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]

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[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;

- *confusion*: lists relations that are confused with this relation with percentages (ie, the probability that other annotators will use another relation name); the numbers in "Confusion$_{A,A_U,A_L}^{N}$ list the number of times the relation name has been used for a multiply-annotated in-node, and the labeled agreement A, the unlabeled agreement A_U, and the label agreement A_L for the relation.

- *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
    CDT1: Deprecated CDT1 relations
    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-!CDT1.

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: CDT1 DIM RULE TOPIC.

CDT1
isa ANY
[395]
Deprecated CDT1 relations. Deprecated relations from the CDT1+2 treebanks.

Subtypes: CDT1ADJ CDT1COMP CDT1GAP.

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 ONTO 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: ””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
    ONTO: ontology level
    SEM: semantic level
    SYN: syntax level
```

Figure 2.2:   The relations matching DIM:LEVEL-!SYNTAX-!MORPH-!DISC-!ANA-!SEM-!ALIGN-!ONTO-!RULE-!TOPIC-!CDT1.

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 ONTO 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 anaphors and their antecedents, as well as lexical features associated with anaphora.

Subtypes: ANAREL anaphor.

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.

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.

ONTO
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.

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.

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.

2.2 Annotation type dimension: DIM:TYPE

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.

FEAT
isa DIM:TYPE
[18]

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

Subtypes: ONTOCLASS.

REL
isa DIM:TYPE
[19]

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).

Subtypes: ALIGNREL ANAREL IDIOM LAND PRIM SEC SEMREL.

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: +.

DIM:TYPE: dimension: annotation type
    FEAT: lexical feature
    REL: directed bilexical relation
        IDIOM: idiomatic relation
            RuleIdiom: idiomatic relation pattern
        LAND: landing relation
            fill: licensed filler
            land: landed lexical element
        PRIM: primary dependency relation
            +: segment concatenation
            ADJ: adjunct relation
            COMP: complement relation
                RuleOblAdv: valency-bound adverbial
        SEC: secondary dependency relation
            RuleSec: secondary relation pattern
            repl: replacement in gapping coordination

Figure 2.3: The relations matching DIM:TYPE-!SYNTAX-!MORPH-!DISC-!ANA-!SEM-!ALIGN-!ONTO-!TOPIC-!CDT1.
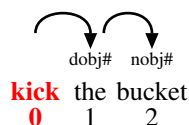
RuleIdiom *Idiomatic relation pattern* (long: (SEMREL)"#"). A semantic relation can be marked as id-
isa IDIOM RULE iomatic by putting a trailing "#" after the semantic relation name. The idiom marker is only
[374] used with semantic relations, not with syntactic relations.
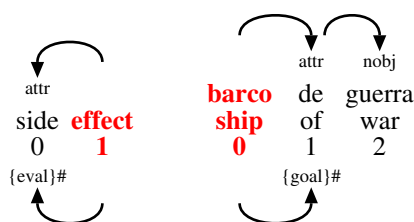
LAND *Landing relation* (long: LANDING). A relation between a lexical element and its landing site.
isa REL Landing relations are not annotated explicitly in the Copenhagen Dependency Treebanks.
[25] In Discontinuous Grammar, the word order is determined by a projective surface tree. The
projective surface tree can be derived from the deep tree by defining the landing site for
a node as the lowest transitive governor in the deep tree that deeply dominates all nodes
between the node and the transitive governor. The resulting set of landing relations can be
shown to form a projective tree. In this tree, a global word order uniquely corresponds to a
local ordering of all the landed nodes at each landing site.

Subtypes: fill land.

fill *Licensed filler*. A landing relation from a filler licensor to a phonetically empty filler that it
isa LAND licenses. The filler licensor is viewed as the landing site for the filler. Filler relations are never
[27]

7

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.

+
isa PRIM
[33]

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.

Related types: IDIOM.

Pica ss o
0 1 2

ADJ
isa PRIM
[22]
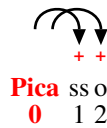
Adjunct relation (long: ADJUNCT). A primary adjunct relation. The relation is licensed by the adjunct, ie, the lexical entry of the adjunct specifies the adjunct relations licensed by the adjunct, along with the associated semantic interpretation mechanisms and selectional restrictions on the licensed 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 *Valency-bound adverbial* (long: `"@"`ADVERB). An adverbial relation can be marked as obliga-
isa COMP RULE tory by putting "@" in front of the relation name.
[371] Related types: cont dir dur ext hab loc prec succ time.

subj nobj   vobj @loc nobj
The Colosseum **is** located in Rome
0   1   **2** 3   4   5
[subj]

subj   @dir
She **went** home
0   **1**   2

SEC *Secondary dependency relation* (long: SECONDARY). A secondary dependency relation. Intu-
isa REL itively, if a node functions as a dependent of more than one word (eg, in verbal chains, raising
[24] and control constructions, relatives, and elliptic coordinations), the dependency relation that
determines the word order is encoded as a primary relation, and the remaining dependency
relations are encoded as secondary dependency relations. In terms the underlying linguistic
theory in Discontinuous Grammar, the secondary relations in the CDT annotation encode
that the child node in the secondary dependency functions as the filler source for a filler
that functions as a primary dependent of the parent node. Since the CDT annotation does
not include filler nodes, there is no explicit annotation of the filler and its associated filler
licensor and filler source, and the filler licensor must be reconstructed from the secondary
dependency by means of heuristic rules.

Subtypes: RuleSec ref repl.

Related types: fill fsrc.

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

subj   vobj preds attr nobj
She **might** be   a   nice person
0   **1**   2   3   4   5
[subj]

repl *Replacement in gapping coordination.* A relation that encodes a constituent in the first con-
isa SEC junct replaced by a gapping dependent. The relation goes from the head of the replaced
[34] constituent to the head of the gapping dependent. The extraction path for the gapping de-
pendent is defined as the path from the replaced constituent to the head of the first conjunct.

Related types: gapd.

Chapter 3

Syntactic relations: **SYNTAX**

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

Figure 3.1: The relations matching SYNTAX-!SYNCOMP-!SYNADJ-!CDT1-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
[105]

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 CDT1ADJ app attr attrg conj coord correl fpred gapd name pnct rel voc xtop.

SYNCOMP
isa COMP SYN
[77]

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 CDT1COMP 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
[77]

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 CDT1COMP aobj avobj dobj fobj gobj iobj nobj numa numm part pobj possd possr pred qobj robj subj vobj.

