The inventory of linguistic relations used in the Copenhagen Dependency Treebanks

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Abstract

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

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

Contents

Chapter 1

Introduction

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

relation
isa super
[12]

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

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

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

Chapter 2

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

Subtypes: DIM:LEVEL DIM:TYPE.

DIM:LEVEL isa DIM [8] *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.

DIM:TYPE isa DIM [17] *Dimension: annotation type.* A dimension specifying the type of the annotation. Eg, a lexical feature or a directed bilexical reiation.

Subtypes: FEAT REL.

RULE isa ANY [4] *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 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 isa ANY [5] *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 isa DIM [8] *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 isa DIM:LEVEL [15] *Alignment level* (long: ALIGNMENT). The alignment level includes alignment relations as well as lexical features associated with alignments.

Subtypes: ALIGNREL.

ANA isa DIM:LEVEL [14] *Anaphor level* (long: ANAPHORA). The anaphor level includes relations between anaphora and their antecedents, as well as lexical features associated with anaphora.

Subtypes: ANAREL anaphor.

DISC *Discourse level* (long: DISCOURSE). The discourse level includes relations between segments
isa DIM:LEVEL 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
isa DIM:LEVEL two word segments within a single word, as well as lexical features associated with mor-
[9] phemes.
Subtypes: MORPHCOMP MORPHDERIV RuleMorph.

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

SEM *Semantic level* (long: SEMANTICS). The semantic level includes relations between lexical ele-
isa DIM:LEVEL ments construed as functors, arguments, and modifiers, as well as lexical features associated
[12] with semantic units.
Subtypes: SEMREL.

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

2.2 Annotation type dimension: DIM:TYPE

DIM:TYPE: dimension: annotation type
- FEAT: lexical feature
- REL: directed bilexical relation
  - +: segment concatenation
  - GAP: gapping dependent
    - RuleGap: gapping dependent
  - 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

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
isa DIM feature or a directed bilexical reiation.
[17]

Subtypes: FEAT REL.

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

Subtypes: ONTOCLASS.

REL *Directed 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).
isa DIM:TYPE [19]

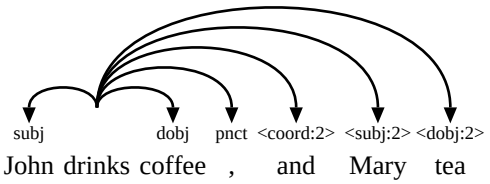
Subtypes: + ALIGNREL ANAREL GAP IDIOM LAND PRIM SEC SEMREL.

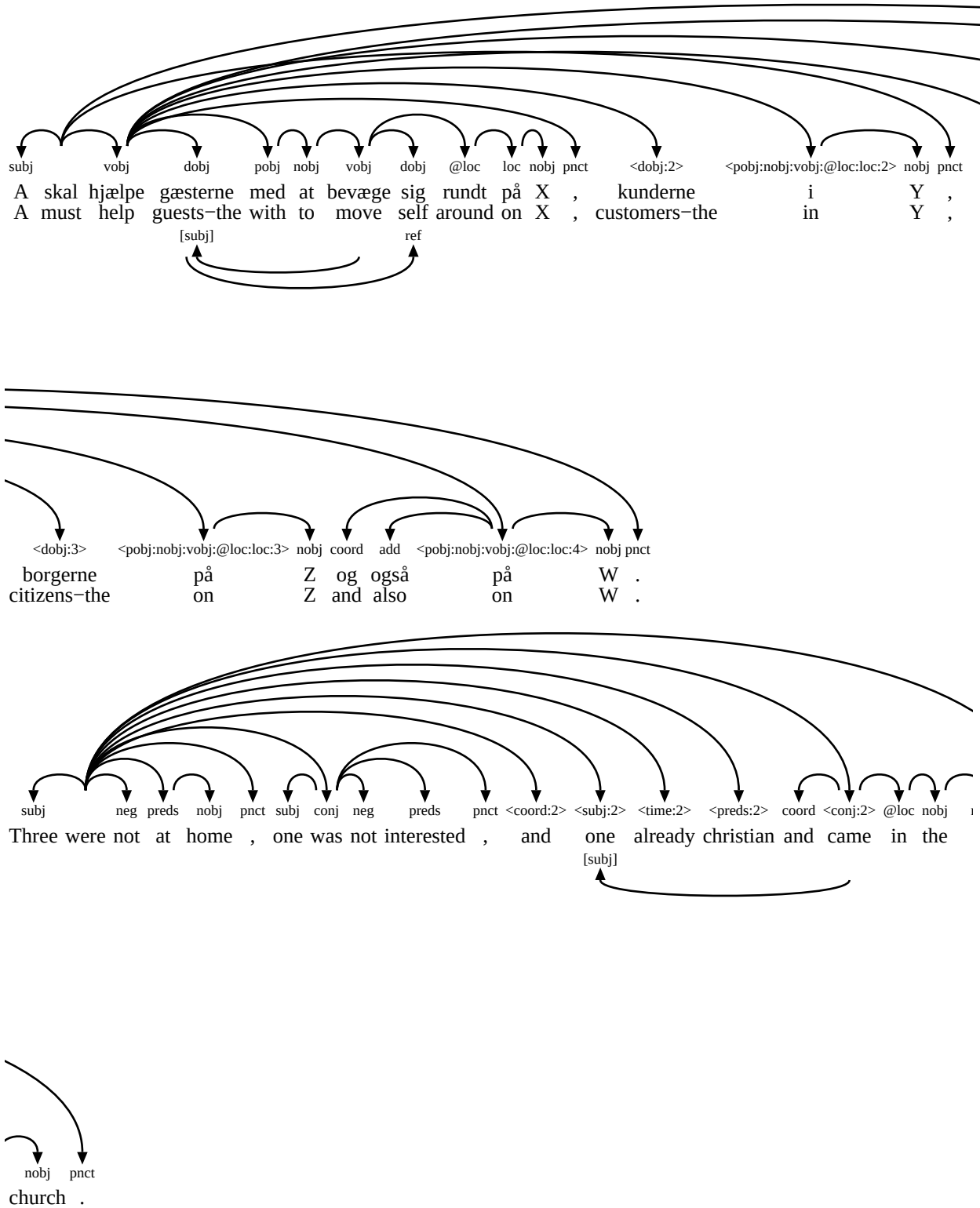
+ *Segment concatenation* (long: CONCATENATION). A concatenation relation. The relation is used to correct segmentation errors, and specifies that two nodes should have been analyzed as subsegments of the same lexical unit. The relation always goes from a node to its immediately following neighbour in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

Related types: IDIOM.

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

Subtypes: RuleGap.

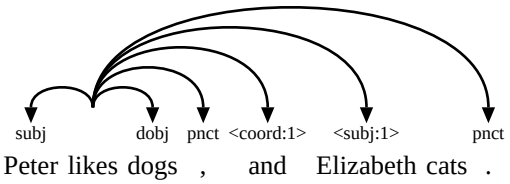




RuleGap isa GAP RULE [355]

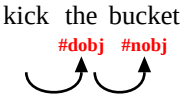
Gapping dependent (long: "<"PRIM(":"PRIM)*":"INTEGER">"). A gapping dependency relation is formed by using angled brackets to enclose a colon-separated list of primary relations followed by an integer that indicates the number of the gapped conjunct, starting with 1. The list of primary relations describes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

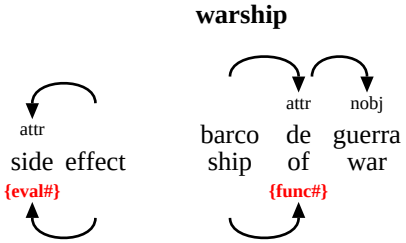


IDIOM
isa REL
[32]
Idiomatic relation. An idiomatic relation. The relation links independent lexical elements that jointly form an idiomatic lexical unit, ie, a unit where the meaning of the whole cannot be described as a semantic composition of its parts.

Subtypes: RuleIdiom.
Related types: +.



RuleIdiom
isa IDIOM RULE
[359]
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.



LAND
isa REL
[25]
Landing relation (long: LANDING). A relation between a lexical element and its landing site. Landing relations are not annotated explicitly in the Copenhagen Dependency Treebanks. In Discontinuous Grammar, the word order is determined by a projective surface tree. The projective surface tree can be derived from the deep tree by defining the landing site for a node as the lowest transitive governor in the deep tree that deeply dominates all nodes between the node and the transitive governor. The resulting set of landing relations can be shown to form a projective tree. In this tree, a global word order uniquely corresponds to a local ordering of all the landed nodes at each landing site.

Subtypes: fill land.

fill
isa LAND
[27]
Licensed filler. A landing relation from a filler licensor to a phonetically empty filler that it licenses. The filler licensor 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 licensor" 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 licensor 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
isa LAND
[26]
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
isa REL
[20]
Primary dependency relation (long: PRIMARY). A primary dependency relation. Ie, a bilexical 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
isa PRIM
[22]
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.

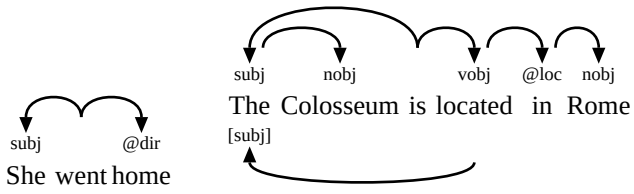
Subtypes: DISCOTHER DISCPRAG DISCSEM SYNADJ.

COMP
isa PRIM
[21]
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
isa COMP RULE
[356]
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
isa REL
[24]
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.

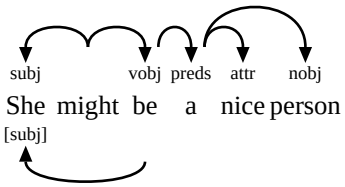
Subtypes: RuleSec ref.

Related types: fill fsrc.

RuleSec
isa RULE SEC
[354]

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

Related types: SEC.



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
isa DIM:LEVEL
[10]
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.
Subtypes: SYNADJ SYNCOMP.

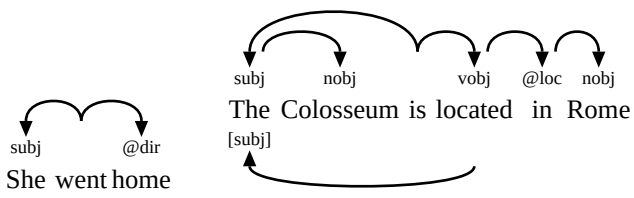
SYNADJ
isa ADJ SYN
[103]
Syntactic adjunct. An adjunct role at the syntactic level. This relation type is used to group a large class of adjunct roles that only apply at the syntactic level.
Subtypes: ADVERB app attr attrg conj coord correl fpred mod name pnct rel voc xtop.

SYNCOMP
isa COMP SYN
[75]
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.
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
isa COMP SYN
[75]
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.
Subtypes: @space @time aobj avobj dobj fobj gobj iobj nobj numa numm part pobj possd possr pred qobj robj subj vobj.

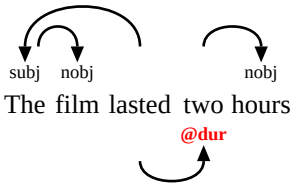
@space
isa SYNCOMP
[84]
Valency-bound location/direction adverbial.
Related types: dir loc.



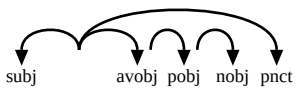
SYNCOMP: syntactic complement
- @space: valency-bound location/direction adverbial
- @time: valency-bound time adverbial
- avobj: adverbial object
- dobj: direct object
- fobj: filler object
- gobj: genitive object
- iobj: indirect object
- nobj: nominal object
- numa: additive numeral complement
- numm: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

Figure 3.2: The relations matching SYNCOMP-TOPIC.

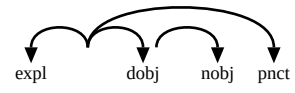
@time isa SYNCOMP [100]
Valency-bound time adverbial. A valency bound time expression. Formerly analyzed as locative object, but we have decided to provide a general mechanism (@) for converting adverbial relations into valency-bound relations.
Related types: cont dur ext hab prec succ.

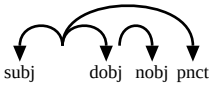


avobj isa SYNCOMP [92]
Adverbial object.
Related types: aobj part.
Confusion$_{19}$: .



dobj isa SYNCOMP [80]
Direct object. A direct object relation. In languages with case, the direct object is typically accusative-marked.
Related types: iobj robj.
Confusion$_{330}$: .

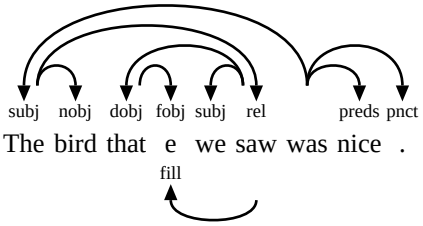




fobj isa SYNCOMP [93]

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

Related types: fill ref.

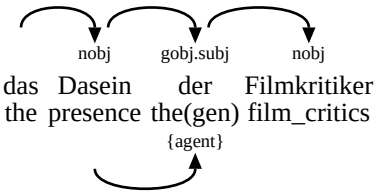


gobj isa SYNCOMP [82]

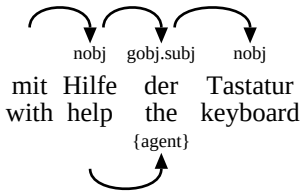
Genitive object. If the genitve object is part of a NP which nucleus is deverbal, the following annotation possibilities are available: gobj.subj{SEMROLE} gobj.dobj{SEMROLE} gobj.pobj{SEMROLE} gobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient, experient, location.

Related types: SEMROLE attrg.

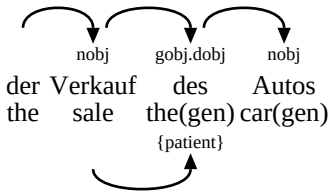
the presence of film critics



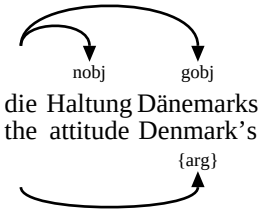
with help from the keyboard



the sale of the car



Denmark’s attitude

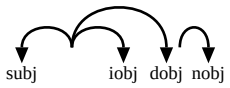


iobj isa SYNCOMP [83]

Indirect object.

Related types: dobj.

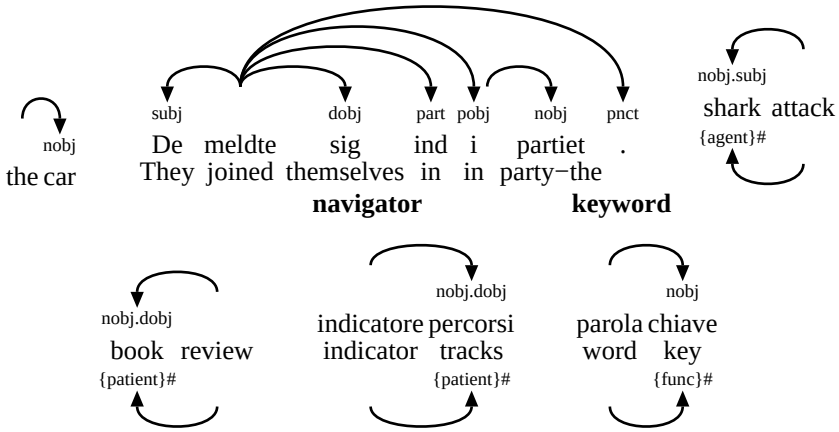
Confusion$_{10}$: iobj$_{50\%}$ dobj$_{40\%}$ robj$_{10\%}$.



nobj isa SYNCOMP [90]

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.

