

# **The inventory of linguistic relations used in the Copenhagen Dependency Treebanks**

Matthias Buch-Kromann      Morten Gylling-Jørgensen  
Lotte Jelsbech Knudsen      Iørn Korzen  
Henrik Høeg Müller

Center for Research and Innovation in Translation and Translation Technology  
Dept. of International Language Studies and Computational Linguistics  
Copenhagen Business School

September 24, 2010

## **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.<sup>1</sup>

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<sup>1</sup><http://spreadsheets.google.com/ccc?key=0ArjTKYTS11WcnNUWGJrX31ZTkxDc3QxYmlqWlRXQ1E&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.

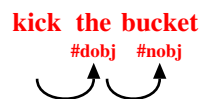


**IDIOM** *Idiomatic relation*. An idiomatic relation. The relation links independent lexical elements that jointly form an idiomatic lexical unit, ie, a unit where the meaning of the whole cannot be described as a semantic composition of its parts.

isa REL  
[32]

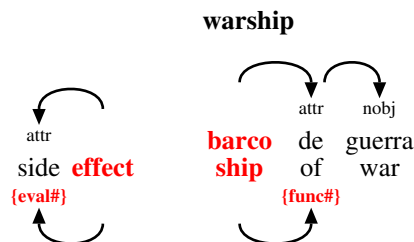
Subtypes: RuleIdiom.

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  
[364]



**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.

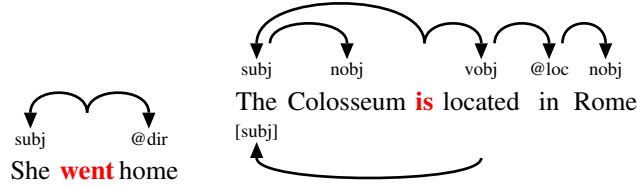
Subtypes: DISCOTHER DISCPRAG DISCSEM SYNADJ.

**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.



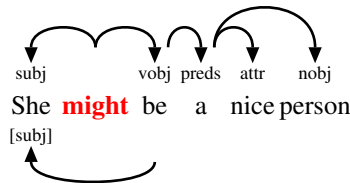
**SEC** *Secondary dependency relation* (long: SECONDARY). A secondary dependency relation. Intuitively, if a node functions as a dependent of more than one word (eg, in verbal chains, raising and control constructions, relatives, and elliptic coordinations), the dependency relation that determines the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

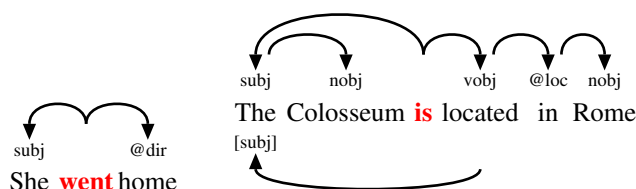
**SYNADJ** *Syntactic adjunct*. An adjunct role at the syntactic level. This relation type is used to group a large class of adjunct roles that only apply at the syntactic level.  
isa ADJ SYN [104]  
Subtypes: ADVERB app attr attrg conj coord correl fpred gapd mod name pnct rel voc xtop.

**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.

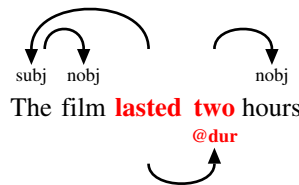
**@space** *Valency-bound location/direction adverbial*.  
isa SYNCOMP Related types: dir loc.  
[85]



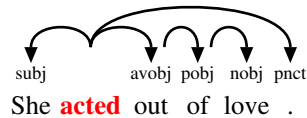
SYNCOMP: syntactic complement  
 @space: valency-bound location/direction adverbial  
 @time: valency-bound time adverbial  
 avobj: adverbial object  
 dobj: direct object  
 fobj: filler object  
 gobj: genitive object  
 iobj: indirect object  
 nobj: nominal object  
 numa: additive numeral complement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

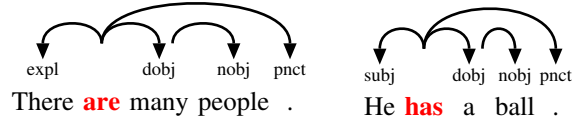
**@time** *Valency-bound time adverbial.* A valency bound time expression. Formerly analyzed as  
 isa SYNCOMP locative object, but we have decided to provide a general mechanism (@) for converting  
 [101] adverbial relations into valency-bound relations.  
 Related types: cont dur ext hab prec succ.



**avobj** *Adverbial object.*  
 isa SYNCOMP Related types: aobj part.  
 [93] Confusion<sub>25</sub>: avobj<sub>44%</sub> part<sub>12%</sub> other<sub>8%</sub> quant<sub>8%</sub> quant<sub>8%</sub> conj<sub>4%</sub> aobj<sub>4%</sub> loc<sub>4%</sub> pobj<sub>4%</sub> pobj<sub>4%</sub> pobj<sub>4%</sub> namef<sub>1%</sub>  
     man<sub>1%</sub> appa<sub>1%</sub> appa<sub>1%</sub> appa<sub>1%</sub> appa<sub>1%</sub> .

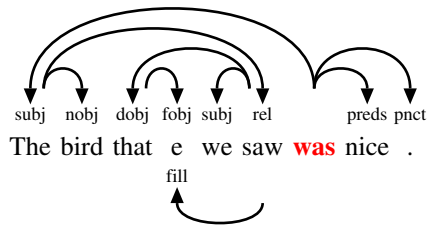


**dobj** *Direct object.* A direct object relation. In languages with case, the direct object is typically  
 isa SYNCOMP accusative-marked.  
 [81] Related types: iobj robj.  
 Confusion<sub>535</sub>: contr<sub>0%</sub> numa<sub>0%</sub> concom<sub>0%</sub> cond<sub>0%</sub> part<sub>0%</sub> exem<sub>0%</sub> source<sub>0%</sub> correl<sub>0%</sub> inst<sub>0%</sub> .



**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.

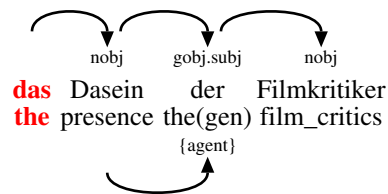
Related types: fill ref.



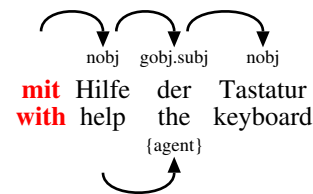
**gobj** *Genitive object*. If the genitive object is part of a NP which nucleus is deverbal, the following annotation possibilities are available: gobj.subj{SEMROLE} gobj.dobj{SEMROLE} gobj.pobj{SEMROLE} gobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient, experient,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

Related types: SEMROLE attrg.

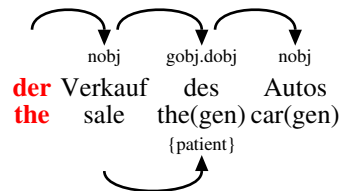
#### the presence of film critics



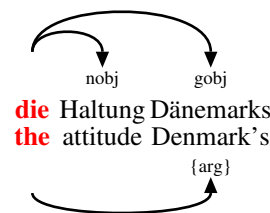
#### with help from the keyboard



#### the sale of the car

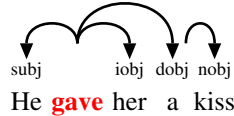


#### Denmark's attitude



**iobj** *Indirect object*.  
Related types: dobj.

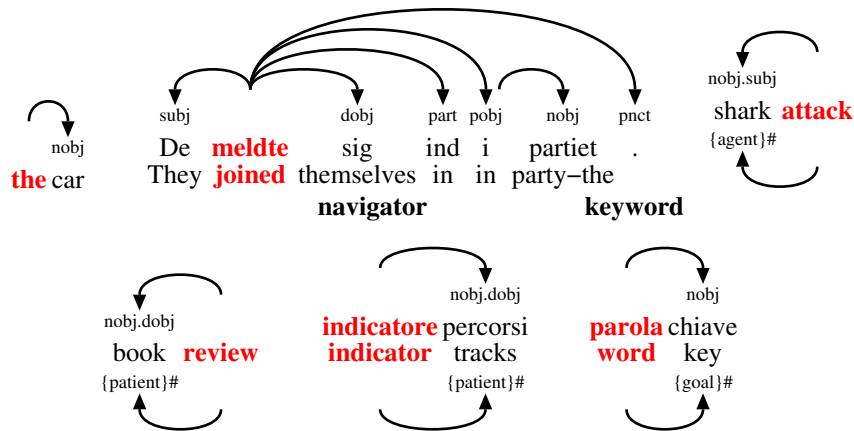
[84] Confusion<sub>11</sub>: pnct<sub>3%</sub> subj<sub>2%</sub> nobj<sub>1%</sub> attr<sub>1%</sub> possd<sub>1%</sub> modp<sub>1%</sub> .



**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.

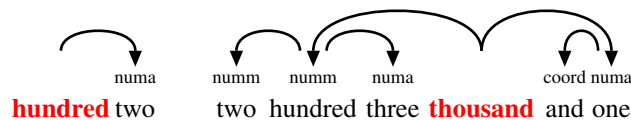
Confusion2094: fpreds0% mod0% conc0% part0% pred0% focal0% fpred0% qobj0% resem0% inst0% add0% iter0% correl0% event0% cause0% comp0% xpl0% exem0% iobj0% avobj0% source0% .

**They joined the party.**

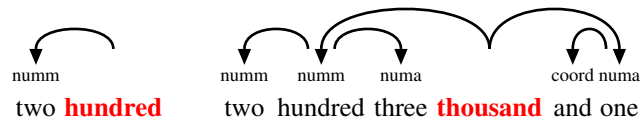


**numa** *Additive numeral complement*. An additive numeral complement relation. Numerals license one additive and one numeral complement, both optional. The numerical value associated with the expression is the value  $M * N + A$ , where  $M$  is the numerical value of the multiplicative complement,  $A$  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 " $(2 * 100 + 4) * 1000 + (20 + (3))$ ".

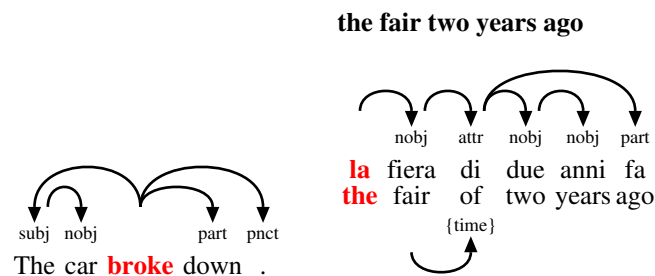
Related types: numm.  
Confusion2: .



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

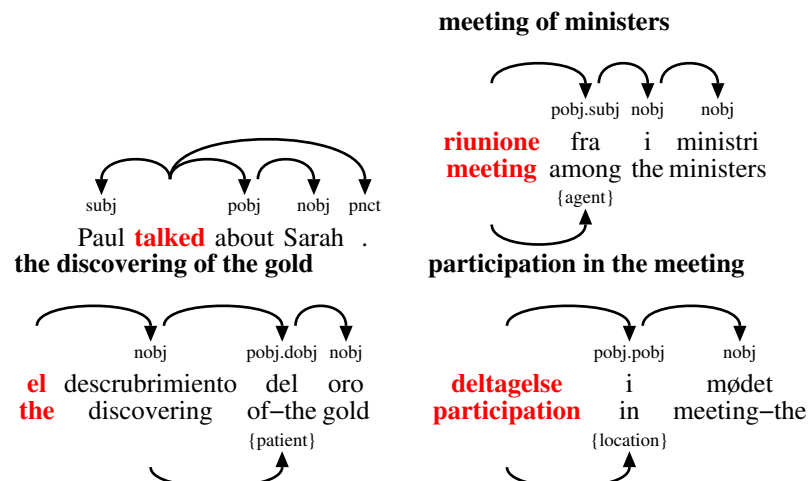
[illegible]

[97] Confusion<sub>24</sub>: subj<sub>2%</sub> subj<sub>2%</sub> epi<sub>1%</sub> man<sub>1%</sub> time<sub>1%</sub> time<sub>1%</sub> time<sub>1%</sub> time<sub>1%</sub> time<sub>1%</sub>.



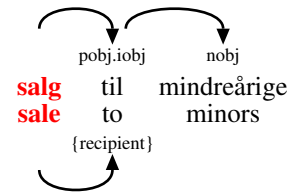
[82]

Confusion<sub>477</sub>: pobj<sub>43%</sub> pobj<sub>43%</sub> pobj<sub>43%</sub> pobj<sub>43%</sub> pobj<sub>43%</sub> pobj<sub>43%</sub> pobj<sub>43%</sub> pobj<sub>43%</sub> other<sub>2%</sub> other<sub>2%</sub> other<sub>2%</sub> other<sub>2%</sub>  
loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub>  
loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> loc<sub>1%</sub> qobj<sub>0%</sub> exem<sub>0%</sub> iter<sub>0%</sub> concom<sub>0%</sub> predo<sub>0%</sub>  
title<sub>0%</sub> correl<sub>0%</sub> .





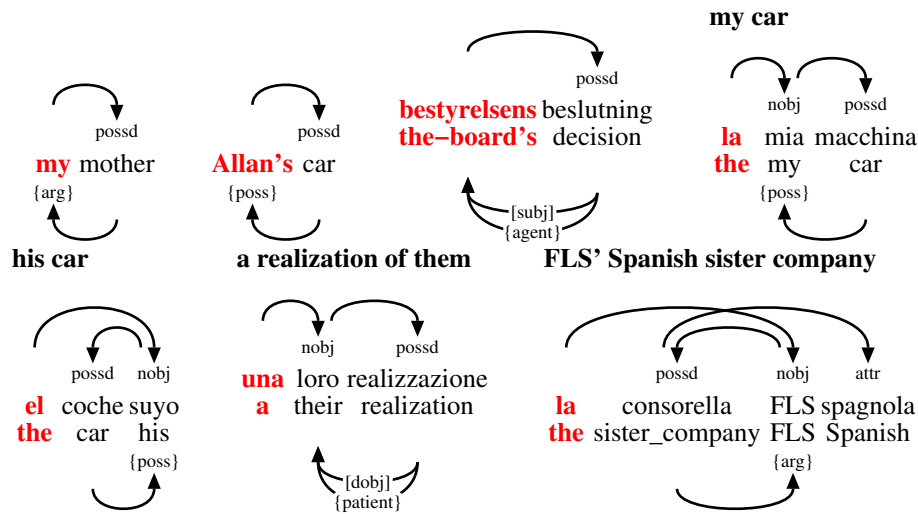
## sale to minors



**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.

Confusion<sub>177</sub>: .



**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.

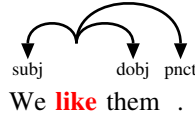
Confusion<sub>25</sub>: possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> possr<sub>4%</sub> numm<sub>1%</sub> numm<sub>1%</sub> numm<sub>1%</sub> numm<sub>1%</sub> numm<sub>1%</sub> .

N/A

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

**predo** *Object predicative.*  
Related types: preds.  
Confusion<sub>18</sub>: .

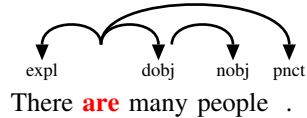




**expl** *Expletive subject*. An expletive subject relation. The expletive subject is typically a situational place adverbial like "there" or time adverbial like "now", and is only possible for verbs that support the expletive alternation. The expletive alternation applies to all verbs that do not have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

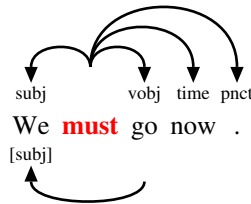
Confusion<sub>25</sub>: expl<sub>88%</sub> expl<sub>88%</sub> preds<sub>4%</sub> preds<sub>4%</sub> preds<sub>4%</sub> .



**vobj** *Verbal object*.

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

[89] Confusion<sub>652</sub>: possr<sub>0%</sub> modp<sub>0%</sub> qobj<sub>0%</sub> cause<sub>0%</sub> cond<sub>0%</sub> eval<sub>0%</sub> xpl<sub>0%</sub> epi<sub>0%</sub> agent<sub>0%</sub> fpred<sub>0%</sub> .



## 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 fpred 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]

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

[115] Subtypes: appa appr.

Related types: appa appr.