@space
isa SYNCOMP
[86]

Valency-bound location/direction adverbial (deprecated lobj). A valency bound locative expression. Formerly analyzed as locative object "lobj", but we have decided to provide a general mechanism (@) for converting adverbial relations into valency-bound relations instead.

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-!CDT1-TOPIC.

@time *Valency-bound time adverbial* (deprecated tobj). A valency bound time expression. Formerly
isa SYNCOMP analyzed as temporal object "tobj", but we have decided to provide a general mechanism (@)
[102] for converting adverbial relations into valency-bound relations instead.

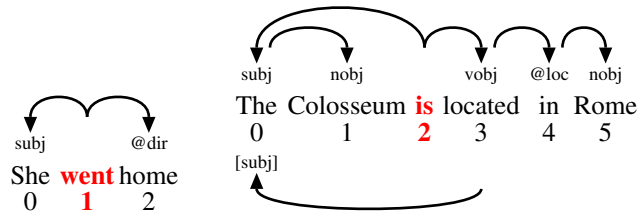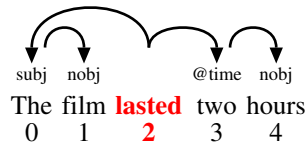Related types: cont dur ext hab prec succ.

avobj *Adverbial object.*
isa SYNCOMP Related types: aobj part.
[94] $\text{Confusion}^{16}_{56.3\%/100\%/56.3\%\%}$: avobj$_{56.3\%}$ other$_{18.8\%}$ part$_{12.5\%}$ aobj$_{6.3\%}$ pobj$_{6.3\%}$.
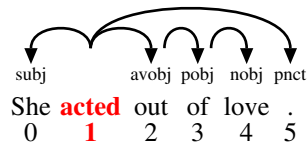
dobj *Direct object.* A direct object relation. In languages with case, the direct object is typically
isa SYNCOMP accusative-marked.
[82] Related types: iobj robj.
Confusion$^{235}_{89.8\%/97.4\%/90.6\%\%}$: dobj$_{90.6\%}$ nobj$_{4.3\%}$ robj$_{1.3\%}$ pobj$_{1.3\%}$ goal$_{0.9\%}$ iobj$_{0.9\%}$ quant$_{0.4\%}$ vobj$_{0.4\%}$.

expl		dobj	nobj	pnct	subj		dobj	nobj pnct
There	**are**	many	people	.	He	**has**	a	ball .
0	**1**	2	3	4	0	**1**	2	3 4
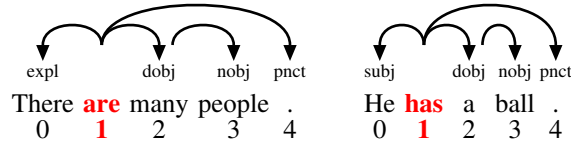
fobj *Filler object.* Filler objects are never annotated explicitly in the CDT annotation. In Discon-
isa SYNCOMP tinuous Grammar, a "filler" is a phonetically empty constituent which is licensed lexically
[95] by a "filler licensor" lexeme (eg, the relative verb in a relative construction acts as filler li-
censor 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.

subj	nobj	dobj	fobj	subj	rel		preds	pnct
The	bird	that	e	we	saw	**was**	nice	.
0	1	2	3	4	5	**6**	7	8

fill
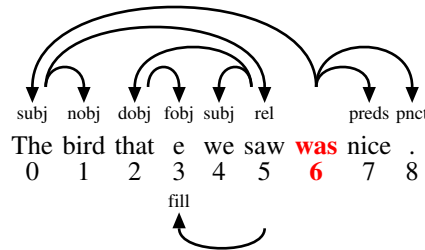
gobj *Genitive object.* If the genitve object is part of a NP with a deverbal nucleus, the following an-
isa SYNCOMP notation possibilities are available: gobj.subj{SEMROLE} gobj.dobj{SEMROLE} gobj.pobj{SEMROLE}
[84] gobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipi-
encer, experient, location.

Related types: SEMROLE attrg.

the presence of film critics

	nobj	gobj.subj	nobj
das	Dasein	der	Filmkritiker
the	presence	the(gen)	film_critics
0	1	2	3

{agent}

with help from the keyboard

	nobj	gobj.subj	nobj
mit	Hilfe	der	Tastatur
with	help	the	keyboard
0	1	2	3

{agent}

the sale of the car

	nobj	gobj.dobj	nobj
der	Verkauf	des	Autos
the	sale	the(gen)	car(gen)
0	1	2	3

{patient}

Denmark's attitude

	nobj	gobj
die	Haltung	Dänemarks
the	attitude	Denmark's
0	1	2

{arg}
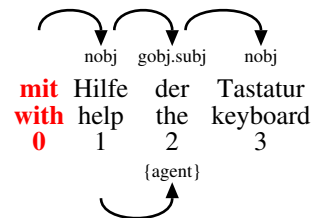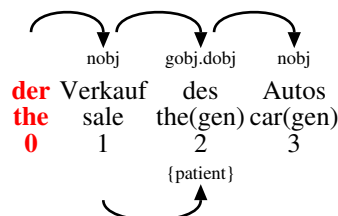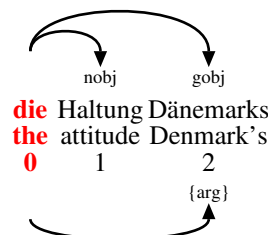
iobj *Indirect object.*
isa SYNCOMP Related types: dobj.
[85] $\text{Confusion}^6_{66.7\%/100\%/66.7\%\%}$: $\text{iobj}_{66.7\%}$ $\text{dobj}_{33.3\%}$.

He **gave** her a kiss
0 **1** 2 3 4
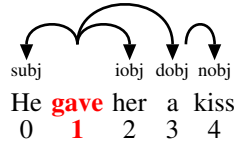
nobj *Nominal object.* If the nominal object is part of a NP with a deverbal nucleus, the following
isa SYNCOMP annotation possibilities are available: nobj.subj{SEMROLE} nobj.dobj{SEMROLE} nobj.pobj{SEMROLE}
[92] nobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient,
experient, location.

