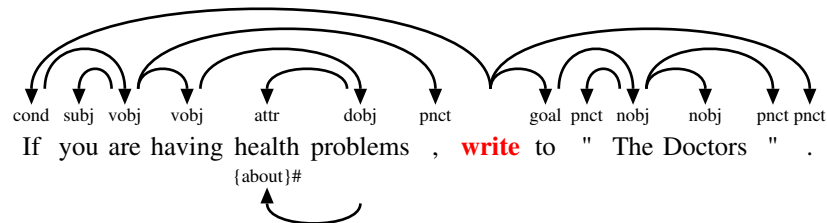


concom . Gerunds in Romance
isa ADVERB Related types: vobj.
[167] Confusion₃: .

The agressor fled and/but got caught hours later.



cond *Condition adverbial.* Describes the condition of the event/action.
 isa ADVERB Related types: pcond.
 [162] Confusion₁₇: .

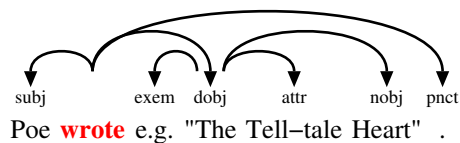


cons *Consequence adverbial.* Describes the consequence of the event/action.
 isa ADVERB Related types: xtop.
 [161] Confusion₁₃: .

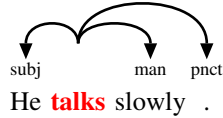
event *Adverbial expressing an event.* Used when the adverbial in questions expresses an event rather than time or place.
 isa ADVERB
 [155] Confusion₁: loc_{100%} .

I andet sæt vandt han 15-6 He told us last Wednesday at the meeting

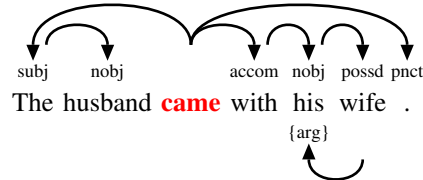
exem *Example adverbial* (long: exemplification, deprecated ex). Exemplification; subordinated the object which is added to a list.
 isa ADVERB
 [166] Confusion₇: exem_{100%} .



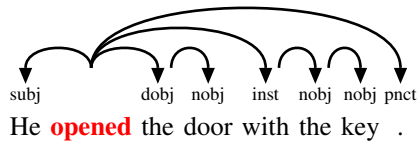
man *Manner adverbial.* The way things are done
 isa ADVERB Subtypes: accom inst.
 [156] Related types: fpredo.
 Confusion₇₆: .



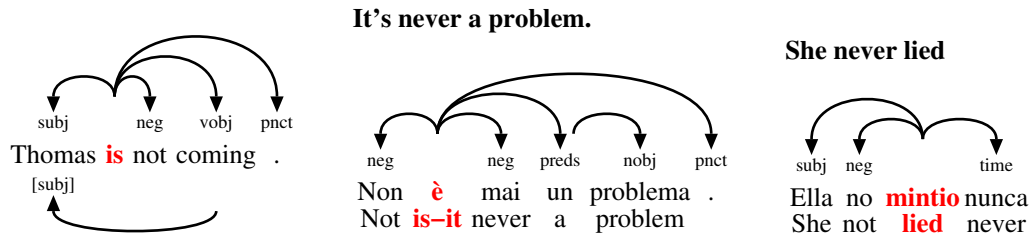
accom *Companionship adverbial* (deprecated comp). Companionship
 isa man Related types: man.
 [157] Confusion₁₁: .



inst *Instrument adverbial*. Instrument/means
 isa man Related types: man.
 [158] Confusion₁₇: .



neg *Negation adverbial*. Negation of a verbal
 isa ADVERB Confusion₄₅: .
 [170]

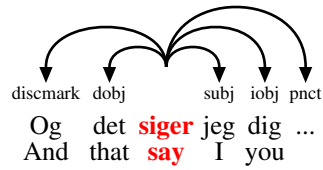


other *Other adverbial*.
 isa ADVERB Confusion₅₂: .
 [171]

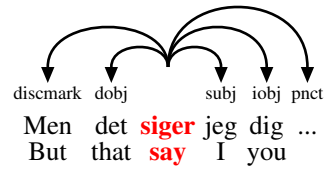
prg *Pragmatic adverbial* (long: pragmatic). Sentence level.
 isa ADVERB Subtypes: discmark epi eval focal scene.
 [141] Confusion₂₀: eval_{40%} prg_{20%} conc_{10%} quant_{10%} man_{5%} contr_{5%} add_{5%} elab_{5%} .

discmark *Sentence-initial discourse marker* (long: discoursemarker). Discourse marker
 isa prg Related types: coord.
 [146] Confusion₂₈: .

And I'm telling you...



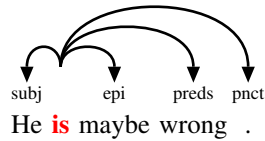
But I'm telling you...



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

isa prg Related types: eval.

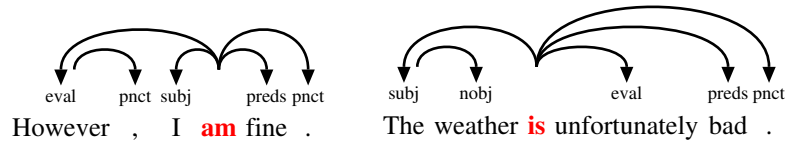
[144] Confusions: epi50% man25% eval25% .



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

isa prg Related types: epi.

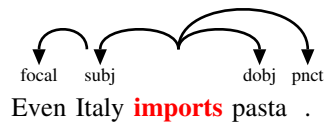
[145] Confusion32: prg25% prg25% prg25% prg25% prg25% prg25% prg25% .



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

isa prg Related types: quant.

[142] Confusion18: .



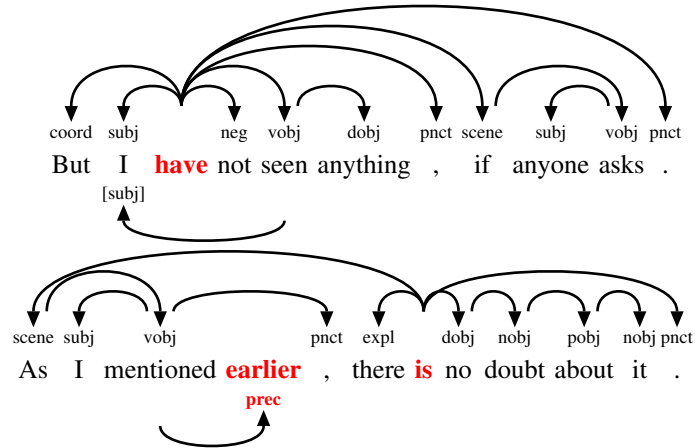
scene *Pragmatic condition and structural adverbial* (deprecated prgcondpcondbgstruct). Setting the

isa prg scene

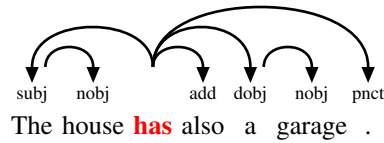
[143] Subtypes: add contr elab.

Related types: cond.

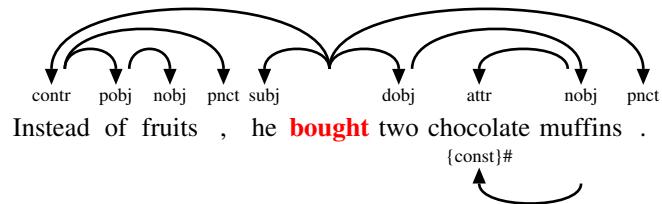
Confusion18: .



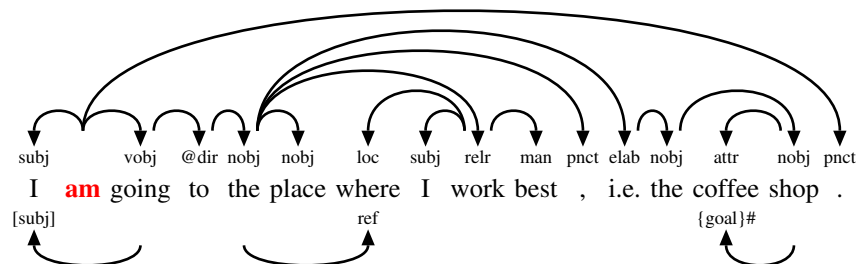
add *Additive adverbial* (long: additive). Additive information
 isa scene Confusion₃₂: add_{75%} add_{75%} add_{75%} add_{75%} add_{75%} .
 [149]



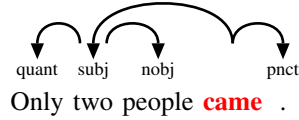
contr *Contrast adverbial* (long: contrast). Opposition
 isa scene Related types: struct.
 [147] Confusion₁₆: discmark_{25%} discmark_{25%} discmark_{25%} discmark_{25%} discmark_{25%} discmark_{25%} .



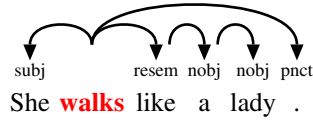
elab *Elaboration adverbial* (long: elaboration). More detailed description
 isa scene Confusion₄: elab_{50%} prg_{25%} quant_{25%} .
 [148]



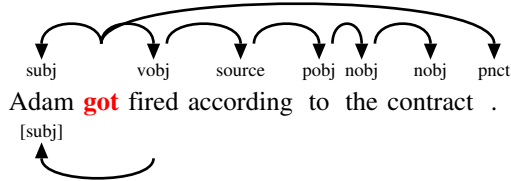
quant *Degree adverbial* (long: quantification, deprecated degr). Modifies the object or verbal by degree
 isa ADVERB Related types: focal.
 [168] Confusion₉₁: .



resem *Comparison adverbial* (deprecated comparecomp). Comparison
 isa ADVERB Confusion₄: resem_{50%} man_{25%} preds_{25%} .
 [164]

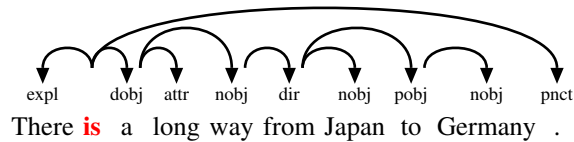


source *Source attribution adverbial*. Reference/source
 isa ADVERB Confusion₁₀: source_{30%} pobj_{30%} concom_{10%} man_{10%} other_{10%} attr_{10%} .
 [165]

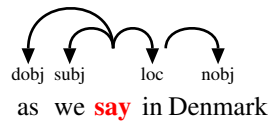


space *Space adverbial*. Space adverbials
 isa ADVERB Subtypes: dir loc.
 [152]

dir *Direction adverbial*. Movement from one place to another; direction
 isa space Related types: loc.
 [154] Confusion₃₉: .