**appa** *Parenthetical apposition (comma)*.

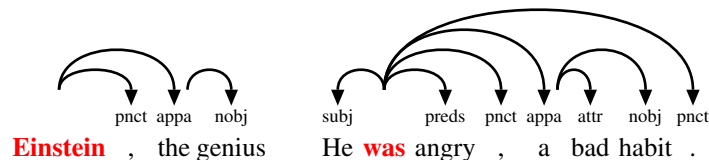
isa app Subtypes: xpl.

[116] Related types: appr xpl.

Confusion<sub>40</sub>: appa<sub>40%</sub> appa<sub>40%</sub> appa<sub>40%</sub> appa<sub>40%</sub> appa<sub>40%</sub> appa<sub>40%</sub> appa<sub>40%</sub> appa<sub>40%</sub> appa<sub>40%</sub> appa<sub>40%</sub> appa<sub>40%</sub> appa<sub>40%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> namef<sub>1%</sub> .

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

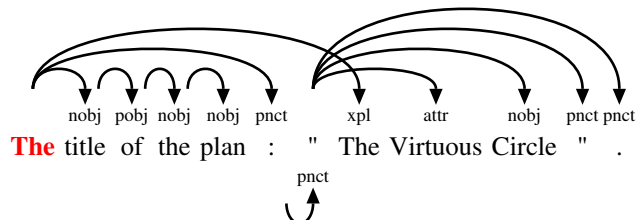
Figure 3.3: The relations matching SYNADJ-ADVERB-TOPIC.



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

isa appa   Related types: qobj.

[129] Confusion<sub>13</sub>: .



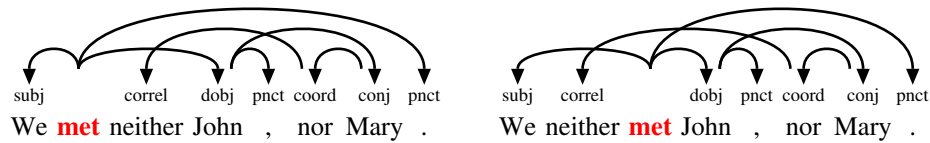
**appr** *Restrictive apposition (no comma).*

isa app   Related types: appa.

[illegible]



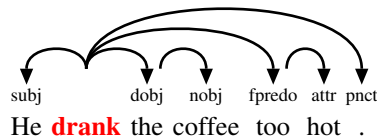
**correl** *Correlative coordinator relation.*  
 isa SYNADJ Related types: conj coord.  
 [107] Confusion<sub>7</sub>: .



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

**V→free predicative**

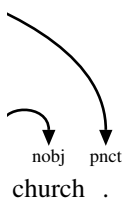
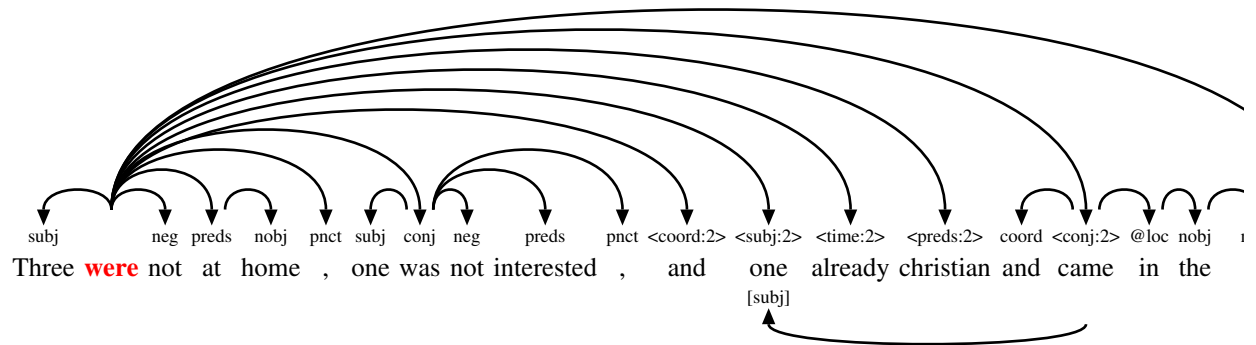
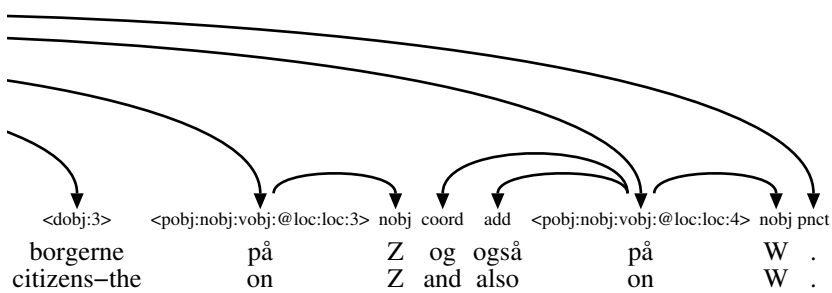
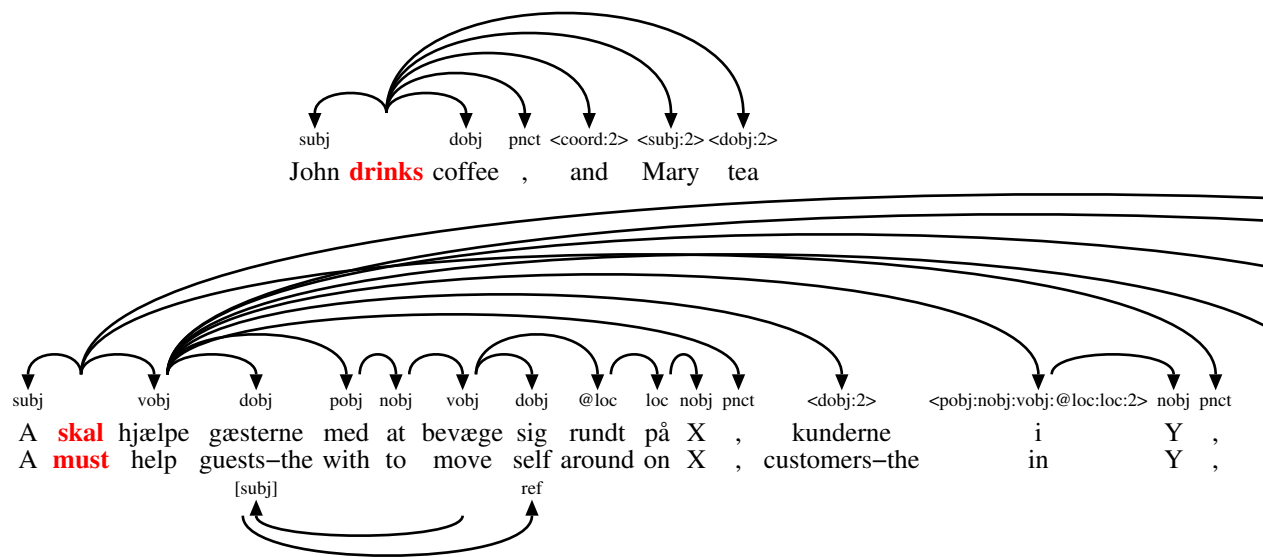
**fpredo** *Free direct-object predicative.*  
 isa fpred Related types: fpreds man.  
 [112] Confusion<sub>11</sub>: .



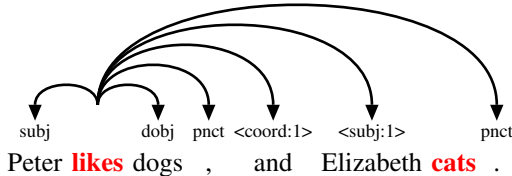
**fpreds** *Free subject predicative.*  
 isa fpred Related types: fpredo.  
 [111] Confusion<sub>3</sub>: .



**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.

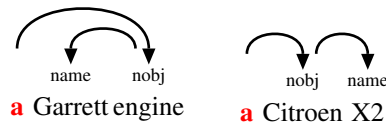


**RuleGap** *Gapping dependent* (long: "<"PRIM(":"PRIM)\*":"INTEGER">"). A gapping dependency relation is formed by using angled brackets to enclose a colon-separated list of primary relations followed by an integer that indicates the number of the gapped conjunct, starting with 1. The list of primary 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] Confusion<sub>10</sub>: attr<sub>60%</sub> nobj<sub>10%</sub> man<sub>10%</sub> time<sub>10%</sub> other<sub>10%</sub> .

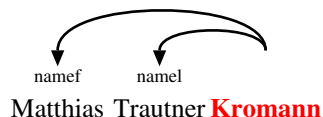
**modp** *Parenthetic modifier*. Deprecated name for parenthetic modifiers  
 isa mod Related types: {elab}.  
 [137] Confusion22: conj3% conj3% conj3% conj3% conj3% conj3% conj3% conj3% conj3% conj3% .

[illegible]

<b>namef</b>	<i>First name.</i> A first name.
<b>isa name</b>	Related types: namel title.
[124]	Confusion90: attr3% .



<b>name1</b>	<i>Last name.</i> A second last name
isa name	Related types: name1 title.
[125]	Confusion4: name1 <sub>100%</sub> .

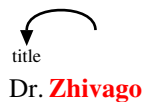




**title** *Person title*. A title in a name. If the is the title is determined by an article, eg. the director  
 isa name Smith, the title must be annotated as "nobj" and the name as "appr".

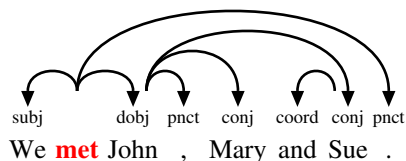
[126] Related types: namef namef.

Confusion<sub>24</sub>: name<sub>1%</sub> name<sub>1%</sub> name<sub>1%</sub> name<sub>1%</sub> name<sub>1%</sub> name<sub>1%</sub> name<sub>1%</sub> .



**punct** *Punctuation*.

isa SYNADJ Confusion<sub>1278</sub>: attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub>  
 [108] attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub>  
 attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> attr<sub>3%</sub> conc<sub>0%</sub> prg<sub>0%</sub> qobj<sub>0%</sub> cause<sub>0%</sub> fpred<sub>0%</sub> eval<sub>0%</sub> add<sub>0%</sub> concom<sub>0%</sub> agent<sub>0%</sub> avobj<sub>0%</sub>  
 correl<sub>0%</sub> cond<sub>0%</sub> iobj<sub>0%</sub> event<sub>0%</sub> xpl<sub>0%</sub> source<sub>0%</sub> .

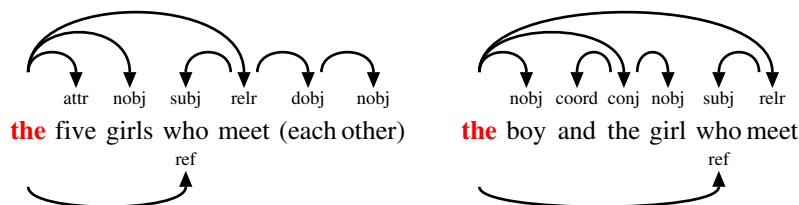


**rel** *Relative clause*. A relation between a relative clause and a relativized NP/VP. The finite verb  
 isa SYNADJ in the relative clause is analyzed as a "rel" dependent of the head of the relativized NP/VP  
 [118] (ie, the determiner if present, otherwise the noun). If there is a relative pronoun,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

Confusion<sub>3</sub>: relr<sub>100%</sub> .



**relelab** *Elaborating relative clause*. Ledsætning med sætningsantecedent i hovedsætning; da: hvilket,

isa rel it: il che, cosa che

[121] Related types: relpa relr.

Confusion<sub>2</sub>: relr<sub>100%</sub> .

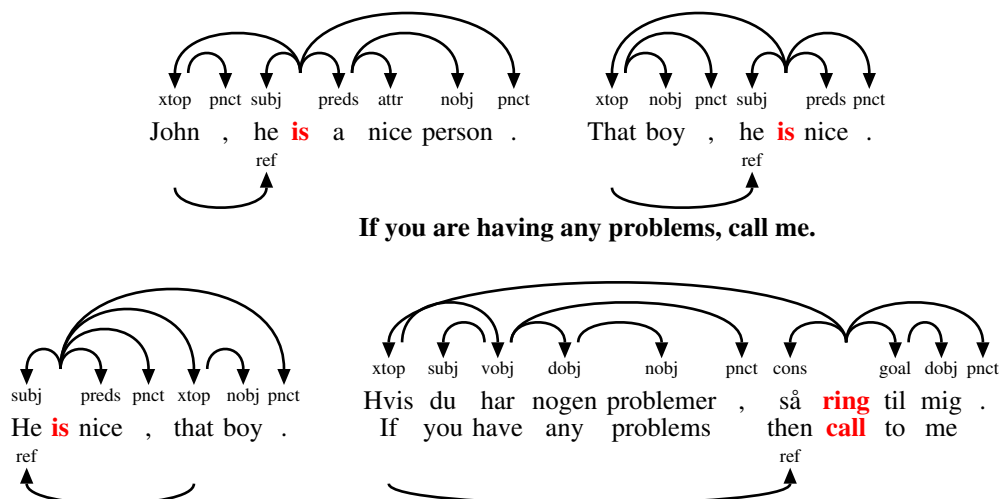
V->V

**relpa** *Parenthetic relative clause* (deprecated relp).

isa rel Related types: relelab relr.

[120] Confusion<sub>16</sub>: .



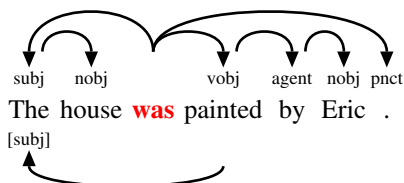


If you are having any problems, call me.

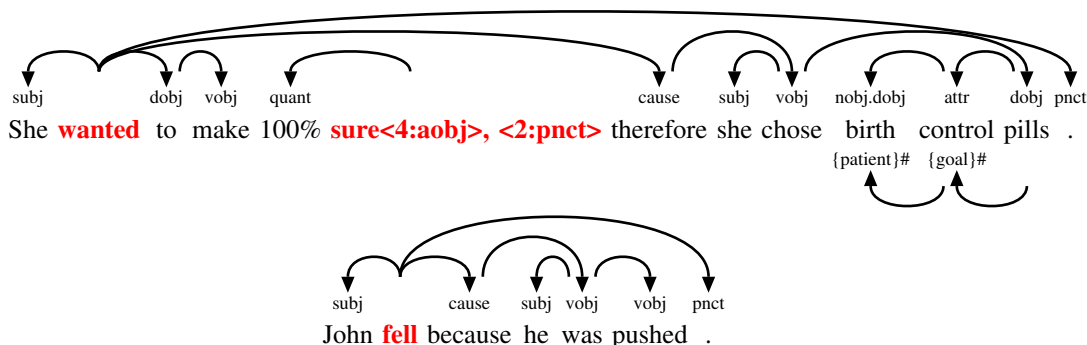
### 3.3 Adverbial adjunct relations: ADVERB

**ADVERB** *Adverbial*. V/N/P->adverbial  
 isa SYNADJ [140] Subtypes: agent cause conc concom cond cons event exem man neg other prg quant resem source space time.

**agent** *Agent adverbial*. The passivized agent in passives.  
 isa ADVERB [169] Confusion<sub>12</sub>: conj<sub>3%</sub> conj<sub>3%</sub> conj<sub>3%</sub> conj<sub>3%</sub> conj<sub>3%</sub> conj<sub>3%</sub> conj<sub>3%</sub> .



**cause** *Causation adverbial*. Causation adverbial. Describes why the event occurred.  
 isa ADVERB Subtypes: goal.  
 [159] Confusion<sub>30</sub>: attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> .