$\text{Confusion}^{881}_{90.6\%/95.3\%/92.4\%\%}$: $\text{nobj}_{92.4\%}$ $\text{attr}_{3\%}$ $\text{dobj}_{1.1\%}$ $\text{aobj}_{0.7\%}$ $\text{preds}_{0.5\%}$ $\text{vobj}_{0.5\%}$ $\text{time}_{0.3\%}$ $\text{subj}_{0.3\%}$ $\text{conj}_{0.2\%}$
$\text{other}_{0.2\%}$ $\text{pnct}_{0.1\%}$ $\text{numa}_{0.1\%}$ $\text{cond}_{0.1\%}$ $\text{name}_{0.1\%}$ $\text{possd}_{0.1\%}$ $\text{appr}_{0.1\%}$ $\text{loc}_{0.1\%}$.
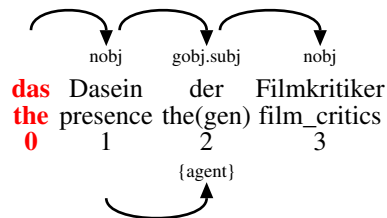
They joined the party.

nobj

the car
0 1

subj dobj part pobj nobj pnct

De **meldte** sig ind i partiet .
They **joined** themselves in in party−the
0 **1** 2 3 4 5 6

navigator

nobj.subj

shark **attack**
0 **1**

{agent}#

nobj.dobj

book **review**
0 **1**

{patient}#

nobj.dobj

indicatore percorsi
indicator tracks
0 1

{patient}#
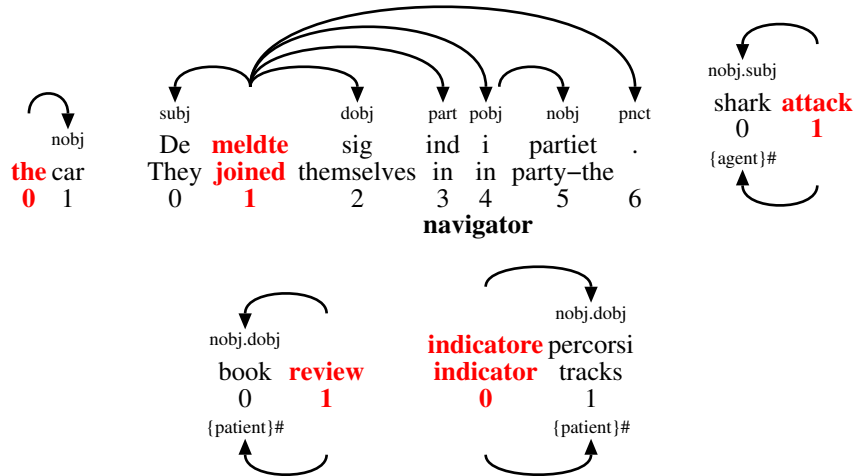
numa *Additive numeral complement.* An additive numeral complement relation. Numerals license
isa SYNCOMP one additive and one numeral complement, both optional. The numerical value associated
[96] with the expression is the value M * N + A, where M is the numerical value of the multi-
plicative complement, 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.
$\text{Confusion}^1_{0\%/100\%/0\%\%}$: $\text{nobj}_{100\%}$.

numa numm numm numa coord numa

hundred two two hundred three **thousand** and one
0 1 0 1 2 **3** 4 5
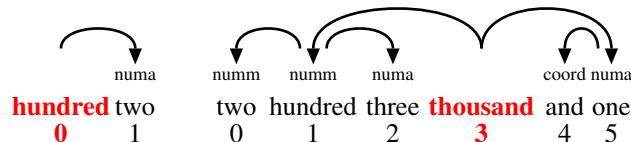
numm *Multiplicative numeral complement.* An multiplicative numeral complement relation. Numerals license one additive and one numeral complement, both optional. The numerical value associated with the expression is the value M * N + A, where M is the numerical value of the multiplicative complement, A is the numerical value of the additive complement, and N is the numerical value associated with the lexical numeral itself. Eg, "two hundred four" has value "2 * 100 + 4", "two hundred four thousand" has value "(2 * 100 + 4) * 1000", and "two hundred four thousand and twenty three" has value "(2 * 100 + 4) * 1000 + (20 + (3))".

isa SYNCOMP
[97]

Related types: numa.
Confusion$_{100\%/100\%/100\%\%}^{1}$: numm$_{100\%}$.
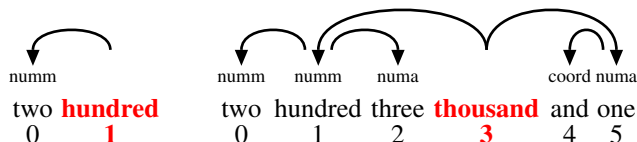
part *Verbal particle.* Verbal particle.

isa SYNCOMP
[98]

Related types: avobj.
Confusion$_{66.7\%/100\%/66.7\%\%}^{6}$: part$_{66.7\%}$ avobj$_{33.3\%}$.

the fair two years ago
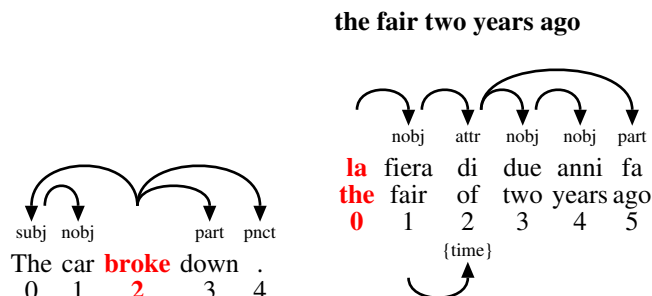
pobj *Prepositional object.* A prepositional object relation. The governor may be a verb, noun, adjective, adverbial, or another preposition. The preposition is analyzed as the head of the prepositional object itself. If the prepositional object is part of a deverbal NP (ie, an NP where the nucleus is 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", "experiencer", "location").

isa SYNCOMP
[83]

Related types: SEMROLE avobj.
Confusion$_{70.9\%/93.7\%/72\%\%}^{175}$: pobj$_{72\%}$ attr$_{12\%}$ goal$_{5.7\%}$ other$_{4\%}$ dobj$_{1.7\%}$ loc$_{1.1\%}$ preds$_{0.6\%}$ avobj$_{0.6\%}$ dir$_{0.6\%}$ inst$_{0.6\%}$ agent$_{0.6\%}$ accom$_{0.6\%}$.