Confusion$_{1351}$: .

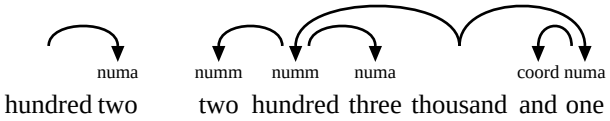


numa isa SYNCOMP [94]

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.

Confusion$_{1}$: nobj$_{100\%}$.

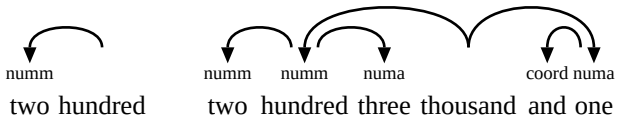


numm isa SYNCOMP [95]

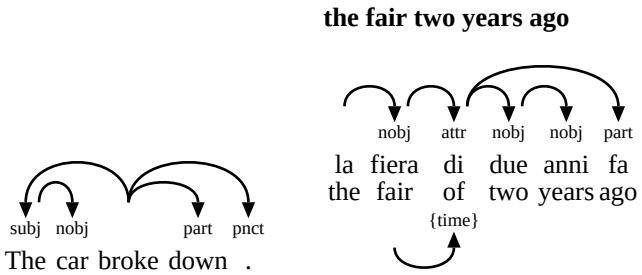
Multiplicative numeral complement. An multiplicative numeral complement relation. Numerals license one additive and one numeral complement, both optional. The numerical value associated with the expression is the value M * N + A, where M is the numerical value of the multiplicative complement, A is the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

Related types: numa.

Confusion$_{2}$: numm$_{100\%}$.



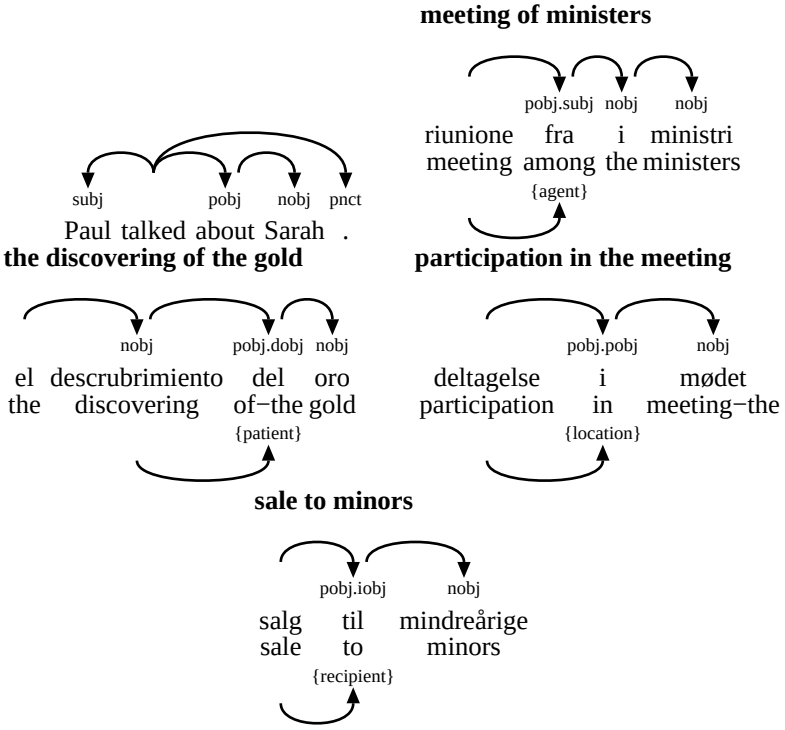
part *Verbal particle.* Verbal particle.
isa SYNCOMP Related types: avobj.
[96] Confusion$_{11}$: .



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

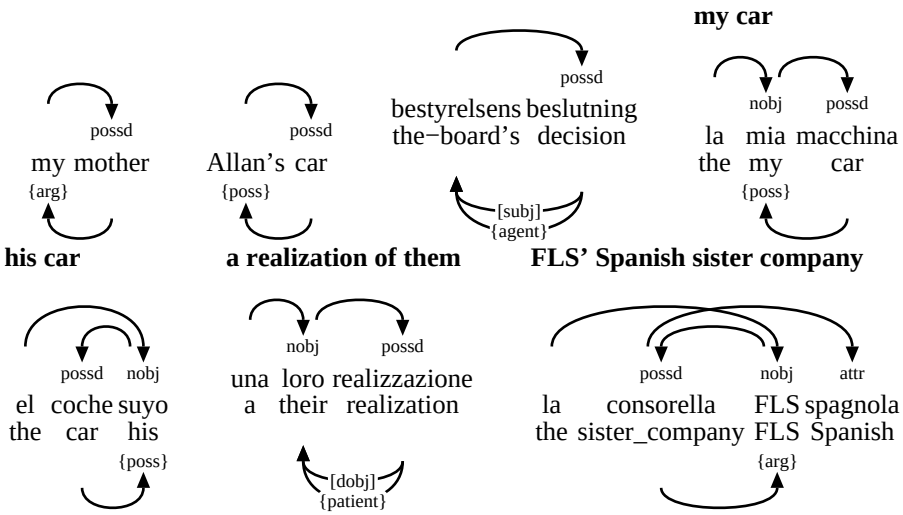
isa SYNCOMP
[81]

Related types: SEMROLE avobj.
Confusion$_{279}$: .



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

Related types: "{"$PRIM"}" SEMROLE poss possr.
Confusion$_{101}$: nobj$_{3\%}$ attr$_{1\%}$ attr$_{1\%}$.



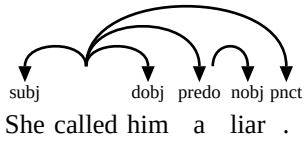
possr *Possessor complement.* NO LONGER IN USE
isa SYNCOMP The possessor complement in a possessive construction. Possession is understood in a
[98] syntactic sense as any construction with a clitic genitive marker, not necessarily as possession in a narrow semantic sense. A better name may be chosen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

Related types: poss possd.

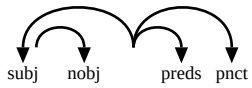
N/A

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

predo *Object predicative.*
isa pred Related types: preds.
[87] Confusion$_{10}$: preds$_{30\%}$ inst$_{20\%}$ attr$_{10\%}$ fpredo$_{10\%}$ predo$_{10\%}$ dobj$_{10\%}$ vobj$_{10\%}$.

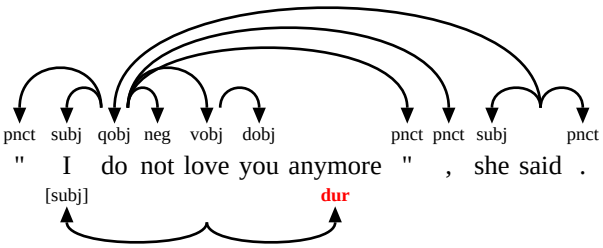


preds *Subject predicative.*
isa pred Related types: predo.
[86] Confusion$_{204}$: time$_{1\%}$ subj$_{1\%}$ dobj$_{1\%}$ dobj$_{1\%}$ dobj$_{1\%}$ dobj$_{1\%}$ dobj$_{1\%}$ dobj$_{1\%}$.



qobj isa SYNCOMP [99] *Quotational object.* A phrase or discourse segment functioning as directly quoted speech, typically by an attribution verb. Indirect speech is analyzed as ”dobj” or ”nobj”.

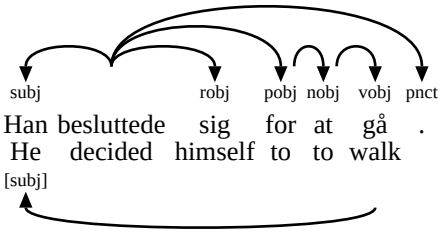
Related types: xpl.
Confusion$_{32}$: .



robj isa SYNCOMP [89] *Reflexive object.*

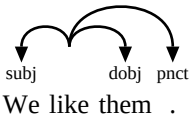
Related types: dobj.
Confusion$_{6}$: .

He decided to walk.



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

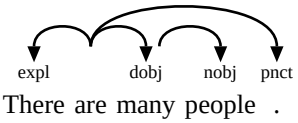
Subtypes: expl.
Related types: expl.
Confusion$_{561}$: subj$_{98\%}$ subj$_{98\%}$ subj$_{98\%}$ subj$_{98\%}$ subj$_{98\%}$ subj$_{98\%}$ subj$_{98\%}$.



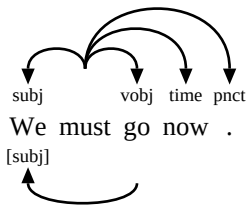
expl isa subj [79] *Expletive subject.* An expletive subject relation. The expletive subject is typically a situational place adverbial like ”there” or time adverbial like ”now”, and is only possible for verbs that support the expletive alternation. The expletive alternation applies to all verbs that 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$_{19}$: .



vobj *Verbal object.*
isa SYNCOMP Related types: "["$PRIM"]".
[88] Confusion$_{405}$: .



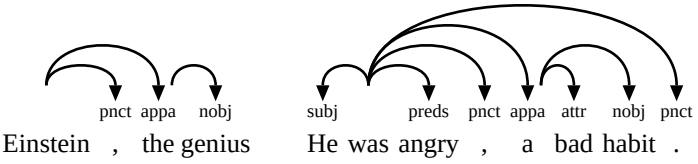
3.2 Non-adverbial adjunct relations: SYNADJ

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

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

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

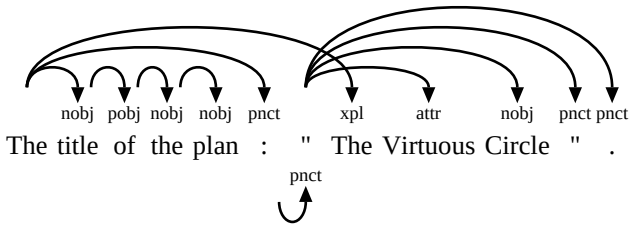
appa *Parenthetic apposition (comma).*
isa app Subtypes: xpl.
[115] Related types: appr xpl.
Confusion$_{16}$: .



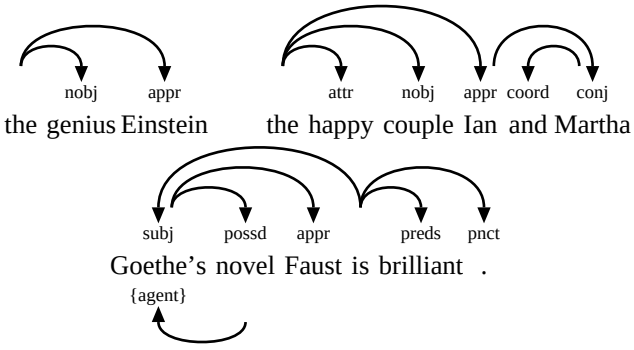
xpl *Explication.* Explication of an NP or VP.
isa appa Related types: qobj.
[128] Confusion$_{9}$: .

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

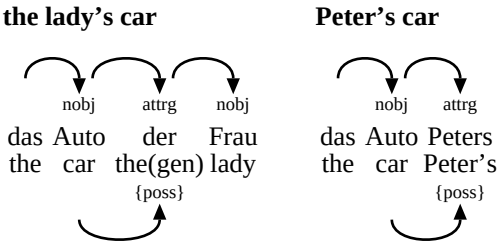
Figure 3.3: The relations matching SYNADJ-!ADVERB-TOPIC.



appr *Restrictive apposition (no comma).*
isa app Related types: appa.
[116] Confusion$_{15}$: nobj$_{10\%}$ nobj$_{10\%}$ nobj$_{10\%}$ nobj$_{10\%}$.

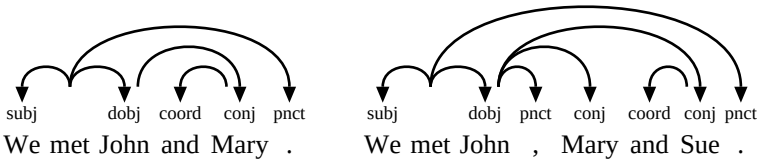


attrg *Genitive attributive.*
isa SYNADJ Related types: SEMROLE gobj.
[113]



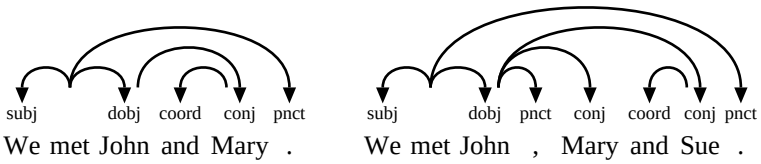
conj *Conjunct relation.* A dependency relation relating the conjuncts in a coordination. Secondary
isa SYNADJ conjuncts are analyzed as "conj"-dependents of the first conjunct. Coordinators are analyzed
[104] as dependents of the secondary conjuncts.

Related types: coord correl.
Confusion$_{232}$: .

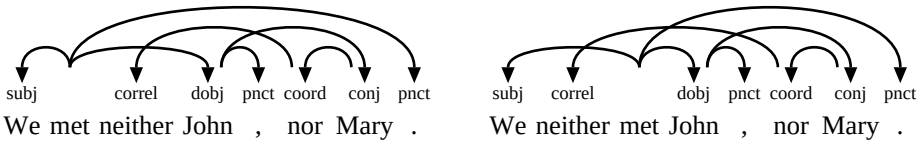


coord *Coordinator relation.* A dependency relation between a coordinating conjunction and a sec-
isa SYNADJ ondary conjunct. The coordinator is analyzed as a dependent of the secondary conjunct.
[105] Secondary conjuncts are in turn analyzed as "conj"-dependents of the first conjunct.

Related types: conj correl discmark.
Confusion$_{183}$: .

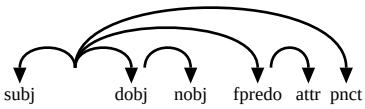


correl *Correlative coordinator relation.*
isa SYNADJ Related types: conj coord.
[106] Confusion$_{4}$: correl$_{50\%}$ focal$_{25\%}$ subj$_{25\%}$.

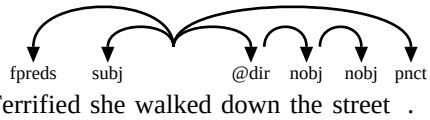


fpred *Free predicative.*
isa SYNADJ Subtypes: fpredo fpreds.
[109] Related types: fpredo fpreds.

fpredo *Free direct-object predicative.*
isa fpred Related types: fpreds man.
[111] Confusion$_{6}$: .



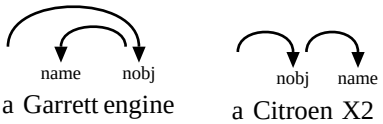
fpreds *Free subject predicative.*
isa fpred Related types: fpredo.
[110] Confusion$_{1}$: man$_{100\%}$.



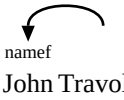
mod *Modifier/adverbial.* Deprecated name for adverbials
isa SYNADJ Subtypes: modp.
[134] Confusion$_{7}$: .

modp *Parenthetic modifier.* Deprecated name for parenthetic modifiers
isa mod Related types: {elab}.
[136] Confusion$_{7}$: .