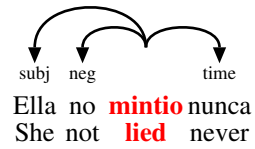
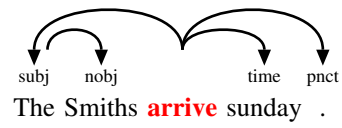


loc *Location adverbial*. Location
 isa space Related types: dir.
 [153] Confusion₁₄₉: .

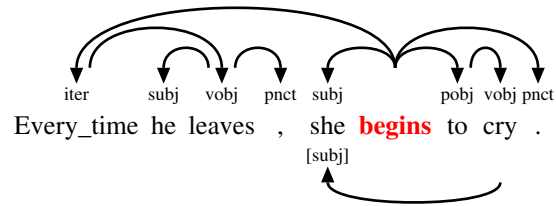


time *Time adverbial*. Time relating adverbials
 isa ADVERB Subtypes: iter.
 [150] Confusion₁₆₃: .

She never lied



iter *Habituality adverb* (deprecatd hab). Habitual; repeated habit
 isa time Related types: dur ext.
 [151] Confusion₁₅: .



Chapter 4

Morphological relations: MORPHOLOGY

MORPH: morphology level
MORPHCOMP: compositional semantic relations
MORPHDERIV: derivational semantic relations
RuleMorph: syntactic morphology relation

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

MORPH *Morphology level* (long: MORPHOLOGY). The morphological level includes relations between two word segments within a single word, as well as lexical features associated with morphemes.
isa DIM:LEVEL [9]

Subtypes: MORPHCOMP MORPHDERIV RuleMorph.

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 [261]

Subtypes: \$ABOUT \$AGENT:MC \$CONST \$DOBJ.patient \$EVAL \$FUNC \$GOAL \$LOC \$OTHER \$POSS \$RE-SEM \$SOURCE \$TIME:MC.

MORPHDERIV *Derivational semantic relations.* A semantic relation is created between a base and an affix
isa MORPH [260]
Subtypes: PREFIX SUFFIX.

RuleMorph *Syntactic morphology relation* (long: "\$"(PRIM)). A primary syntactic relation that has been used as a morphology relation for stylistic purposes.
isa MORPH RULE [362]

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 [261]

Subtypes: \$ABOUT \$AGENT:MC \$CONST \$DOBJ.patient \$EVAL \$FUNC \$GOAL \$LOC \$OTHER \$POSS \$RE-SEM \$SOURCE \$TIME:MC.

MORPHCOMP: compositional semantic relations
 §ABOUT: noun-noun compound (about)
 §AGENT:MC: noun-noun compound (agentive)
 §CONST: noun-noun compound (constitutive)
 §DOBJ.patient:
 §EVAL: noun-noun compound (evaluative)
 §FUNC: noun-noun compound (function)
 §GOAL: noun-noun compound (goal)
 §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.

§ABOUT *Noun-noun compound (about)*. Non-head has an aboutness meaning wrt. head.
 isa MORPHCOMP
 [349]

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

§AGENT:MC *Noun-noun compound (agentive)*. Non-head has an agentive meaning wrt. head.
 isa MORPHCOMP
 [340]

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

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

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

§DOBJ.patient .
 isa MORPHCOMP

§EVAL *Noun-noun compound (evaluative)*. Non-head has an evaluative meaning wrt. head.
 isa MORPHCOMP
 [347]

coche de lujo 'luksusbil'

§FUNC *Noun-noun compound (function)*. Non-head has a functional/instrumental meaning wrt. head.
 isa MORPHCOMP
 [342]

(function: vindmølle 'wind mill' = mølle –vind/FUNC)

§GOAL *Noun-noun compound (goal)*.
 isa MORPHCOMP
 [343]

(goal: krigsskib 'war ship' = skib –[krig]s/GOAL)

\$LOC *Noun-noun compound (position).* Non-head has a locative meaning wrt. head.
 isa MORPHCOMP
 [345]

(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
 [350]

\$POSS *Noun-noun compound (possession).* Non-head has a possessive meaning wrt. head.
 isa MORPHCOMP
 [344]

(possession: politibil = bil –politi/POSS)

\$RESEM *Noun-noun compound (resemblance).* Denotations of head and non-head resemble each other.
 isa MORPHCOMP
 [348]

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
 [341]

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

\$TIME:MC *Noun-noun compound (time).* Non-head has a temporal meaning wrt. head.
 isa MORPHCOMP
 [346]

(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.
 [260]

PREFIX *Semantic relations appearing with prefixes.* A semantic relation is created between a base and a prefix.
 isa MORPHDERIV
 [263]
 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
 [264]
 Subtypes: \$AUG \$DENUM \$DER \$DERan:qual \$DERna \$DERnn \$DERv \$DIMIN \$PEJ.

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.

4.2.1 Prefix relations: PREFIX

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

[263]

Subtypes: \$AGENT \$ITER \$MOD \$NEG \$PRE:other \$SPACE \$TELIC \$TIME \$TRANS.

\$AGENT *Agentive* (deprecated ASPEC:cause+reflex). Prefix conveys agentive action.

isa PREFIX

[279]

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

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

isa PREFIX

[278]

(iterative: redefine = define -re/ITER)

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

isa PREFIX

[282]

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

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

isa \$MOD

[284]

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

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

isa \$MOD

[285]

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

\$MOD:quant *Quantification* (deprecated MOD:cuant+GRAD:size). Prefix conveys quantification.
isa \$MOD
[283]

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

\$NEG *Negation*. Prefix conveys negation in a broad sense.
isa PREFIX
[274]

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

\$NEG:contr *Contrast* (deprecated NEG:oppo). Prefix conveys contrast.
isa \$NEG
[275]

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

\$NEG:priv *Privation*. Prefix conveys privation.
isa \$NEG
[276]

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

\$NEG:rev *Reversion* (deprecated ASPEC:rev). Prefix conveys reversion.
isa \$NEG
[277]

(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
[266]

Subtypes: \$SPACE:dir \$SPACE:loc \$SPACE:source.

\$SPACE:dir *Direction* (deprecated LOC:dir). Prefix expresses direction.
isa \$SPACE
[268]

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

\$SPACE:loc *Location* (deprecated LOC:pos). Prefix expresses location.
isa \$SPACE
[267]

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

\$SPACE:source *Source* (deprecated LOC:proce). Prefix conveys source.
isa \$SPACE
[269]

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

\$TELIC *Telic* (deprecated ASPEC:term+resul). Prefix conveys termination or result.
isa PREFIX
[280]

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

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

isa PREFIX Subtypes: \$TIME:post \$TIME:pre.
[271]

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

isa \$TIME
[273]

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

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

isa \$TIME
[272]

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

\$TRANS *Transitivity*. Prefix conveys transitivity.

isa PREFIX
[281]

(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.

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

\$AUG *Augmentation*. Suffix conveys augmentation.

isa SUFFIX
[287]

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

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

isa SUFFIX Subtypes: \$DENUM:apart \$DENUM:ord \$DENUM:quant.
[335]

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

isa \$DENUM
[337]

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

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

isa \$DENUM
[336]

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

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

isa \$DENUM
[338]

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

\$DER *Verb derivation.* Suffix triggers a derivation
 isa SUFFIX Subtypes: \$DERadvv \$DERav \$DERnv \$DERva \$DERvn \$DERvv.
 [290]

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

\$DERav *Adjective-verb derivation* (deprecated \$DER:av). Suffix triggers a derivation from an adjective
 isa \$DER to a verb.
 [292]

(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.
 [291] Subtypes: \$DERvn:inst \$DERvn:other.

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

\$DERvn:inst *Verb-noun derivation (instrument).* Suffix creates deverbal nouns expressing the instrument
 isa \$DERnv related to the meaning of the original noun.
 [302]

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

\$DERvn:other *Verb-noun derivation (other).* If in doubt about the meaning conveyed by the suffix
 isa \$DERnv
 [303] **\$DERva** *Verb-adjective derivation* (deprecated \$DERV). Suffix creates deverbal adjectives in a broad
 isa \$DER sense.
 [316] Subtypes: \$DERva:act \$DERva:pas.

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

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

\$DERva:act.disp *Verb-adjective derivation (disposition)* (deprecated DEVERB:act.disp). Suffix creates active ad-
 isa \$DERva:act jectives with the meaning aspect "disposition".
 [318]

"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:act.epi *Verb-adjective derivation (potentiality)* (deprecated DEVERB:act.poten). Suffix creates active adjectives with the meaning aspect "potentiality".
 isa \$DERva:act [319]

"que puede V" (móvil – que puede moverse 'bevægelig/der kan bevæge sig)

\$DERva:pas *Verb-adjective derivation (passive)* (deprecated DEVERB:pas). Suffix creates passive adjectives.
 isa \$DERva [320] Subtypes: \$DERva:pas.deon \$DERva:pas.epi \$DERva:pas.part.