ADVERB: adverbial

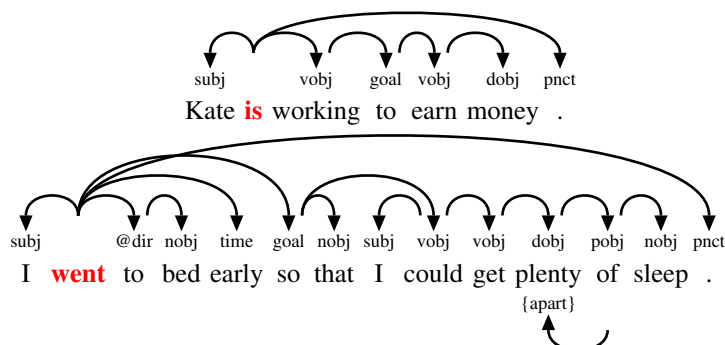
- agent: agent adverbial
- cause: causation adverbial
- goal: goal adverbial
- conc: concession adverbial
- concom:
- cond: condition adverbial
- cons: consequence adverbial
- event: Adverbial expressing an event
- exem: example adverbial
- man: manner adverbial
- accom: companionship adverbial
- inst: 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

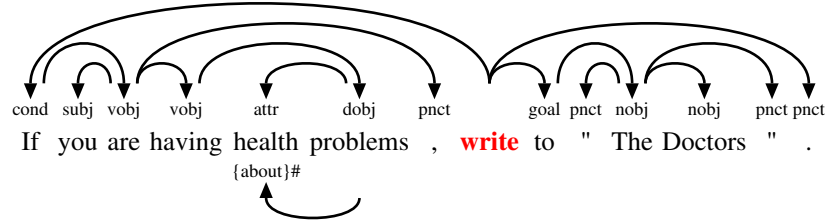
Figure 3.4: The relations matching ADVERB-TOPIC.

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

[160] Related types: reas.

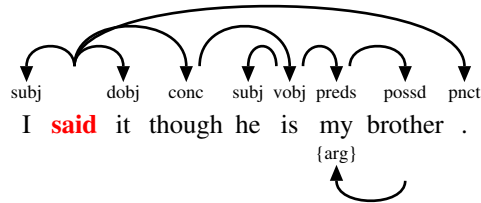
Confusion<sub>56</sub>: dobj<sub>4%</sub> dobj<sub>4%</sub> dobj<sub>4%</sub> dobj<sub>4%</sub> dobj<sub>4%</sub> other<sub>2%</sub> other<sub>2%</sub> other<sub>2%</sub> other<sub>2%</sub> other<sub>2%</sub> other<sub>2%</sub> other<sub>2%</sub> other<sub>2%</sub> other<sub>2%</sub> other<sub>2%</sub> .





**conc** *Concession adverbial*. Describes the concession of the event/action.

isa ADVERB Confusion<sub>15</sub>: conc<sub>20%</sub> conc<sub>20%</sub> conc<sub>20%</sub> conc<sub>20%</sub> conc<sub>20%</sub> conc<sub>20%</sub> conc<sub>20%</sub> conc<sub>20%</sub> conc<sub>20%</sub> subj<sub>3%</sub> subj<sub>3%</sub> subj<sub>3%</sub>  
[163] subj<sub>3%</sub> .

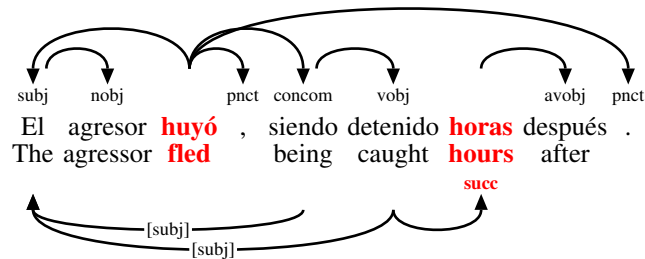


**concom** . Gerunds in Romance

isa ADVERB Related types: vobj.

[167] Confusion<sub>14</sub>: relr<sub>2%</sub> numm<sub>2%</sub> numm<sub>2%</sub> numm<sub>2%</sub> numm<sub>2%</sub> numm<sub>2%</sub> numm<sub>2%</sub> numm<sub>2%</sub> numm<sub>2%</sub> numm<sub>2%</sub> .

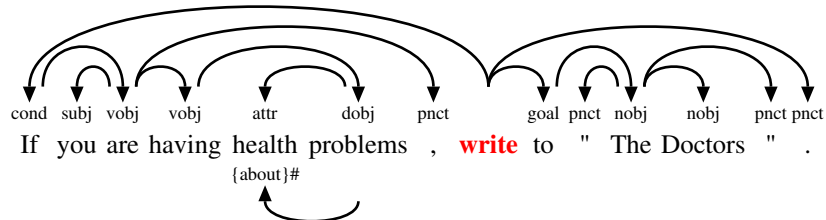
**The agressor fled and/but got caught hours later.**



**cond** *Condition adverbial*. Describes the condition of the event/action.

isa ADVERB Related types: pcond.

[162] Confusion<sub>23</sub>: time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> .



**cons** *Consequence adverbial*. Describes the consequence of the event/action.

isa ADVERB Related types: xtop.

[161] Confusion<sub>13</sub>: .

**event** *Adverbial expressing an event*. Used when the adverbial in questions expresses an event

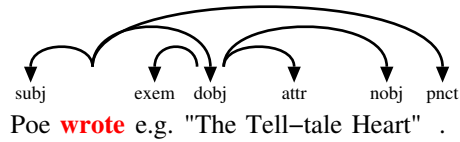
isa ADVERB rather than time or place.

[155] Confusion<sub>3</sub>: nobj<sub>30%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> attr<sub>10%</sub> .

**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  
isa ADVERB which is added to a list.

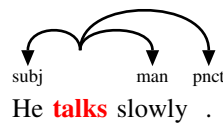
[166] Confusion<sub>11</sub>: .



**man** *Manner adverbial*. The way things are done  
isa ADVERB Subtypes: accom inst.

[156] Related types: fpredo.

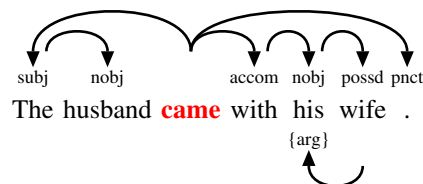
Confusion<sub>98</sub>: goal<sub>2%</sub> goal<sub>2%</sub> goal<sub>2%</sub> goal<sub>2%</sub> prg<sub>1%</sub> fpreds<sub>1%</sub> cond<sub>1%</sub> concom<sub>1%</sub> fpredo<sub>1%</sub> loc<sub>1%</sub> inst<sub>1%</sub> resem<sub>1%</sub> source<sub>1%</sub>  
aobj<sub>1%</sub> eval<sub>1%</sub> scene<sub>1%</sub> mod<sub>1%</sub> mod<sub>1%</sub> mod<sub>1%</sub> mod<sub>1%</sub> mod<sub>1%</sub> mod<sub>1%</sub> mod<sub>1%</sub> mod<sub>1%</sub> mod<sub>1%</sub> mod<sub>1%</sub> mod<sub>1%</sub> .



**accom** *Companionship adverbial* (deprecated comp). Companionship

isa man Related types: man.

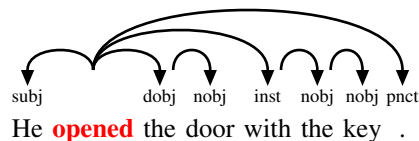
[157] Confusion<sub>1</sub>: conj<sub>40%</sub> nobj<sub>40%</sub> subj<sub>20%</sub> .



**inst** *Instrument adverbial*. Instrument/means

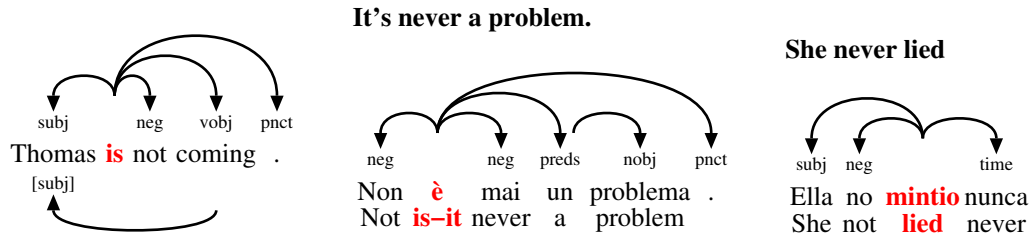
isa man Related types: man.

[158] Confusion<sub>24</sub>: nobj<sub>3%</sub> nobj<sub>3%</sub> nobj<sub>3%</sub> nobj<sub>3%</sub> nobj<sub>3%</sub> nobj<sub>3%</sub> .



**neg** *Negation adverbial*. Negation of a verbal  
isa ADVERB Confusion<sub>70</sub>: .

[170]



**other** *Other adverbial*.

isa ADVERB Confusion<sub>78</sub>: subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>%  
 [171] subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% subj<sub>2</sub>% .

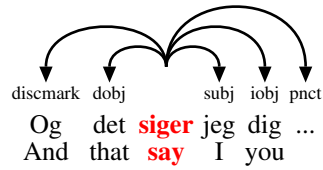
**prg** *Pragmatic adverbial* (long: pragmatic). Sentence level.

isa ADVERB Subtypes: discmark epi eval focal scene.  
 [141] Confusion<sub>27</sub>: .

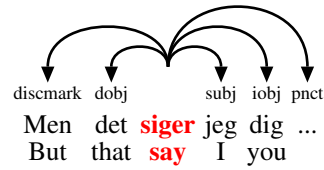
**discmark** *Sentence-initial discourse marker* (long: discoursemarker). Discourse marker

isa prg Related types: coord.  
 [146] Confusion<sub>29</sub>: .

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

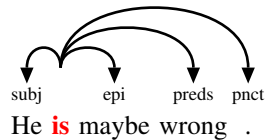


**But I'm telling you...**



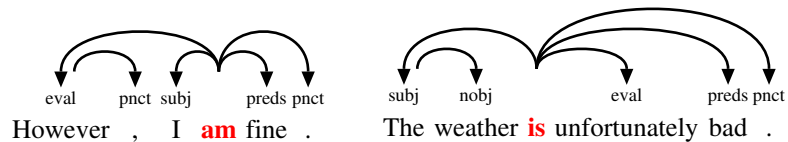
**epi** *Epistemic adverbial* (long: epistemic). Regarding the level of truth in the expression

isa prg Related types: eval.  
 [144] Confusion<sub>15</sub>: man<sub>15</sub>% man<sub>15</sub>% man<sub>15</sub>% man<sub>15</sub>% man<sub>15</sub>% man<sub>15</sub>% man<sub>15</sub>% man<sub>15</sub>% man<sub>15</sub>% man<sub>15</sub>% man<sub>15</sub>% .



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

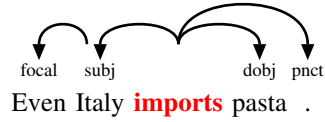
isa prg Related types: epi.  
 [145] Confusion<sub>38</sub>: nobj<sub>8</sub>% nobj<sub>8</sub>% nobj<sub>8</sub>% nobj<sub>8</sub>% nobj<sub>8</sub>% nobj<sub>8</sub>% nobj<sub>8</sub>% nobj<sub>8</sub>% attr<sub>2</sub>% attr<sub>2</sub>% pobj<sub>1</sub>% pobj<sub>1</sub>% pobj<sub>1</sub>% pobj<sub>1</sub>% pobj<sub>1</sub>%  
 pobj<sub>1</sub>% pobj<sub>1</sub>% pobj<sub>1</sub>% pobj<sub>1</sub>% .



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

isa prg Related types: quant.

[142] Confusion<sub>27</sub>: other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> other<sub>8%</sub> .

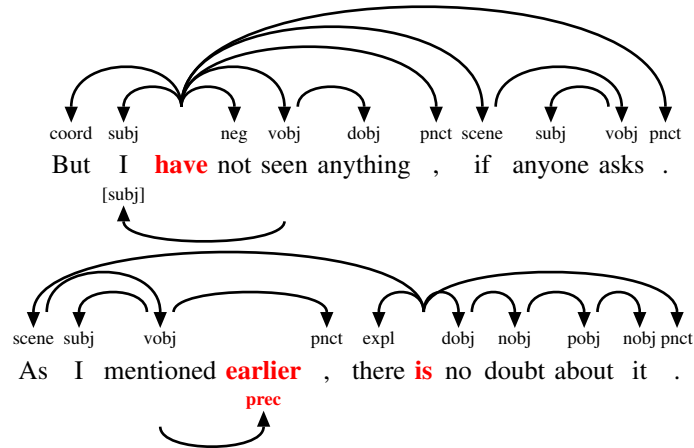


**scene** *Pragmatic condition and structural adverbial* (deprecated prgcondpcondbgstruct). Setting the scene

[143] Subtypes: add contr elab.

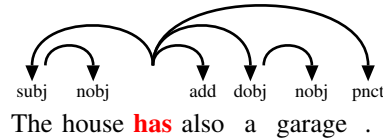
Related types: cond.

Confusion<sub>42</sub>: vobj<sub>4%</sub> vobj<sub>4%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> time<sub>3%</sub> dobj<sub>2%</sub> dobj<sub>2%</sub> dobj<sub>2%</sub> neg<sub>1%</sub> neg<sub>1%</sub> neg<sub>1%</sub> neg<sub>1%</sub> neg<sub>1%</sub> neg<sub>1%</sub> .



**add** *Additive adverbial* (long: additive). Additive information

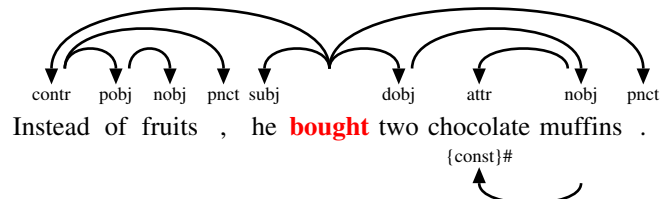
isa scene Confusion<sub>40</sub>: other<sub>10%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> discmark<sub>5%</sub> .



**contr** *Contrast adverbial* (long: contrast). Opposition

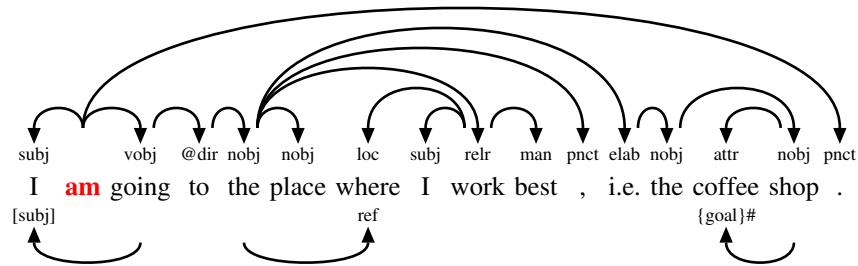
isa scene Related types: struct.

[147] Confusion<sub>21</sub>: discmark<sub>19%</sub> discmark<sub>19%</sub> discmark<sub>19%</sub> discmark<sub>19%</sub> pnt<sub>6%</sub> pnt<sub>6%</sub> pnt<sub>6%</sub> pnt<sub>6%</sub> pnt<sub>6%</sub> pnt<sub>6%</sub> pnt<sub>6%</sub> pnt<sub>6%</sub> pnt<sub>6%</sub> .

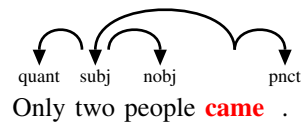




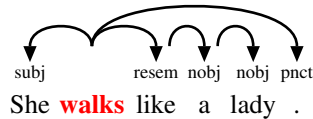
**elab** *Elaboration adverbial* (long: elaboration). More detailed description  
 isa scene Confusion<sub>4</sub>: elab<sub>50%</sub> prg<sub>25%</sub> quant<sub>25%</sub> .  
 [148]



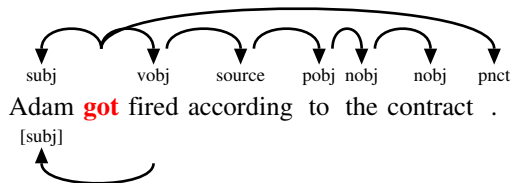
**quant** *Degree adverbial* (long: quantification, deprecated degr). Modifies the object or verbal by degree  
 isa ADVERB Related types: focal.  
 [168] Confusion<sub>131</sub>: .



**resem** *Comparison adverbial* (deprecated comparecomp). Comparison  
 isa ADVERB Confusion<sub>11</sub>: possr<sub>3%</sub> possr<sub>3%</sub> possr<sub>3%</sub> .  
 [164]

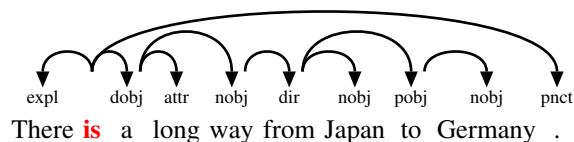


**source** *Source attribution adverbial*. Reference/source  
 isa ADVERB Confusion<sub>13</sub>: .  
 [165]



**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] Confusion<sub>40</sub>: loc<sub>50%</sub> loc<sub>50%</sub> loc<sub>50%</sub> loc<sub>50%</sub> loc<sub>50%</sub> loc<sub>50%</sub> loc<sub>50%</sub> .