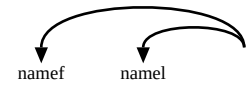
name *Part of name.* Part of a name.
isa SYNADJ Subtypes: namef namel title.
[122] Confusion$_{19}$: .



namef *First name.* A first name.
isa name Related types: namel title.
[123] Confusion$_{67}$: namef$_{100\%}$.

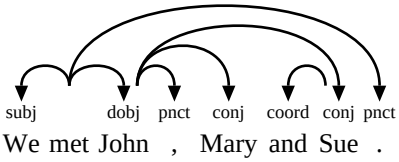


namel *Last name.* A second last name
isa name Related types: namef title.
[124] Confusion$_{4}$: namel$_{100\%}$.

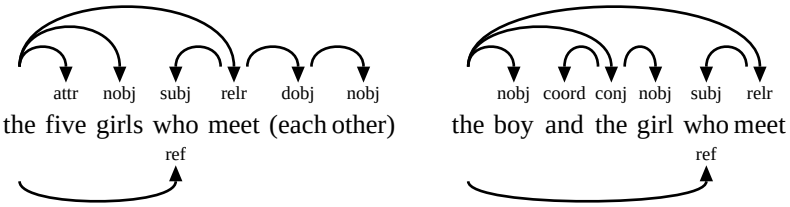


title *Person title.* A title in a name. If the is the title is determinated by an article, eg. the director Smith, the title must be annotated as ”nobj” and the name as ”appr”.
isa name
[125]
Related types: namef namel.
Confusion$_{15}$: nobj$_{20\%}$ nobj$_{20\%}$.

pnct *Punctuation.*
isa SYNADJ
[107]
Confusion$_{862}$: .



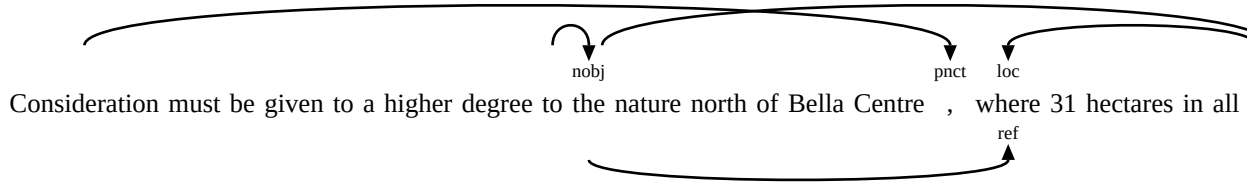
rel *Relative clause.* A relation between a relative clause and a relativized NP/VP. The finite verb in the relative clause is analyzed as a ”rel” dependent of the head of the relativized NP/VP (ie, the determiner if present, otherwise the noun). If there is a relative pronoun, it receives an incoming ”ref” arrow from the head of the relativized NP/VP; otherwise, the head of the relativized NP/VP must function as a secondary dependent of some word within the relative clause (often the relative verb itself).
isa SYNADJ
[117]
Subtypes: relelab relpa relr.
Related types: relelab relpa relr.
Confusion$_{3}$: relr$_{100\%}$.

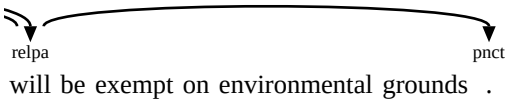


relelab *Elaborating relative clause.* Ledsætning med sætningsantecedent i hovedsætning; da: hvilket, it: il che, cosa che
isa rel
[120]
Related types: relpa relr.
Confusion$_{2}$: relr$_{100\%}$.

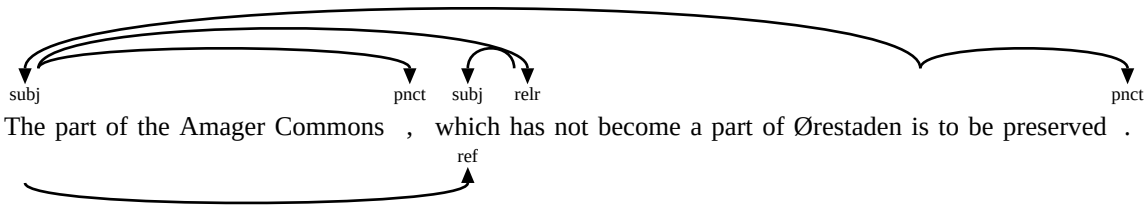
V–>V

relpa *Parenthetic relative clause* (deprecated relp).
isa rel
[119]
Related types: relelab relr.
Confusion$_{15}$: .

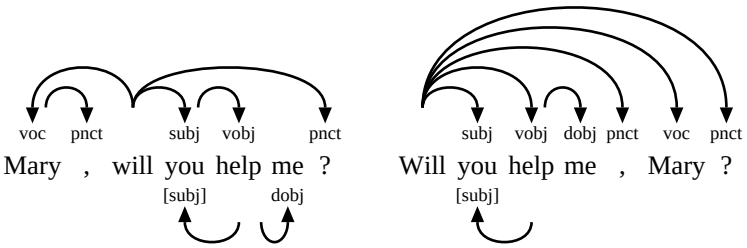




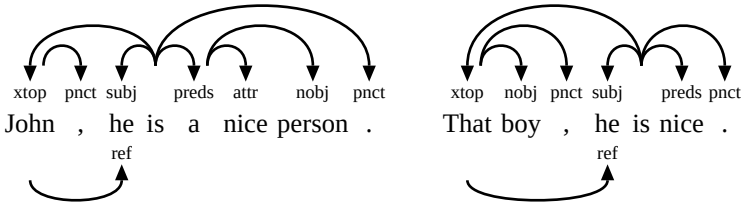
relr *Restrictive relative clause.*
isa rel Related types: relelab relpa.
[118] Confusion$_{73}$: .

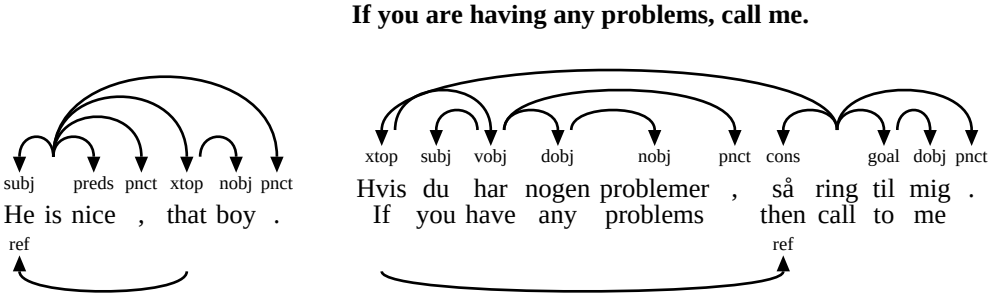


voc *Vocative.* Vocative specification. The person to whom the statement is directed.
isa SYNADJ Confusion$_{1}$: voc$_{100\%}$.
[127]



xtop *External topic with resuming pronoun.* An external topic is a sentence-initial NP whose only
isa SYNADJ function is to provide the antecedent for a pronoun later in the sentence. Eg in ”John, he is a
[121] nice person”. Here ”John” is the ”xtop” of ”is”, and ”he” is the subject of ”is”.
Related types: cons ref xtop.
Confusion$_{2}$: xtop$_{100\%}$.





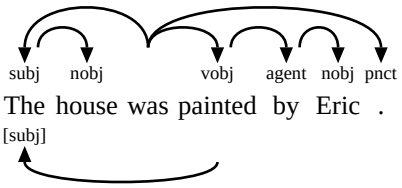
3.3 Adverbial adjunct relations: ADVERB

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

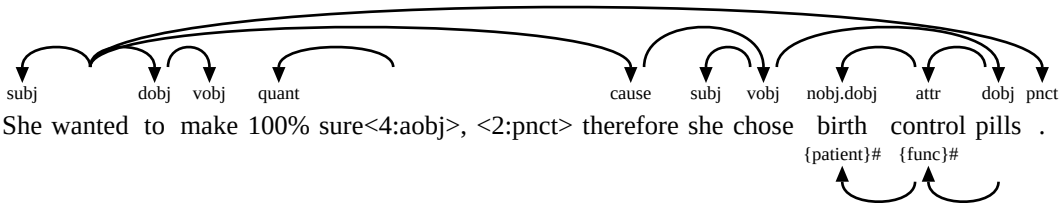
Figure 3.4: The relations matching ADVERB-TOPIC.

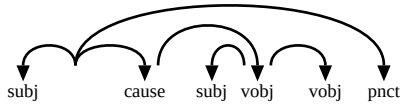
ADVERB *Adverbial.* V/N/P->adverbial
isa SYNADJ [139]
Subtypes: agent cause conc concom cond cons exem man neg other prg quant resem source space time.

agent *Agent adverbial.* The passivized agent in passives.
isa ADVERB [167]
Confusion$_5$: agent$_{80\%}$ attr$_{20\%}$.

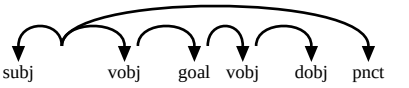


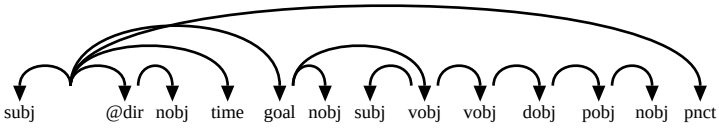
cause *Causation adverbial.* Causation adverbial. Describes why the event occurred.
isa ADVERB Subtypes: goal.
[157] Confusion$_{24}$: cause$_{75\%}$ cause$_{75\%}$ cause$_{75\%}$ cause$_{75\%}$ cause$_{75\%}$ cause$_{75\%}$.

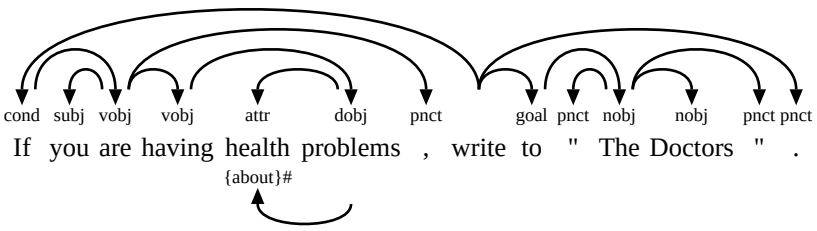




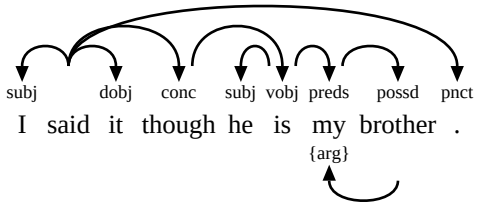
goal *Goal adverbial* (deprecated ben). Describes the intended goal of the event/action. Also used in
isa cause connection with free datives.
[158] Related types: reas.
Confusion$_{34}$: .





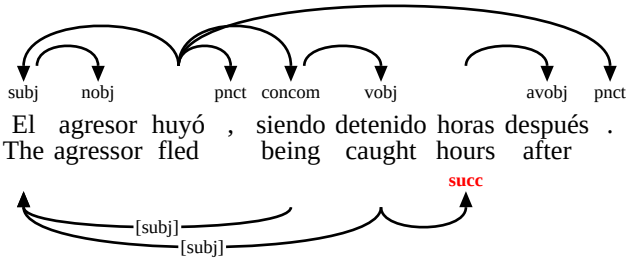


conc *Concession adverbial.* Describes the concession of the event/action.
isa ADVERB Confusion$_{6}$: .
[161]

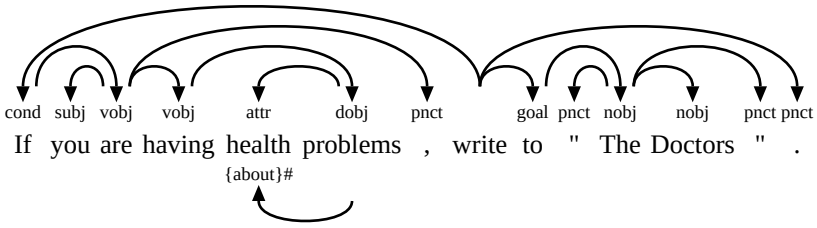


concom . Gerunds in Romance
isa ADVERB Related types: vobj.
[165] Confusion$_{3}$: .

The agressor fled and/but got caught hours later.

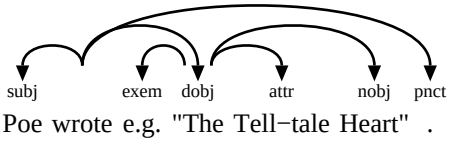


cond *Condition adverbial.* Describes the condition of the event/action.
isa ADVERB Related types: pcond.
[160] Confusion$_{14}$: .

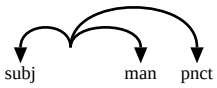


cons *Consequence adverbial.* Describes the consequence of the event/action.
isa ADVERB Related types: xtop.
[159] Confusion$_{13}$: .

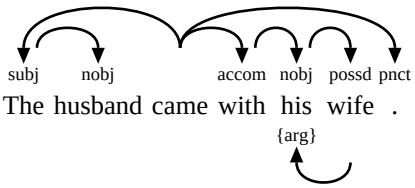
exem *Example adverbial* (long: exemplification, deprecated ex). Exemplification; subordinated the object which is added to a list.
isa ADVERB
[164] Confusion$_{7}$: exem$_{100\%}$.



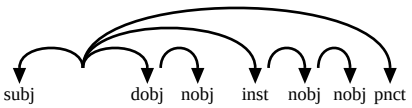
man *Manner adverbial.* The way things are done
isa ADVERB Subtypes: accom inst.
[154] Related types: fpredo.
Confusion$_{69}$: .



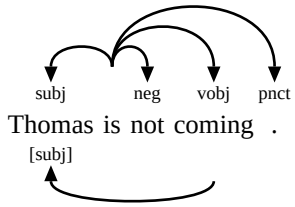
accom *Companionship adverbial* (deprecated comp). Companionship
isa man Related types: man.
[155] Confusion_{11}: .



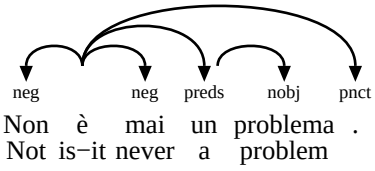
inst *Instrument adverbial.* Instrument/means
isa man Related types: man.
[156] Confusion_{15}: .



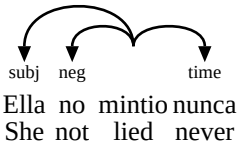
neg *Negation adverbial.* Negation of a verbal
isa ADVERB Confusion_{42}: .
[168]



It's never a problem.



She never lied

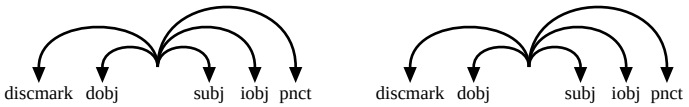


other *Other adverbial.*
isa ADVERB Confusion_{51}: $\text{source}_{2\%}$ $\text{time}_{2\%}$ $\text{contr}_{2\%}$ $\text{eval}_{2\%}$ $\text{iter}_{2\%}$ $\text{xpl}_{2\%}$ $\text{mod}_{2\%}$.
[169]

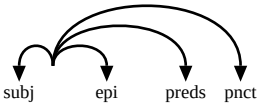
prg *Pragmatic adverbial* (long: pragmatic). Sentence level.
isa ADVERB Subtypes: discmark epi eval focal scene.
[140] Confusion_{19}: .

discmark *Sentence-initial discourse marker* (long: discoursemarker). Discourse marker
isa prg Related types: coord.
[145] Confusion_{27}: .