meeting of ministers

the discovering of the gold

	nobj	pobj.dobj	nobj
el	descrubrimiento	del	oro
the	discovering	of–the	gold
0	1	2	3

{patient}

sale to minors

	pobj.iobj	nobj
salg	til	mindreårige
sale	to	minors
0	1	2

{recipient}

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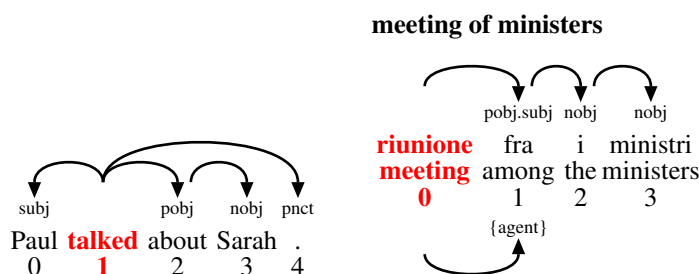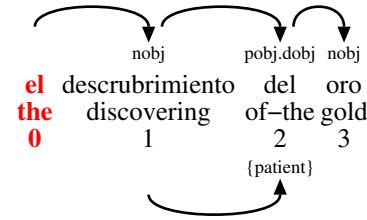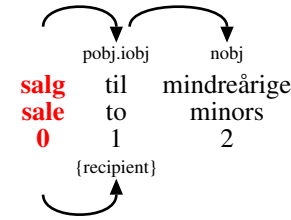
possd *Possessed complement.* The possessed complement in a possessive construction. Possession
isa SYNCOMP is understood in a syntactic sense as any construction with a clitic genitive marker, not nec-
[99] essarily as possession in a narrow semantic sense. A better name may be chosen for this
relation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

Related types: "{"$PRIM"}" SEMROLE poss possr.
Confusion$_{94.9\%/94.9\%/97.8\%\%}^{69}$: possd$_{97.8\%}$ nobj$_{1.4\%}$ pnct$_{0.7\%}$.

	possd
my	mother
0	1

{arg}

	possd
Allan's	car
0	1

{poss}

	possd
bestyrelsens	beslutning
the–board's	decision
0	1

[subj]
{agent}

my car

	nobj	possd
la	mia	macchina
the	my	car
0	1	2

{poss}

his car

	possd	nobj
el	coche	suyo
the	car	his
0	1	2

{poss}

a realization of them

	nobj	possd
una	loro	realizzazione
a	their	realization
0	1	2

[dobj]
{patient}

FLS' Spanish sister company

	possd	nobj	attr
la	consorella	FLS	spagnola
the	sister_company	FLS	Spanish
0	1	2	3

{arg}

---

possr *Possessor complement.* NO LONGER IN USE
isa SYNCOMP   The possessor complement in a possessive construction. Possession is understood in a
[100] 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.

---

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

---

predo *Object predicative.*
isa pred Related types: preds.
[89] Confusion$_{10\%/70\%/10\%\%}^{10}$: preds$_{40\%}$ inst$_{20\%}$ attr$_{10\%}$ fpredo$_{10\%}$ vobj$_{10\%}$ predo$_{10\%}$.

subj		dobj	predo	nobj	pnct
She	**called**	him	a	liar	.
0	**1**	2	3	4	5
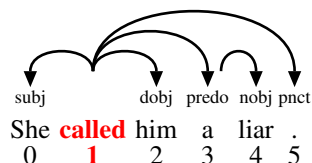
preds *Subject predicative.*

isa pred   Related types: predo.

[88] $\text{Confusion}^{160}_{76.9\%/100\%/76.9\%\%}$: $\text{preds}_{76.9\%}$ $\text{vobj}_{9.4\%}$ $\text{loc}_{5\%}$ $\text{nobj}_{2.5\%}$ $\text{predo}_{2.5\%}$ $\text{time}_{1.3\%}$ $\text{subj}_{1.3\%}$ $\text{fpredo}_{0.6\%}$ $\text{pobj}_{0.6\%}$.

```
       subj   nobj      preds  pnct
      The  house  is   green    .
       0     1    2     3       4
```
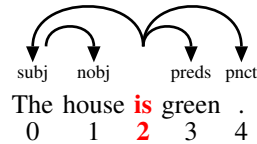
qobj *Quotational object.* A phrase or discourse segment functioning as directly quoted speech,

isa SYNCOMP   typically by an attribution verb. Indirect speech is analyzed as "dobj" or "nobj".

[101]   Related types: xpl.

$\text{Confusion}^{26}_{82.7\%/82.7\%/82.7\%\%}$: $\text{qobj}_{82.7\%}$ $\text{coord}_{7.7\%}$ $\text{conj}_{3.8\%}$ $\text{discmark}_{3.8\%}$ $\text{CONJ:add}_{1.9\%}$.

```
 pnct  subj qobj neg vobj dobj    time     pnct pnct subj      pnct
  "     I   do  not love you  anymore  "   ,   she  said   .
  0     1   2    3   4    5     6       7   8    9    10    11
 [subj]
```
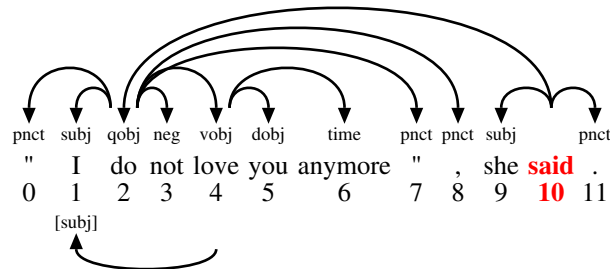
robj *Reflexive object.*

isa SYNCOMP   Related types: dobj.

[91] $\text{Confusion}^{4}_{25\%/100\%/25\%\%}$: $\text{dobj}_{75\%}$ $\text{robj}_{25\%}$.

He decided to walk.

```
  subj            robj   pobj nobj vobj pnct
 Han  besluttede  sig   for  at   gå    .
 He   decided   himself to   to   walk
  0      1         2     3    4    5    6
 [subj]
```
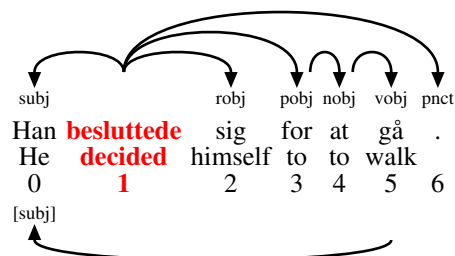
subj *Subject.* A subject relation. In languages with case, subjects are usually nominative-marked.

isa SYNCOMP   Agent-roles are often encoded as subjects, but not necessarily so (eg, in passive constructions).