\$DERva:pas.deon *Verb-adjective derivation (passive deontic)* (deprecated DEVERB:pas.deon). Suffix creates passive adjectives with a deontic meaning.
 isa \$DERva:pas [323]

"Que debe {ser PP/Vse} (abominable – "que debe ser abominado/que debe abominarse" áfskyelig/som må

forkastes)

\$DERva:pas.epi *Verb-adjective derivation (passive potentiality)* (deprecated DEVERB:pas.poten). Suffix creates passive adjectives with the meaning aspect "potentiality".
 isa \$DERva:pas [322]

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

'transportabel/maskine som kan blive transporteret/transporteres

\$DERva:pas.part *Verb-adjective derivation (passive participles)* (deprecated DEVERB:pas.part). Suffix creates passive adjectives with the form of participles.
 isa \$DERva:pas [321]

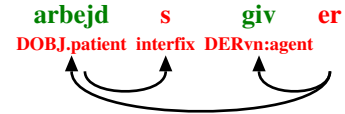
"que {ha sido/está/es} PP" (comprado – "hombre que {ha sido/está/es} comprado 'mand som er

blevet/er/bliver købt"

\$DERvn *Verb-noun derivation* (deprecated PREDDEVERBN). Suffix creates deverbal nouns in a broad sense.
 isa \$DER [295] Subtypes: \$DERvn:agent \$DERvn:core \$DERvn:exper \$DERvn:loc \$DERvn:patient \$DERvn:recip.

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

(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 \$DERvn [298]

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

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

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

\$DERvn:loc *Verb-noun derivation (location)*. Suffix creates deverbal nouns expressing the location related to the meaning of the original noun.
isa \$DERvn [301]

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

\$DERvn:patient *Verb-noun derivation (patient)*. Suffix creates deverbal nouns absorbing the patient role.
isa \$DERvn [299]

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

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

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

\$DERvv *Verb-verb derivation* (deprecated \$DER:vv). Suffix triggers a derivation from a verb to another verb.
isa \$DER [293]

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

\$DERan:qual *Adjective derivation* (deprecated QUAL). Suffix creates deadjectival nouns.
isa SUFFIX [304]

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

§DERna *Noun-adjective derivation* (deprecated DENOM). Suffix creates denominal adjectives in a broad sense.

[324] 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".

[327] Subtypes: §DERna:deono.loc §DERna:deono.pers.

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

isa §DERna:deono
[329]

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

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

isa §DERna:deono
[328]

Cervantino 'som har at gøre med Cervantes'

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

isa §DERna
[332]

"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
[334]

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

isa §DERna
[331]

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

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

isa §DERna
[325] Subtypes: §DERna:rel.norm.

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

isa §DERna:rel
[326]

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

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

isa §DERna
[330]

"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.
isa \$DERna [333]

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

\$DERnn *Noun-noun derivation* (deprecated NOPRED). Suffix creates non-predicative nouns (from other nouns) in a broad sense.
isa SUFFIX [305]
Subtypes: \$DERnn:agent \$DERnn:assoc \$DERnn:capac \$DERnn:cont \$DERnn:loc \$DERnn:other \$DERnn:quant \$DERnn:telic \$DERnn:time.

\$DERnn:agent *Noun-noun derivation (agent)* (deprecated NOPRED:agent). Suffix creates non-predicative nouns expressing an agent role.
isa \$DERnn [306]

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

\$DERnn:assoc *Noun-noun derivation (association)* (deprecated NOPRED:script). Suffix creates non-predicative nouns expressing a script/notion related to the original noun.
isa \$DERnn [313]

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

\$DERnn:capac *Noun-noun derivation (capacity)* (deprecated NOPRED:capac). Suffix creates non-predicative nouns expressing a capacity.
isa \$DERnn [311]

(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 [308]

(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 [312]

(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
[314]

\$DERnn:quant *Noun-noun derivation (quantification)* (deprecated NOPRED:set). Suffix creates non-predicative nouns expressing a quantification.
isa \$DERnn
[310]

(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
[307]

(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
[309]

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

\$DERv (deprecated DEVERB).
isa SUFFIX

\$DIMIN *Diminution*. Suffix conveys diminution.
isa SUFFIX
[288]

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

\$PEJ *Pejoration*. Suffix conveys a pejorative sense.
isa SUFFIX
[289]

(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:inst: verb-noun derivation (instrument)
 - \$DERvn:other: verb-noun derivation (other)
 - \$DERva: verb-adjective derivation
 - \$DERva:act: verb-adjective derivation (pure)
 - \$DERva:act.disp: verb-adjective derivation (disposition)
 - \$DERva:act.epi: verb-adjective derivation (potentiality)
 - \$DERva:pas: verb-adjective derivation (passive)
 - \$DERva:pas.deon: verb-adjective derivation (passive deontic)
 - \$DERva:pas.epi: verb-adjective derivation (passive potentiality)
 - \$DERva:pas.part: verb-adjective derivation (passive participles)
 - \$DERvn: verb-noun derivation
 - \$DERvn:agent: verb-noun derivation (agent)
 - \$DERvn:core: verb-noun derivation (core)
 - \$DERvn:exper: verb-noun derivation (experiencer)
 - \$DERvn:loc: verb-noun derivation (location)
 - \$DERvn:patient: verb-noun derivation (patient)
 - \$DERvn:recip: verb-noun derivation (recipient)
 - \$DERvv: verb-verb derivation
- \$DERan:qual: adjective derivation
- \$DERna: noun-adjective derivation
 - \$DERna:deono: noun-adjective derivation (naming)
 - \$DERna:deono.loc: noun-adjective derivation (naming places)
 - \$DERna:deono.pers: noun-adjective derivation (naming persons)
 - \$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
DISCOTHER:
 JOINT: no clear relation
 REP: repaired
 SCENE: scene
DISCPRAG: pragmatic and illocutionary discourse relations
DISCSEM: semantic discourse relations
RuleDisc: syntactic discourse relation

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

DISC *Discourse level* (long: DISCOURSE). The discourse level includes relations between segments in different sentences, as well as lexical features associated with discourse units.
isa DIM:LEVEL
[11] Subtypes: DISCOTHER DISCPRAG DISCSEM RuleDisc.

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

JOINT *No clear relation*. The dependent text segment adds a completely new content without any clear discourse relation to the governing segment
isa DISCOTHER
[258] Confusion₆: .

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
[257]

SCENE *Scene* (deprecated STRUCT:prepPREP). Dependent text segment expresses the scene of the following and governing text, e.g. headings, titles
isa DISCOTHER
[256] Confusion₆: 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; regarding speaker's intentions and speech acts we consider the narrating asserting speech act as our default value.
isa ADJ DISC
[207]

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
[206]

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

RuleDisc *Syntactic discourse relation* (long: “ α ”(PRIM)). A primary syntactic relation that has been used as a discourse relation for stylistic purposes.

isa DISC RULE
[361]

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
[207]

Subtypes: ANSW CONSOL DIREC EXPR INTACT QUEST.

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

isa DISCPRAG
[245]

Confusion₁: ANSW_{100%} .

CONSOL *Consolidation* (deprecated SUPPORT?).
 Subtypes: CONSOL:inst CONSOL:motiv CONSOL:source.

isa DISCPRAG
[251]

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
[253]

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

isa CONSOL

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

isa CONSOL
[252]

Typical connectives: [da] Fordi, Eftersom.

Confusion₂: AGENTIVE:subj_{100%} .

DIREC *Directive act.* Dependent text segment contains an order, command or request
isa DISCPRAG Confusion₂: CONJ:elab_{50%} CONJ:seq_{50%} .
[246]

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 [247]

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

INTACT *Interactional signals.*
isa DISCPRAG Subtypes: INTACT:attn INTACT:inter.
[248]

INTACT:attn *Attention.* S contains an attention signal
isa INTACT [249]

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

INTACT:inter *Interruption.* S contains an interruption signal
isa INTACT [250]

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

QUEST *Question .* The dependent text segment contains a question with or without an answer
isa DISCPRAG [244]

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

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.
[210]

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".
[211] Typical connectives: [da] Nemlig; [it] Infatti; [en] In fact, Indeed.
Related types: reason.
Confusion₈: AGENTIVE:expl_{75%} AGENTIVE:expl_{75%} AGENTIVE:expl_{75%} .

AGENTIVE:reas *Reason relation (discourse).* S expresses a specific and concrete reason
isa AGENTIVE [212]

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

Figure 5.3: The relations matching DISCSEM-TOPIC.

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

Confusion₆: AGENTIVE:reas_{50%} AGENTIVE:reas_{50%} AGENTIVE:reas_{50%} AGENTIVE:reas_{50%} .

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

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

Confusion₅: CONJ:add_{40%} CONSOL:source_{40%} AGENTIVE:reas_{20%} .

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

[226] Confusion₁₁: .

COND *Condition.*
 isa DISCSEM Confusion₁: conj_{50%} COND_{50%} .

[227]

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

[233]

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

Confusion₁: CONJ:add_{100%} .

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 [234]

Confusion₇₄: .

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 [235]

Confusion₄₉: TELIC:cons.sbj_{2%} CONST:rest_{2%} DIREC_{2%} CONC_{2%} .

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 [236]

Confusion₁₂: CONJ:seq_{75%} CONJ:seq_{75%} CONJ:seq_{75%} .

CONST *Constitutive elaboration.* S adds more details on N or parts of N
isa DISCSEM [218]

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

CONST:apart *Part of relation.* S is a part of N
isa CONST [221]

Typical connectives: [da] Herunder, Heri.
Confusion₉: .

CONST:elab *Elaboration* (deprecated ELAB:spec,ELAB:exp). S elaborates and expands knowledge of N; may be difficult to distinguish from CONJ
isa CONST [220]

Typical connectives: [it] Cioè.

Related types: CONJ.

Confusion₃: .

CONST:exem *Exemplification.* S gives examples of elements or phenomena mentioned in N
isa CONST [219]

Typical connectives: [en] For example.

Confusion₁₁: .

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

isa CONST [222]

Typical connectives: [da] Dvs.; [it] Ossia, In altre parole, Cioè; [en] In other words, Or.
Confusion₆: .

CONTR *Contrast.*

isa DISCSEM Subtypes: CONTR:dir CONTR:subj.

[237] Confusion₁: AGENTIVE:expl_{100%} .

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

isa CONTR [238]

Typical connectives: [da] Men, Derimod.
Confusion₇: CONJ:add_{19%} CONJ:add_{19%} .

CONTR:subj *Subjective contrast* (deprecated CONTR:prg). The contrast lies between an explicit and a subjectively inferred text segment
isa CONTR [239]

Typical connectives: [da] Men.

Confusion₆: .