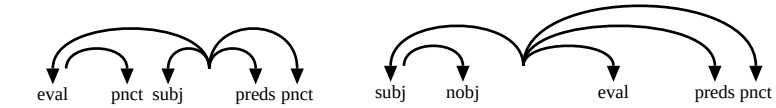
And I'm telling you... **But I'm telling you...**



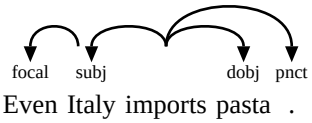
epi *Epistemic adverbial* (long: epistemic). Regarding the level of truth in the expression
isa prg Related types: eval.
[143] Confusion$_{8}$: epi$_{50\%}$ man$_{25\%}$ eval$_{25\%}$.



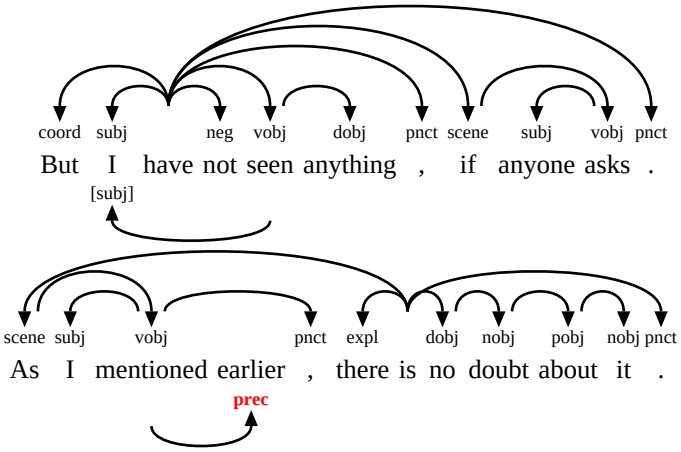
eval *Evaluation adverbial* (long: evaluation, deprecated evalatt). Evaluating and attitude adverbials
isa prg Related types: epi.
[144] Confusion$_{30}$: quant$_{10\%}$ quant$_{10\%}$ quant$_{10\%}$ quant$_{10\%}$ quant$_{10\%}$ quant$_{10\%}$.



focal *Focalizer adverbial* (long: focalizator). Focalization of a noun
isa prg Related types: quant.
[141] Confusion$_{18}$: .



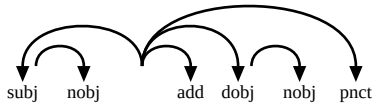
scene *Pragmatic condition and structural adverbial* (deprecated prgcondpcondbgstruct). Setting the scene
isa prg
[142] Subtypes: add contr elab.
Related types: cond.
Confusion$_{13}$: .



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

isa scene

[148] Confusion$_{32}$: add$_{75\%}$ add$_{75\%}$ add$_{75\%}$ add$_{75\%}$ add$_{75\%}$.

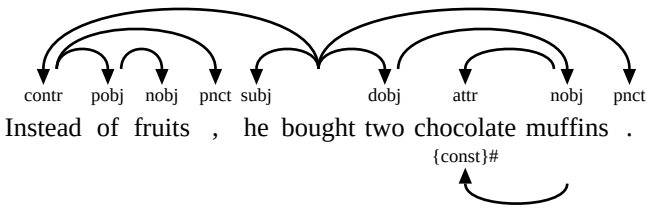


contr *Contrast adverbial* (long: contrast). Opposition

isa scene

Related types: struct.

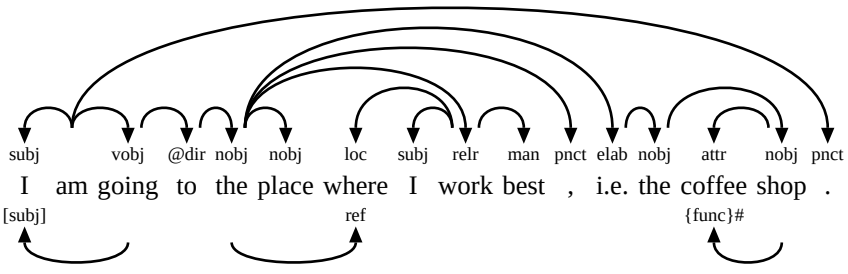
[146] Confusion$_{16}$: discmark$_{25\%}$ discmark$_{25\%}$ discmark$_{25\%}$ discmark$_{25\%}$ discmark$_{25\%}$ discmark$_{25\%}$.



elab *Elaboration adverbial* (long: elaboration). More detailed description

isa scene

[147] Confusion$_{4}$: elab$_{50\%}$ prg$_{25\%}$ quant$_{25\%}$.

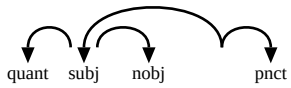


quant *Degree adverbial* (long: quantification, deprecated degr). Modifies the object or verbal by degree

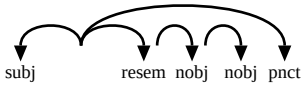
isa ADVERB

Related types: focal.

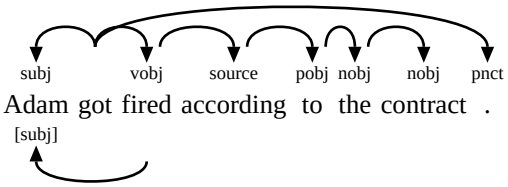
[166] Confusion$_{85}$: .



resem *Comparison adverbial* (deprecated comparecomp). Comparison
isa ADVERB Confusion$_{4}$: resem$_{50\%}$ man$_{25\%}$ preds$_{25\%}$.
[162]

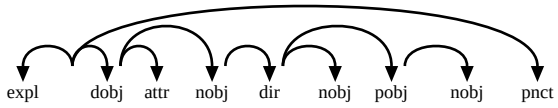


source *Source attribution adverbial.* Reference/source
isa ADVERB Confusion$_{9}$: .
[163]

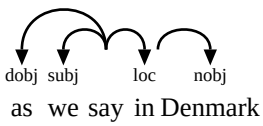


space *Space adverbial.* Space adverbials
isa ADVERB Subtypes: dir loc.
[151]

dir *Direction adverbial.* Movement from one place to another; direction
isa space Related types: loc.
[153] Confusion$_{39}$: .

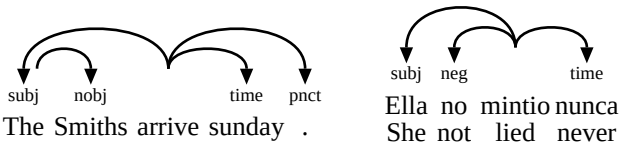


loc *Location adverbial.* Location
isa space Related types: dir.
[152] Confusion$_{138}$: .



time *Time adverbial.* Time relating adverbials
isa ADVERB Subtypes: iter.
[149] Confusion$_{149}$: attr$_{6\%}$ attr$_{6\%}$ attr$_{6\%}$ cons$_{2\%}$ quant$_{2\%}$ quant$_{2\%}$ quant$_{2\%}$ quant$_{2\%}$ quant$_{2\%}$ quant$_{2\%}$.

She never lied

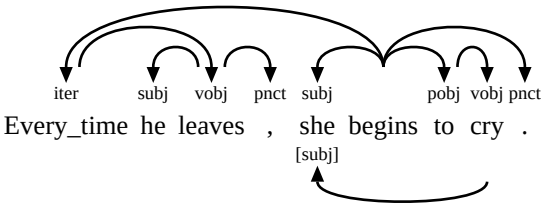


iter *Habituality adverb* (deprecated hab). Habitual; repeated habit

isa time

Related types: dur ext.

[150] Confusion$_{12}$: iter$_{25\%}$ iter$_{25\%}$.



Chapter 4

Morphological relations: MORPHOLOGY

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

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

MORPH isa DIM:LEVEL [9] *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.

Subtypes: MORPHCOMP MORPHDERIV RuleMorph.

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

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

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

Subtypes: PREFIX SUFFIX.

RuleMorph isa MORPH RULE [358] *Syntactic morphlogy relation* (long: "§"(PRIM)). A primary syntactic relation that has been used as a morphology relation for stilistic purposes.

4.1 Compositional relations: MORPHCOMP

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

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

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

Figure 4.2: The relations matching MORPHCOMP-TOPIC.

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

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

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

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

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

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

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

coche de lujo 'luksusbil'

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

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

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

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

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

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

(possession: politibil = bil −politi/POSS

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

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

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

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

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

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

4.2 Derivational relations: MORPHDERIV

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

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

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

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

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

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

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

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

§ITER isa PREFIX [275] *Iteration* (deprecated ASPEC:iter). Prefix conveys iteration.

(iterative: redefine = define −re/ITER)

§MOD isa PREFIX [279] *Modification.* Prefix conveys modification in a broad sense.
Subtypes: §MOD:eval §MOD:qual §MOD:quant.

§MOD:eval isa §MOD [281] *Evaluation* (deprecated MOD:man). Prefix conveys evaluation

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

§MOD:qual isa §MOD [282] *Qualification* (deprecated MOD:qual+MOD:rel+GRAD:qual). Prefix conveys qualification.

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

§MOD:quant *Quantification* (deprecated MOD:cuant+GRAD:size). Prefix conveys quantification.
isa §MOD
[280]

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

§NEG *Negation.* Prefix conveys negation in a broad sense.
isa PREFIX
Subtypes: §NEG:contr §NEG:priv §NEG:rev.
[271]

§NEG:contr *Contrast* (deprecated NEG:oppo). Prefix conveys contrast.
isa §NEG
[272]

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

§NEG:priv *Privation.* Prefix conveys privation.
isa §NEG
[273]

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

§NEG:rev *Reversion* (deprecated ASPEC:rev). Prefix conveys reversion.
isa §NEG
[274]

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

§PRE:other *Other prefix relation.* If in doubt about the meaning conveyed by the prefix
isa PREFIX
[283]

§SPACE *Space* (deprecated LOC). Prefix expresses space in a broad sense.
isa PREFIX
Subtypes: §SPACE:dir §SPACE:loc §SPACE:source.
[263]

§SPACE:dir *Direction* (deprecated LOC:dir). Prefix expresses direction.
isa §SPACE
[265]

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

§SPACE:loc *Location* (deprecated LOC:pos). Prefix expresses location.
isa §SPACE
[264]

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

§SPACE:source *Source* (deprecated LOC:proce). Prefix conveys source.
isa §SPACE
[266]

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

§TELIC *Telic* (deprecated ASPEC:term+resul). Prefix conveys termination or result.
isa PREFIX
[277]

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

§TIME *Time.* Prefix conveys time in a broad sense.
isa PREFIX
[268] Subtypes: §TIME:post §TIME:pre.

§TIME:post *Temporal succession* (deprecated TIME:succ). Prefix conveys succession.
isa §TIME
[270]

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

§TIME:pre *Temporal precedence* (deprecated TIME:prec). Prefix conveys precedence.
isa §TIME
[269]

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

§TRANS *Transitivity.* Prefix conveys transitivity.
isa PREFIX
[278]

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

4.2.2 Suffix relations: SUFFIX

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

§AUG *Augmentation.* Suffix conveys augmentation.
isa SUFFIX
[284]

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

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

§DENUM:apart *Adjective-partitive derivation* (deprecated DENUM:part). Suffix creates partitive numerals.
isa §DENUM
[334]

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

§DENUM:ord *Adjective-ordinal derivation.* Suffix creates ordinals.
isa §DENUM
[333]

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

§DENUM:quant *Adjective-multiplicative derivation.* Suffix creates multiplicative numerals.
isa §DENUM
[335]

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

§DER *Verb derivation.* Suffix triggers a derivation
isa SUFFIX
[287]
Subtypes: §DERadvv §DERav §DERnv §DERva §DERvn §DERvv.

§DERadvv *Adverb-verb derivation.* Suffix triggers a derivation from an adverb to a verb
isa §DER
[291]

§DERav *Adjective-verb derivation* (deprecated §DER:av). Suffix triggers a derivation from an adjective to a verb.
isa §DER
[289]

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

§DERnv *Noun-verb derivation* (deprecated §DER:nvPRED). Suffix triggers a derivation from a noun to a verb.
isa §DER
[288]
Subtypes: §DERvn:agent §DERvn:core §DERvn:exper §DERvn:inst §DERvn:loc §DERvn:other §DERvn:patient §DERvn:recip.

(noun−>verb derivation: salar 'to salt' = sal +ar/§DERnv)

§DERvn:agent *Verb-noun derivation (agent).* Suffix creates deverbal nouns absorbing the agent role.
isa §DERnv
[293]

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

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

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

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

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

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

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

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

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

§DERvn:other *Verb-noun derivation (other).* If in doubt about the meaning conveyed by the suffix
isa §DERnv
[300]

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

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

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

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

§DERva *Verb-adjective derivation* (deprecated §DERV). Suffix creates deverbal adjectives in a broad sense.
isa §DER
[313]
Subtypes: §DERva:act §DERva:pas.

§DERva:act *Verb-adjective derivation (pure)* (deprecated DEVERB:act.pure). Suffix creates active adjectives with the meaning aspect "pure".
isa §DERva
[314]
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 adjectives with the meaning aspect "disposition".
isa §DERva:act
[315]

"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
[316]

"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
[317]
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
[320]

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

§DERva:pas.epi isa §DERva:pas [319] *Verb-adjective derivation (passive potentiality)* (deprecated DEVERB:pas.poten). Suffix creates passive adjectives with the meaning aspect ”potentiality”.

"que puede {ser PP/Vse}" (transportable − "máquina que puede {ser transportada/transportarse} ’transportabel/maskine som kan blive transporteret/transporteres

§DERva:pas.part isa §DERva:pas [318] *Verb-adjective derivation (passive participles)* (deprecated DEVERB:pas.part). Suffix creates passive adjectives with the form of participles.

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

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

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

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

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

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

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

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

§DERna:deono.pers isa §DERna:deono [325] *Noun-adjective derivation (naming persons)* (deprecated DENOM:rel.deono.pers). Suffix creates relational adjectives with the meaning of "naming" persons.

Cervantino 'som har at gøre med Cervantes'

§DERna:deono.place isa §DERna:deono [326] *Noun-adjective derivation (naming places)* (deprecated DENOM:rel.deono.place). Suffix creates relational adjectives with the meaning of "naming" of places.

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

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

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

§DERna:other isa §DERna [331] *Noun-adjective derivation (other)* (deprecated DENOM:other). If in doubt about the meaning conveyed by the suffix

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

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

§DERna:rel isa §DERna [322] *Noun-adjective derivation (relational)* (deprecated DENOM:rel). Suffix creates denominal adjectives with a relational meaning.
Subtypes: §DERna:rel.norm.

§DERna:rel.norm isa §DERna:rel [323] *Noun-adjective derivation (normal)* (deprecated DENOM:rel.norm). Suffix creates relational adjectives with a "normal" meaning aspect.