## 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 [262]

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 [261]  
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 [363]

### 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 [262]

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  
 [350]

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

**§AGENT:MC** *Noun-noun compound (agentive)*. Non-head has an agentive meaning wrt. head.  
 isa MORPHCOMP  
 [341]

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

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

**(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  
 [348]

**coche de lujo 'luksusbil'**

**§FUNC** *Noun-noun compound (function)*. Non-head has a functional/instrumental meaning wrt. head.  
 isa MORPHCOMP  
 [343]

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

**§GOAL** *Noun-noun compound (goal)*.  
 isa MORPHCOMP  
 [344]

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

**\$LOC** *Noun-noun compound (position).* Non-head has a locative meaning wrt. head.  
 isa MORPHCOMP  
 [346]

(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  
 [351]

**\$POSS** *Noun-noun compound (possession).* Non-head has a possessive meaning wrt. head.  
 isa MORPHCOMP  
 [345]

(possession: politibil = bil –politi/POSS)

**\$RESEM** *Noun-noun compound (resemblance).* Denotations of head and non-head resemble each other.  
 isa MORPHCOMP  
 [349]

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  
 [342]

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

**\$TIME:MC** *Noun-noun compound (time).* Non-head has a temporal meaning wrt. head.  
 isa MORPHCOMP  
 [347]

(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.  
 [261]

**PREFIX** *Semantic relations appearing with prefixes.* A semantic relation is created between a base and a prefix.  
 isa MORPHDERIV  
 [264]  
 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  
 [265]  
 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.

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

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

isa PREFIX

[280]

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

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

isa PREFIX

[279]

(iterative: redefine = define -re/ITER)

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

isa PREFIX

[283] Subtypes: \$MOD:eval \$MOD:qual \$MOD:quant.

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

isa \$MOD

[285]

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

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

isa \$MOD

[286]

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

**\$MOD:quant** *Quantification* (deprecated MOD:cuant+GRAD:size). Prefix conveys quantification.  
isa \$MOD  
[284]

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

**\$NEG** *Negation*. Prefix conveys negation in a broad sense.  
isa PREFIX  
[275]

**\$NEG:contr** *Contrast* (deprecated NEG:oppo). Prefix conveys contrast.  
isa \$NEG  
[276]

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

**\$NEG:priv** *Privation*. Prefix conveys privation.  
isa \$NEG  
[277]

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

**\$NEG:rev** *Reversion* (deprecated ASPEC:rev). Prefix conveys reversion.  
isa \$NEG  
[278]

(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  
[267]

**\$SPACE:dir** *Direction* (deprecated LOC:dir). Prefix expresses direction.  
isa \$SPACE  
[269]

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

**\$SPACE:loc** *Location* (deprecated LOC:pos). Prefix expresses location.  
isa \$SPACE  
[268]

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

**\$SPACE:source** *Source* (deprecated LOC:proce). Prefix conveys source.  
isa \$SPACE  
[270]

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

**\$TELIC** *Telic* (deprecated ASPEC:term+resul). Prefix conveys termination or result.  
isa PREFIX  
[281]

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

**\$TIME** *Time*. Prefix conveys time in a broad sense.  
isa PREFIX Subtypes: \$TIME:post \$TIME:pre.  
[272]

**\$TIME:post** *Temporal succession* (deprecated TIME:succ). Prefix conveys succession.  
isa \$TIME  
[274]

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

**\$TIME:pre** *Temporal precedence* (deprecated TIME:prec). Prefix conveys precedence.  
isa \$TIME  
[273]

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

**\$TRANS** *Transitivity*. Prefix conveys transitivity.  
isa PREFIX  
[282]

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

#### 4.2.2 Suffix relations: SUFFIX

**SUFFIX** *Semantic relations appearing with suffixes*. A semantic relation is created between a base and a suffix.  
isa MORPHDERIV Subtypes: \$AUG \$DENUM \$DER \$DERan:qual \$DERna \$DERnn \$DERv \$DIMIN \$PEJ.  
[265]

**\$AUG** *Augmentation*. Suffix conveys augmentation.  
isa SUFFIX  
[288]

**(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.  
[336]

**\$DENUM:apart** *Adjective-partitive derivation* (deprecated DENUM:part). Suffix creates partitive numerals.  
isa \$DENUM  
[338]

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

**\$DENUM:ord** *Adjective-ordinal derivation*. Suffix creates ordinals.  
isa \$DENUM  
[337]

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

**\$DENUM:quant** *Adjective-multiplicative derivation*. Suffix creates multiplicative numerals.  
isa \$DENUM  
[339]

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



**\$DER** *Verb derivation*. Suffix triggers a derivation  
isa SUFFIX Subtypes: \$DERadvv \$DERav \$DERnv \$DERva \$DERvn \$DERvv.  
[291]

**\$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.  
[293]

**(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.  
[292] 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.  
[303]

**(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

**\$DERva** *Verb-adjective derivation* (deprecated \$DERV). Suffix creates deverbal adjectives in a broad  
isa \$DER sense.  
[304]  
[317] 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".  
[318] 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".  
[319]

**"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 [320]

**"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 [321] 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 [324]

**"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 [323]

**"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 [322]

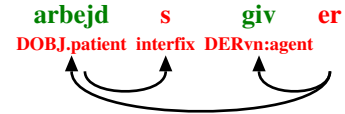
**"que {ha sido/está/es} PP" (comprado – "hombre que {ha sido/está/es} comprado 'mand som er**

**blevet/er/bliver købt"**

**\$DERvn** *Verb-noun derivation* (deprecated PREDDEVERBN). Suffix creates deverbal nouns in a broad sense.  
 isa \$DER [296] 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 [297]

(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 [299]

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

**\$DERvn:exper** *Verb-noun derivation (experiencer)*. Suffix creates deverbal nouns absorbing the experiencer role.  
isa \$DERvn [298]

(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 [302]

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

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

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

**\$DERvn:recip** *Verb-noun derivation (recipient)*. Suffix creates deverbal nouns absorbing the recipient role.  
isa \$DERvn [301]

(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 [294]

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

**\$DERan:qual** *Adjective derivation* (deprecated QUAL). Suffix creates deadjectival nouns.  
isa SUFFIX [305]

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

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

[325] 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".

[328] 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 [330]

**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 [329]

**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 [333]

**"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 [335]

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

isa §DERna [332]

**"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 [326] 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 [327]

**(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 [331]

**"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  
[334]

**"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  
[306]  
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  
[307]

**(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  
[314]

**(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  
[312]

**(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  
[309]

**(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  
[313]

(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  
[315]

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

(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  
[308]

(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  
[310]

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

**\$DERv** (deprecated DEVERB).  
isa SUFFIX

**\$DIMIN** *Diminution*. Suffix conveys diminution.  
isa SUFFIX  
[289]

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

**\$PEJ** *Pejoration*. Suffix conveys a pejorative sense.  
isa SUFFIX  
[290]

(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.  
[209]

**JOINT** *No clear relation*. The dependent text segment adds a completely new content without any clear discourse relation to the governing segment  
isa DISCOTHER  
[259] Confusion<sub>6</sub>: .

**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  
[258]

**SCENE** *Scene* (deprecated STRUCT:prepPREP). Dependent text segment expresses the scene of the following and governing text, e.g. headings, titles  
isa DISCOTHER  
[257] Confusion<sub>6</sub>: SCENE<sub>100%</sub> .

**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  
[208] 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  
[207]

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

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

isa DISC RULE  
[362]

## 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  
[208]

Subtypes: ANSW CONSOL DIREC EXPR INTACT QUEST.

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

isa DISCPRAG  
[246]

Confusion<sub>1</sub>: ANSW<sub>100%</sub> .

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

isa DISCPRAG  
[252]

**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  
[254]

**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  
[253]

Typical connectives: [da] Fordi, Eftersom.

Confusion<sub>2</sub>: AGENTIVE:subj<sub>100%</sub> .

**DIREC** *Directive act.* Dependent text segment contains an order, command or request  
isa DISCPRAG Confusion<sub>2</sub>: CONJ:elab<sub>50%</sub> CONJ:seq<sub>50%</sub> .  
[247]

**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 [248]

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

**INTACT** *Interactional signals.*  
isa DISCPRAG Subtypes: INTACT:attn INTACT:inter.  
[249]

**INTACT:attn** *Attention.* S contains an attention signal  
isa INTACT [250]

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

**INTACT:inter** *Interruption.* S contains an interruption signal  
isa INTACT [251]

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

**QUEST** *Question .* The dependent text segment contains a question with or without an answer  
isa DISCPRAG [245]

## 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.  
[211]

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

Confusion<sub>8</sub>: AGENTIVE:expl<sub>75%</sub> AGENTIVE:expl<sub>75%</sub> AGENTIVE:expl<sub>75%</sub> .

**AGENTIVE:reas** *Reason relation (discourse).* S expresses a specific and concrete reason  
isa AGENTIVE [213]

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.

Confusion<sub>6</sub>: AGENTIVE:reas<sub>50%</sub> AGENTIVE:reas<sub>50%</sub> AGENTIVE:reas<sub>50%</sub> AGENTIVE:reas<sub>50%</sub> .

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

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

Confusion<sub>5</sub>: CONJ:add<sub>40%</sub> CONSOL:source<sub>40%</sub> AGENTIVE:reas<sub>20%</sub> .

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

[227] Confusion<sub>11</sub>: .

**COND** *Condition.*  
 isa DISCSEM Confusion<sub>1</sub>: conj<sub>50%</sub> COND<sub>50%</sub> .

[228]

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

[234]

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

Confusion<sub>1</sub>: CONJ:add<sub>100%</sub> .

**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  
[235]

Confusion<sub>74</sub>: .

**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  
[236]

Confusion<sub>49</sub>: TELIC:cons.sbj<sub>2%</sub> CONST:rest<sub>2%</sub> DIREC<sub>2%</sub> CONC<sub>2%</sub> .

**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.  
[237]

Confusion<sub>12</sub>: CONJ:seq<sub>75%</sub> CONJ:seq<sub>75%</sub> CONJ:seq<sub>75%</sub> .

**CONST** *Constitutive elaboration.* S adds more details on N or parts of N  
isa DISCSEM  
[219] Subtypes: CONST:apart CONST:elab CONST:exem CONST:rest.

**CONST:apart** *Part of relation.* S is a part of N  
isa CONST  
[222] Typical connectives: [da] Herunder, Heri.  
Confusion<sub>9</sub>: .

**CONST:elab** *Elaboration* (deprecated ELAB:spec,ELAB:exp). S elaborates and expands knowledge of N; may be difficult to distinguish from CONJ  
isa CONST  
[221] Typical connectives: [it] Cioè.  
Related types: CONJ.  
Confusion<sub>3</sub>: .

**CONST:exem** *Exemplification.* S gives examples of elements or phenomena mentioned in N  
isa CONST  
[220] Typical connectives: [en] For example.  
Confusion<sub>11</sub>: .

**CONST:rest** *Restatement.* S states N again in a different way  
isa CONST  
[223] Typical connectives: [da] Dvs.; [it] Ossia, In altre parole, Cioè; [en] In other words, Or.  
Confusion<sub>6</sub>: .

**CONTR** *Contrast.*  
isa DISCSEM Subtypes: CONTR:dir CONTR:subj.  
[238] Confusion<sub>1</sub>: AGENTIVE:expl<sub>100%</sub> .

**CONTR:dir** *Direct contrast.* The contrast lies between the governing and dependent text segment  
isa CONTR  
[239] Typical connectives: [da] Men, Derimod.  
Confusion<sub>7</sub>: CONJ:add<sub>19%</sub> CONJ:add<sub>19%</sub> .

**CONTR:subj** *Subjective contrast* (deprecated CONTR:prg). The contrast lies between an explicit and a subjectively inferred text segment  
isa CONTR  
[240] Typical connectives: [da] Men.  
Confusion<sub>6</sub>: .

- DISJ** *Disjunction*.  
 isa DISCSEM Typical connectives: [da] Eller.  
 [241] Subtypes: DISJ:dir DISJ:sbj.
- DISJ:dir** *Direct disjunction*. The disjunction lies between the governing and dependent text segment  
 isa DISJ  
 [242] Confusion<sub>1</sub>: CONJ:add<sub>100%</sub> .
- DISJ:sbj** *Subjective disjunction* (deprecated DISJ:prg). The disjunction lies between the dependent and a  
 isa DISJ  
 [243] subjectively inferred text segment
- FORMAL** *Formal description*. S describes N, N may be a first-order or second-order entity  
 isa DISCSEM  
 [224] Subtypes: FORMAL:descr FORMAL:eval.
- FORMAL:descr** *Neutral description* (deprecated DESCR:qual). S expresses an objective and/or neutral description  
 isa FORMAL  
 [225] of N  
 Confusion<sub>3</sub>: .
- FORMAL:eval** *Positive/negative evaluation* (deprecated DESCR:eval). S expresses a personal and/or subjective  
 isa FORMAL  
 [226] positive or negative description of N  
 Confusion<sub>6</sub>: FORMAL:eval<sub>50%</sub> FORMAL:eval<sub>50%</sub> FORMAL:eval<sub>50%</sub> .
- TELIC** *Consequence/result/conclusion relation (discourse)*. S expresses purpose, function or conse-  
 isa DISCSEM  
 [215] quence wrt N  
 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  
 [217] sequence or result  
 Typical connectives: [da] Derfor, Af den grund.  
 Confusion<sub>7</sub>: .
- TELIC:cons.sbj** *Pragmatic/personal conclusion, deduction* (deprecated TELIC:sbj). Subjective conclusion or de-  
 isa TELIC  
 [218] duction on behalf of the speaker  
 Typical connectives: [da] Derfor, Af den grund.  
 Confusion<sub>10</sub>: TELIC:cons.sbj<sub>40%</sub> CONJ:add<sub>20%</sub> CONST:rest<sub>20%</sub> CONJ:elab<sub>10%</sub> CONTR:dir<sub>10%</sub> .
- TELIC:goal** *Goal relation (discourse)*. S expresses goal, purpose, aim  
 isa TELIC  
 [216] Typical connectives: [da] For (at).
- TIME** *Temporal relation* (deprecated CIRCUM). There is a clear temporal relation between N and S  
 isa DISCSEM  
 [229] Subtypes: TIME:cont TIME:post TIME:pre.
- TIME:cont** *Contemporaneity*. S is contemporary with N (now includes abolished TIME:dur)  
 isa TIME  
 [230] Typical connectives: [da] Samtidig, Mens, Så længe, Da.
- TIME:post** *Temporal succession* (deprecated TIME:succ). S succeeds N  
 isa TIME  
 [232] Typical connectives: [en] Later, Some time afterwards.
- TIME:pre** *Temporal precedence* (deprecated TIME:prec). S precedes N  
 isa TIME  
 [231] 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-telic.agent assoc-time.  
Confusion<sub>9</sub>: .

**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.  
Confusion<sub>141</sub>: .

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.  
 Confusion<sub>141</sub>: .

**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] Confusion<sub>1</sub>: coref-var<sub>100%</sub> .

**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 Confusion<sub>52</sub>: .  
 [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] Confusion<sub>25</sub>: coref-res<sub>72%</sub> coref-var<sub>12%</sub> assoc-telic<sub>4%</sub> coref-iden<sub>4%</sub> coref<sub>4%</sub> coref-res.prg<sub>4%</sub> .

**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] Confusion<sub>1</sub>: coref-res<sub>100%</sub> .

**coref-var** *Coreferential NP with lexical variety*.  
 isa coref Confusion<sub>97</sub>: coref-var<sub>79%</sub> coref-var<sub>79%</sub> coref-var<sub>79%</sub> coref-var<sub>79%</sub> coref-var<sub>79%</sub> coref-evol<sub>1%</sub> assoc<sub>1%</sub> .  
 [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] Confusion<sub>42</sub>: ref<sub>100%</sub> .

**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-telic.agent:  
 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-telic.agent assoc-time.  
 Confusion<sub>9</sub>: .

**"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  
 Confusion<sub>4</sub>: assoc-agentive<sub>50%</sub> assoc-telic<sub>25%</sub> assoc-const<sub>25%</sub> .