- DISJ** *Disjunction*.
 isa DISCSEM Typical connectives: [da] Eller.
 [240] Subtypes: DISJ:dir DISJ:sbj.
- DISJ:dir** *Direct disjunction*. The disjunction lies between the governing and dependent text segment
 isa DISJ
 [241] Confusion₁: CONJ:add_{100%} .
- DISJ:sbj** *Subjective disjunction* (deprecated DISJ:prg). The disjunction lies between the dependent and a
 isa DISJ subjectively inferred text segment
 [242]
- FORMAL** *Formal description*. S describes N, N may be a first-order or second-order entity
 isa DISCSEM
 [223] Subtypes: FORMAL:descr FORMAL:eval.
- FORMAL:descr** *Neutral description* (deprecated DESCR:qual). S expresses an objective and/or neutral description
 isa FORMAL of N
 [224] Confusion₃: .
- FORMAL:eval** *Positive/negative evaluation* (deprecated DESCR:eval). S expresses a personal and/or subjective
 isa FORMAL positive or negative description of N
 [225] Confusion₆: FORMAL:eval_{50%} FORMAL:eval_{50%} FORMAL:eval_{50%} .
- TELIC** *Consequence/result/conclusion relation (discourse)*. S expresses purpose, function or conse-
 isa DISCSEM quence wrt N
 [214] 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
 [216] Typical connectives: [da] Derfor, Af den grund.
 Confusion₇: .
- TELIC:cons.sbj** *Pragmatic/personal conclusion, deduction* (deprecated TELIC:sbj). Subjective conclusion or de-
 isa TELIC duction on behalf of the speaker
 [217] Typical connectives: [da] Derfor, Af den grund.
 Confusion₁₀: TELIC:cons.sbj_{40%} CONJ:add_{20%} CONST:rest_{20%} CONJ:elab_{10%} CONTR:dir_{10%} .
- TELIC:goal** *Goal relation (discourse)*. S expresses goal, purpose, aim
 isa TELIC
 [215] Typical connectives: [da] For (at).
- TIME** *Temporal relation* (deprecated CIRCUM). There is a clear temporal relation between N and S
 isa DISCSEM
 [228] Subtypes: TIME:cont TIME:post TIME:pre.
- TIME:cont** *Contemporaneity*. S is contemporary with N (now includes abolished TIME:dur)
 isa TIME
 [229] Typical connectives: [da] Samtidig, Mens, Så længe, Da.
- TIME:post** *Temporal succession* (deprecated TIME:succ). S succeeds N
 isa TIME
 [231] Typical connectives: [en] Later, Some time afterwards.
- TIME:pre** *Temporal precedence* (deprecated TIME:prec). S precedes N
 isa TIME
 [230] Typical connectives: [en] Earlier, Some days before.

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 anaphor level includes relations between anaphora and their antecedents, as well as 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 [182]
Subtypes: assoc coref.

assoc *Associative anaphor*. The anaphor denotes entity which is associated with the antecedent
isa anaphor Subtypes: "assoc-"QUALIA assoc-agentive assoc-const assoc-event assoc-exper assoc-formal assoc-inst assoc-loc
[192] assoc-patient assoc-telic assoc-time.
Confusion₉: .

coref *Coreference*. Anaphor denotes same entity as antecedent; all coreferential pronouns are labelled this way
isa anaphor [185]
Subtypes: coref-evol coref-iden coref-res coref-var ref.
Confusion₁₄₁: .

coref: coreference
 coref-evol: evolving anaphor
 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
 [185] Subtypes: coref-evol coref-iden coref-res coref-var ref.
 Confusion₁₄₁: .

coref-evol *Evolving anaphor*. The anaphor refers to the same discourse referent as the antecedent, but after it has undergone radical changes in its ontological status
 isa coref
 [190] Confusion₁: coref-var_{100%} .

The compactor crushed a VW. A huge crane then moved it to a railcar. (cit.: Asher 2000: 142)

coref-iden *Coreferential NP with lexical identity* (deprecated coref-id).
 isa coref Confusion₅₂: .
 [186]

(antecedent→anaphor) a car → the car // a yellow car → the yellow car
In connection with appositions: Socialdemokratiets næstformand Birte Weiss → Birte Weiss

coref-res *Resumptive anaphor* (deprecated nowincludescoref-res.cause).
 isa coref Subtypes: coref-res.prg.
 [188] Confusion₂₅: coref-res_{72%} coref-var_{12%} assoc-telic_{4%} coref-iden_{4%} coref_{4%} coref-res.prg_{4%} .

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
 [189] Confusion₁: coref-res_{100%} .

coref-var *Coreferential NP with lexical variety*.
 isa coref Confusion₉₇: coref-var_{79%} coref-var_{79%} coref-var_{79%} coref-var_{79%} coref-var_{79%} coref-evol_{1%} assoc_{1%} .
 [187]

a car → the vehicle // a yellow car → the car Henrik Larsen → Larsen

ref *Syntactically determined coreference* (long: [fobj]). Syntactically determined coreference (eg, relative pronouns, external topics)
 isa SEC coref
 [183] Confusion₄₂: 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 relations matching assoc-TOPIC.

assoc *Associative anaphor.* The anaphor denotes entity which is associated with the antecedent
 isa anaphor Subtypes: "assoc-"QUALIA assoc-agentive assoc-const assoc-event assoc-exper assoc-formal assoc-inst assoc-loc
 [192] assoc-patient assoc-telic assoc-time.
 Confusion₉: .

"assoc-"QUALIA *Associative anaphor wrt. qualia.* The anaphor denotes entity which is associated with the
 isa RULE assoc antecedent
 [193]

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
 [196] is a predicate or a predicative noun, the anaphor may be the semantic agent
 Confusion₄: assoc-agentive_{50%} assoc-telic_{25%} assoc-const_{25%} .

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.)
 [194] Confusion₃₉: .

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 event that can be associated with the antecedent or in which the antecedent plays a part
isa assoc [203] Confusion₃: assoc-event_{100%} .

Iraq -> the invasion, the war

assoc-exper *Associative anaphor (experiencer)*. The antecedent is a predicate or predicative noun, and the anaphor is the semantic experiencer
isa assoc [200]

an accident -> the eye witness

assoc-formal *Associative anaphor (formal)*. The anaphor is associated with the antecedent wrt its formal qualia (shape, dimension, colour, etc.)
isa assoc [195] Confusion₁: assoc-formal_{100%} .

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 anaphor is the instrument
isa assoc [201]

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 [198] Confusion₅: assoc-loc_{100%} .

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 anaphor is the semantic patient
isa assoc [199]

an operation -> the patient; a crime -> the victim

assoc-telic *Associative anaphor (telic)* (deprecated assoc-scope?). The anaphor is associated with antecedent wrt its telic qualia (purpose, function, result, consequence etc.)
isa assoc [197] Confusion₂₄: .

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 more general narrative frame, the anaphor is a point in time linked to it
isa assoc
[202]

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}:
{event}:
{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 includes relations between lexical elements construed as functors, arguments, and modifiers, as well as lexical features associated with semantic units.

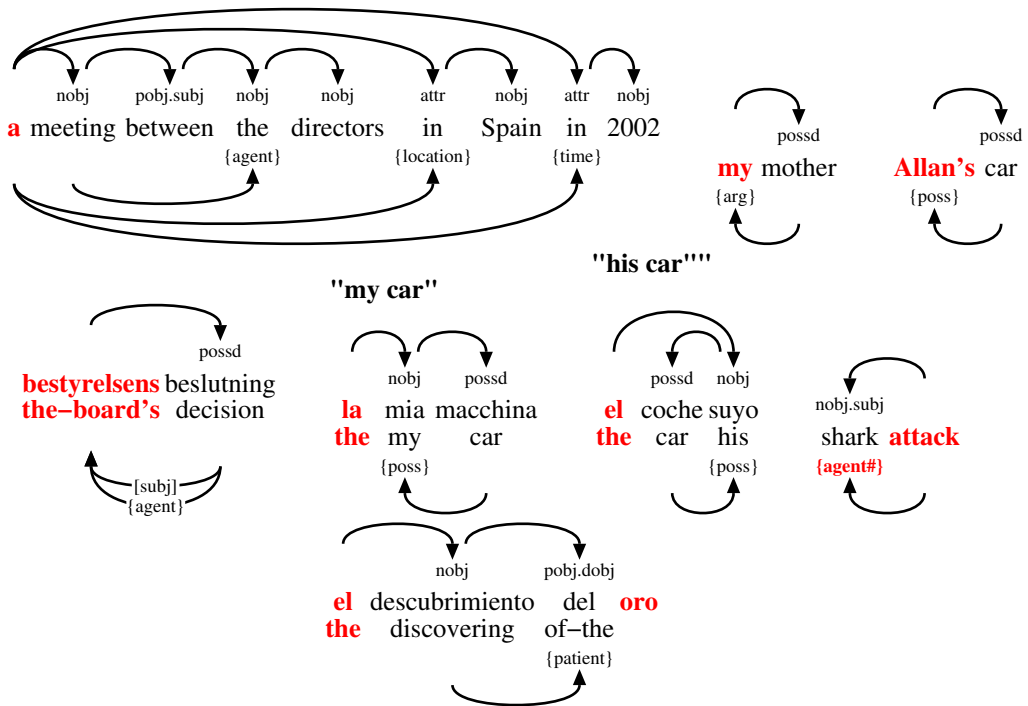
Subtypes: SEMREL.

SEMREL *Semantic role*. A semantic relation. The semantic relation specifies the argument role that

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} {event} {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.
 isa SEMREL [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.
 isa SEMREL [62]
 Confusion₂₇: {patient}_{37%} {patient}_{37%} {patient}_{37%} {patient}_{37%} {patient}_{37%} .



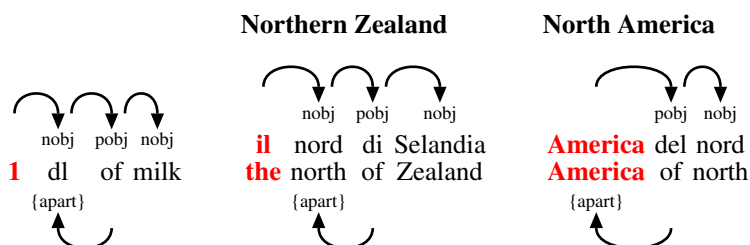
{agent} *An object or a person that performs an action.* Used in noun phrases where the satellite is the object or the person that performs the volitional action indicated by the nucleus. Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a subject.