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

§DERna:resem isa §DERna [327] *Noun-adjective derivation (resemblance)* (deprecated DENOM:resem). Suffix creates denominal adjectives that express resemblance.

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

§DERna:telic isa §DERna [330] *Noun-adjective derivation (effect)* (deprecated DENOM:eff). Suffix creates denominal adjectives that express an effect.

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

§DERnn isa SUFFIX [302] *Noun-noun derivation* (deprecated NOPRED). Suffix creates non-predicative nouns (from other nouns) in a broad sense.

Subtypes: §DERnn:agent §DERnn:assoc §DERnn:capac §DERnn:cont §DERnn:loc §DERnn:other §DERnn:quant §DERnn:telic §DERnn:time.

§DERnn:agent isa §DERnn [303] *Noun-noun derivation (agent)* (deprecated NOPRED:agent). Suffix creates non-predicative nouns expressing an agent role.

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

§DERnn:assoc isa §DERnn [310] *Noun-noun derivation (association)* (deprecated NOPRED:script). Suffix creates non-predicative nouns expressing a script/notion related to the original noun.

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

§DERnn:capac isa §DERnn [308] *Noun-noun derivation (capacity)* (deprecated NOPRED:capac). Suffix creates non-predicative nouns expressing a capacity.

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

§DERnn:cont isa §DERnn [305] *Noun-noun derivation (container)* (deprecated NOPRED:cont). Suffix creates non-predicative nouns expressing a container.

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

§DERnn:loc isa §DERnn [309] *Noun-noun derivation (location)* (deprecated NOPRED:loc). Suffix creates non-predicative nouns expressing a location.

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

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

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

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

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

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

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

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

§DERv (deprecated DEVERB).
isa SUFFIX
[313]

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

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

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

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

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

Figure 4.5: The relations matching SUFFIX-TOPIC.

Chapter 5

Discourse relations: DISCOURSE

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

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

JOINT isa DISCOTHER [255]
No clear relation. The dependent text segment adds a completely new content without any clear discourse relation to the governing segment
Confusion$_2$: JOINT$_{100\%}$.

REP isa DISCOTHER [254]
Repaired (deprecated STRUCT:rep). Dependent text segment is interrupted and unfinished and "repaired" by the following and governing text segments, which completes it

SCENE isa DISCOTHER [253]
Scene (deprecated STRUCT:prepPREP). Dependent text segment expresses the scene of the following and governing text, e.g. headings, titles
Confusion$_4$: SCENE$_{100\%}$.

DISCPRAG isa ADJ DISC [204]
Pragmatic and illocutionary discourse relations (deprecated DISCFUNC). The dependent text segment expresses a change in speech act or pragmatic function (speaker's intention) wrt the governing segment; the label indicates the speech act or function of the dependent segment; regarding speaker's intentions and speech acts we consider the narrating asserting speech act as our default value.
Subtypes: ANSW CONSOL DIREC EXPR INTACT QUEST.

DISCSEM isa ADJ DISC [203] *Semantic discourse relations.* The relations hold between the propositions of the governing and dependent text segments and are defined in semantic terms; relations are mono- or multinuclear; the four "prg"-subtypes express changes of speech act like the DISCPRAG, however the semantic relations are so dominant that they should determine the main type of the relation

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

RuleDisc isa DISC RULE [357] *Syntactic discourse relation* (long: "¤"(PRIM)). A primary syntactic relation that has been used as a discourse relation for stilistic purposes.

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 isa ADJ DISC [204] *Pragmatic and illocutionary discourse relations* (deprecated DISCFUNC). The dependent text segment expresses a change in speech act or pragmatic function (speaker's intention) wrt the governing segment; the label indicates the speech act or function of the dependent segment; regarding speaker's intentions and speech acts we consider the narrating asserting speech act as our default value.

Subtypes: ANSW CONSOL DIREC EXPR INTACT QUEST.

ANSW isa DISCPRAG [242] *Answer.* Governing text segment contains question or problem, dependent text segment answer or solution

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

CONSOL isa DISCPRAG [248] *Consolidation* (deprecated SUPPORT?).

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

CONSOL:inst isa CONSOL [250] *Instrumental* (deprecated CONSOL:enabl). S is instrumental in helping reader or recipient to carry out the action mentioned in N; frequent in directive texts

CONSOL:motiv isa CONSOL [251] *Motivation.* S motivates reader or recipient to carry out the action mentioned in N

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

CONSOL:source isa CONSOL [249] *Justification* (deprecated JUSTCONSOL:just). S expresses a source that justifies N wrt its content (reason for mentioning it or sim.) thereby strengthening it argumentatively

Typical connectives: [da] Fordi, Eftersom.
Confusion$_1$: CONJ:elab$_{100\%}$.

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

e.g. imperatives

EXPR *Expressive act.* Dependent text segment contains an expression of the speaker's attitudes or emotions, e.g. congratulations, excuses or thanks
isa DISCPRAG
[244]

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

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

INTACT:attn *Attention.* S contains an attention signal
isa INTACT
[246]

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

INTACT:inter *Interruption.* S contains an interruption signal
isa INTACT
[247]

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

QUEST *Question* . The dependent text segment contains a question with or withour an answer
isa DISCPRAG
[241]

5.2 Semantic relations: DISCSEM

DISCSEM *Semantic discourse relations.* The relations hold between the propositions of the governing and dependent text segments and are defined in semantic terms; relations are mono- or multinuclear; the four "prg"-subtypes express changes of speech act like the DISCPRAG, however the semantic relations are so dominant that they should determine the main type of the relation
isa ADJ DISC
[203]

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

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

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

AGENTIVE:expl *Explanation relation in discourse.* An explanation relation. The satellite explains the nucleus. The relation is more general and elaborating than "reason".
isa AGENTIVE
[208]

Typical connectives: [da] Nemlig; [it] Infatti; [en] In fact, Indeed.
Related types: reason.
Confusion$_6$: .

AGENTIVE:reas *Reason relation (discourse).* S expresses a specific and concrete reason
isa AGENTIVE
[209]

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

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

Figure 5.3: The relations matching DISCSEM-TOPIC.

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

AGENTIVE:sbj isa AGENTIVE [210] *Subjective cause.* The speaker uses the cause as a subjective/personal argument to support a claim

Typical connectives: Because, In fact, Indeed.

CONC isa DISCSEM [223] *Concession.* S admits or acknowledges a fact wrt N, which may however not have the expected consequence or effect

Confusion$_2$: CONJ:add$_{50\%}$ CONC$_{50\%}$.

COND isa DISCSEM [224] *Condition.*

CONJ isa DISCSEM [230] *Conjunction.* Dependent text segment elaborates and expans knowledge of governing text segment or adds a new subject somehow related to it

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

CONJ:add *Conjunction, addition.* Dependent text segment adds a new subject somehow related to the governing text segment; in cases of uncertainty between add and elab we do not specify the subtype
isa CONJ
[231]
Confusion$_{41}$: .

CONJ:elab *Conjunction, elaboration* (deprecated ELAB:spec,ELAB:exp,CONST:elab). Dependent text segment elaborates and expans knowledge of governing text segment; in cases of uncertainty between add and elab we do not specify the subtype
isa CONJ
[232]
Confusion$_{27}$: CONJ:add$_{42\%}$ CONJ:add$_{42\%}$ CONJ:add$_{42\%}$ CONJ:add$_{42\%}$ CONJ:add$_{42\%}$ CONJ:add$_{42\%}$ CONJ:add$_{42\%}$
.

CONJ:seq *Sequence.* Dependent text segment is part of list or sequence linked to governing text segment as e.g. in recipes, sport results etc.
isa CONJ
[233]

CONST *Constitutive elaboration.* S adds more details on N or parts of N
isa DISCSEM
Subtypes: CONST:apart CONST:elab CONST:exem CONST:rest.
[215]

CONST:apart *Part of relation.* S is a part of N
isa CONST
Typical connectives: [da] Herunder, Heri.
[218]

CONST:elab *Elaboration* (deprecated ELAB:spec,ELAB:exp). S elaborates and expans knowledge of N; may be difficult to distinguish from CONJ
isa CONST
[217]
Typical connectives: [it] Cioè.
Related types: CONJ.

CONST:exem *Exemplification.* S gives examples of elements or phenomena mentioned in N
isa CONST
Typical connectives: [en] For example.
[216]
Confusion$_{1}$: CONJ:add$_{100\%}$.

CONST:rest *Restatement.* S states N again in a different way
isa CONST
Typical connectives: [da] Dvs.; [it] Ossia, In altre parole, Cioè; [en] In other words, Or.
[219]
Confusion$_{4}$: CONST:rest$_{50\%}$ CONST:rest$_{50\%}$ CONST:rest$_{50\%}$.

CONTR *Contrast.*
isa DISCSEM
Subtypes: CONTR:dir CONTR:sbj.
[234]
Confusion$_{1}$: CONTR:sbj$_{50\%}$ conj$_{50\%}$.

CONTR:dir *Direct contrast.* The contrast lies between the governing and dependent text segment
isa CONTR
Typical connectives: [da] Men, Derimod.
[235]
Confusion$_{2}$: expl$_{50\%}$ CONTR:dir$_{50\%}$.

CONTR:sbj *Subjective contrast* (deprecated CONTR:prg). The contrast lies between an explicit and a subjectively inferred text segment
isa CONTR
[236]
Typical connectives: [da] Men.
Confusion$_{10}$: conj$_{40\%}$ CONTR:sbj$_{25\%}$ CONJ:add$_{20\%}$ coord$_{10\%}$ CONTR$_{5\%}$.

DISJ *Disjunction.*
isa DISCSEM
Typical connectives: [da] Eller.
[237]
Subtypes: DISJ:dir DISJ:sbj.

DISJ:dir *Direct disjunction.* The disjunction lies between the governing and dependent text segment
isa DISJ
[238]

DISJ:sbj *Subjective disjunction* (deprecated DISJ:prg). The disjunction lies between the dependent and a subjectively inferred text segment
isa DISJ
[239]

FORMAL *Formal description.* S describes N, N may be a first-order or second-order entity
isa DISCSEM
Subtypes: FORMAL:descr FORMAL:eval.
[220]

FORMAL:descr *Neutral description* (deprecated DESCR:qual). S expresses an objective and/or neutral description of N
isa FORMAL
[221]
Confusion$_1$: CONJ:elab$_{100\%}$.

FORMAL:eval *Positive/negative evaluation* (deprecated DESCR:eval). S expresses a personal and/or subjective positive or negative description of N
isa FORMAL
[222]

TELIC *Consequence/result/conclusion relation (discourse).* S expresses purpose, function or consequence wrt N
isa DISCSEM
Subtypes: TELIC:cons.dir TELIC:cons.sbj TELIC:goal.
[211]

TELIC:cons.dir *Direct, physical consequence, result* (deprecated TELIC:dir). Physical, objectively observed consequence or result
isa TELIC
Typical connectives: [da] Derfor, Af den grund.
[213]
Confusion$_3$: .

TELIC:cons.sbj *Pragmatic/personal conclusion, deduction* (deprecated TELIC:sbj). Subjective conclusion or deduction on behalf of the speaker
isa TELIC
Typical connectives: [da] Derfor, Af den grund.
[214]
Confusion$_4$: TELIC:cons.sbj$_{75\%}$ CONJ:add$_{25\%}$.

TELIC:goal *Goal relation (discourse).* S expresses goal, purpose, aim
isa TELIC
Typical connectives: [da] For (at).
[212]

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

TIME:cont *Contemporaneity.* S is contemporary with N (now includes abolished TIME:dur)
isa TIME
Typical connectives: [da] Samtidig, Mens, Så længe, Da.
[226]

TIME:post *Temporal succession* (deprecated TIME:succ). S succeeds N
isa TIME
Typical connectives: [en] Later, Some time afterwards.
[228]

TIME:pre *Temporal precedence* (deprecated TIME:prec). S precedes N
isa TIME
Typical connectives: [en] Earlier, Some days before.
[227]

Chapter 6

Anaphor relations: ANAPHORA

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

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

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

ANAREL isa ANA REL [28]
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.

anaphor isa ANA [181]
. This section concerns anaphors as well as cataphors; cataphors may by and large express the same relations with their postcedents as anaphors with their antecedents; the relations are therefore labelled identically and will be distinguished solely by the edge direction: from left to right (anaphors) or from right to left (cataphors); because of their much higher frequency, we shall limit ourselves to examples of anaphors
Subtypes: assoc coref.

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

coref isa anaphor [182]
Coreference. Anaphor denotes same entity as antecedent; all coreferential pronouns are labelled this way
Subtypes: coref-iden coref-res coref-var ref.
Confusion$_1$: coref-res$_{100\%}$.

coref: coreference
- coref-iden: coreferential NP with lexical identity
- coref-res: resumptive anaphor
  - coref-res.prg: pragmatic coreference
- coref-var: coreferential NP with lexical variety
- ref: syntactically determined coreference

Figure 6.2: The relations matching coref-TOPIC.

6.1 Coreference relations: coref

coref *Coreference.* Anaphor denotes same entity as antecedent; all coreferential pronouns are labelled this way
isa anaphor
[182] Subtypes: coref-iden coref-res coref-var ref.
Confusion$_1$: coref-res$_{100\%}$.

coref-iden *Coreferential NP with lexical identity* (deprecated coref-id).
isa coref
[184] (antecedent−>anaphor) a car −> the car // a yellow car −> the yellow car

coref-res *Resumptive anaphor* (deprecated nowincludescoref-res.cause).
isa coref
[186] Subtypes: coref-res.prg.
Confusion$_2$: coref$_{50\%}$ coref-res$_{50\%}$.

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

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

ref *Syntactically determined coreference* (long: [fobj]). Syntactically determined coreference (eg, relative pronouns, external topics)
isa SEC coref
[183] Confusion$_{38}$: ref$_{100\%}$.

antecedent−>anaphor

6.2 Associative anaphor relations: assoc

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

Figure 6.3: The relations matching assoc-TOPIC.

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

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

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

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

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

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

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
isa assoc
[200]
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

Iraq −> the invasion, the war

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

an accident −> the eye witness

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

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

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

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
isa assoc
[195]

Associative locative anaphor. The anaphor is located in the antecedent

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

assoc-patient
isa assoc
[196]

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

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

assoc-telic
isa assoc
[194]

Associative anaphor (telic) (deprecated assoc-scope?). The anaphor is associated with antecedent wrt its telic qualia (purpose, function, result, consequence etc.)

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

dancing −> the dance

assoc-time
isa assoc
[199]

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

an event −> the (following) morning, in the morning, during the night

Chapter 7

Semantic relations: SEMANTICS

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

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

SEM
isa DIM:LEVEL [12]

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.