**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] Confusion<sub>39</sub>: .

**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 [204] Confusion<sub>3</sub>: assoc-event<sub>100%</sub> .

**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 [201]

**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] Confusion<sub>1</sub>: assoc-formal<sub>100%</sub> .

**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 [202]

**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 [199] Confusion<sub>5</sub>: assoc-loc<sub>100%</sub> .

**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 [200]

**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] Confusion<sub>24</sub>: .

a car -> the driver, the passengers; a hotel -> the guests, the receptionist; predicate or predicative noun

e.g. dancing -> the dance

assoc-telic.agent .

isa assoc

assoc-time [198] 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  
[203]

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.

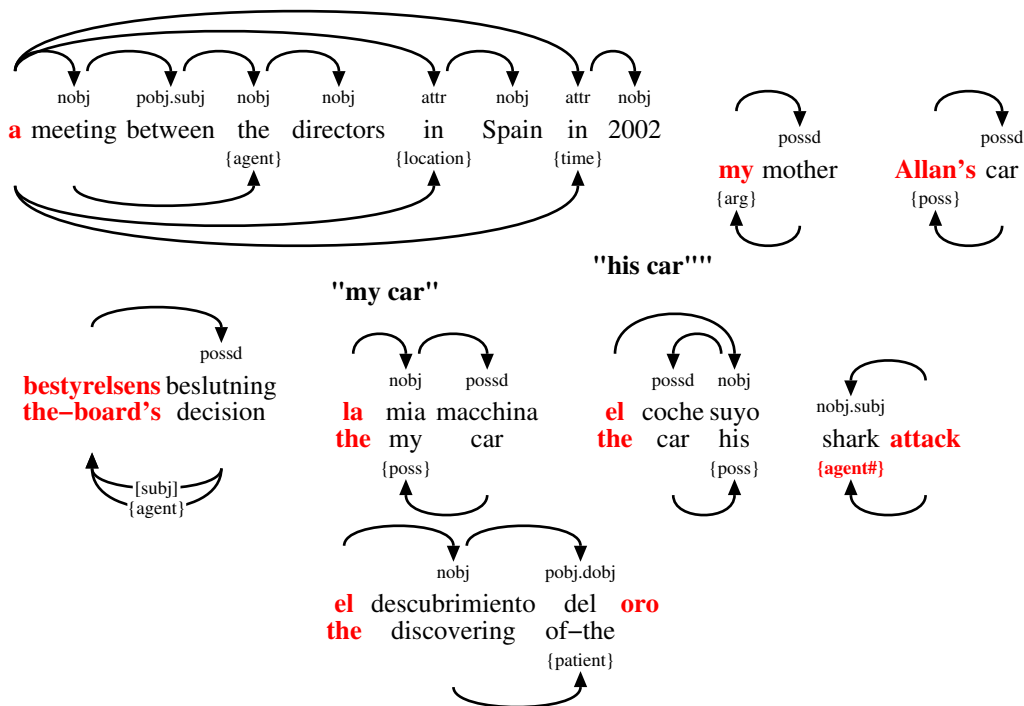
Subtypes: SEMREL.

**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]  
 Confusion<sub>35</sub>: .

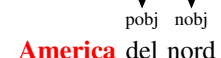


[50]

Confusion<sub>74</sub>: {arg}<sub>27%</sub> {arg}<sub>27%</sub> {arg}<sub>27%</sub> {about}<sub>3%</sub> {about}<sub>3%</sub> {about}<sub>3%</sub> {loc}<sub>2%</sub> {elab}<sub>2%</sub> {elab}<sub>2%</sub> {elab}<sub>2%</sub> {elab}<sub>2%</sub> {elab}<sub>2%</sub>.

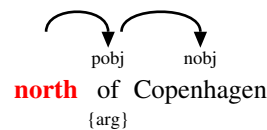


[63]

Confusion<sub>19</sub>: .

[68]

Confusion<sub>90</sub>: {patient}<sub>10%</sub> {patient}<sub>10%</sub> {patient}<sub>10%</sub> {patient}<sub>10%</sub> {patient}<sub>10%</sub> {patient}<sub>10%</sub> {patient}<sub>10%</sub> {patient}<sub>10%</sub>  
{patient}<sub>10%</sub> {patient}<sub>10%</sub> {patient}<sub>10%</sub> {patient}<sub>10%</sub> {patient}<sub>10%</sub> .

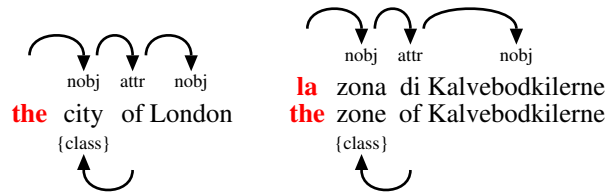


[53]

Confusion<sub>1</sub>: {goal}<sub>100%</sub> .

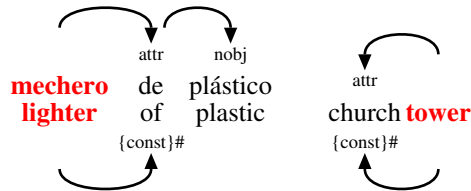
## sultedød ildebrand?

**{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}.  
 Confusion<sub>3</sub>: .



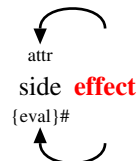
**{const}** . Used in noun phrases where the satellite represents a part, material or essential constituent of the nucleus.  
 Confusion<sub>49</sub>: {loc}<sub>2%</sub> {func}<sub>2%</sub> {elab}<sub>2%</sub> {apart}<sub>2%</sub> {class}<sub>2%</sub> {goal}<sub>2%</sub> {source}<sub>2%</sub> .

## plastic lighter

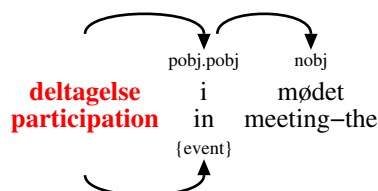


**{elab}** . position).  
 Related types: modp.  
 Confusion<sub>10</sub>: {elab}<sub>40%</sub> {loc}<sub>15%</sub> {agent}<sub>15%</sub> {const}<sub>10%</sub> {form}<sub>10%</sub> {arg}<sub>5%</sub> {other}<sub>5%</sub> .

**{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.  
 Confusion<sub>2</sub>: {arg}<sub>50%</sub> {eval}<sub>50%</sub> .

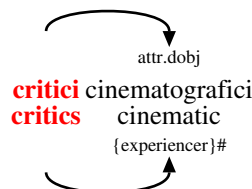


**{event}** .  
 Confusion<sub>59</sub>: .



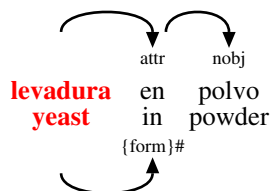
**{experienter}** *The receiver of an emotion or a physical impact.* Used in noun phrases where there is a deverbial relation between the nucleus and the satellite. Often realized as a direct object  
 isa SEMREL  
 [71] Confusion<sub>5</sub>: {agent}<sub>80%</sub> {patient}<sub>20%</sub> .

#### film critics

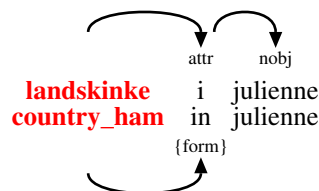


**{form}** . Used in noun phrases where the satellite indicates the shape or form of the nucleus.  
 isa SEMREL  
 Confusion<sub>6</sub>: .  
 [66]

#### baking powder



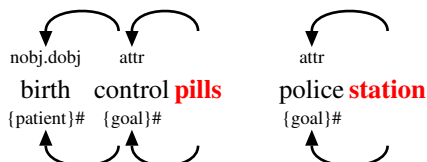
#### country ham in julienne strips



**{func}** . Used in noun phrases where the satellite determinates the instrumental function of the nucleus.  
 isa SEMREL  
 Confusion<sub>42</sub>: {arg}<sub>19%</sub> {arg}<sub>19%</sub> {arg}<sub>19%</sub> {arg}<sub>19%</sub> {arg}<sub>19%</sub> {arg}<sub>19%</sub> {arg}<sub>19%</sub> {arg}<sub>19%</sub> {arg}<sub>19%</sub> .  
 [55]



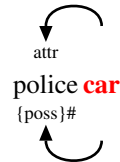
**{goal}** . Used in noun phrases where the satellite determinates the goal or the intention for which the nucleus is destined.  
 isa SEMREL  
 Confusion<sub>60</sub>: .  
 [54]



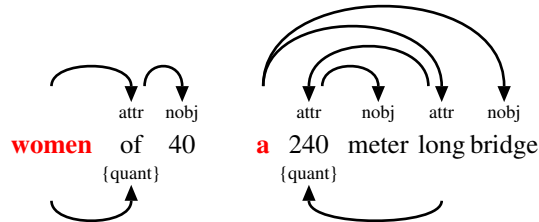
**{iden}** . Used in noun phrases where the satellite indicates the identity of the nucleus. In this case it is also possible to equate the satellite to the nucleus i.e. that the nucleus represents the super type of the satellite.  
 isa SEMREL  
 [67]  
 Related types: {class}.  
 Confusion<sub>1</sub>: {func}<sub>100%</sub> .



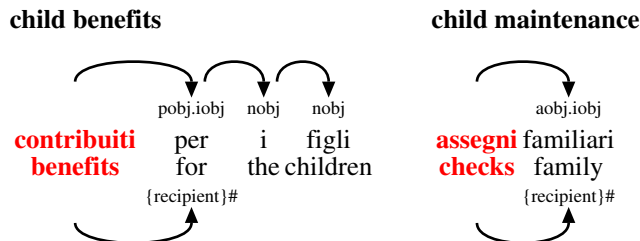




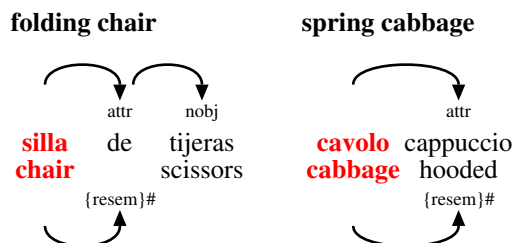
**{quant}** . Used in noun phrases where the satellite indicates the quantity in numbers or another countable unit of the nucleus.  
 isa SEMREL  
 [65] Confusion<sub>23</sub>: .



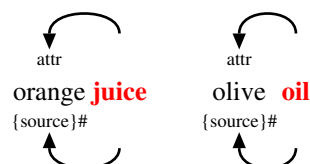
**{recipient}** *The receiver of something.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as an indirect object  
 isa SEMREL  
 [72] Confusion<sub>2</sub>: {loc}<sub>50%</sub> {goal}<sub>50%</sub> .



**{resem}** . Used in noun phrases where there is a resemblance between the nucleus and the satellite.  
 isa SEMREL  
 Confusion<sub>2</sub>: {resem}<sub>50%</sub> {goal}<sub>50%</sub> .  
 [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] Confusion<sub>43</sub>: {other}<sub>7%</sub> {other}<sub>7%</sub> {other}<sub>7%</sub> {other}<sub>7%</sub> {other}<sub>7%</sub> .



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

[58] Confusion<sub>29</sub>: {time}<sub>69%</sub> {time}<sub>69%</sub> {time}<sub>69%</sub> {time}<sub>69%</sub> {time}<sub>69%</sub> {time}<sub>69%</sub> {time}<sub>69%</sub> .



## 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]

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]

isa QUALIA

[40]

Subtypes: about.

**about** *About qualia.* Relates to hyponym (subtype)  
isa telic Confusion<sub>1</sub>: about<sub>100%</sub> .  
[43]

## 7.2 Thematic role relations: SEMROLE

Figure 7.3: The relations matching SEMROLE.

## Chapter 8

# Word alignment relations: ALIGNMENT

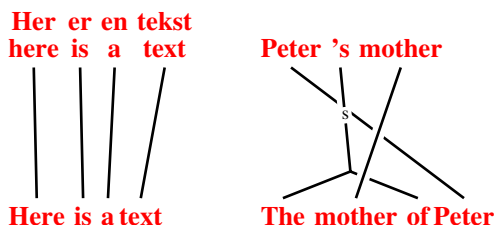
ALIGN: alignment level  
ALIGNREL: alignment relation  
"": unlabeled word alignment  
f: fuzzy word alignment

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.

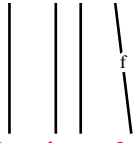
**ALIGNREL** *Alignment relation*. An alignment relation. An alignment relation encodes a translational equivalence between two sets of words (and their associated phrases), either in terms of form or meaning. Null alignments - ie, a set of words in one text which does not correspond to any set of words 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  
[380]



**f** *Fuzzy word alignment* (long: fuzzy). A semantically fuzzy word alignment.  
isa ALIGNREL  
[381]

**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  
 [355]

**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  
 [367]

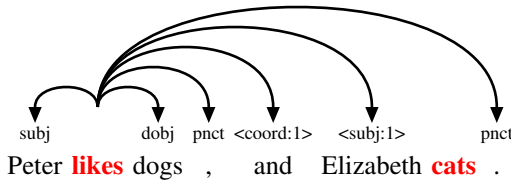
**RuleAttrD** *Down-dependent in attribution* (long: DISC"\*"). The dependent in the relation is one step further down in the attribution chain  
 isa RULE  
 [369]

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

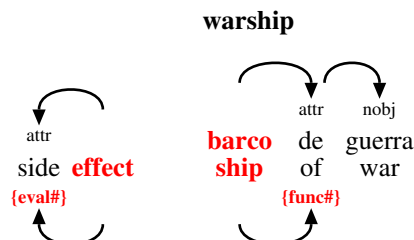
**RuleDisc** *Syntactic discourse relation* (long: "⌘"(PRIM)). A primary syntactic relation that has been used as a discourse relation for stylistic purposes.  
 isa DISC RULE  
 [362]

**RuleExpConn** *Explicit connector* (long: PRIM"/"CONNECTOR). The discourse relation has explicit connector \$CONNECTOR  
 isa RULE  
 [370]

**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  
 [360]



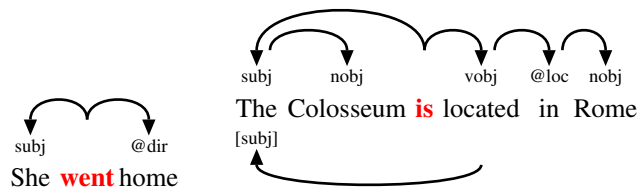
**RuleIdiom** *Idiomatic relation pattern* (long: (SEMREL)"#"). A semantic relation can be marked as idiomatic by putting a trailing "#" after the semantic relation name. The idiom marker is only used with semantic relations, not with syntactic relations.  
 isa IDIOM RULE  
 [364]



**RuleImpConn** *Implicit connector* (long: PRIM"/("CONNECTOR)"). The discourse relation has implicit connector \$CONNECTOR  
isa RULE  
[371]

**RuleMorph** *Syntactic morphology relation* (long: "\$"(PRIM)). A primary syntactic relation that has been used as a morphology relation for stylistic purposes.  
isa MORPH RULE  
[363]

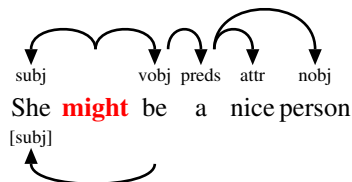
**RuleOblAdv** *Valency-bound adverbial* (long: "@"(ADVERB)). An adverbial relation can be marked as obligatory by putting "@" in front of the relation name.  
isa COMP RULE  
[361] Related types: cont dir dur ext hab loc prec succ time.



**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  
[356]

**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  
[357]

**RuleSec** *Secondary relation pattern* (long: "[" PRIM "]"). A secondary relation name is formed by enclosing a primary relation name in square brackets.  
isa RULE SEC  
[359] 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 [412]  
Subtypes: ⊢top.