Confusion₅₅: .



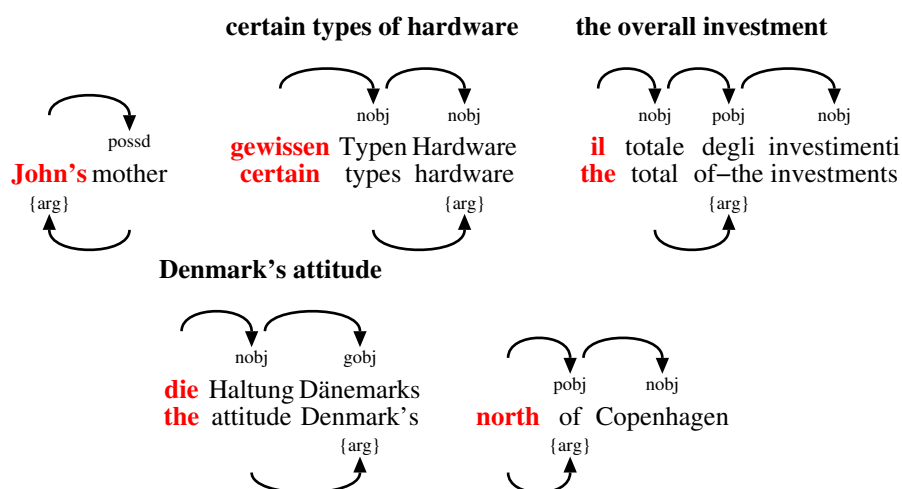
{apart} . Used in noun phrases where the satellite represents an arbitrary part of the nucleus. Please note that the semantic relation goes from the satellite to the nucleus in opposition to the main part of the other semantic roles.

Confusion₁₉: .



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

[68] Confusion₁₄₇: {other}_{2%} {other}_{2%} .

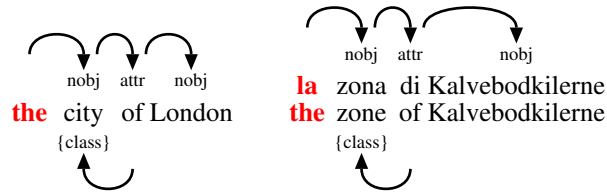


{cause} . Used in noun phrases where the satellite is the person or object that performs the non-volitional action indicated by the nucleus.

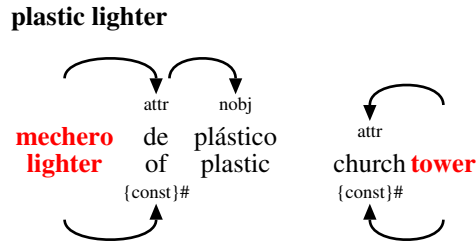
[53] Confusion₁: {goal}_{100%} .

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}.
 Confusion₃: .

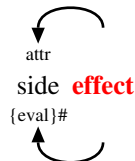


{const} . Used in noun phrases where the satellite represents a part, material or essential constituent of the nucleus.
 Confusion₄₄: .

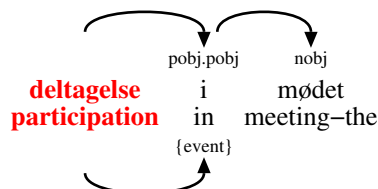


{elab} . position).
 Related types: modp.
 Confusion₅: {elab}_{80%} {loc}_{20%} .

{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%} .

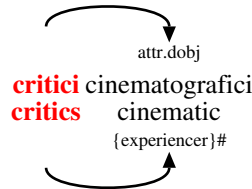


{event} .
 Confusion₅₉: .



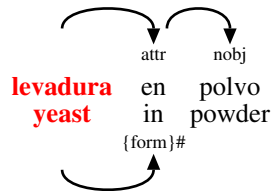
{experienter} *The receiver of an emotion or a physical impact.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a direct object
 isa SEMREL [71] Confusion₅: {agent}_{80%} {patient}_{20%} .

film critics

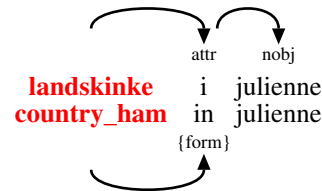


{form} . Used in noun phrases where the satellite indicates the shape or form of the nucleus.
 isa SEMREL [66] Confusion₅: {const}_{40%} {form}_{40%} {loc}_{20%} .

baking powder



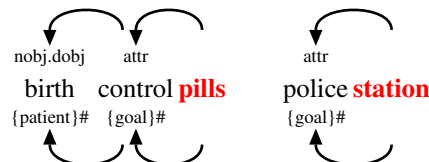
country ham in julienne strips



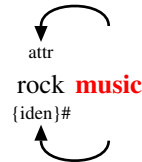
{func} . Used in noun phrases where the satellite determinates the instrumental function of the nucleus.
 isa SEMREL [55] Confusion₄₂: {arg}_{19%} {arg}_{19%} {arg}_{19%} {arg}_{19%} {arg}_{19%} {arg}_{19%} {arg}_{19%} {arg}_{19%} .



{goal} . Used in noun phrases where the satellite determinates the goal or the intention for which the nucleus is destined.
 isa SEMREL [54] Confusion₄₂: {arg}_{19%} {arg}_{19%} {arg}_{19%} {arg}_{19%} {arg}_{19%} {arg}_{19%} {arg}_{19%} {arg}_{19%} {arg}_{19%} .



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

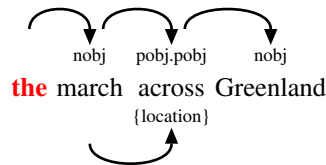


{location} *The location where something is situated or happens.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a prepositional object

isa SEMREL

[73]

Confusion₂: {loc}_{50%} {location}_{50%} .



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

isa SEMREL

[57]

Confusion₇₃: .



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

isa SEMREL

[74]

Confusion₁₆: .

{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.

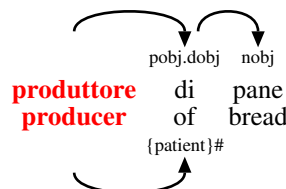
isa SEMREL

[70]

Often realized as a direct object

Confusion₆₃: .

bread producer

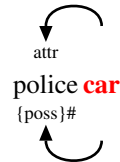


{poss} . Used in noun phrases where there is a possession relation between the nucleus and the satellite. Often the satellite is the owner or possessor of the nucleus.

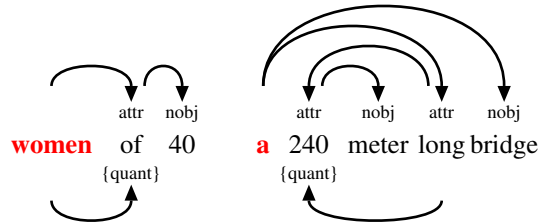
isa SEMREL

[56]

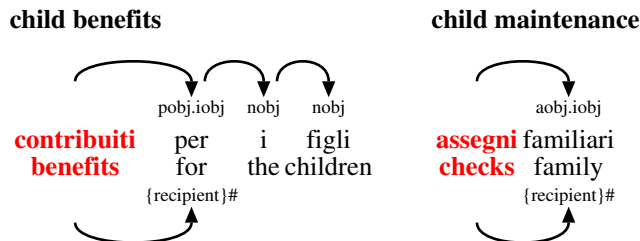
Confusion₂₃: {other}_{13%} {other}_{13%} {other}_{13%} {other}_{13%} {other}_{13%} .



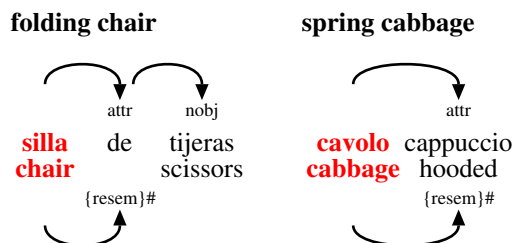
{quant} . Used in noun phrases where the satellite indicates the quantity in numbers or another countable unit of the nucleus.
 isa SEMREL
 [65] Confusion₁₆: .



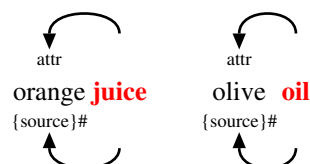
{recipient} *The receiver of something.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as an indirect object
 isa SEMREL
 [72] Confusion₂: {loc}_{50%} {goal}_{50%} .



{resem} . Used in noun phrases where there is a resemblance between the nucleus and the satellite.
 isa SEMREL
 Confusion₂: {resem}_{50%} {goal}_{50%} .
 [61]



{source} (deprecated {origin}). Used in noun phrases where the satellite is the source from which the nucleus derives or is deduced.
 isa SEMREL
 [52] Confusion₃₅: {arg}_{20%} {arg}_{20%} {arg}_{20%} {arg}_{20%} {arg}_{20%} {arg}_{20%} .



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

[58] Confusion₂₅: {time}_{80%} {source}_{12%} {arg}_{4%} {other}_{4%} .



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.

[30] Subtypes: agentive const formal resemblance telic.

agentive *Agentive qualia*. A relation which describes the origin of an object. E.g., its creator, artifact, natural kind, causal chain (cf. Pustejovsky 1995).

[41]

const *Constitutive qualia* (long: constitutive). A relation between an object and its constituents or proper parts. E.g., material, weight, parts and component elements (cf. Pustejovsky 1995).

[38]

formal *Formal qualia*. A property that distinguishes the object within a larger domain. E.g., its orientation, magnitude, shape, dimensionality, color, position (cf. Pustejovsky 1995).

[39]

Subtypes: location.

location *Location qualia*. A qualia role that relates a lexeme to its location qualia.

isa formal

resemblance *Resemblance wrt. qualia role*. Resemblance wrt. some qualia role

isa QUALIA

[42]
[44]

Subtypes: ""QUALIA.

""QUALIA *Resemblance wrt. \$qualia relation*. The property that distinguishes

isa RULE resemblance

telic *Telic qualia*. A relation which describes the purpose and function of the object. E.g., the purpose of performing an act, the intended use of an artifact (cf. Pustejovsky 1995).