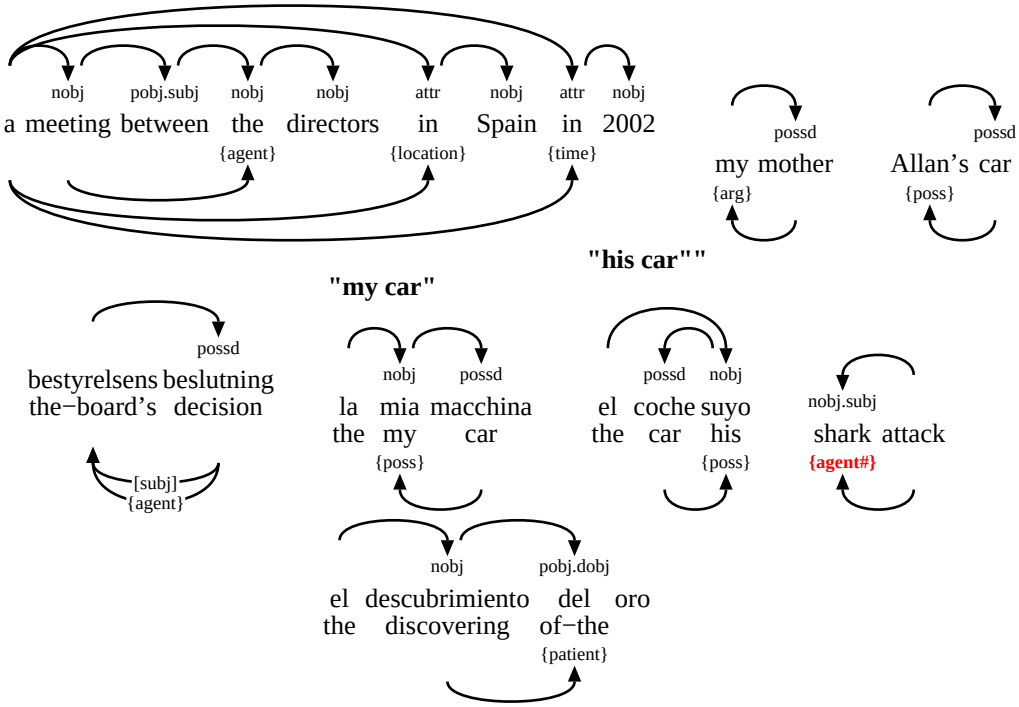
SEMREL
isa REL SEM [29]

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} {experiencer} {form} {func} {goal} {iden} {location} {loc} {other} {patient} {poss} {quant} {recipient} {resem} {source} {time}.



QUALIA isa SEMREL [30]
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.
Subtypes: agentive const formal resemblance telic.

{about} isa SEMREL [61]
. Used in noun phrases where the satellite indicates the content or genre of the nucleus, which typically denotes a semiotic artefact.
Confusion$_{26}$: .

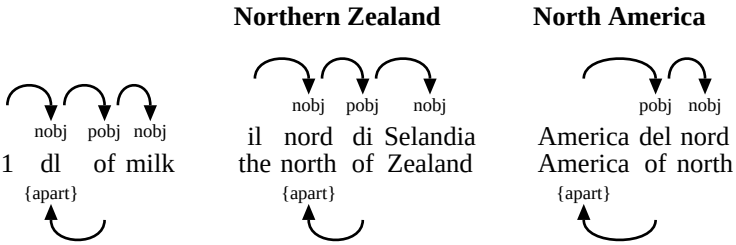
{agent} isa SEMREL [50]
An object or a person that performs an action. Used in noun phrases where the satellite is the object or the person that performs the volitional action indicated by the nucleus. Used in

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

Confusion$_{49}$: {agent}$_{49\%}$ {agent}$_{49\%}$ {agent}$_{49\%}$ {agent}$_{49\%}$ {loc}$_{2\%}$ {goal}$_{2\%}$ {source}$_{2\%}$.

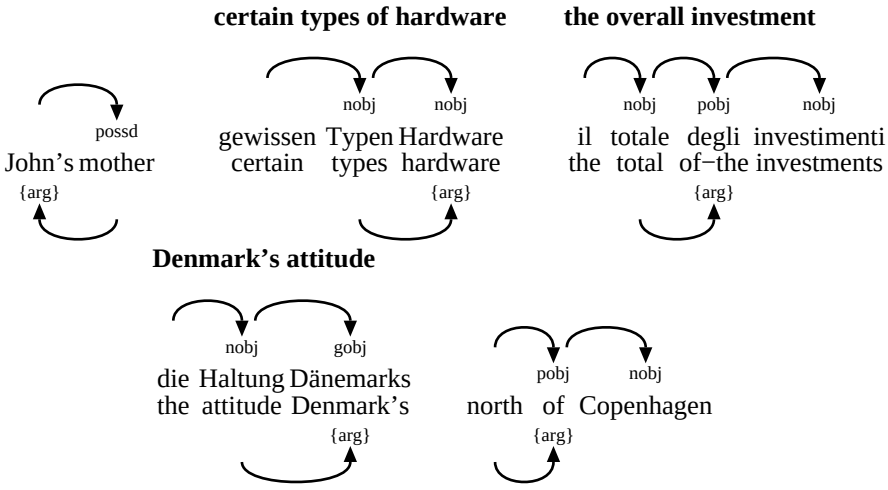
{apart} isa SEMREL [62] . Used in noun phrases where the satellite represents an arbitary part of the nucleus. Please note that the semantic relation goes from the satellite to the nucleus in opposition to the main part of the other semantic roles.

Confusion$_{17}$: .



{arg} isa SEMREL [67] . Used in noun phrases where there is a deadjectival relation or another similiar relationship between the nucleus and the satellite.

Confusion$_{144}$: .



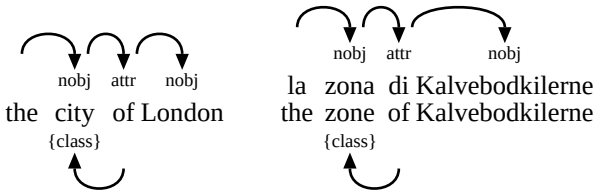
{cause} isa SEMREL [53] . Used in noun phrases where the satellite is the person or object that performs the non-volitional action indicated by the nucleus.

Confusion$_{1}$: {goal}$_{100\%}$.

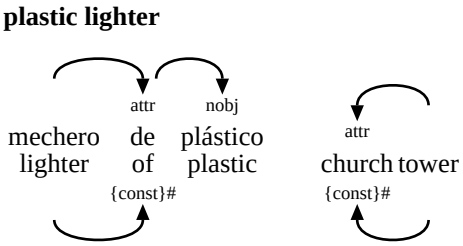
sultedød ildebrand?

{class} . Used in noun phrases where the satellite indicates the super type or classification of the
isa SEMREL nucleus. This is in opposition to the identity relation which denotates the opposit relationship
[63] 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$_3$: .



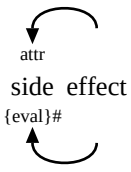
{const} . Used in noun phrases where the satellite represents a part, material or essential constituent
isa SEMREL of the nucleus.
[49] Confusion$_{42}$: {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$.



{elab} . position).
isa SEMREL Related types: modp.
[48] Confusion$_5$: {elab}$_{80\%}$ {loc}$_{20\%}$.

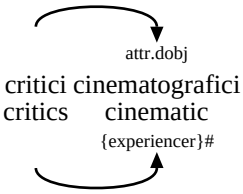
{eval} . Used in noun phrases where there is a descriptive relation between the nucleus and the
isa SEMREL satellite. The relation is often a subjective description from the writer who either evaluates
[59] the relationship in a positive or negative manner.

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



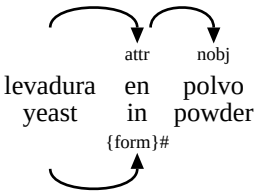
{experiencer} *The receiver of an emotion or a physical impact.* Used in noun phrases where there is a
isa SEMREL deverbal relation between the nucleus and the satellite. Often realized as a direct object
[70] Confusion$_5$: {agent}$_{80\%}$ {patient}$_{20\%}$.

film critics

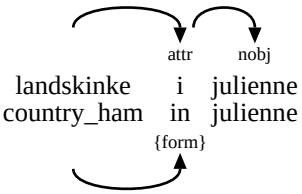


{form} . Used in noun phrases where the satellite indicates the shape or form of the nucleus.
isa SEMREL [65]
Confusion$_5$: {const}$_{40\%}$ {form}$_{40\%}$ {loc}$_{20\%}$.

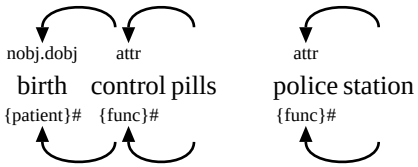
baking powder



country ham in julienne strips

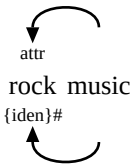


{func} . Used in noun phrases where the satellite determinates the function of the nucleus.
isa SEMREL [55]
Confusion$_{37}$: .

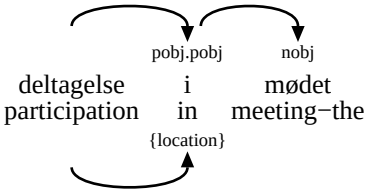


{goal} . Used in noun phrases where the satellite determinates the goal or the intention for which the nucleus is destinated.
isa SEMREL [54]
Confusion$_{42}$: {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$ {arg}$_{19\%}$.

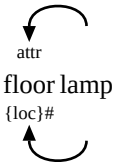
{iden} . Used in noun phrases where the satellite indicates the identity of the nucleus. In this case it is also possible to equate the satellite to the nucleus i.e. that the nucleus represents the super type of the satellite.
isa SEMREL [66]
Related types: {class}.
Confusion$_1$: {func}$_{100\%}$.



{location} *The location where something is situated or happens.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a prepositional object
isa SEMREL [72]
Confusion$_2$: {loc}$_{50\%}$ {location}$_{50\%}$.



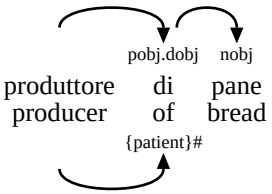
{loc} (deprecated {pos}). Used in noun phrases where the satellite indicates the location of the position or the location of nucleus.
isa SEMREL
[57] Confusion$_{72}$: .



{other} *No specific semantic role.* Used when none of the other semantic roles are suitable or when in doubt.
isa SEMREL
[73] Confusion$_{15}$: {arg}$_{20\%}$ {poss}$_{20\%}$ {poss}$_{20\%}$ {poss}$_{20\%}$ {poss}$_{20\%}$ {poss}$_{20\%}$ {poss}$_{20\%}$ {poss}$_{20\%}$ {poss}$_{20\%}$.

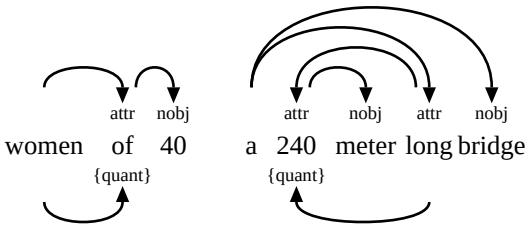
{patient} *An object or a person that is the subject of the action or the one who is located somewhere.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a direct object
isa SEMREL
[69] Confusion$_{54}$: {patient}$_{50\%}$ {patient}$_{50\%}$ {patient}$_{50\%}$ {patient}$_{50\%}$ {patient}$_{50\%}$ {patient}$_{50\%}$ {patient}$_{50\%}$ {patient}$_{50\%}$ {patient}$_{50\%}$.

bread producer

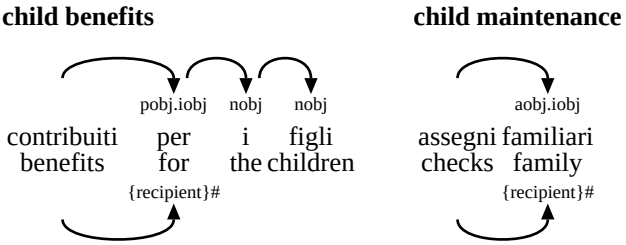


{poss} . Used in noun phrases where there is a possession relation between the nucleus and the satellite. Often the satelitte is the owner or possessor of the nucleus.
isa SEMREL
[56] Confusion$_{23}$: {other}$_{13\%}$ {other}$_{13\%}$ {other}$_{13\%}$ {other}$_{13\%}$ {other}$_{13\%}$.

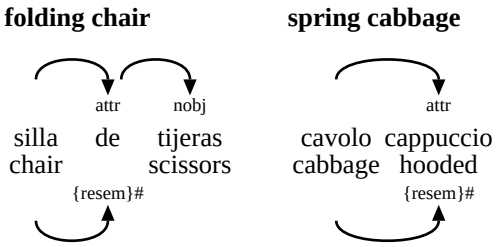
{quant} . Used in noun phrases where the satellite indicates the quantity in numbers or another countable unit of the nucleus.
isa SEMREL
[64] Confusion$_{14}$: .



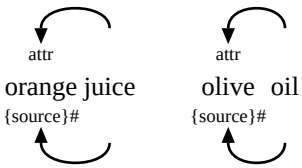
{recipient} *The receiver of something.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as an indirect object
isa SEMREL
[71] Confusion$_2$: {loc}$_{50\%}$ {goal}$_{50\%}$.



{resem} . Used in noun phrases where there is a resemblance between the nucleus and the satellite.
isa SEMREL
[60] Confusion$_2$: {resem}$_{50\%}$ {goal}$_{50\%}$.



{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$_{35}$: {arg}$_{20\%}$ {arg}$_{20\%}$ {arg}$_{20\%}$ {arg}$_{20\%}$ {arg}$_{20\%}$ {arg}$_{20\%}$.



{time} . Used in noun phrases where the satellite indicates some kind of temporal aspect of the nucleus.
isa SEMREL
[58] Confusion$_{22}$: .

7.1 Qualia relations: QUALIA

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

Figure 7.2: The relations matching QUALIA.

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

agentive *Agentive qualia.* A relation which describes the origin of an object. E.g., its creator, artifact, natural kind, causal chain (cf. Pustejovsky 1995).
isa QUALIA
[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).
isa QUALIA
[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).
isa QUALIA
[39]
Subtypes: location.

location *Location qualia.* A qualia role that relates a lexeme to its location qualia.
isa formal
[42]

resemblance *Resemblance wrt. qualia role.* Resemblance wrt. some qualia role
isa QUALIA
[44]
Subtypes: ""QUALIA.

""QUALIA *Resemblance wrt. $qualia relation.* The property that distinguishes
isa RULE resemblance
[45]

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).
isa QUALIA
[40]
Subtypes: about.

about *About qualia.* Relates to hyponym (subtype)
isa telic
[43]
Confusion_1: $\text{about}_{100\%}$.

7.2 Thematic role relations: SEMROLE

Figure 7.3: The relations matching SEMROLE.

Chapter 8

Word alignment relations: ALIGNMENT

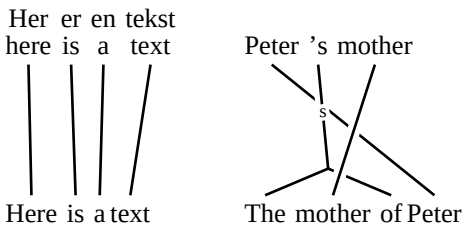
ALIGN: alignment level
  ALIGNREL: alignment relation
    "": unlabeled word alignment
    f: fuzzy word alignment

Figure 8.1: The relations matching ALIGNMENT-TOPIC.

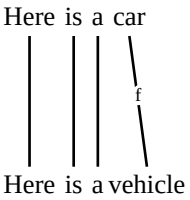
ALIGN isa DIM:LEVEL [15]
Alignment level (long: ALIGNMENT). The alignment level includes alignment relations as well as lexical features associated with alignments.
Subtypes: ALIGNREL.

ALIGNREL isa ALIGN REL [31]
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.
Subtypes: "" f.

"" isa ALIGNREL [375]
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.