[80]

Subtypes: expl.

Related types: expl.

$\text{Confusion}^{383}_{97.4\%/98.2\%/98.2\%\%}$: $\text{subj}_{98.2\%}$ $\text{nobj}_{0.8\%}$ $\text{preds}_{0.5\%}$ $\text{appr}_{0.3\%}$ $\text{expl}_{0.3\%}$.

```
   subj      dobj pnct
  We  like  them   .
  0    1     2     3
```
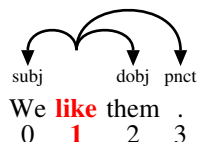
expl *Expletive subject.* An expletive subject relation. The expletive subject is typically a situational
isa subj place adverbial like "there" or time adverbial like "now", and is only possible for verbs that
[81] support the expletive alternation. The expletive alternation applies to all verbs that do not
have a direct object (this observation, due to Richard Hudson, can be used as a test to distin-
guish 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$_{94.4\%/100\%/94.4\%\%}^{18}$: expl$_{94.4\%}$ subj$_{5.6\%}$.
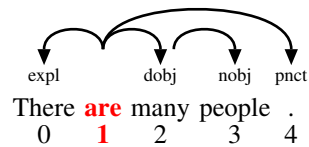
vobj *Verbal object.*
isa SYNCOMP Related types: "["\$PRIM"]".
[90] Confusion$_{90.4\%/97.9\%/92.1\%\%}^{292}$: vobj$_{92.1\%}$ preds$_{5.1\%}$ nobj$_{1.4\%}$ relr$_{0.3\%}$ pnct$_{0.3\%}$ dobj$_{0.3\%}$ predo$_{0.3\%}$.
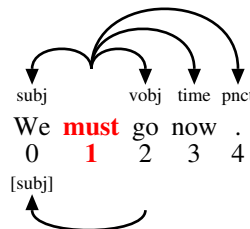
3.2   Non-adverbial adjunct relations: SYNADJ

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.
[105]
Subtypes: ADVERB CDT1ADJ app attr attrg conj coord correl fpred gapd name pnct rel voc xtop.

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

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.
[116] Subtypes: appa appr.

Related types: appa appr.

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

Confusion$_{90.9\%/90.9\%/100\%\%}^{11}$: appa$_{100\%}$.

SYNADJ: syntactic adjunct
    ADVERB: adverbial
    app: apposition
        appa: parenthetic apposition (comma)
            xpl: explication
        appr: restrictive apposition (no comma)
    attrg: genitive attributive
    conj: conjunct relation
    coord: coordinator relation
    correl: correlative coordinator relation
    fpred: free predicative
        fpredo: free direct-object predicative
        fpreds: free subject predicative
    gapd: gapping dependent
        RuleGap: gapping dependent
    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-!CDT1-!ADVERB-TOPIC.
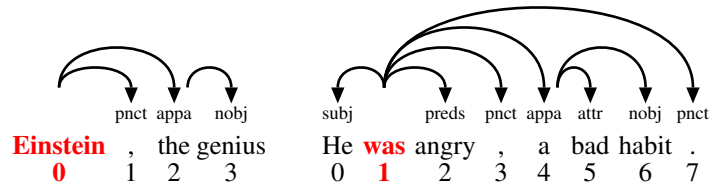
xpl *Explication.* Explication of an NP or VP.
isa appa   Related types: qobj.
  [130] $\text{Confusion}^{8}_{87.5\%/100\%/87.5\%\%}$: $\text{xpl}_{87.5\%}$ $\text{other}_{12.5\%}$.
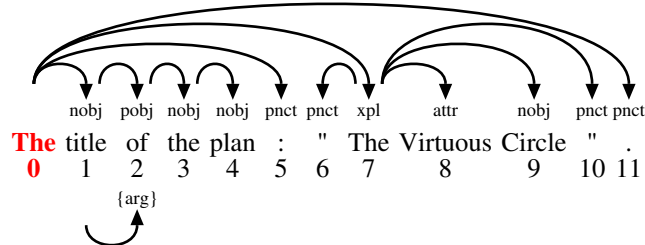
appr *Restrictive apposition (no comma).*
isa app   Related types: appa.
  [118] $\text{Confusion}^{10}_{60\%/80\%/60\%\%}$: $\text{appr}_{60\%}$ $\text{nobj}_{10\%}$ $\text{pnct}_{10\%}$ $\text{title}_{10\%}$ $\text{subj}_{10\%}$.

the genius Einstein — **the**(0) genius(1) Einstein(2) — nobj, appr

the happy couple Ian and Martha — **the**(0) happy(1) couple(2) Ian(3) and(4) Martha(5) — attr, nobj, appr, coord, conj

Goethe's novel Faust is brilliant . — Goethe's(0) novel(1) Faust(2) **is**(3) brilliant(4) .(5) — subj, possd, appr, preds, pnct, {agent}

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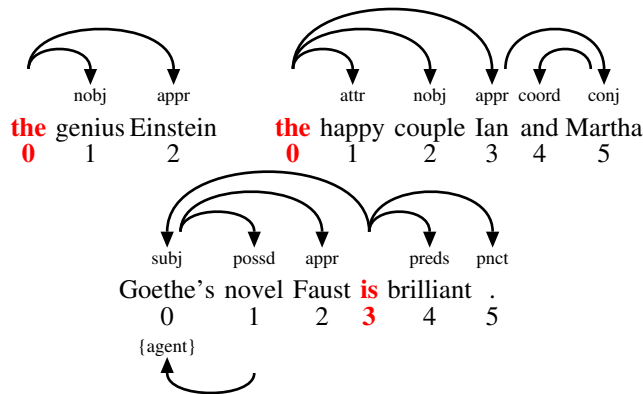
attrg *Genitive attributive.*
isa SYNADJ Related types: SEMROLE gobj.
[115]

the lady's car

das Auto der Frau — **the** car the(gen) lady — **0** 1 2 3 — nobj, attrg, nobj, {poss}

Peter's car

das Auto Peters — **the** car Peter's — **0** 1 2 — nobj, attrg, {poss}

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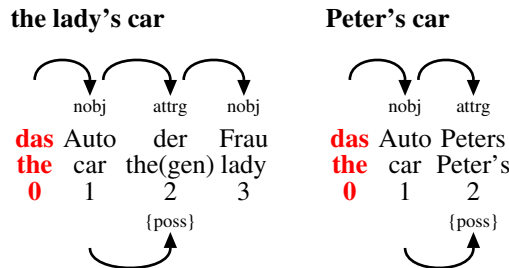
conj *Conjunct relation.* A dependency relation relating the conjuncts in a coordination. Secondary
isa SYNADJ conjuncts are analyzed as "conj"-dependents of the first conjunct. Coordinators are analyzed
[106] as dependents of the secondary conjuncts.