[45]
[40]

Subtypes: about.

about *About qualia.* Relates to hyponym (subtype)
isa telic Confusion₁: about_{100%} .
[43]

7.2 Thematic role relations: SEMROLE

Figure 7.3: The relations matching SEMROLE.

Chapter 8

Word alignment relations: ALIGNMENT

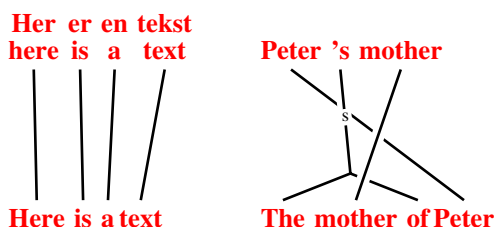
ALIGN: alignment level
ALIGNREL: alignment relation
"": unlabeled word alignment
f: fuzzy word alignment

Figure 8.1: The relations matching ALIGNMENT-TOPIC.

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

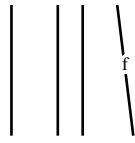
ALIGNREL *Alignment relation*. An alignment relation. An alignment relation encodes a translational equivalence between two sets of words (and their associated phrases), either in terms of form or meaning. Null alignments - ie, a set of words in one text which does not correspond to any set of words 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
[379]



f *Fuzzy word alignment* (long: fuzzy). A semantically fuzzy word alignment.
isa ALIGNREL
[380]

Here is a car



Here is a vehicle

Chapter 9

Rule schemata for complex relations: RULE

RULE: generative type specification rule
"assoc-"QUALIA: associative anaphor wrt. qualia
""QUALIA: resemblance wrt. \$qualia relation
RuleAnd: conjunctive both-and type
RuleAttr: attribution
RuleAttrD: down-dependent in attribution
RuleAttrH: down-head in attribution
RuleDisc: syntactic discourse relation
RuleExpConn: explicit connector
RuleGap: gapping dependent
RuleIdiom: idiomatic relation pattern
RuleImpConn: implicit connector
RuleMorph: syntactic morphology relation
RuleOblAdv: valency-bound adverbial
RuleOr: disjunctive either-or type
RulePar: disambiguated type
RuleSec: secondary relation pattern

Figure 9.1: The relations matching RULE-TOPIC.

RULE *Generative type specification rule.* Generative type specification rules specify how type names are created generatively using rules. A rule consists of a sequence of null-separated items
isa ANY [4] 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: "assoc-"QUALIA ""QUALIA RuleAnd RuleAttr RuleAttrD RuleAttrH RuleDisc RuleExpConn RuleGap RuleIdiom RuleImpConn RuleMorph RuleOblAdv RuleOr RulePar RuleSec.

"assoc-"QUALIA *Associative anaphor wrt. qualia.* The anaphor denotes entity which is associated with the antecedent
 isa RULE assoc
 [193]

"QUALIA *Resemblance wrt. \$qualia relation.* The property that distinguishes
 isa RULE resemblance

RuleAnd *Conjunctive both-and type* (long: (REL)"&"(REL)). Conjunctive both-and relation types can be formed as "&"-separated lists of relation types. Conjunctive relation types are used by the annotators when two or more relation types seem to hold simultaneously. They may be removed from later versions of the CDT treebanks.
 isa RULE
 [354]

RuleAttr *Attribution* (long: (PRIM)"/ATTR"INTEGER). Specifies the person to whom the utterance is attributed (ATTR or ATTR1, ATTR2, ... when there is more than one person)
 isa RULE
 [366]

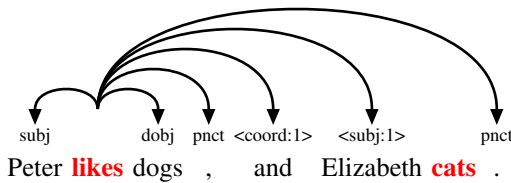
RuleAttrD *Down-dependent in attribution* (long: DISC"*"). The dependent in the relation is one step further down in the attribution chain
 isa RULE
 [368]

RuleAttrH *Down-head in attribution* (long: "*"DISC). The head in the relation is one step further down in the attribution chain
 isa RULE
 [367]

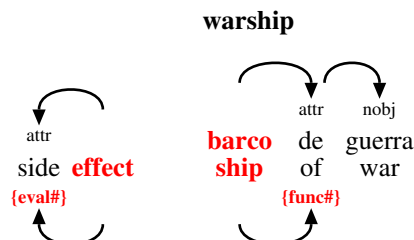
RuleDisc *Syntactic discourse relation* (long: "⌘"(PRIM)). A primary syntactic relation that has been used as a discourse relation for stylistic purposes.
 isa DISC RULE
 [361]

RuleExpConn *Explicit connector* (long: PRIM"/"CONNECTOR). The discourse relation has explicit connector \$CONNECTOR
 isa RULE
 [369]

RuleGap *Gapping dependent* (long: "<"PRIM(":"PRIM)*":"INTEGER">"). A gapping dependency relation is formed by using angled brackets to enclose a colon-separated list of primary relations followed by an integer that indicates the number of the gapped conjunct, starting with 1. The list of primary relations describes the path from the head of the gapped conjunct to the gapping dependent within the gapped conjunct, viewed as a copy of the tree structure within the first conjunct.
 isa RULE gapd
 [359]



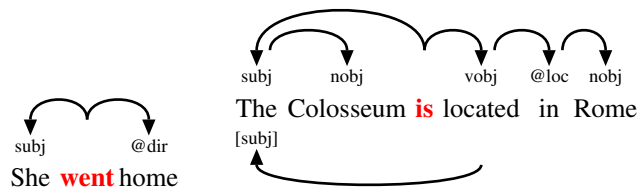
RuleIdiom *Idiomatic relation pattern* (long: (SEMREL)"#"). A semantic relation can be marked as idiomatic by putting a trailing "#" after the semantic relation name. The idiom marker is only used with semantic relations, not with syntactic relations.
 isa IDIOM RULE
 [363]



RuleImpConn *Implicit connector* (long: PRIM"/("CONNECTOR)"). The discourse relation has implicit connector \$CONNECTOR
isa RULE
[370]

RuleMorph *Syntactic morphology relation* (long: "\$"(PRIM)). A primary syntactic relation that has been used as a morphology relation for stylistic purposes.
isa MORPH RULE
[362]

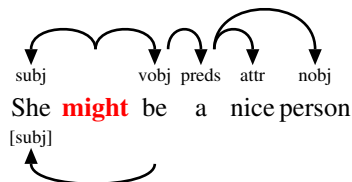
RuleOblAdv *Valency-bound adverbial* (long: "@"(ADVERB)). An adverbial relation can be marked as obligatory by putting "@" in front of the relation name.
isa COMP RULE
[360] Related types: cont dir dur ext hab loc prec succ time.



RuleOr *Disjunctive either-or type* (long: (REL)"|(REL)). Disjunctive either-or relation types can be formed as "|" separated lists of relation types. Disjunctive relations types are used by the annotators when one of the relation types in the disjunction seems to provide the right label for the relation, but it is difficult to decide which one of them is most appropriate. They may be removed from later versions of the CDT treebanks.
isa RULE
[355]

RulePar *Disambiguated type* (long: "(" (REL) ")"). Relation types can be disambiguated by enclosing them in parentheses. The need for disambiguation normally only arises when specifying conjunctive or disjunctive types.
isa RULE
[356]

RuleSec *Secondary relation pattern* (long: "[" PRIM "]"). A secondary relation name is formed by enclosing a primary relation name in square brackets.
isa RULE SEC
[358] Related types: SEC.



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 includes relations between lexical elements construed as ontological units, as well as lexical features associated with ontological units.
isa DIM:LEVEL [13]

Subtypes: ONTOCLASS.

ONTOCLASS *Ontological class*. A class in the ontology. The ontology encodes a classification of all lexical elements with respect to their natural kind.
isa FEAT ONT [411]
Subtypes: ⊢top.

⊢top *Ontological entity*.
isa ONTOCLASS Subtypes: ⊢abstract ⊢concrete.
[412]

⊢abstract *Abstract entity*.

isa ⊢top

⊢concrete *Concrete entity*.

isa ⊢top

[414]

Chapter 11

Relations misplaced outside the ANY hierarchy

MISPLACED: misplaced relation
§interfix:

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.

§interfix .
[265]

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
IDIOM: idiomatic relation
 RuleIdiom: idiomatic relation pattern
LAND: landing relation
 fill: licensed filler
 land: landed lexical element
PRIM: primary dependency relation
 ADJ: adjunct relation
 COMP: complement relation
 RuleOblAdv: valency-bound adverbial
SEC: secondary dependency relation
 RuleSec: secondary relation pattern
 repl: replacement in gapping coordination

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: 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
 gapd: gapping dependent
 RuleGap: gapping dependent
 mod: modifier/adverbial
 modp: parenthetic modifier
 name: part of name
 namef: first name
 namel: last name
 title: person title
 pnct: punctuation
 rel: relative clause
 relelab: elaborating relative clause
 relpa: parenthetic relative clause
 relr: restrictive relative clause
 voc: vocative
 xtop: external topic with resuming pronoun

The relations matching SYNADJ-!ADVERB-TOPIC.