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


Here is a car
f
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 morphlogy 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 isa ANY [4] *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 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 isa RULE assoc [190] *Associative anaphor wrt. qualia.* The anaphor denotes entity which is associated with the antecedent

””QUALIA isa RULE resemblance [45] *Resemblance wrt. $qualia relation.* The property that distinguishes

RuleAnd isa RULE [350] *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.

RuleAttr isa RULE [362] *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)

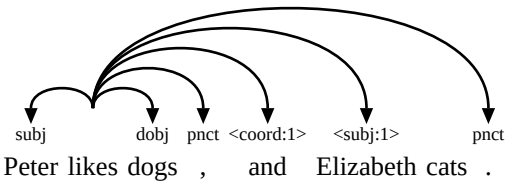
RuleAttrD isa RULE [364] *Down-dependent in attribution* (long: DISC"*"). The dependent in the relation is one step further down in the attribution chain

RuleAttrH isa RULE [363] *Down-head in attribution* (long: "*"DISC). The head in the relation is one step further down in the attribution chain

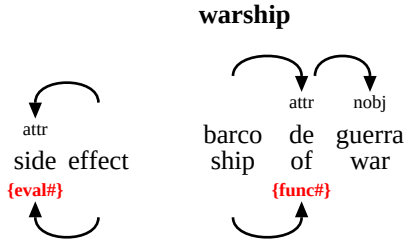
RuleDisc isa DISC RULE [357] *Syntactic discourse relation* (long: "¤"(PRIM)). A primary syntactic relation that has been used as a discourse relation for stilistic purposes.

RuleExpConn isa RULE [365] *Explicit connector* (long: PRIM"/"CONNECTOR). The discourse relation has explicit connector $CONNECTOR

RuleGap isa GAP RULE [355] *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.



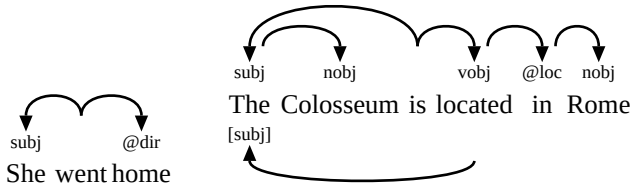
RuleIdiom isa IDIOM RULE [359] *Idiomatic relation pattern* (long: (SEMREL)"#"). A semantic relation can be marked as idiomatic by putting a trailing ”#” after the semantic relation name. The idiom marker is only used with semantic relations, not with syntactic relations.



RuleImpConn *Implicit connector* (long: PRIM"/("CONNECTOR")"). The discourse relation has implicit connector $CONNECTOR
isa RULE
[366]

RuleMorph *Syntactic morphlogy relation* (long: "§"(PRIM)). A primary syntactic relation that has been used as a morphology relation for stilistic purposes.
isa MORPH RULE
[358]

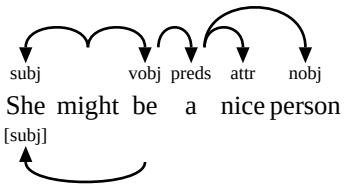
RuleOblAdv *Valency-bound adverbial* (long: "@"ADVERB). An adverbial relation can be marked as obligatory by putting "@" in front of the relation name.
isa COMP RULE
[356] Related types: cont dir dur ext hab loc prec succ time.



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
[351]

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
[352]

RuleSec *Secondary relation pattern* (long: "["PRIM"]"). A secondary relation name is formed by enclosing a primary relation name in square brackets.
isa RULE SEC
[354] 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
isa DIM:LEVEL
[13]

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.

Subtypes: ONTOCLASS.

ONTOCLASS
isa FEAT ONT
[405]

Ontological class. A class in the ontology. The ontology encodes a classification of all lexical elements with respect to their natural kind.

Subtypes: ¤top.

¤top
isa ONTOCLASS
[406]

Ontological entity.

Subtypes: ¤abstract ¤concrete.

¤abstract
isa ¤top
[407]

Abstract entity.

¤concrete
isa ¤top
[408]

Concrete entity.

Chapter 11

Relations misplaced outside the ANY hierarchy

MISPLACED: misplaced relation

Figure 11.1: The relations matching -ANY.

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

Chapter 12

Annotation topics:: TOPICS

Figure 12.1: The relations matching TOPICS-DIM.

Appendix A

Overview tables

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

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

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

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

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

DIM:TYPE: dimension: annotation type
- FEAT: lexical feature
- REL: directed bilexical relation
  - +: segment concatenation
  - GAP: gapping dependent
    - RuleGap: gapping dependent
  - 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

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

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

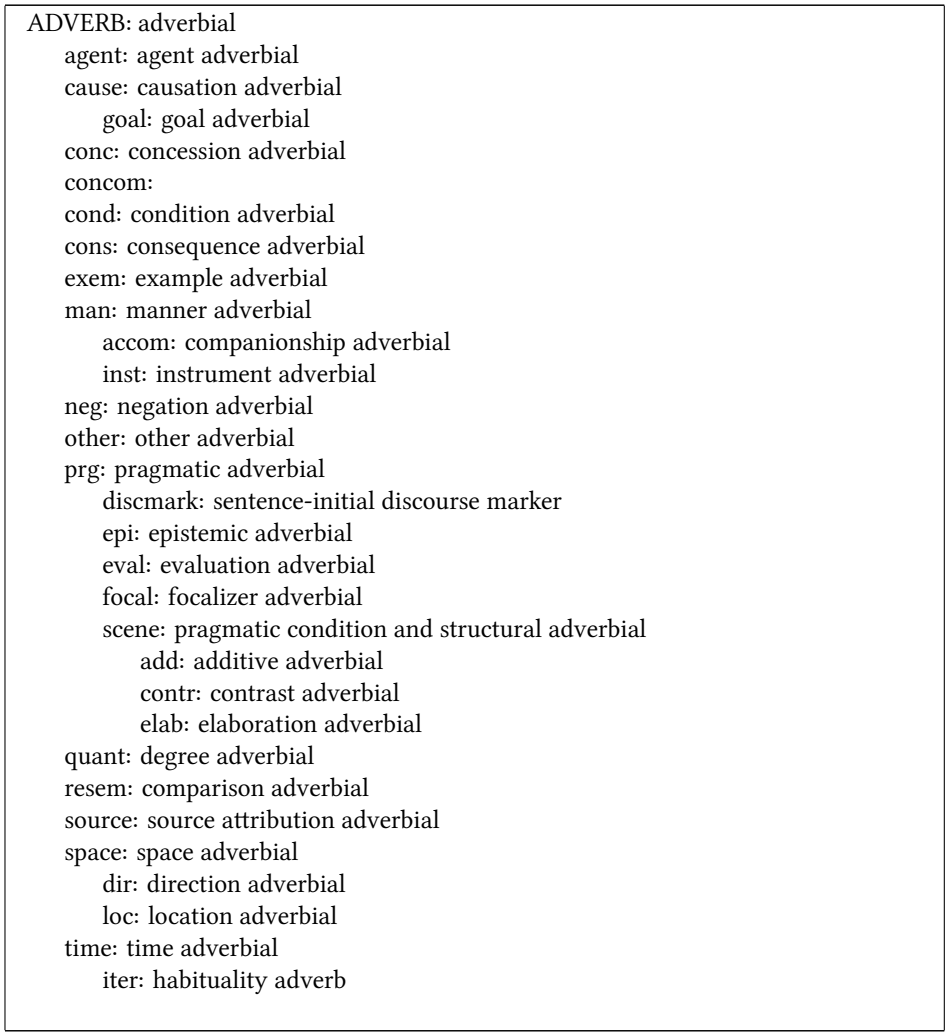
The relations matching SYNTAX-!SYNCOMP-!SYNADJ-TOPIC.

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

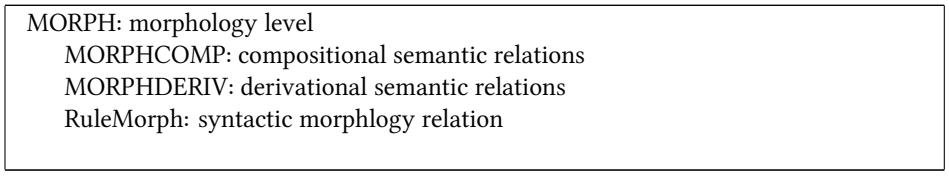
The relations matching SYNCOMP-TOPIC.

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
- 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.



The relations matching ADVERB-TOPIC.



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

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

The relations matching MORPHCOMP-TOPIC.

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

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

PREFIX: semantic relations appearing with prefixes
- §AGENT: agentive
- §ITER: iteration
- §MOD: modification
  - §MOD:eval: evaluation
  - §MOD:qual: qualification
  - §MOD:quant: quantification
- §NEG: negation
  - §NEG:contr: contrast
  - §NEG:priv: privation
  - §NEG:rev: reversion
- §PRE:other: other prefix relation
- §SPACE: space
  - §SPACE:dir: direction
  - §SPACE:loc: location
  - §SPACE:source: source
- §TELIC: telic
- §TIME: time
  - §TIME:post: temporal succession
  - §TIME:pre: temporal precedence
- §TRANS: transitivity

The relations matching PREFIX-TOPIC.

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

The relations matching SUFFIX-TOPIC.

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

The relations matching DISCSEM-TOPIC.

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

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

coref: coreference
- coref-iden: coreferential NP with lexical identity
- coref-res: resumptive anaphor
  - coref-res.prg: pragmatic coreference
- coref-var: coreferential NP with lexical variety
- ref: syntactically determined coreference

The relations matching coref-TOPIC.

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

The relations matching assoc-TOPIC.

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

The relations matching SEMANTICS-!QUALIA-!SEMROLE-TOPIC.

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

The relations matching QUALIA.

The relations matching SEMROLE.

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

The relations matching ALIGNMENT-TOPIC.

RULE: generative type specification rule
    "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 morphlogy 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

The relations matching -ANY.

Appendix B

Agreement and confusion tables

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

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

B.1 Confusion table: syntax

R	A	N	Confusion list
xtop	100%	2	xtop$_{100\%}$
voc	100%	1	voc$_{100\%}$
rel	100%	3	relr$_{100\%}$
numm	100%	2	numm$_{100\%}$
namel	100%	4	namel$_{100\%}$
namef	100%	67	namef$_{100\%}$
exem	100%	7	exem$_{100\%}$
pnct	99%	862	pnct$_{99\%}$ nobj$_{0\%}$ conj$_{0\%}$ possd$_{0\%}$ dobj$_{0\%}$ vobj$_{0\%}$ appr$_{0\%}$
subj	98%	561	subj$_{98\%}$ nobj$_{0\%}$ preds$_{0\%}$ appr$_{0\%}$ correl$_{0\%}$ attr$_{0\%}$ expl$_{0\%}$
possd	95%	101	possd$_{95\%}$ nobj$_{3\%}$ attr$_{1\%}$ pnct$_{0\%}$
neg	95%	42	neg$_{95\%}$ coord$_{2\%}$ eval$_{2\%}$
conj	95%	232	conj$_{95\%}$ nobj$_{1\%}$ attr$_{1\%}$ coord$_{0\%}$ qobj$_{0\%}$ cause$_{0\%}$ vobj$_{0\%}$ pnct$_{0\%}$
expl	94%	19	expl$_{94\%}$ subj$_{5\%}$
vobj	93%	405	vobj$_{93\%}$ preds$_{3\%}$ nobj$_{1\%}$ relr$_{0\%}$ conj$_{0\%}$ pnct$_{0\%}$ dobj$_{0\%}$ predo$_{0\%}$
appa	93%	16	appa$_{93\%}$ attr$_{6\%}$
nobj	92%	1351	nobj$_{92\%}$ attr$_{2\%}$ dobj$_{0\%}$ aobj$_{0\%}$ name$_{0\%}$ preds$_{0\%}$ vobj$_{0\%}$ time$_{0\%}$ subj$_{0\%}$ pobj$_{0\%}$ conj$_{0\%}$ possd$_{0\%}$ title$_{0\%}$ pnct$_{0\%}$ other$_{0\%}$ loc$_{0\%}$ appr$_{0\%}$ numa$_{0\%}$ quant$_{0\%}$ cond$_{0\%}$ modp$_{0\%}$