Related types: coord correl.
Confusion$_{89.9\%/91.8\%/95.8\%\%}^{153}$: conj$_{95.8\%}$ nobj$_{1.3\%}$ coord$_{0.7\%}$ qobj$_{0.7\%}$ cause$_{0.7\%}$ attr$_{0.7\%}$ pnct$_{0.3\%}$.

We **met** John and Mary . — 0 **1** 2 3 4 5 — subj, dobj, coord, conj, pnct

We **met** John , Mary and Sue . — 0 **1** 2 3 4 5 6 7 — subj, dobj, pnct, conj, coord, conj, pnct

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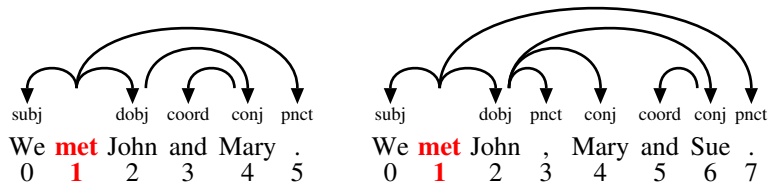
coord *Coordinator relation.* A dependency relation between a coordinating conjunction and a sec-
isa SYNADJ ondary conjunct. The coordinator is analyzed as a dependent of the secondary conjunct.
[107] Secondary conjuncts are in turn analyzed as "conj"-dependents of the first conjunct.

Related types: conj correl discmark.
Confusion$_{80.3\%/92.3\%/84.6\%\%}^{117}$: coord$_{84.6\%}$ discmark$_{12.8\%}$ qobj$_{1.7\%}$ conj$_{0.9\%}$.

We **met** John and Mary . — 0 **1** 2 3 4 5 — subj, dobj, coord, conj, pnct

We **met** John , Mary and Sue . — 0 **1** 2 3 4 5 6 7 — subj, dobj, pnct, conj, coord, conj, pnct

19
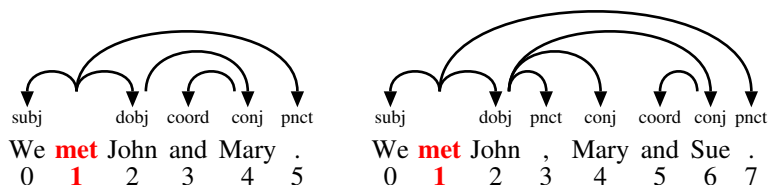
correl *Correlative coordinator relation.*
isa SYNADJ Related types: conj coord.
[108]

We met neither John , nor Mary .
0 **1** 2 3 4 5 6 7

We neither met John , nor Mary .
0 1 **2** 3 4 5 6 7

subj correl dobj pnct coord conj pnct
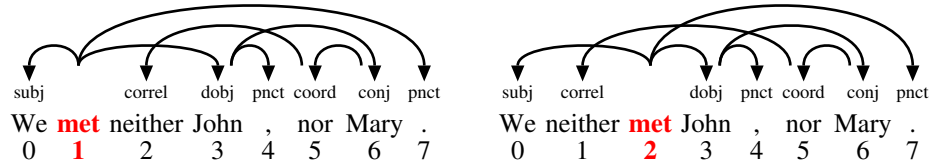
fpred *Free predicative.*
isa SYNADJ Subtypes: fpredo fpreds.
[111] Related types: fpredo fpreds.

fpredo *Free direct-object predicative.*
isa fpred Related types: fpreds man.
[113] $Confusion^6_{0\%/66.7\%/0\%\%}$: $loc_{33.3\%}$ $goal_{16.7\%}$ $man_{16.7\%}$ $preds_{16.7\%}$ $predo_{16.7\%}$.

subj dobj nobj fpredo attr pnct
He drank the coffee too hot .
0 **1** 2 3 4 5 6
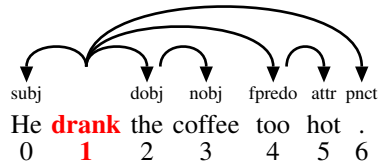
fpreds *Free subject predicative.*
isa fpred Related types: fpredo.
[112] $Confusion^1_{0\%/100\%/0\%\%}$: $man_{100\%}$.

fpreds subj @dir nobj nobj pnct
Terrified she walked down the street .
0 1 **2** 3 4 5 6
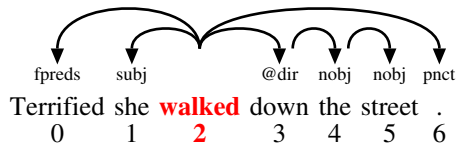
gapd *Gapping dependent* (long: GAPPING, deprecated GAP). A relation between a gapping dependent
isa SYNADJ in a secondary conjunct and the head of the first conjunct. In gapping coordinations, the sec-
[23] ondary conjuncts have an elided head, so the remaining material in the secondary conjuncts
is 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 depen-
dent functions as an anaphoric element that must identify a phrase within the copied tree
that it replaces, encoded with a "repl" relation.
Subtypes: CDT1GAP RuleGap.