**⊢top** *Ontological entity*.  
isa ONTOCLASS Subtypes: ⊢abstract ⊢concrete.  
    [413]

**⊢abstract** *Abstract entity*.

        isa ⊢top

**⊢concrete** *Concrete entity*.

        isa ⊢top

        [415]

## 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 .  
[266]

## 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-telic.agent:  
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 <sub>100%</sub>
voc	100%	1	voc <sub>100%</sub>
namel	100%	4	namel <sub>100%</sub>
expl	88%	25	expl <sub>88%</sub> subj <sub>5%</sub> preds <sub>4%</sub> time <sub>1%</sub> pobj <sub>1%</sub>
qobj	75%	38	qobj <sub>75%</sub> coord <sub>5%</sub> conj <sub>3%</sub> nobj <sub>2%</sub> discmark <sub>2%</sub> dobj <sub>2%</sub> pnct <sub>2%</sub> CONJ:add <sub>1%</sub> subj <sub>1%</sub> time <sub>1%</sub> vobj <sub>0%</sub> numm <sub>0%</sub> other <sub>0%</sub> loc <sub>0%</sub> resem <sub>0%</sub> pobj <sub>0%</sub> attr <sub>0%</sub>
namef	75%	90	namef <sub>75%</sub> nobj <sub>6%</sub> pnct <sub>3%</sub> subj <sub>3%</sub> attr <sub>3%</sub> pobj <sub>1%</sub> vobj <sub>0%</sub> conj <sub>0%</sub> numm <sub>0%</sub> dobj <sub>0%</sub> time <sub>0%</sub> appa <sub>0%</sub> possd <sub>0%</sub> co- ord <sub>0%</sub> relr <sub>0%</sub> scene <sub>0%</sub> possr <sub>0%</sub> avobj <sub>0%</sub> man <sub>0%</sub> concom <sub>0%</sub> part <sub>0%</sub> exem <sub>0%</sub> goal <sub>0%</sub> eval <sub>0%</sub> quant <sub>0%</sub>
pnct	74%	1278	pnct <sub>74%</sub> nobj <sub>7%</sub> attr <sub>3%</sub> subj <sub>2%</sub> vobj <sub>1%</sub> dobj <sub>1%</sub> conj <sub>1%</sub> pobj <sub>1%</sub> coord <sub>1%</sub> time <sub>0%</sub> possd <sub>0%</sub> preds <sub>0%</sub> relr <sub>0%</sub> numm <sub>0%</sub> man <sub>0%</sub> possr <sub>0%</sub> namef <sub>0%</sub> modp <sub>0%</sub> neg <sub>0%</sub> appa <sub>0%</sub> quant <sub>0%</sub> focal <sub>0%</sub> other <sub>0%</sub> appr <sub>0%</sub> loc <sub>0%</sub> scene <sub>0%</sub> contr <sub>0%</sub> epi <sub>0%</sub> resem <sub>0%</sub> accom <sub>0%</sub> dir <sub>0%</sub> part <sub>0%</sub> goal <sub>0%</sub> pred <sub>0%</sub> title <sub>0%</sub> name <sub>0%</sub> aobj <sub>0%</sub> inst <sub>0%</sub> conc <sub>0%</sub> prg <sub>0%</sub> qobj <sub>0%</sub> cause <sub>0%</sub> fpred <sub>0%</sub> eval <sub>0%</sub> add <sub>0%</sub> concom <sub>0%</sub> agent <sub>0%</sub> avobj <sub>0%</sub> correl <sub>0%</sub> cond <sub>0%</sub> iobj <sub>0%</sub> event <sub>0%</sub> xpl <sub>0%</sub> source <sub>0%</sub>

exem	72%	11	exem <sub>72%</sub> subj <sub>5%</sub> conj <sub>4%</sub> other <sub>4%</sub> attr <sub>3%</sub> source <sub>2%</sub> namef <sub>1%</sub> nobj <sub>1%</sub> dobj <sub>1%</sub> goal <sub>1%</sub> pobj <sub>1%</sub>
subj	70%	871	subj <sub>70%</sub> nobj <sub>8%</sub> pnct <sub>3%</sub> attr <sub>3%</sub> pobj <sub>1%</sub> vobj <sub>1%</sub> dobj <sub>1%</sub> conj <sub>1%</sub> coord <sub>1%</sub> preds <sub>1%</sub> time <sub>0%</sub> scene <sub>0%</sub> neg <sub>0%</sub> numm <sub>0%</sub> goal <sub>0%</sub> loc <sub>0%</sub> relr <sub>0%</sub> possr <sub>0%</sub> possd <sub>0%</sub> appa <sub>0%</sub> appr <sub>0%</sub> namef <sub>0%</sub> other <sub>0%</sub> name <sub>0%</sub> modp <sub>0%</sub> cond <sub>0%</sub> expl <sub>0%</sub> source <sub>0%</sub> prg <sub>0%</sub> avobj <sub>0%</sub> add <sub>0%</sub> correl <sub>0%</sub> CONJ:elab <sub>0%</sub> title <sub>0%</sub> man <sub>0%</sub> quant <sub>0%</sub> agent <sub>0%</sub> resem <sub>0%</sub> epi <sub>0%</sub> ac- com <sub>0%</sub> concom <sub>0%</sub> cause <sub>0%</sub> fpredo <sub>0%</sub> part <sub>0%</sub> conc <sub>0%</sub> fo- cal <sub>0%</sub> exem <sub>0%</sub> qobj <sub>0%</sub> contr <sub>0%</sub> comp <sub>0%</sub> iobj <sub>0%</sub> iter <sub>0%</sub> inst <sub>0%</sub> event <sub>0%</sub> xpl <sub>0%</sub> pred <sub>0%</sub>
nobj	70%	2094	nobj <sub>70%</sub> attr <sub>5%</sub> pnct <sub>3%</sub> subj <sub>2%</sub> vobj <sub>2%</sub> pobj <sub>2%</sub> dobj <sub>2%</sub> conj <sub>1%</sub> preds <sub>1%</sub> coord <sub>1%</sub> time <sub>0%</sub> possd <sub>0%</sub> quant <sub>0%</sub> relr <sub>0%</sub> name <sub>0%</sub> loc <sub>0%</sub> aobj <sub>0%</sub> numm <sub>0%</sub> goal <sub>0%</sub> other <sub>0%</sub> neg <sub>0%</sub> namef <sub>0%</sub> man <sub>0%</sub> appa <sub>0%</sub> possr <sub>0%</sub> title <sub>0%</sub> appr <sub>0%</sub> epi <sub>0%</sub> modp <sub>0%</sub> concom <sub>0%</sub> accom <sub>0%</sub> eval <sub>0%</sub> cond <sub>0%</sub> agent <sub>0%</sub> scene <sub>0%</sub> contr <sub>0%</sub> numa <sub>0%</sub> prg <sub>0%</sub> fpreds <sub>0%</sub> mod <sub>0%</sub> conc <sub>0%</sub> part <sub>0%</sub> pred <sub>0%</sub> focal <sub>0%</sub> fpredo <sub>0%</sub> qobj <sub>0%</sub> resem <sub>0%</sub> inst <sub>0%</sub> add <sub>0%</sub> iter <sub>0%</sub> correl <sub>0%</sub> event <sub>0%</sub> cause <sub>0%</sub> comp <sub>0%</sub> xpl <sub>0%</sub> exem <sub>0%</sub> iobj <sub>0%</sub> avobj <sub>0%</sub> source <sub>0%</sub>
xpl	69%	13	xpl <sub>69%</sub> pobj <sub>9%</sub> other <sub>7%</sub> nobj <sub>6%</sub> conj <sub>2%</sub> subj <sub>1%</sub> vobj <sub>1%</sub> preds <sub>0%</sub> pnct <sub>0%</sub> title <sub>0%</sub>
cause	66%	30	cause <sub>66%</sub> attr <sub>10%</sub> conj <sub>3%</sub> time <sub>3%</sub> cons <sub>3%</sub> pobj <sub>3%</sub> subj <sub>1%</sub> dobj <sub>1%</sub> other <sub>1%</sub> pnct <sub>1%</sub> iter <sub>0%</sub> nobj <sub>0%</sub> name <sub>0%</sub> vobj <sub>0%</sub>
vobj	65%	652	vobj <sub>65%</sub> nobj <sub>9%</sub> pnct <sub>4%</sub> attr <sub>3%</sub> preds <sub>3%</sub> subj <sub>2%</sub> dobj <sub>1%</sub> pobj <sub>1%</sub> conj <sub>1%</sub> coord <sub>0%</sub> relr <sub>0%</sub> possd <sub>0%</sub> numm <sub>0%</sub> time <sub>0%</sub> quant <sub>0%</sub> loc <sub>0%</sub> appa <sub>0%</sub> scene <sub>0%</sub> pred <sub>0%</sub> man <sub>0%</sub> iter <sub>0%</sub> aobj <sub>0%</sub> name <sub>0%</sub> fpreds <sub>0%</sub> part <sub>0%</sub> goal <sub>0%</sub> namef <sub>0%</sub> neg <sub>0%</sub> prg <sub>0%</sub> accom <sub>0%</sub> title <sub>0%</sub> other <sub>0%</sub> concom <sub>0%</sub> appr <sub>0%</sub> re- sem <sub>0%</sub> focal <sub>0%</sub> add <sub>0%</sub> possr <sub>0%</sub> modp <sub>0%</sub> qobj <sub>0%</sub> cause <sub>0%</sub> cond <sub>0%</sub> eval <sub>0%</sub> xpl <sub>0%</sub> epi <sub>0%</sub> agent <sub>0%</sub> fpredo <sub>0%</sub>
cond	65%	23	cond <sub>65%</sub> nobj <sub>11%</sub> subj <sub>5%</sub> man <sub>4%</sub> time <sub>3%</sub> preds <sub>1%</sub> dobj <sub>1%</sub> conj <sub>1%</sub> possd <sub>1%</sub> numm <sub>1%</sub> vobj <sub>1%</sub> attr <sub>0%</sub> fpredo <sub>0%</sub> other <sub>0%</sub> pnct <sub>0%</sub>
add	62%	40	add <sub>62%</sub> other <sub>10%</sub> discmark <sub>5%</sub> subj <sub>3%</sub> prg <sub>2%</sub> quant <sub>2%</sub> scene <sub>2%</sub> dobj <sub>1%</sub> pobj <sub>1%</sub> vobj <sub>1%</sub> pnct <sub>1%</sub> nobj <sub>1%</sub> attr <sub>1%</sub> preds <sub>0%</sub> possd <sub>0%</sub> coord <sub>0%</sub> neg <sub>0%</sub> appr <sub>0%</sub> conj <sub>0%</sub> time <sub>0%</sub>
neg	61%	70	neg <sub>61%</sub> nobj <sub>9%</sub> subj <sub>4%</sub> pnct <sub>4%</sub> dobj <sub>3%</sub> attr <sub>3%</sub> pobj <sub>2%</sub> coord <sub>2%</sub> vobj <sub>1%</sub> eval <sub>1%</sub> preds <sub>0%</sub> scene <sub>0%</sub> relr <sub>0%</sub> conj <sub>0%</sub> possr <sub>0%</sub> accom <sub>0%</sub> possd <sub>0%</sub> appr <sub>0%</sub> time <sub>0%</sub> add <sub>0%</sub> other <sub>0%</sub> agent <sub>0%</sub> title <sub>0%</sub>
dobj	61%	535	dobj <sub>61%</sub> nobj <sub>10%</sub> attr <sub>4%</sub> pnct <sub>4%</sub> pobj <sub>3%</sub> subj <sub>2%</sub> vobj <sub>2%</sub> coord <sub>1%</sub> preds <sub>1%</sub> time <sub>0%</sub> conj <sub>0%</sub> iobj <sub>0%</sub> robj <sub>0%</sub> possd <sub>0%</sub> neg <sub>0%</sub> quant <sub>0%</sub> goal <sub>0%</sub> other <sub>0%</sub> loc <sub>0%</sub> numm <sub>0%</sub> appa <sub>0%</sub> pred <sub>0%</sub> relr <sub>0%</sub> modp <sub>0%</sub> name <sub>0%</sub> appr <sub>0%</sub> dir <sub>0%</sub> possr <sub>0%</sub> title <sub>0%</sub> scene <sub>0%</sub> qobj <sub>0%</sub> namef <sub>0%</sub> cause <sub>0%</sub> resem <sub>0%</sub> add <sub>0%</sub> focal <sub>0%</sub> conc <sub>0%</sub> iter <sub>0%</sub> agent <sub>0%</sub> aobj <sub>0%</sub> man <sub>0%</sub> contr <sub>0%</sub> numa <sub>0%</sub> concom <sub>0%</sub> cond <sub>0%</sub> part <sub>0%</sub> exem <sub>0%</sub> source <sub>0%</sub> correl <sub>0%</sub> inst <sub>0%</sub>
cons	61%	13	cons <sub>61%</sub> time <sub>23%</sub> inst <sub>7%</sub> cause <sub>7%</sub>