dobj	89%	330	dobj$_{89\%}$ nobj$_{3\%}$ pobj$_{2\%}$ robj$_{1\%}$ iobj$_{1\%}$ preds$_{0\%}$ goal$_{0\%}$ predo$_{0\%}$ dir$_{0\%}$ pnct$_{0\%}$ quant$_{0\%}$ vobj$_{0\%}$
xpl	88%	9	xpl$_{88\%}$ other$_{11\%}$
coord	86%	183	coord$_{86\%}$ discmark$_{9\%}$ contr$_{1\%}$ qobj$_{1\%}$ conj$_{0\%}$ neg$_{0\%}$
qobj	85%	32	qobj$_{85\%}$ coord$_{6\%}$ conj$_{3\%}$ discmark$_{3\%}$ CONJ:add$_{1\%}$
cond	85%	14	cond$_{85\%}$ man$_{7\%}$ nobj$_{7\%}$
agent	80%	5	agent$_{80\%}$ attr$_{20\%}$
preds	78%	204	preds$_{78\%}$ vobj$_{7\%}$ loc$_{3\%}$ nobj$_{2\%}$ predo$_{1\%}$ time$_{1\%}$ subj$_{1\%}$ dobj$_{1\%}$ fpredo$_{0\%}$ aobj$_{0\%}$ inst$_{0\%}$ resem$_{0\%}$ pobj$_{0\%}$
attr	78%	582	attr$_{78\%}$ pobj$_{6\%}$ nobj$_{5\%}$ time$_{1\%}$ aobj$_{1\%}$ loc$_{1\%}$ other$_{0\%}$ focal$_{0\%}$ mod$_{0\%}$ conj$_{0\%}$ cause$_{0\%}$ goal$_{0\%}$ dir$_{0\%}$ predo$_{0\%}$ quant$_{0\%}$ conc$_{0\%}$ name$_{0\%}$ subj$_{0\%}$ possd$_{0\%}$ man$_{0\%}$ inst$_{0\%}$ agent$_{0\%}$ appa$_{0\%}$ modp$_{0\%}$
time	76%	149	time$_{76\%}$ attr$_{6\%}$ iter$_{5\%}$ nobj$_{3\%}$ cons$_{2\%}$ quant$_{2\%}$ preds$_{1\%}$ man$_{1\%}$ scene$_{0\%}$ other$_{0\%}$ cause$_{0\%}$
relr	75%	73	relr$_{75\%}$ relpa$_{15\%}$ rel$_{4\%}$ relelab$_{2\%}$ vobj$_{2\%}$
cause	75%	24	cause$_{75\%}$ attr$_{8\%}$ conj$_{4\%}$ time$_{4\%}$ pobj$_{4\%}$ cons$_{4\%}$
add	75%	32	add$_{75\%}$ other$_{12\%}$ discmark$_{6\%}$ prg$_{3\%}$ scene$_{3\%}$
quant	74%	85	quant$_{74\%}$ time$_{3\%}$ man$_{3\%}$ eval$_{3\%}$ prg$_{2\%}$ focal$_{2\%}$ avobj$_{2\%}$ degr$_{2\%}$ nobj$_{1\%}$ elab$_{1\%}$ attr$_{1\%}$ dobj$_{1\%}$ modp$_{1\%}$
title	73%	15	title$_{73\%}$ nobj$_{20\%}$ appr$_{6\%}$
appr	73%	15	appr$_{73\%}$ nobj$_{10\%}$ title$_{6\%}$ subj$_{6\%}$ pnct$_{3\%}$
pobj	66%	279	pobj$_{66\%}$ attr$_{14\%}$ goal$_{4\%}$ other$_{3\%}$ dir$_{2\%}$ dobj$_{2\%}$ nobj$_{1\%}$ loc$_{1\%}$ source$_{1\%}$ inst$_{0\%}$ preds$_{0\%}$ avobj$_{0\%}$ man$_{0\%}$ cause$_{0\%}$ accom$_{0\%}$
part	63%	11	part$_{63\%}$ avobj$_{27\%}$ dir$_{9\%}$
name	63%	19	name$_{63\%}$ nobj$_{31\%}$ attr$_{5\%}$
cons	61%	13	cons$_{61\%}$ time$_{23\%}$ inst$_{7\%}$ cause$_{7\%}$
loc	60%	138	loc$_{60\%}$ dir$_{14\%}$ preds$_{5\%}$ other$_{5\%}$ attr$_{4\%}$ pobj$_{2\%}$ nobj$_{1\%}$ focal$_{1\%}$ fpredo$_{1\%}$ avobj$_{0\%}$ man$_{0\%}$ inst$_{0\%}$
modp	57%	7	modp$_{57\%}$ nobj$_{14\%}$ quant$_{14\%}$ attr$_{14\%}$
man	55%	69	man$_{55\%}$ accom$_{7\%}$ other$_{5\%}$ quant$_{4\%}$ epi$_{2\%}$ time$_{2\%}$ source$_{1\%}$ prg$_{1\%}$ attr$_{1\%}$ fpreds$_{1\%}$ aobj$_{1\%}$ eval$_{1\%}$ cond$_{1\%}$ concom$_{1\%}$ scene$_{1\%}$ fpredo$_{1\%}$ goal$_{1\%}$ loc$_{1\%}$ resem$_{1\%}$ mod$_{1\%}$ pobj$_{1\%}$
resem	50%	4	resem$_{50\%}$ man$_{25\%}$ preds$_{25\%}$
iobj	50%	10	iobj$_{50\%}$ dobj$_{40\%}$ robj$_{10\%}$
epi	50%	8	epi$_{50\%}$ man$_{25\%}$ eval$_{25\%}$
elab	50%	4	elab$_{50\%}$ prg$_{25\%}$ quant$_{25\%}$
correl	50%	4	correl$_{50\%}$ focal$_{25\%}$ subj$_{25\%}$
avobj	47%	19	avobj$_{47\%}$ part$_{15\%}$ other$_{10\%}$ quant$_{10\%}$ aobj$_{5\%}$ loc$_{5\%}$ pobj$_{5\%}$
scene	46%	13	scene$_{46\%}$ goal$_{15\%}$ man$_{7\%}$ contr$_{7\%}$ add$_{7\%}$ time$_{7\%}$ inst$_{7\%}$
accom	45%	11	man$_{45\%}$ accom$_{45\%}$ pobj$_{9\%}$
eval	43%	30	eval$_{43\%}$ prg$_{26\%}$ quant$_{10\%}$ epi$_{6\%}$ man$_{3\%}$ other$_{3\%}$ focal$_{3\%}$ neg$_{3\%}$
goal	38%	34	goal$_{38\%}$ pobj$_{35\%}$ scene$_{5\%}$ attr$_{5\%}$ dobj$_{5\%}$ man$_{2\%}$ fpredo$_{2\%}$ mod$_{2\%}$
source	33%	9	source$_{33\%}$ pobj$_{33\%}$ man$_{11\%}$ concom$_{11\%}$ other$_{11\%}$
inst	33%	15	inst$_{33\%}$ predo$_{13\%}$ pobj$_{13\%}$ concom$_{6\%}$ scene$_{6\%}$ preds$_{6\%}$ attr$_{6\%}$ cons$_{6\%}$ loc$_{6\%}$

focal	33%	18	$focal_{33\%}$ $attr_{22\%}$ $other_{11\%}$ $loc_{11\%}$ $quant_{11\%}$ $correl_{5\%}$ $eval_{5\%}$
aobj	33%	24	$aobj_{33\%}$ $nobj_{29\%}$ $attr_{25\%}$ $man_{4\%}$ $preds_{4\%}$ $avobj_{4\%}$
contr	31%	16	$contr_{31\%}$ $discmark_{25\%}$ $conc_{12\%}$ $coord_{12\%}$ $prg_{6\%}$ $other_{6\%}$ $scene_{6\%}$
relpa	26%	15	$relr_{73\%}$ $relpa_{26\%}$
iter	25%	12	$time_{66\%}$ $iter_{25\%}$ $other_{8\%}$
dir	23%	39	$loc_{51\%}$ $dir_{23\%}$ $pobj_{17\%}$ $part_{2\%}$ $attr_{2\%}$ $dobj_{2\%}$
robj	16%	6	$dobj_{66\%}$ $robj_{16\%}$ $iobj_{16\%}$
conc	16%	6	$contr_{33\%}$ $prg_{33\%}$ $conc_{16\%}$ $attr_{16\%}$
prg	15%	19	$eval_{42\%}$ $prg_{15\%}$ $conc_{10\%}$ $quant_{10\%}$ $add_{5\%}$ $elab_{5\%}$ $man_{5\%}$ $contr_{5\%}$
other	15%	51	$pobj_{17\%}$ $other_{15\%}$ $loc_{15\%}$ $attr_{9\%}$ $add_{7\%}$ $man_{7\%}$ $nobj_{3\%}$ $avobj_{3\%}$ $focal_{3\%}$ $source_{2\%}$ $time_{2\%}$ $contr_{2\%}$ $eval_{2\%}$ $iter_{2\%}$ $xpl_{2\%}$ $mod_{2\%}$
predo	10%	10	$preds_{30\%}$ $inst_{20\%}$ $attr_{10\%}$ $fpredo_{10\%}$ $predo_{10\%}$ $dobj_{10\%}$ $vobj_{10\%}$
discmark	7%	27	$coord_{66\%}$ $contr_{14\%}$ $discmark_{7\%}$ $add_{7\%}$ $qobj_{3\%}$
relelab	0%	2	$relr_{100\%}$
numa	0%	1	$nobj_{100\%}$
mod	0%	7	$attr_{57\%}$ $goal_{14\%}$ $man_{14\%}$ $other_{14\%}$
fpreds	0%	1	$man_{100\%}$
fpredo	0%	6	$loc_{33\%}$ $goal_{16\%}$ $man_{16\%}$ $preds_{16\%}$ $predo_{16\%}$
degr	0%	2	$quant_{100\%}$
concom	0%	3	$source_{33\%}$ $man_{33\%}$ $inst_{33\%}$
TOTAL	83%	6389	

B.2 Confusion table: semantics

R	A	N	Confusion list
eval	100%	1	$eval_{100\%}$
elab	80%	5	$elab_{80\%}$ $loc_{20\%}$
time	77%	22	$time_{77\%}$ $source_{13\%}$ $arg_{4\%}$ $other_{4\%}$
const	57%	42	$const_{57\%}$ $arg_{19\%}$ $form_{4\%}$ $poss_{4\%}$ $loc_{2\%}$ $func_{2\%}$ $apart_{2\%}$ $class_{2\%}$ $goal_{2\%}$ $source_{2\%}$
loc	56%	72	$loc_{56\%}$ $arg_{9\%}$ $source_{6\%}$ $func_{4\%}$ $goal_{2\%}$ $patient_{2\%}$ $poss_{2\%}$ $other_{2\%}$ $const_{1\%}$ $location_{1\%}$ $agent_{1\%}$ $elab_{1\%}$ $apart_{1\%}$ $form_{1\%}$ $recipient_{1\%}$ $about_{1\%}$
goal	54%	42	$goal_{54\%}$ $arg_{19\%}$ $loc_{4\%}$ $func_{4\%}$ $cause_{2\%}$ $resem_{2\%}$ $const_{2\%}$ $agent_{2\%}$ $recipient_{2\%}$ $patient_{2\%}$ $other_{2\%}$
resem	50%	2	$resem_{50\%}$ $goal_{50\%}$
patient	50%	54	$patient_{50\%}$ $about_{16\%}$ $arg_{16\%}$ $agent_{5\%}$ $loc_{3\%}$ $func_{1\%}$ $experiencer_{1\%}$ $goal_{1\%}$ $poss_{1\%}$
location	50%	2	$loc_{50\%}$ $location_{50\%}$
agent	49%	49	$agent_{49\%}$ $arg_{30\%}$ $experiencer_{8\%}$ $patient_{6\%}$ $loc_{2\%}$ $goal_{2\%}$ $source_{2\%}$
source	48%	35	$source_{48\%}$ $arg_{20\%}$ $loc_{14\%}$ $time_{8\%}$ $const_{2\%}$ $agent_{2\%}$ $poss_{2\%}$
func	48%	37	$func_{48\%}$ $arg_{21\%}$ $loc_{8\%}$ $about_{5\%}$ $goal_{5\%}$ $const_{2\%}$ $iden_{2\%}$ $patient_{2\%}$ $other_{2\%}$
arg	46%	144	$arg_{46\%}$ $agent_{10\%}$ $patient_{6\%}$ $const_{5\%}$ $func_{5\%}$ $goal_{5\%}$ $loc_{4\%}$ $source_{4\%}$ $about_{4\%}$ $poss_{3\%}$ $other_{2\%}$ $time_{0\%}$

form	40%	5	$const_{40\%}$ $form_{40\%}$ $loc_{20\%}$
poss	39%	23	$poss_{39\%}$ $arg_{21\%}$ $other_{13\%}$ $loc_{8\%}$ $const_{8\%}$ $patient_{4\%}$ $source_{4\%}$
apart	35%	17	$quant_{52\%}$ $apart_{35\%}$ $loc_{5\%}$ $const_{5\%}$
about	30%	26	$patient_{34\%}$ $about_{30\%}$ $arg_{23\%}$ $func_{7\%}$ $loc_{3\%}$
quant	28%	14	$apart_{64\%}$ $quant_{28\%}$ $other_{7\%}$
other	6%	15	$arg_{20\%}$ $poss_{20\%}$ $loc_{13\%}$ $class_{13\%}$ $quant_{6\%}$ $time_{6\%}$ $goal_{6\%}$ $func_{6\%}$ $other_{6\%}$
recipient	0%	2	$loc_{50\%}$ $goal_{50\%}$
iden	0%	1	$func_{100\%}$
experiencer	0%	5	$agent_{80\%}$ $patient_{20\%}$
class	0%	3	$other_{66\%}$ $const_{33\%}$
cause	0%	1	$goal_{100\%}$
TOTAL	47%	619	

B.3 Confusion table: discourse

R	A	N	Confusion list
SCENE	100%	4	$SCENE_{100\%}$
JOINT	100%	2	$JOINT_{100\%}$
ANSW	100%	1	$ANSW_{100\%}$
TELIC:cons.sbj	75%	4	$TELIC:cons.sbj_{75\%}$ $CONJ:add_{25\%}$
CONTR:dir	50%	2	$expl_{50\%}$ $CONTR:dir_{50\%}$
CONTR	50%	1	$CONTR:sbj_{50\%}$ $conj_{50\%}$
CONST:rest	50%	4	$CONST:rest_{50\%}$ $CONJ:elab_{33\%}$ $xpl_{16\%}$
CONC	50%	2	$CONJ:add_{50\%}$ $CONC_{50\%}$
TELIC:cons.dir	44%	3	$TELIC:cons.dir_{44\%}$ $CONJ:add_{33\%}$ $vobj_{22\%}$
CONJ:elab	40%	27	$CONJ:add_{42\%}$ $CONJ:elab_{40\%}$ $CONST:rest_{4\%}$ $FORMAL:descr_{3\%}$ $CONSOL:source_{3\%}$ $qobj_{2\%}$ $xpl_{2\%}$
CONJ:add	37%	41	$CONJ:add_{37\%}$ $CONJ:elab_{27\%}$ $qobj_{6\%}$ $CONTR:sbj_{4\%}$ $AGENTIVE:expl_{4\%}$ $conj_{3\%}$ $rel_{2\%}$ $TELIC:cons.sbj_{2\%}$ $time_{2\%}$ $TELIC:cons.dir_{2\%}$ $CONST:exem_{2\%}$ $CONC_{2\%}$
AGENTIVE:expl	33%	6	$CONJ:add_{33\%}$ $AGENTIVE:expl_{33\%}$ $CONSOL:motiv_{16\%}$ $vobj_{16\%}$
CONTR:sbj	25%	10	$conj_{40\%}$ $CONTR:sbj_{25\%}$ $CONJ:add_{20\%}$ $coord_{10\%}$ $CONTR_{5\%}$
xpl CONJ:elab	0%	1	$xpl_{100\%}$
FORMAL:descr	0%	1	$CONJ:elab_{100\%}$
CONST:exem	0%	1	$CONJ:add_{100\%}$
CONSOL:source	0%	1	$CONJ:elab_{100\%}$
CONSOL:motiv	0%	1	$AGENTIVE:expl_{100\%}$
AGENTIVE:reas	0%	1	$qobj_{100\%}$
TOTAL	40%	113	

B.4 Confusion table: anaphora

R	A	N	Confusion list
ref	100%	38	$ref_{100\%}$
coref	100%	1	$coref\text{-}res_{100\%}$

coref-res	50%	2	$\text{coref}_{50\%}$	$\text{coref-res}_{50\%}$
TOTAL	97%	41		

B.5 Confusion table: morphology

R	A	N	Confusion list
func	100%	2	$\text{func}_{100\%}$
DERvn:patient	100%	1	$\text{DERvn:patient}_{100\%}$
DERvn:core	100%	6	$\text{DERvn:core}_{100\%}$
DERnv	100%	1	$\text{DERnv}_{100\%}$
DERna:disp	100%	1	$\text{DERna:disp}_{100\%}$
DERan:qual	100%	1	$\text{DERan:qual}_{100\%}$
about	100%	1	$\text{about}_{100\%}$
TOTAL	100%	13	

B.6 Confusion table: alignment

R	A	N	Confusion list

Appendix C

Annotation status

C.1 All texts

	alignment	discourse	morphology	postag	syntax
none	1016	2086	2206		951
auto				1775	71
outdated-final	536				911
first	45	32	105	1	95
discussed	178	194	1		198
final				536	86

C.2 da texts

	discourse	morphology	postag	syntax
none	435	468		
auto				
outdated-final				491
first	16	68	1	18
discussed	86	1		22
final			536	6

C.3 de texts

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

C.4 en texts

	discourse	morphology	postag	syntax
none	528	536		
auto			536	71
outdated-final				420

first	8			21
discussed				18
final				6

C.5 es texts

	discourse	morphology	postag	syntax
none	388	379		343
auto			413	
outdated-final				
first		34		1
discussed	25			65
final				4

C.6 it texts

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

C.7 da-de texts

	alignment
none	368
auto	
outdated-final	
first	45
discussed	
final	

C.8 da-en texts

	alignment
none	
auto	
outdated-final	536
first	
discussed	
final	

C.9 da-es texts

	alignment
none	332

auto	
outdated-final	
first	
discussed	81
final	

C.10 da-it texts

	alignment
none	316
auto	
outdated-final	
first	
discussed	97
final	

Appendix D

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