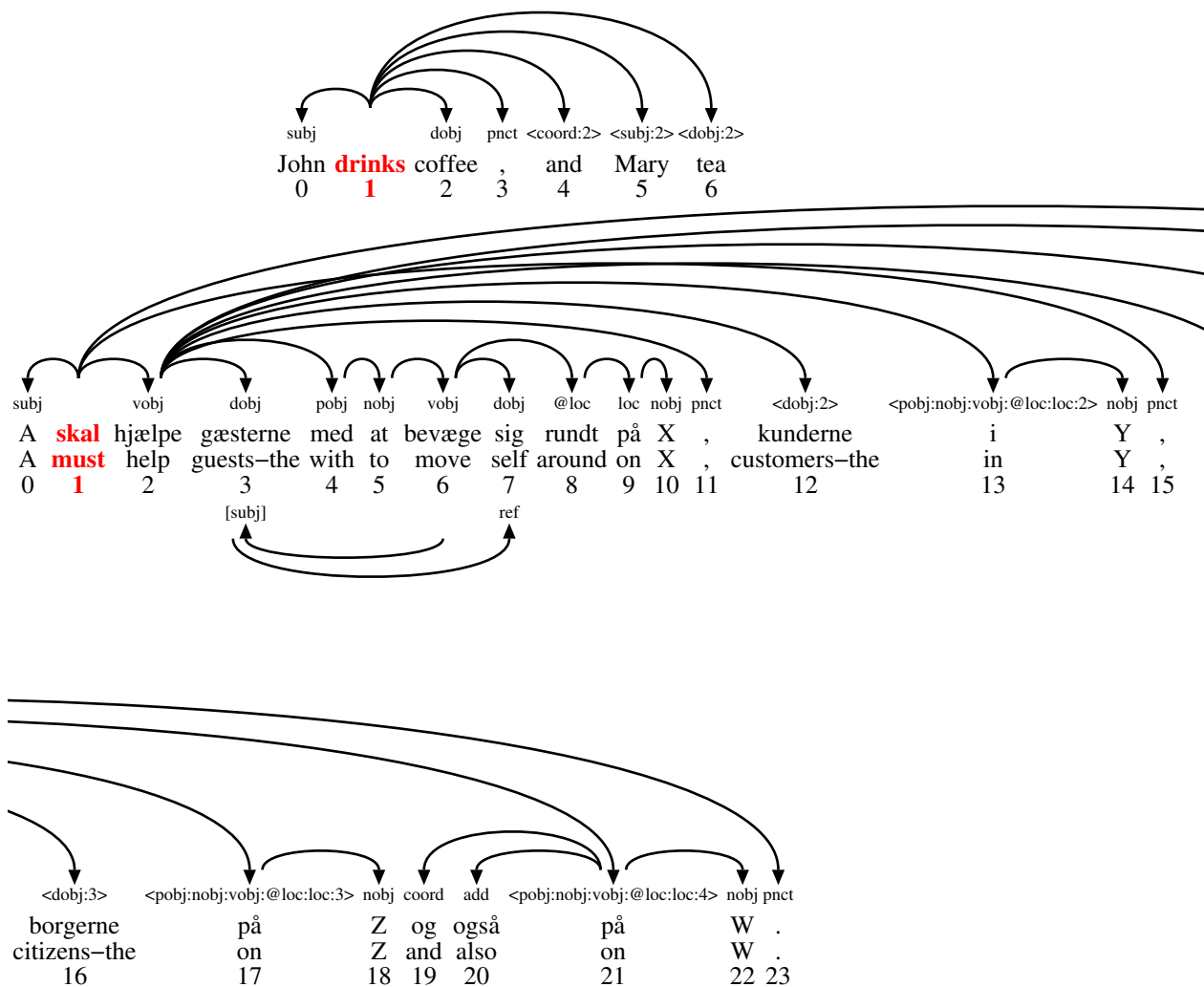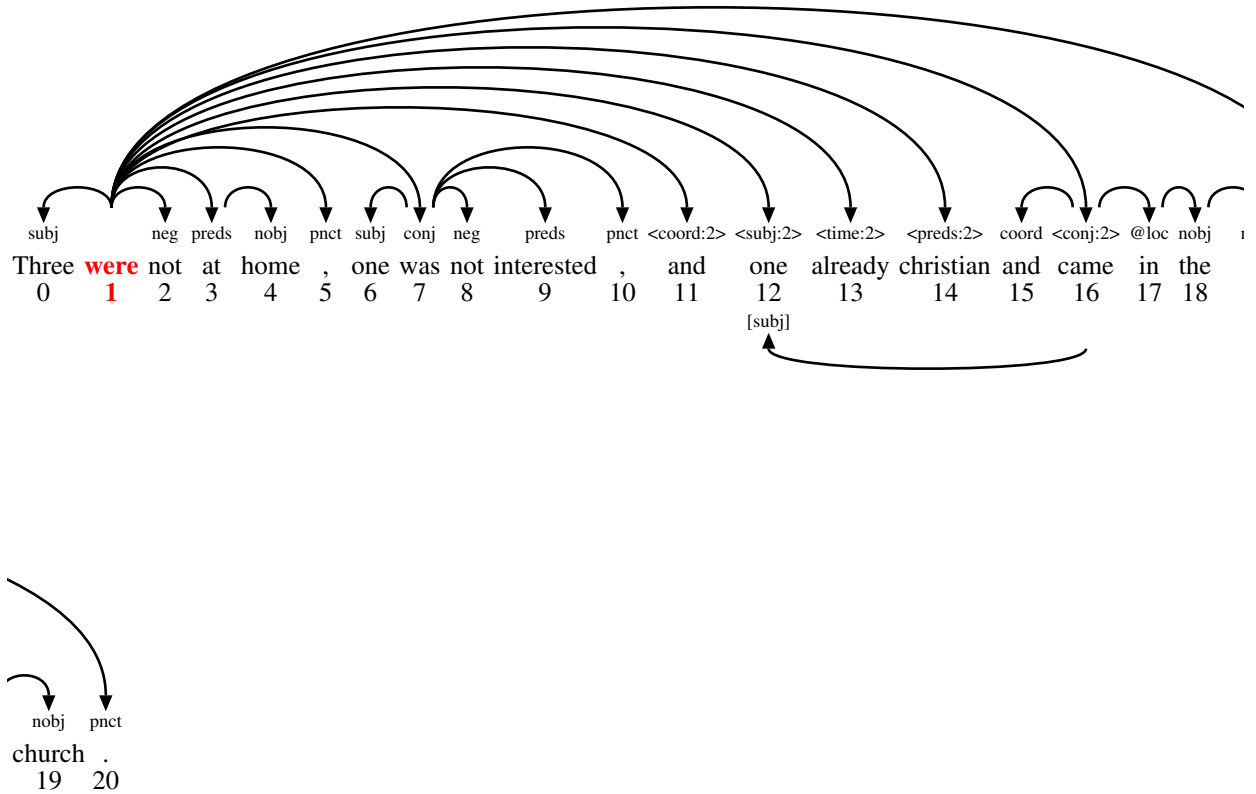
subj   dobj pnct <coord:2> <subj:2> <dobj:2>

John	**drinks**	coffee	,	and	Mary	tea
0	**1**	2	3	4	5	6

subj vobj dobj pobj nobj vobj dobj @loc loc nobj pnct <dobj:2> <pobj:nobj:vobj:@loc:loc:2> nobj pnct

A	**skal**	hjælpe	gæsterne	med	at	bevæge	sig	rundt	på	X	,	kunderne	i	Y	,
A	**must**	help	guests−the	with	to	move	self	around	on	X	,	customers−the	in	Y	,
0	**1**	2	3	4	5	6	7	8	9	10	11	12	13	14	15

[subj]   ref

<dobj:3> <pobj:nobj:vobj:@loc:loc:3> nobj coord add <pobj:nobj:vobj:@loc:loc:4> nobj pnct

borgerne	på	Z	og	også	på	W	.
citizens−the	on	Z	and	also	on	W	.