conj	61%	412	conj <sub>61%</sub> nobj <sub>9%</sub> attr <sub>5%</sub> pnct <sub>5%</sub> subj <sub>2%</sub> vobj <sub>1%</sub> coord <sub>1%</sub> pobj <sub>1%</sub> CONJ:add <sub>1%</sub> dobj <sub>1%</sub> possd <sub>0%</sub> preds <sub>0%</sub> time <sub>0%</sub> CONTR:sbj <sub>0%</sub> CONTR:dir <sub>0%</sub> numm <sub>0%</sub> loc <sub>0%</sub> part <sub>0%</sub> conc <sub>0%</sub> qobj <sub>0%</sub> scene <sub>0%</sub> name <sub>0%</sub> other <sub>0%</sub> relr <sub>0%</sub> cause <sub>0%</sub> inst <sub>0%</sub> avobj <sub>0%</sub> CONST:rest <sub>0%</sub> TELIC:cons.dir <sub>0%</sub> con-com <sub>0%</sub> possr <sub>0%</sub> quant <sub>0%</sub> namef <sub>0%</sub> modp <sub>0%</sub> exem <sub>0%</sub> neg <sub>0%</sub> title <sub>0%</sub> appa <sub>0%</sub> goal <sub>0%</sub> pred <sub>0%</sub> agent <sub>0%</sub> focal <sub>0%</sub> cond <sub>0%</sub> correl <sub>0%</sub> eval <sub>0%</sub> prg <sub>0%</sub> comp <sub>0%</sub> event <sub>0%</sub> fpred <sub>0%</sub> aobj <sub>0%</sub> man <sub>0%</sub> appr <sub>0%</sub> accom <sub>0%</sub> xpl <sub>0%</sub> add <sub>0%</sub>
possd	59%	177	possd <sub>59%</sub> nobj <sub>11%</sub> attr <sub>5%</sub> pnct <sub>4%</sub> vobj <sub>2%</sub> dobj <sub>2%</sub> pobj <sub>2%</sub> coord <sub>1%</sub> subj <sub>1%</sub> conj <sub>1%</sub> time <sub>1%</sub> relr <sub>1%</sub> quant <sub>0%</sub> inst <sub>0%</sub> numm <sub>0%</sub> modp <sub>0%</sub> scene <sub>0%</sub> loc <sub>0%</sub> preds <sub>0%</sub> other <sub>0%</sub> aobj <sub>0%</sub> possr <sub>0%</sub> namef <sub>0%</sub> conc <sub>0%</sub> neg <sub>0%</sub> focal <sub>0%</sub> cond <sub>0%</sub> numa <sub>0%</sub> event <sub>0%</sub> add <sub>0%</sub> iobj <sub>0%</sub> title <sub>0%</sub> appr <sub>0%</sub> appa <sub>0%</sub> concom <sub>0%</sub> name <sub>0%</sub>
quant	58%	131	quant <sub>58%</sub> nobj <sub>10%</sub> attr <sub>2%</sub> pobj <sub>2%</sub> time <sub>2%</sub> eval <sub>2%</sub> man <sub>2%</sub> dobj <sub>1%</sub> pnct <sub>1%</sub> prg <sub>1%</sub> focal <sub>1%</sub> vobj <sub>1%</sub> avobj <sub>1%</sub> degr <sub>1%</sub> possd <sub>1%</sub> modp <sub>0%</sub> relr <sub>0%</sub> add <sub>0%</sub> elab <sub>0%</sub> subj <sub>0%</sub> conj <sub>0%</sub> numm <sub>0%</sub> coord <sub>0%</sub> accom <sub>0%</sub> preds <sub>0%</sub> name <sub>0%</sub> appa <sub>0%</sub> epi <sub>0%</sub> iter <sub>0%</sub> appr <sub>0%</sub> namef <sub>0%</sub> event <sub>0%</sub>
preds	58%	307	preds <sub>58%</sub> nobj <sub>9%</sub> vobj <sub>7%</sub> attr <sub>3%</sub> subj <sub>3%</sub> loc <sub>3%</sub> dobj <sub>2%</sub> pnct <sub>2%</sub> time <sub>1%</sub> pobj <sub>1%</sub> pred <sub>1%</sub> coord <sub>0%</sub> aobj <sub>0%</sub> conj <sub>0%</sub> scene <sub>0%</sub> fpred <sub>0%</sub> other <sub>0%</sub> numm <sub>0%</sub> inst <sub>0%</sub> resem <sub>0%</sub> expl <sub>0%</sub> goal <sub>0%</sub> neg <sub>0%</sub> part <sub>0%</sub> prg <sub>0%</sub> possd <sub>0%</sub> possr <sub>0%</sub> relr <sub>0%</sub> title <sub>0%</sub> add <sub>0%</sub> cond <sub>0%</sub> agent <sub>0%</sub> accom <sub>0%</sub> name <sub>0%</sub> quant <sub>0%</sub> man <sub>0%</sub> concom <sub>0%</sub> appr <sub>0%</sub> appa <sub>0%</sub> xpl <sub>0%</sub>
coord	54%	327	coord <sub>54%</sub> nobj <sub>10%</sub> discmark <sub>5%</sub> pnct <sub>5%</sub> attr <sub>3%</sub> subj <sub>2%</sub> pobj <sub>2%</sub> dobj <sub>2%</sub> conj <sub>2%</sub> vobj <sub>1%</sub> time <sub>1%</sub> preds <sub>0%</sub> possd <sub>0%</sub> qobj <sub>0%</sub> contr <sub>0%</sub> scene <sub>0%</sub> neg <sub>0%</sub> loc <sub>0%</sub> accom <sub>0%</sub> part <sub>0%</sub> numm <sub>0%</sub> appa <sub>0%</sub> appr <sub>0%</sub> other <sub>0%</sub> quant <sub>0%</sub> goal <sub>0%</sub> possr <sub>0%</sub> concom <sub>0%</sub> namef <sub>0%</sub> title <sub>0%</sub> fpred <sub>0%</sub> inst <sub>0%</sub> eval <sub>0%</sub> relr <sub>0%</sub> conc <sub>0%</sub> focal <sub>0%</sub> modp <sub>0%</sub> add <sub>0%</sub> iter <sub>0%</sub> avobj <sub>0%</sub> pred <sub>0%</sub> prg <sub>0%</sub> source <sub>0%</sub>
attr	54%	973	attr <sub>54%</sub> nobj <sub>12%</sub> pobj <sub>5%</sub> pnct <sub>4%</sub> subj <sub>3%</sub> dobj <sub>2%</sub> vobj <sub>2%</sub> conj <sub>1%</sub> time <sub>1%</sub> loc <sub>1%</sub> coord <sub>1%</sub> other <sub>0%</sub> preds <sub>0%</sub> possd <sub>0%</sub> aobj <sub>0%</sub> mod <sub>0%</sub> focal <sub>0%</sub> relr <sub>0%</sub> scene <sub>0%</sub> numm <sub>0%</sub> goal <sub>0%</sub> quant <sub>0%</sub> appa <sub>0%</sub> cause <sub>0%</sub> name <sub>0%</sub> modp <sub>0%</sub> man <sub>0%</sub> neg <sub>0%</sub> accom <sub>0%</sub> pred <sub>0%</sub> appr <sub>0%</sub> namef <sub>0%</sub> source <sub>0%</sub> conc <sub>0%</sub> inst <sub>0%</sub> agent <sub>0%</sub> possr <sub>0%</sub> dir <sub>0%</sub> part <sub>0%</sub> title <sub>0%</sub> eval <sub>0%</sub> exem <sub>0%</sub> add <sub>0%</sub> concom <sub>0%</sub> prg <sub>0%</sub> fpred <sub>0%</sub> resem <sub>0%</sub> contr <sub>0%</sub> numa <sub>0%</sub> cond <sub>0%</sub> epi <sub>0%</sub> iobj <sub>0%</sub> qobj <sub>0%</sub> avobj <sub>0%</sub> event <sub>0%</sub>
time	52%	242	time <sub>52%</sub> nobj <sub>10%</sub> attr <sub>7%</sub> pnct <sub>4%</sub> iter <sub>4%</sub> dobj <sub>2%</sub> preds <sub>2%</sub> subj <sub>1%</sub> coord <sub>1%</sub> pobj <sub>1%</sub> quant <sub>1%</sub> cons <sub>1%</sub> man <sub>1%</sub> conj <sub>1%</sub> other <sub>1%</sub> possd <sub>0%</sub> vobj <sub>0%</sub> scene <sub>0%</sub> cause <sub>0%</sub> mod <sub>0%</sub> cond <sub>0%</sub> numm <sub>0%</sub> relr <sub>0%</sub> possr <sub>0%</sub> goal <sub>0%</sub> fpred <sub>0%</sub> appa <sub>0%</sub> loc <sub>0%</sub> qobj <sub>0%</sub> neg <sub>0%</sub> expl <sub>0%</sub> namef <sub>0%</sub> part <sub>0%</sub> inst <sub>0%</sub> resem <sub>0%</sub> name <sub>0%</sub> eval <sub>0%</sub> concom <sub>0%</sub> appr <sub>0%</sub> add <sub>0%</sub>
loc	51%	182	loc <sub>51%</sub> dir <sub>11%</sub> nobj <sub>7%</sub> attr <sub>6%</sub> preds <sub>5%</sub> other <sub>4%</sub> pobj <sub>2%</sub> subj <sub>1%</sub> vobj <sub>1%</sub> focal <sub>1%</sub> fpred <sub>1%</sub> dobj <sub>1%</sub> pnct <sub>0%</sub> conj <sub>0%</sub> coord <sub>0%</sub> avobj <sub>0%</sub> event <sub>0%</sub> man <sub>0%</sub> inst <sub>0%</sub> possd <sub>0%</sub> time <sub>0%</sub> possr <sub>0%</sub> numm <sub>0%</sub> qobj <sub>0%</sub> name <sub>0%</sub> relr <sub>0%</sub>
elab	50%	4	elab <sub>50%</sub> prg <sub>25%</sub> quant <sub>25%</sub>

relr	48%	119	relr <sub>48%</sub> nobj <sub>11%</sub> relpa <sub>9%</sub> attr <sub>4%</sub> pnct <sub>4%</sub> vobj <sub>3%</sub> subj <sub>2%</sub> rel <sub>2%</sub> pobj <sub>1%</sub> relelab <sub>1%</sub> possd <sub>1%</sub> dobj <sub>1%</sub> conj <sub>1%</sub> pred <sub>0%</sub> quant <sub>0%</sub> time <sub>0%</sub> neg <sub>0%</sub> scene <sub>0%</sub> pred <sub>0%</sub> coord <sub>0%</sub> prg <sub>0%</sub> epi <sub>0%</sub> namef <sub>0%</sub> appa <sub>0%</sub> possr <sub>0%</sub> iter <sub>0%</sub> contr <sub>0%</sub> modp <sub>0%</sub> concom <sub>0%</sub> name <sub>0%</sub> numm <sub>0%</sub> eval <sub>0%</sub> loc <sub>0%</sub>
man	46%	98	man <sub>46%</sub> nobj <sub>6%</sub> accom <sub>5%</sub> other <sub>4%</sub> pnct <sub>3%</sub> attr <sub>3%</sub> time <sub>3%</sub> quant <sub>3%</sub> epi <sub>2%</sub> goal <sub>2%</sub> vobj <sub>1%</sub> pobj <sub>1%</sub> subj <sub>1%</sub> prg <sub>1%</sub> fpreds <sub>1%</sub> cond <sub>1%</sub> concom <sub>1%</sub> fpred <sub>1%</sub> loc <sub>1%</sub> inst <sub>1%</sub> resem <sub>1%</sub> source <sub>1%</sub> aobj <sub>1%</sub> eval <sub>1%</sub> scene <sub>1%</sub> mod <sub>1%</sub> dobj <sub>0%</sub> namef <sub>0%</sub> appa <sub>0%</sub> avobj <sub>0%</sub> part <sub>0%</sub> numm <sub>0%</sub> conj <sub>0%</sub> pred <sub>0%</sub> modp <sub>0%</sub> possr <sub>0%</sub>
title	45%	24	title <sub>45%</sub> nobj <sub>21%</sub> subj <sub>5%</sub> appr <sub>4%</sub> dobj <sub>4%</sub> pnct <sub>3%</sub> attr <sub>3%</sub> conj <sub>2%</sub> vobj <sub>2%</sub> pred <sub>1%</sub> coord <sub>1%</sub> name <sub>1%</sub> neg <sub>0%</sub> possd <sub>0%</sub> agent <sub>0%</sub> numm <sub>0%</sub> pobj <sub>0%</sub> xpl <sub>0%</sub>
iobj	45%	11	iobj <sub>45%</sub> dobj <sub>36%</sub> robj <sub>9%</sub> pnct <sub>3%</sub> subj <sub>2%</sub> nobj <sub>1%</sub> attr <sub>1%</sub> possd <sub>1%</sub> modp <sub>1%</sub>
avobj	44%	25	avobj <sub>44%</sub> part <sub>12%</sub> other <sub>8%</sub> quant <sub>8%</sub> subj <sub>4%</sub> conj <sub>4%</sub> aobj <sub>4%</sub> loc <sub>4%</sub> pobj <sub>4%</sub> nobj <sub>1%</sub> pnct <sub>1%</sub> namef <sub>1%</sub> man <sub>1%</sub> appa <sub>1%</sub> attr <sub>0%</sub> numm <sub>0%</sub> coord <sub>0%</sub>
pobj	43%	477	pobj <sub>43%</sub> nobj <sub>12%</sub> attr <sub>11%</sub> pnct <sub>3%</sub> dobj <sub>3%</sub> subj <sub>3%</sub> goal <sub>2%</sub> vobj <sub>2%</sub> other <sub>2%</sub> coord <sub>1%</sub> dir <sub>1%</sub> conj <sub>1%</sub> loc <sub>1%</sub> time <sub>0%</sub> possd <sub>0%</sub> pred <sub>0%</sub> source <sub>0%</sub> quant <sub>0%</sub> relr <sub>0%</sub> inst <sub>0%</sub> neg <sub>0%</sub> numm <sub>0%</sub> man <sub>0%</sub> conc <sub>0%</sub> xpl <sub>0%</sub> possr <sub>0%</sub> namef <sub>0%</sub> part <sub>0%</sub> appr <sub>0%</sub> appa <sub>0%</sub> cause <sub>0%</sub> avobj <sub>0%</sub> accom <sub>0%</sub> focal <sub>0%</sub> name <sub>0%</sub> prg <sub>0%</sub> add <sub>0%</sub> modp <sub>0%</sub> scene <sub>0%</sub> eval <sub>0%</sub> expl <sub>0%</sub> epi <sub>0%</sub> fpred <sub>0%</sub> qobj <sub>0%</sub> exem <sub>0%</sub> iter <sub>0%</sub> concom <sub>0%</sub> pred <sub>0%</sub> title <sub>0%</sub> correl <sub>0%</sub>
correl	42%	7	correl <sub>42%</sub> subj <sub>15%</sub> focal <sub>14%</sub> nobj <sub>7%</sub> pnct <sub>7%</sub> dobj <sub>4%</sub> conj <sub>3%</sub> appr <sub>1%</sub> appa <sub>1%</sub> pobj <sub>1%</sub>
agent	41%	12	agent <sub>41%</sub> nobj <sub>19%</sub> attr <sub>9%</sub> pnct <sub>8%</sub> subj <sub>5%</sub> dobj <sub>3%</sub> conj <sub>3%</sub> scene <sub>2%</sub> pred <sub>2%</sub> numm <sub>2%</sub> title <sub>0%</sub> neg <sub>0%</sub> vobj <sub>0%</sub>
appa	40%	40	appa <sub>40%</sub> nobj <sub>13%</sub> attr <sub>8%</sub> pnct <sub>6%</sub> subj <sub>5%</sub> dobj <sub>5%</sub> vobj <sub>4%</sub> pobj <sub>2%</sub> conj <sub>1%</sub> coord <sub>1%</sub> appr <sub>1%</sub> time <sub>1%</sub> namef <sub>1%</sub> pred <sub>0%</sub> inst <sub>0%</sub> relr <sub>0%</sub> avobj <sub>0%</sub> man <sub>0%</sub> numm <sub>0%</sub> possr <sub>0%</sub> quant <sub>0%</sub> name <sub>0%</sub> other <sub>0%</sub> correl <sub>0%</sub> pred <sub>0%</sub> possd <sub>0%</sub>
eval	39%	38	eval <sub>39%</sub> prg <sub>21%</sub> nobj <sub>8%</sub> quant <sub>7%</sub> epi <sub>5%</sub> focal <sub>2%</sub> neg <sub>2%</sub> man <sub>2%</sub> other <sub>2%</sub> attr <sub>2%</sub> pnct <sub>1%</sub> pobj <sub>1%</sub> coord <sub>0%</sub> conj <sub>0%</sub> time <sub>0%</sub> vobj <sub>0%</sub> relr <sub>0%</sub> namef <sub>0%</sub> concom <sub>0%</sub> numm <sub>0%</sub>
appr	37%	29	appr <sub>37%</sub> nobj <sub>15%</sub> subj <sub>7%</sub> pnct <sub>6%</sub> attr <sub>5%</sub> pobj <sub>5%</sub> dobj <sub>4%</sub> title <sub>3%</sub> vobj <sub>2%</sub> coord <sub>2%</sub> appa <sub>1%</sub> focal <sub>0%</sub> neg <sub>0%</sub> conc <sub>0%</sub> numm <sub>0%</sub> name <sub>0%</sub> add <sub>0%</sub> conj <sub>0%</sub> quant <sub>0%</sub> iter <sub>0%</sub> time <sub>0%</sub> possr <sub>0%</sub> correl <sub>0%</sub> pred <sub>0%</sub> possd <sub>0%</sub>
relpa	31%	16	relr <sub>68%</sub> relpa <sub>31%</sub>
name	30%	39	nobj <sub>32%</sub> name <sub>30%</sub> attr <sub>10%</sub> vobj <sub>4%</sub> subj <sub>4%</sub> dobj <sub>3%</sub> conj <sub>2%</sub> pnct <sub>2%</sub> pobj <sub>1%</sub> numm <sub>1%</sub> possr <sub>0%</sub> cause <sub>0%</sub> iter <sub>0%</sub> title <sub>0%</sub> other <sub>0%</sub> quant <sub>0%</sub> pred <sub>0%</sub> appr <sub>0%</sub> relr <sub>0%</sub> focal <sub>0%</sub> aobj <sub>0%</sub> loc <sub>0%</sub> appa <sub>0%</sub> time <sub>0%</sub> part <sub>0%</sub> possd <sub>0%</sub>
goal	30%	56	goal <sub>30%</sub> pobj <sub>23%</sub> nobj <sub>9%</sub> attr <sub>5%</sub> subj <sub>5%</sub> dobj <sub>4%</sub> scene <sub>3%</sub> man <sub>3%</sub> pnct <sub>2%</sub> fpred <sub>2%</sub> other <sub>2%</sub> vobj <sub>1%</sub> pred <sub>1%</sub> time <sub>0%</sub> coord <sub>0%</sub> accom <sub>0%</sub> conj <sub>0%</sub> numm <sub>0%</sub> namef <sub>0%</sub> exem <sub>0%</sub>
part	29%	24	part <sub>29%</sub> avobj <sub>12%</sub> nobj <sub>8%</sub> pobj <sub>6%</sub> conj <sub>5%</sub> pnct <sub>5%</sub> attr <sub>4%</sub> coord <sub>4%</sub> dir <sub>4%</sub> scene <sub>4%</sub> vobj <sub>3%</sub> pred <sub>2%</sub> subj <sub>2%</sub> numm <sub>1%</sub> epi <sub>1%</sub> man <sub>1%</sub> time <sub>1%</sub> namef <sub>0%</sub> dobj <sub>0%</sub> other <sub>0%</sub> name <sub>0%</sub>