ADVERB: adverbial
 agent: agent adverbial
 cause: causation adverbial
 goal: goal adverbial
 conc: concession adverbial
 concom:
 cond: condition adverbial
 cons: consequence adverbial
 event: Adverbial expressing an event
 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
 MORPHCOMP: compositional semantic relations
 MORPHDERIV: derivational semantic relations
 RuleMorph: syntactic morphology relation

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)
 \$DOBJ.patient:
 \$EVAL: noun-noun compound (evaluative)
 \$FUNC: noun-noun compound (function)
 \$GOAL: noun-noun compound (goal)
 \$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:inst: verb-noun derivation (instrument)
 \$DERvn:other: verb-noun derivation (other)
 \$DERva: verb-adjective derivation
 \$DERva:act: verb-adjective derivation (pure)
 \$DERva:act.disp: verb-adjective derivation (disposition)
 \$DERva:act.epi: verb-adjective derivation (potentiality)
 \$DERva:pas: verb-adjective derivation (passive)
 \$DERva:pas.deon: verb-adjective derivation (passive deontic)
 \$DERva:pas.epi: verb-adjective derivation (passive potentiality)
 \$DERva:pas.part: verb-adjective derivation (passive participles)
 \$DERvn: verb-noun derivation
 \$DERvn:agent: verb-noun derivation (agent)
 \$DERvn:core: verb-noun derivation (core)
 \$DERvn:exper: verb-noun derivation (experiencer)
 \$DERvn:loc: verb-noun derivation (location)
 \$DERvn:patient: verb-noun derivation (patient)
 \$DERvn:recip: verb-noun derivation (recipient)
 \$DERvv: verb-verb derivation
 \$DERan:qual: adjective derivation
 \$DERna: noun-adjective derivation
 \$DERna:deono: noun-adjective derivation (naming)
 \$DERna:deono.loc: noun-adjective derivation (naming places)
 \$DERna:deono.pers: noun-adjective derivation (naming persons)
 \$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
DISCOTHER:
 JOINT: no clear relation
 REP: repaired
 SCENE: scene
DISCPRAG: pragmatic and illocutionary discourse relations
DISCSEM: semantic discourse relations
RuleDisc: syntactic discourse relation

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-evol: evolving anaphor
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}:
 {event}:
 {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
"assoc-"QUALIA: associative anaphor wrt. qualia
""QUALIA: resemblance wrt. \$qualia relation
RuleAnd: conjunctive both-and type
RuleAttr: attribution
RuleAttrD: down-dependent in attribution
RuleAttrH: down-head in attribution
RuleDisc: syntactic discourse relation
RuleExpConn: explicit connector
RuleGap: gapping dependent
RuleIdiom: idiomatic relation pattern
RuleImpConn: implicit connector
RuleMorph: syntactic morphology relation
RuleOblAdv: valency-bound adverbial
RuleOr: disjunctive either-or type
RulePar: disambiguated type
RuleSec: secondary relation pattern

The relations matching RULE-TOPIC.

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

The relations matching ONTOLOGY-TOPIC.

MISPLACED: misplaced relation
\$interfix:

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
xtop	100%	2	xtop _{100%}
voc	100%	1	voc _{100%}
numm	100%	2	numm _{100%}
namel	100%	4	namel _{100%}
namef	100%	68	namef _{100%}
exem	100%	7	exem _{100%}
subj	98%	592	subj _{98%} nobj _{0%} preds _{0%} CONJ:elab _{0%} appr _{0%} correl _{0%} attr _{0%} expl _{0%}
pnct	98%	907	pnct _{98%} nobj _{0%} vobj _{0%} dobj _{0%} conj _{0%} attr _{0%} possd _{0%} appr _{0%}
possd	95%	109	possd _{95%} nobj _{2%} attr _{0%} pnct _{0%}
neg	95%	45	neg _{95%} coord _{2%} eval _{2%}
expl	95%	20	expl _{95%} subj _{5%}
vobj	93%	439	vobj _{93%} preds _{3%} nobj _{1%} pnct _{0%} relr _{0%} conj _{0%} dobj _{0%} predo _{0%} fpreds _{0%}
appa	93%	16	appa _{93%} attr _{6%}
nobj	92%	1436	nobj _{92%} attr _{2%} dobj _{0%} aobj _{0%} name _{0%} preds _{0%} vobj _{0%} time _{0%} subj _{0%} pobj _{0%} pnct _{0%} conj _{0%} possd _{0%} title _{0%} loc _{0%} other _{0%} appr _{0%} numa _{0%} quant _{0%} cond _{0%} modp _{0%} mod _{0%}

conj	91%	254	conj _{91%} CONJ:add _{2%} nobj _{1%} attr _{1%} CONTR:sbj _{0%} CONTR:dir _{0%} CONST:rest _{0%} TELIC:cons.dir _{0%} coord _{0%} qobj _{0%} cause _{0%} vobj _{0%} pnct _{0%}
dobj	89%	348	dobj _{89%} nobj _{3%} pobj _{2%} robj _{1%} iobj _{1%} preds _{0%} goal _{0%} pnct _{0%} pred _{0%} dir _{0%} quant _{0%} vobj _{0%}
xpl	88%	9	xpl _{88%} other _{11%}
cond	88%	17	cond _{88%} man _{5%} nobj _{5%}
coord	87%	193	coord _{87%} discmark _{9%} contr _{1%} qobj _{1%} conj _{0%} neg _{0%}
qobj	86%	33	qobj _{86%} coord _{6%} conj _{3%} discmark _{3%} CONJ:add _{1%}
agent	80%	5	agent _{80%} attr _{20%}
preds	79%	215	preds _{79%} vobj _{7%} loc _{3%} nobj _{2%} pred _{1%} time _{0%} subj _{0%} dobj _{0%} aobj _{0%} fpred _{0%} inst _{0%} resem _{0%} pobj _{0%}
attr	77%	620	attr _{77%} pobj _{6%} nobj _{5%} time _{1%} loc _{1%} aobj _{1%} mod _{1%} other _{0%} focal _{0%} conj _{0%} cause _{0%} goal _{0%} man _{0%} source _{0%} relr _{0%} pred _{0%} dir _{0%} pnct _{0%} quant _{0%} conc _{0%} name _{0%} possd _{0%} subj _{0%} inst _{0%} agent _{0%} modp _{0%} appa _{0%}
cause	76%	25	cause _{76%} attr _{8%} conj _{4%} time _{4%} pobj _{4%} cons _{4%}
time	75%	163	time _{75%} attr _{6%} iter _{6%} nobj _{3%} cons _{1%} quant _{1%} preds _{1%} man _{1%} scene _{0%} other _{0%} cause _{0%} mod _{0%}
quant	75%	91	quant _{75%} time _{3%} man _{3%} eval _{3%} prg _{2%} avobj _{2%} focal _{2%} degr _{2%} nobj _{1%} elab _{1%} attr _{1%} dobj _{1%} modp _{1%}
add	75%	32	add _{75%} other _{12%} discmark _{6%} prg _{3%} scene _{3%}
relr	74%	75	relr _{74%} relp _{14%} rel _{4%} relelab _{2%} vobj _{2%} attr _{1%}
title	73%	15	title _{73%} nobj _{20%} appr _{6%}
appr	73%	15	appr _{73%} nobj _{10%} title _{6%} subj _{6%} pnct _{3%}
pobj	67%	288	pobj _{67%} attr _{13%} goal _{4%} other _{3%} dobj _{2%} dir _{2%} nobj _{1%} loc _{1%} source _{1%} inst _{0%} preds _{0%} avobj _{0%} man _{0%} cause _{0%} accom _{0%}
part	63%	11	part _{63%} avobj _{27%} dir _{9%}
scene	61%	18	scene _{61%} goal _{11%} contr _{5%} man _{5%} add _{5%} time _{5%} inst _{5%}
cons	61%	13	cons _{61%} time _{23%} inst _{7%} cause _{7%}
name	60%	20	name _{60%} nobj _{35%} attr _{5%}
correl	60%	5	correl _{60%} focal _{20%} subj _{20%}
loc	59%	149	loc _{59%} dir _{13%} attr _{6%} preds _{5%} other _{5%} pobj _{2%} nobj _{1%} focal _{1%} fpred _{1%} avobj _{0%} event _{0%} man _{0%} inst _{0%}
modp	57%	7	modp _{57%} nobj _{14%} quant _{14%} attr _{14%}
man	56%	76	man _{56%} accom _{6%} other _{5%} quant _{3%} epi _{2%} time _{2%} attr _{2%} source _{1%} prg _{1%} fpreds _{1%} aobj _{1%} eval _{1%} cond _{1%} con-com _{1%} scene _{1%} fpred _{1%} goal _{1%} loc _{1%} inst _{1%} resem _{1%} mod _{1%} pobj _{1%}
resem	50%	4	resem _{50%} man _{25%} preds _{25%}
iobj	50%	10	iobj _{50%} dobj _{40%} robj _{10%}
epi	50%	8	epi _{50%} man _{25%} eval _{25%}
elab	50%	4	elab _{50%} prg _{25%} quant _{25%}
avobj	50%	20	avobj _{50%} part _{15%} other _{10%} quant _{10%} aobj _{5%} loc _{5%} pobj _{5%}
eval	46%	32	eval _{46%} prg _{25%} quant _{9%} epi _{6%} man _{3%} other _{3%} focal _{3%} neg _{3%}
accom	45%	11	man _{45%} accom _{45%} pobj _{9%}
goal	44%	36	goal _{44%} pobj _{33%} scene _{5%} attr _{5%} dobj _{5%} man _{2%} fpred _{2%}
conc	37%	8	conc _{37%} contr _{25%} prg _{25%} attr _{12%}

inst	35%	17	inst _{35%} pred _{11%} pobj _{11%} con _{5%} scene _{5%} pred _{5%} attr _{5%} cons _{5%} man _{5%} loc _{5%}
focal	33%	18	focal _{33%} attr _{22%} other _{11%} loc _{11%} quant _{11%} correl _{5%} eval _{5%}
aobj	32%	25	aobj _{32%} nobj _{28%} attr _{24%} pred _{8%} man _{4%} avobj _{4%}
contr	31%	16	contr _{31%} discmark _{25%} conc _{12%} coord _{12%} prg _{6%} other _{6%} scene _{6%}
source	30%	10	source _{30%} pobj _{30%} con _{10%} man _{10%} other _{10%} attr _{10%}
relpa	26%	15	relr _{73%} relpa _{26%}
iter	26%	15	time _{66%} iter _{26%} other _{6%}
dir	23%	39	loc _{51%} dir _{23%} pobj _{17%} part _{2%} attr _{2%} dobj _{2%}
prg	20%	20	eval _{40%} prg _{20%} conc _{10%} quant _{10%} man _{5%} contr _{5%} add _{5%} elab _{5%}
other	17%	52	other _{17%} pobj _{17%} loc _{15%} attr _{9%} add _{7%} man _{7%} nobj _{3%} avobj _{3%} focal _{3%} source _{1%} time _{1%} contr _{1%} eval _{1%} iter _{1%} xpl _{1%} mod _{1%}
robj	16%	6	dobj _{66%} robj _{16%} iobj _{16%}
predo	10%	10	pred _{30%} inst _{20%} attr _{10%} fpredo _{10%} predo _{10%} dobj _{10%} vobj _{10%}
discmark	10%	28	coord _{64%} contr _{14%} discmark _{10%} add _{7%} qobj _{3%}
relelab	0%	2	relr _{100%}
rel	0%	3	relr _{100%}
numa	0%	1	nobj _{100%}
mod	0%	10	attr _{60%} nobj _{10%} man _{10%} time _{10%} other _{10%}
fpreds	0%	2	man _{50%} vobj _{50%}
fpredo	0%	6	loc _{33%} goal _{16%} man _{16%} pred _{16%} predo _{16%}
event	0%	1	loc _{100%}
degr	0%	2	quant _{100%}
concom	0%	3	source _{33%} man _{33%} inst _{33%}
TOTAL	83%	6779	