inst	29%	24	inst <sub>29%</sub> pobj <sub>9%</sub> predo <sub>8%</sub> possd <sub>5%</sub> attr <sub>5%</sub> pnct <sub>4%</sub> conj <sub>4%</sub> concom <sub>4%</sub> preds <sub>4%</sub> scene <sub>4%</sub> cons <sub>4%</sub> man <sub>4%</sub> loc <sub>4%</sub> nobj <sub>3%</sub> coord <sub>2%</sub> appa <sub>1%</sub> time <sub>0%</sub> subj <sub>0%</sub> dobj <sub>0%</sub>
scene	28%	42	scene <sub>28%</sub> subj <sub>9%</sub> attr <sub>9%</sub> nobj <sub>6%</sub> goal <sub>4%</sub> coord <sub>4%</sub> pnct <sub>4%</sub> vobj <sub>4%</sub> preds <sub>3%</sub> time <sub>3%</sub> conj <sub>2%</sub> add <sub>2%</sub> contr <sub>2%</sub> part <sub>2%</sub> man <sub>2%</sub> inst <sub>2%</sub> dobj <sub>2%</sub> possd <sub>1%</sub> namef <sub>1%</sub> neg <sub>1%</sub> relr <sub>0%</sub> pobj <sub>0%</sub> iter <sub>0%</sub> agent <sub>0%</sub> event <sub>0%</sub>
contr	28%	21	contr <sub>28%</sub> discmark <sub>19%</sub> conc <sub>9%</sub> coord <sub>9%</sub> nobj <sub>7%</sub> pnct <sub>6%</sub> prg <sub>4%</sub> scene <sub>4%</sub> other <sub>4%</sub> dobj <sub>2%</sub> relr <sub>1%</sub> attr <sub>1%</sub> subj <sub>1%</sub>
epi	26%	15	epi <sub>26%</sub> nobj <sub>21%</sub> man <sub>15%</sub> eval <sub>13%</sub> pnct <sub>7%</sub> subj <sub>6%</sub> relr <sub>2%</sub> part <sub>1%</sub> pobj <sub>1%</sub> attr <sub>1%</sub> quant <sub>1%</sub> modp <sub>1%</sub> vobj <sub>1%</sub>
aobj	24%	33	nobj <sub>29%</sub> aobj <sub>24%</sub> attr <sub>19%</sub> preds <sub>6%</sub> vobj <sub>4%</sub> avobj <sub>3%</sub> man <sub>3%</sub> pnct <sub>2%</sub> concom <sub>1%</sub> possd <sub>1%</sub> modp <sub>1%</sub> dobj <sub>1%</sub> possr <sub>1%</sub> conj <sub>0%</sub> focal <sub>0%</sub> name <sub>0%</sub>
source	23%	13	pobj <sub>23%</sub> source <sub>23%</sub> attr <sub>12%</sub> subj <sub>11%</sub> concom <sub>7%</sub> man <sub>7%</sub> other <sub>7%</sub> exem <sub>1%</sub> pnct <sub>1%</sub> nobj <sub>0%</sub> dobj <sub>0%</sub> coord <sub>0%</sub>
focal	22%	27	focal <sub>22%</sub> attr <sub>19%</sub> pnct <sub>8%</sub> other <sub>8%</sub> quant <sub>7%</sub> loc <sub>7%</sub> nobj <sub>5%</sub> correl <sub>3%</sub> eval <sub>3%</sub> pobj <sub>3%</sub> subj <sub>1%</sub> dobj <sub>1%</sub> vobj <sub>1%</sub> conj <sub>1%</sub> numm <sub>1%</sub> possd <sub>0%</sub> appr <sub>0%</sub> aobj <sub>0%</sub> name <sub>0%</sub> coord <sub>0%</sub>
dir	22%	40	loc <sub>50%</sub> dir <sub>22%</sub> pobj <sub>17%</sub> part <sub>2%</sub> pnct <sub>2%</sub> attr <sub>2%</sub> dobj <sub>2%</sub>
accom	22%	22	man <sub>22%</sub> accom <sub>22%</sub> nobj <sub>14%</sub> attr <sub>11%</sub> pnct <sub>5%</sub> coord <sub>5%</sub> pobj <sub>4%</sub> vobj <sub>2%</sub> subj <sub>2%</sub> goal <sub>2%</sub> quant <sub>1%</sub> neg <sub>1%</sub> preds <sub>1%</sub> conj <sub>1%</sub>
iter	21%	19	time <sub>52%</sub> iter <sub>21%</sub> vobj <sub>7%</sub> other <sub>5%</sub> nobj <sub>2%</sub> dobj <sub>1%</sub> relr <sub>1%</sub> name <sub>1%</sub> scene <sub>1%</sub> cause <sub>1%</sub> pobj <sub>1%</sub> subj <sub>0%</sub> appr <sub>0%</sub> coord <sub>0%</sub> quant <sub>0%</sub>
conc	20%	15	conc <sub>20%</sub> prg <sub>13%</sub> contr <sub>13%</sub> pobj <sub>9%</sub> nobj <sub>9%</sub> conj <sub>8%</sub> attr <sub>8%</sub> pnct <sub>6%</sub> dobj <sub>3%</sub> subj <sub>3%</sub> possd <sub>1%</sub> appr <sub>1%</sub> coord <sub>1%</sub>
resem	18%	11	resem <sub>18%</sub> pnct <sub>11%</sub> numm <sub>10%</sub> preds <sub>9%</sub> man <sub>9%</sub> other <sub>9%</sub> nobj <sub>7%</sub> dobj <sub>5%</sub> subj <sub>5%</sub> attr <sub>4%</sub> vobj <sub>3%</sub> possr <sub>3%</sub> time <sub>1%</sub> qobj <sub>1%</sub>
modp	18%	22	modp <sub>18%</sub> nobj <sub>17%</sub> attr <sub>14%</sub> pnct <sub>13%</sub> subj <sub>7%</sub> quant <sub>5%</sub> dobj <sub>5%</sub> possd <sub>3%</sub> pobj <sub>3%</sub> conj <sub>3%</sub> aobj <sub>2%</sub> predo <sub>1%</sub> vobj <sub>1%</sub> coord <sub>1%</sub> relr <sub>0%</sub> epi <sub>0%</sub> man <sub>0%</sub> iobj <sub>0%</sub> prg <sub>0%</sub>
robj	16%	6	dobj <sub>66%</sub> robj <sub>16%</sub> iobj <sub>16%</sub>
prg	14%	27	eval <sub>29%</sub> prg <sub>14%</sub> quant <sub>7%</sub> conc <sub>7%</sub> nobj <sub>5%</sub> subj <sub>4%</sub> add <sub>3%</sub> contr <sub>3%</sub> elab <sub>3%</sub> man <sub>3%</sub> pnct <sub>2%</sub> preds <sub>2%</sub> vobj <sub>2%</sub> pobj <sub>2%</sub> attr <sub>1%</sub> relr <sub>1%</sub> conj <sub>1%</sub> coord <sub>0%</sub> numm <sub>0%</sub> modp <sub>0%</sub>
discmark	13%	29	coord <sub>62%</sub> contr <sub>13%</sub> discmark <sub>13%</sub> add <sub>6%</sub> qobj <sub>3%</sub>
other	11%	78	attr <sub>12%</sub> pobj <sub>12%</sub> other <sub>11%</sub> loc <sub>10%</sub> nobj <sub>8%</sub> add <sub>5%</sub> man <sub>5%</sub> pnct <sub>3%</sub> time <sub>3%</sub> focal <sub>2%</sub> avobj <sub>2%</sub> dobj <sub>2%</sub> subj <sub>2%</sub> preds <sub>1%</sub> goal <sub>1%</sub> conj <sub>1%</sub> iter <sub>1%</sub> resem <sub>1%</sub> xpl <sub>1%</sub> source <sub>1%</sub> contr <sub>1%</sub> eval <sub>1%</sub> mod <sub>1%</sub> coord <sub>0%</sub> vobj <sub>0%</sub> possd <sub>0%</sub> cause <sub>0%</sub> exem <sub>0%</sub> name <sub>0%</sub> numm <sub>0%</sub> cond <sub>0%</sub> qobj <sub>0%</sub> appa <sub>0%</sub> part <sub>0%</sub> neg <sub>0%</sub>
predo	5%	18	preds <sub>17%</sub> vobj <sub>12%</sub> inst <sub>11%</sub> nobj <sub>10%</sub> attr <sub>9%</sub> dobj <sub>8%</sub> pnct <sub>6%</sub> relr <sub>5%</sub> predo <sub>5%</sub> fpredo <sub>5%</sub> conj <sub>2%</sub> modp <sub>1%</sub> appa <sub>1%</sub> co- ord <sub>0%</sub> pobj <sub>0%</sub> subj <sub>0%</sub> numm <sub>0%</sub>
possr	4%	25	nobj <sub>28%</sub> subj <sub>13%</sub> pnct <sub>13%</sub> attr <sub>5%</sub> pobj <sub>4%</sub> possr <sub>4%</sub> dobj <sub>3%</sub> conj <sub>2%</sub> time <sub>2%</sub> vobj <sub>2%</sub> preds <sub>2%</sub> coord <sub>1%</sub> possd <sub>1%</sub> relr <sub>1%</sub> aobj <sub>1%</sub> neg <sub>1%</sub> resem <sub>1%</sub> name <sub>1%</sub> loc <sub>1%</sub> namef <sub>1%</sub> numm <sub>1%</sub> concom <sub>0%</sub> appa <sub>0%</sub> man <sub>0%</sub> appr <sub>0%</sub>

numm	4%	49	nobj31% pnct10% attr9% subj6% vobj5% numm4% dobj3% conj3% pobj3% resem2% preds2% coord2% possd2% time1% namef1% name0% quant0% focal0% part0% loc0% concom0% goal0% cond0% man0% agent0% possr0% other0% appr0% appa0% qobj0% relr0% prg0% avobj0% eval0% title0% predo0%
relelab	0%	2	relr100%
rel	0%	3	relr100%
numa	0%	2	nobj62% attr12% dobj12% possd12%
mod	0%	10	attr60% nobj10% man10% time10% other10%
fpreds	0%	3	man33% nobj33% vobj33%
fpredo	0%	11	loc18% preds11% goal11% nobj9% predo9% man9% pnct8% subj5% time4% attr3% pobj3% coord2% cond1% conj1% vobj0%
event	0%	3	loc33% nobj30% attr10% conj5% scene5% possd5% subj3% pnct3% quant3%
degr	0%	2	quant100%
concom	0%	14	nobj27% subj11% source7% man7% inst7% conj6% attr5% pnct4% coord4% vobj3% aobj3% relr2% numm2% namef1% dobj1% possr1% eval0% pobj0% time0% preds0% possd0%
comp	0%	1	conj40% nobj40% subj20%
TOTAL	59%	10147	

## B.2 Confusion table: semantics

R	A	N	Confusion list
time	69%	29	time69% source13% other7% arg6% about0% patient0% agent0%
const	59%	49	const59% arg18% form4% poss4% loc2% func2% elab2% apart2% class2% goal2% source2%
func	54%	42	func54% arg19% loc7% about4% goal4% const2% patient2% iden2% other2%
resem	50%	2	resem50% goal50%
location	50%	2	loc50% location50%
loc	50%	83	loc50% arg12% source6% goal5% patient4% func3% other3% poss2% agent1% elab1% const1% form1% location1% apart1% recipient1% about1% quant0%
eval	50%	2	arg50% eval50%
goal	46%	60	goal46% arg21% loc7% other7% func3% agent3% patient2% cause1% resem1% const1% recipient1% quant1% about0%
agent	43%	74	agent43% arg27% patient9% experiencer5% about3% goal2% source2% loc2% elab2% quant1% poss0% time0% other0%
apart	42%	19	quant47% apart42% loc5% const5%
patient	40%	86	patient40% arg22% about13% agent7% loc4% poss3% other1% goal1% quant1% func1% experiencer1% time0%
elab	40%	10	elab40% loc15% agent15% const10% form10% arg5% other5%
arg	40%	190	arg40% agent10% patient10% goal6% loc5% const4% about4% func4% source4% other3% poss3% quant1% time1% eval0% elab0%

source	39%	43	source <sub>39%</sub> arg <sub>18%</sub> loc <sub>11%</sub> time <sub>9%</sub> other <sub>7%</sub> agent <sub>4%</sub> poss <sub>4%</sub> const <sub>2%</sub> quant <sub>2%</sub>
poss	34%	29	poss <sub>34%</sub> arg <sub>20%</sub> other <sub>11%</sub> patient <sub>11%</sub> loc <sub>6%</sub> const <sub>6%</sub> source <sub>6%</sub> agent <sub>1%</sub>
form	33%	6	const <sub>33%</sub> form <sub>33%</sub> loc <sub>16%</sub> elab <sub>16%</sub>
quant	26%	23	apart <sub>39%</sub> quant <sub>26%</sub> arg <sub>8%</sub> patient <sub>5%</sub> other <sub>5%</sub> agent <sub>4%</sub> source <sub>4%</sub> goal <sub>3%</sub> loc <sub>2%</sub> about <sub>1%</sub>
about	25%	35	patient <sub>32%</sub> about <sub>25%</sub> arg <sub>23%</sub> agent <sub>6%</sub> func <sub>5%</sub> loc <sub>2%</sub> other <sub>1%</sub> quant <sub>0%</sub> time <sub>0%</sub> goal <sub>0%</sub>
other	7%	32	arg <sub>20%</sub> goal <sub>13%</sub> poss <sub>10%</sub> loc <sub>9%</sub> source <sub>9%</sub> other <sub>7%</sub> time <sub>7%</sub> class <sub>6%</sub> patient <sub>4%</sub> quant <sub>3%</sub> func <sub>3%</sub> elab <sub>1%</sub> about <sub>1%</sub> agent <sub>0%</sub>
recipient	0%	2	loc <sub>50%</sub> goal <sub>50%</sub>
iden	0%	1	func <sub>100%</sub>
experiencer	0%	5	agent <sub>80%</sub> patient <sub>20%</sub>
class	0%	3	other <sub>66%</sub> const <sub>33%</sub>
cause	0%	1	goal <sub>100%</sub>
TOTAL	41%	828	

### B.3 Confusion table: discourse

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



JOINT	16%	6	CONJ:add <sub>66%</sub> JOINT <sub>16%</sub> CONST:exem <sub>16%</sub>
DISJ:dir	0%	1	CONJ:add <sub>100%</sub>
DIREC	0%	2	CONJ:elab <sub>50%</sub> CONJ:seq <sub>50%</sub>
CONTR:prg	0%	1	CONTR:sbj <sub>100%</sub>
CONTR	0%	1	AGENTIVE:expl <sub>100%</sub>
CONST:elab	0%	3	CONJ:elab <sub>66%</sub> CONST:rest <sub>33%</sub>
CONSOL:source	0%	2	AGENTIVE:sbj <sub>100%</sub>
CONJ	0%	1	CONJ:add <sub>100%</sub>
AGENTIVE:sbj	0%	5	CONJ:add <sub>40%</sub> CONSOL:source <sub>40%</sub> AGENTIVE:reas <sub>20%</sub>
<hr/>			
TOTAL	47%	255	

## B.4 Confusion table: anaphora

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

## B.5 Confusion table: morphology

R	A	N	Confusion list
func	100%	2	func <sub>100%</sub>
DERvn:patient	100%	1	DERvn:patient <sub>100%</sub>
DERvn:core	100%	6	DERvn:core <sub>100%</sub>
DERnv	100%	1	DERnv <sub>100%</sub>
DERna:disp	100%	1	DERna:disp <sub>100%</sub>
DERan:qual	100%	1	DERan:qual <sub>100%</sub>
about	100%	1	about <sub>100%</sub>
<hr/>			
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		929
auto				1774	82
outdated-final	536				882
first	45	70	102	1	151
discussed	178	194	1		176
final				537	94

### 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		358
auto			413	
outdated-final				
first	2	31		2
discussed	25			49
final				4

## C.6 it texts

	discourse	morphology	postag	syntax
none	330	411		244
auto			412	3
outdated-final				
first		2		38
discussed	83			77
final			1	54

## C.7 da-de texts

	alignment	syntax
none	368	
auto		4
outdated-final		
first	45	
discussed		
final		

## C.8 da-en texts

	alignment	syntax
none		
auto		1
outdated-final	536	
first		
discussed		
final		

## C.9 da-es texts

	alignment	syntax
none	332	

auto	2
outdated-final	
first	
discussed	81
final	

## C.10 da-it texts

	alignment	syntax
none	316	
auto		2
outdated-final		
first		
discussed	97	
final		

# Appendix D

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