B.2 Confusion table: semantics

R	A	N	Confusion list
eval	100%	1	eval _{100%}
time	80%	25	time _{80%} source _{12%} arg _{4%} other _{4%}
elab	80%	5	elab _{80%} loc _{20%}
const	59%	44	const _{59%} arg _{18%} form _{4%} poss _{4%} loc _{2%} func _{2%} apart _{2%} class _{2%} goal _{2%} source _{2%}
loc	57%	73	loc _{57%} arg _{9%} source _{6%} func _{4%} goal _{2%} patient _{2%} poss _{2%} other _{2%} const _{1%} agent _{1%} form _{1%} location _{1%} elab _{1%} apart _{1%} recipient _{1%} about _{1%}
patient	55%	63	patient _{55%} about _{15%} arg _{14%} agent _{4%} loc _{3%} func _{1%} ex- periencer _{1%} goal _{1%} poss _{1%}
goal	54%	42	goal _{54%} arg _{19%} loc _{4%} func _{4%} cause _{2%} resem _{2%} const _{2%} agent _{2%} recipient _{2%} patient _{2%} other _{2%}
func	54%	42	func _{54%} arg _{19%} loc _{7%} about _{4%} goal _{4%} const _{2%} patient _{2%} iden _{2%} other _{2%}
agent	52%	55	agent _{52%} arg _{29%} experiencer _{7%} patient _{5%} loc _{1%} goal _{1%} source _{1%}

resem	50%	2	resem _{50%} goal _{50%}
location	50%	2	loc _{50%} location _{50%}
source	48%	35	source _{48%} arg _{20%} loc _{14%} time _{8%} const _{2%} agent _{2%} poss _{2%}
arg	46%	147	arg _{46%} agent _{10%} patient _{6%} const _{5%} func _{5%} goal _{5%} loc _{4%} source _{4%} about _{4%} poss _{3%} other _{2%} time _{0%}
apart	42%	19	quant _{47%} apart _{42%} loc _{5%} const _{5%}
form	40%	5	const _{40%} form _{40%} loc _{20%}
poss	39%	23	poss _{39%} arg _{21%} other _{13%} loc _{8%} const _{8%} patient _{4%} source _{4%}
quant	37%	16	apart _{56%} quant _{37%} other _{6%}
about	29%	27	patient _{37%} about _{29%} arg _{22%} func _{7%} loc _{3%}
other	12%	16	arg _{18%} poss _{18%} loc _{12%} class _{12%} other _{12%} quant _{6%} time _{6%} goal _{6%} func _{6%}
recipient	0%	2	loc _{50%} goal _{50%}
iden	0%	1	func _{100%}
experiencer	0%	5	agent _{80%} patient _{20%}
class	0%	3	other _{66%} const _{33%}
cause	0%	1	goal _{100%}
TOTAL	49%	654	

B.3 Confusion table: discourse

R	A	N	Confusion list
SCENE	100%	6	SCENE _{100%}
ANSW	100%	1	ANSW _{100%}
TELIC:cons.dir	76%	7	TELIC:cons.dir _{76%} AGENTIVE:reas _{14%} conj _{9%}
CONJ:seq	75%	12	CONJ:seq _{75%} CONJ:add _{16%} DIREC _{8%}
AGENTIVE:expl	75%	8	AGENTIVE:expl _{75%} CONTR _{12%} AGENTIVE:reas _{12%}
CONST:exem	63%	11	CONST:exem _{63%} CONST:apart _{18%} JOINT _{9%} CONC _{9%}
CONC	54%	11	CONC _{54%} CONJ:add _{18%} CONJ:elab _{9%} FOR- MAL:eval _{9%} CONST:exem _{9%}
CONJ:add	51%	74	CONJ:add _{51%} CONJ:elab _{14%} conj _{7%} JOINT _{5%} CONJ:seq _{2%} TELIC:cons.sbj _{2%} AGENTIVE:sbj _{2%} CONST:apart _{2%} CONC _{2%} CONTR:dir _{1%} CONJ _{1%} CONTR:sbj _{1%} DISJ:dir _{1%} vobj _{1%}
FORMAL:eval	50%	6	FORMAL:eval _{50%} CONJ:elab _{33%} CONC _{16%}
COND	50%	1	conj _{50%} COND _{50%}
AGENTIVE:reas	50%	6	AGENTIVE:reas _{50%} AGENTIVE:expl _{16%} TELIC:cons.dir _{16%} AGENTIVE:sbj _{16%}
CONJ:elab	46%	49	CONJ:elab _{46%} CONJ:add _{22%} CONST:apart _{6%} FOR- MAL:descr _{4%} FORMAL:eval _{4%} CONST:elab _{4%} subj _{4%} TELIC:cons.sbj _{2%} CONST:rest _{2%} DIREC _{2%} CONC _{2%}
CONTR:sbj	44%	6	CONTR:sbj _{44%} conj _{22%} CONTR:prg _{16%} CONJ:add _{16%}
TELIC:cons.sbj	40%	10	TELIC:cons.sbj _{40%} CONJ:add _{20%} CONST:rest _{20%} CONJ:elab _{10%} CONTR:dir _{10%}
FORMAL:descr	33%	3	CONJ:elab _{66%} FORMAL:descr _{33%}
CONTR:dir	33%	7	conj _{33%} CONTR:dir _{33%} CONJ:add _{19%} TELIC:cons.sbj _{14%}

CONST:rest	22%	6	TELIC:cons.sbj _{33%} CONST:rest _{22%} CONJ:elab _{16%} CONST:elab _{16%} conj _{11%}
CONST:apart	22%	9	CONJ:elab _{33%} CONJ:add _{22%} CONST:apart _{22%} CONST:exem _{22%}
JOINT	16%	6	CONJ:add _{66%} JOINT _{16%} CONST:exem _{16%}
DISJ:dir	0%	1	CONJ:add _{100%}
DIREC	0%	2	CONJ:elab _{50%} CONJ:seq _{50%}
CONTR:prg	0%	1	CONTR:subj _{100%}
CONTR	0%	1	AGENTIVE:expl _{100%}
CONST:elab	0%	3	CONJ:elab _{66%} CONST:rest _{33%}
CONSOL:source	0%	2	AGENTIVE:subj _{100%}
CONJ	0%	1	CONJ:add _{100%}
AGENTIVE:subj	0%	5	CONJ:add _{40%} CONSOL:source _{40%} AGENTIVE:reas _{20%}
TOTAL	47%	255	

B.4 Confusion table: anaphora

R	A	N	Confusion list
ref	100%	42	ref _{100%}
assoc-loc	100%	5	assoc-loc _{100%}
assoc-formal	100%	1	assoc-formal _{100%}
assoc-event	100%	3	assoc-event _{100%}
coref	92%	141	coref _{92%} coref-var _{4%} coref-iden _{1%} coref-res _{0%} assoc _{0%} assoc-const _{0%}
assoc-telic	83%	24	assoc-telic _{83%} assoc-const _{8%} coref-res _{4%} assoc-agentive _{4%}
coref-iden	80%	52	coref-iden _{80%} coref-var _{10%} coref _{3%} assoc-const _{1%} coref-res _{1%} coref coref-iden _{1%}
coref-var	79%	97	coref-var _{79%} coref _{6%} coref-iden _{5%} assoc-const _{4%} coref-res _{3%} coref-evol _{1%} assoc _{1%}
coref-res	72%	25	coref-res _{72%} coref-var _{12%} assoc-telic _{4%} coref-iden _{4%} coref _{4%} coref-res.prg _{4%}
assoc-const	66%	39	assoc-const _{66%} coref-var _{10%} assoc _{10%} assoc-telic _{5%} coref-iden _{2%} coref _{2%} assoc-agentive _{2%}
assoc-agentive	50%	4	assoc-agentive _{50%} assoc-telic _{25%} assoc-const _{25%}
assoc	38%	9	assoc-const _{44%} assoc _{38%} coref-var _{11%} coref _{5%}
coref-res.prg	0%	1	coref-res _{100%}
coref-evol	0%	1	coref-var _{100%}
coref coref-iden	0%	1	coref-iden _{100%}
TOTAL	82%	445	

B.5 Confusion table: morphology

R	A	N	Confusion list
func	100%	2	func _{100%}
DERvn:patient	100%	1	DERvn:patient _{100%}
DERvn:core	100%	6	DERvn:core _{100%}
DERnv	100%	1	DERnv _{100%}

DERna:disp	100%	1	DERna:disp _{100%}
DERan:qual	100%	1	DERan:qual _{100%}
about	100%	1	about _{100%}
TOTAL	100%	13	

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	2048	2208		925
auto				1774	70
outdated-final	536				882
first	45	70	102	1	150
discussed	178	194	1		180
final				537	95

C.2 da texts

	discourse	morphology	postag	syntax
none	431	468		
auto				
outdated-final				486
first	20	68	1	17
discussed	86	1		23
final			536	7

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	496	535		
auto			536	70
outdated-final				396

first	40	39
discussed		19
final		6

C.5 es texts

	discourse	morphology	postag	syntax
none	386	382		354
auto			413	
outdated-final				
first	2	31		1
discussed	25			53
final				5

C.6 it texts

	discourse	morphology	postag	syntax
none	330	411		244
auto			412	
outdated-final				
first		2		38
discussed	83			77
final			1	54

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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