16	17	18	19	20	21	22	23

subj · neg · preds · nobj · pnct · subj · conj · neg · preds · pnct · <coord:2> · <subj:2> · <time:2> · <preds:2> · coord · <conj:2> · @loc · nobj

Three	were	not	at	home	,	one	was	not	interested	,	and	one	already	christian	and	came	in	the
0	**1**	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

[subj]

nobj · pnct

church	.
19	20

RuleGap
isa RULE gapd
[370]

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.

subj · dobj · pnct · <coord:1> · <subj:1> · <dobj:1> · pnct

Peter	likes	dogs	,	and	Elizabeth	cats	.
0	**1**	2	3	4	5	6	7
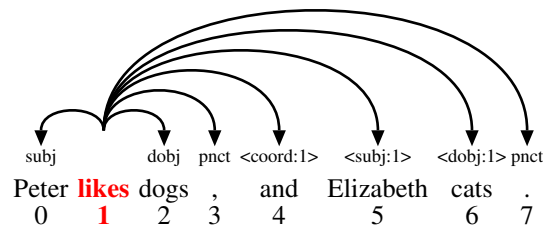
name
isa SYNADJ
[124]

Part of name. Part of a name.

Subtypes: namef namel title.

Confusion$^2_{50\%/100\%/50\%\%}$: nobj$_{50\%}$ name$_{50\%}$.

name · nobj · · nobj · name

a Garrett engine   **a** Citroen X2
0 1 2   **0** 1 2
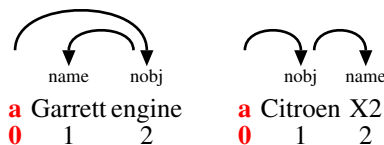
namef *First name.* A first name.

isa name   Related types: namel title.

[125] $\text{Confusion}^{44}_{97.7\%/97.7\%/100\%\%}$: $\text{namef}_{100\%}$.

namef

John **Travolta**

0   **1**

---
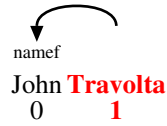
namel *Last name.* A second last name

isa name   Related types: namef title.

[126]

namef   namel

Matthias Trautner **Kromann**

0   1   **2**

---
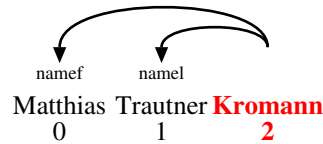
title *Person title.* A title in a name. If the title is determinated by an article, eg. the director Smith,

isa name   the article is the head of the DP and the title and the name are dependents of the article,

[127]   annotated as "nobj" and "appr", respectively.

Related types: namef namel.

$\text{Confusion}^{9}_{88.9\%/100\%/88.9\%\%}$: $\text{title}_{88.9\%}$ $\text{appr}_{11.1\%}$.

title   nobj   appr

Dr. **Zhivago**   **The** director Smith

0   **1**   **0**   1   2

---
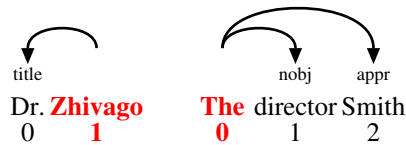
pnct *Punctuation.*

isa SYNADJ $\text{Confusion}^{588}_{89.8\%/89.8\%/99\%\%}$: $\text{pnct}_{99\%}$ $\text{nobj}_{0.3\%}$ $\text{conj}_{0.2\%}$ $\text{appr}_{0.2\%}$ $\text{possd}_{0.2\%}$ $\text{vobj}_{0.2\%}$.

[109]

subj   dobj pnct conj   coord conj pnct

We **met** John   ,   Mary and Sue .

0   **1**   2   3   4   5   6   7

---
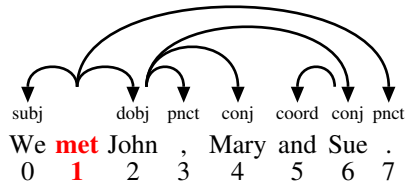
rel *Relative clause.* A relation between a relative clause and a relativized NP/VP. The finite verb

isa SYNADJ   in the relative clause is analyzed as a "rel" dependent of the head of the relativized NP/VP

[119]   (ie, the determiner if present, otherwise the noun). If there is a relative pronoun, it receives

an incoming "ref" arrow from the head of the relativized NP/VP; otherwise, the head of the

relativized NP/VP must function as a secondary dependent of some word within the relative

clause (often the relative verb itself).

Subtypes: relelab relpa relr.

Related types: relelab relpa relr.

$\text{Confusion}^{6}_{0\%/100\%/0\%\%}$: $\text{relr}_{100\%}$.

the girl who lives **in** London
nobj / subj / rel / nobj / ref
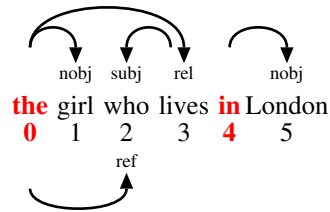
relelab *Elaborating relative clause.* Ledsætning med sætningsantecedent i hovedsætning; da: hvilket,
isa rel   it: il che, cosa che
[122]   Related types: relpa relr.
Confusion$_{0\%/100\%/0\%\%}^{2}$: relr$_{100\%}$.

She **left** , which really **upset** me .
subj / pnct / subj / prg / dobj / pnct / ref / **releab**
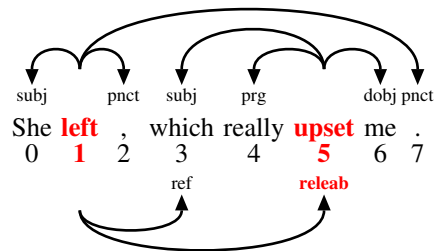
relpa *Parenthetic relative clause* (deprecated relp).
isa rel   Related types: relelab relr.
[121]   Confusion$_{20\%/100\%/20\%\%}^{5}$: relr$_{80\%}$ relpa$_{20\%}$.

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

all will **be exempt on environmental grounds** .
relpa / pnct
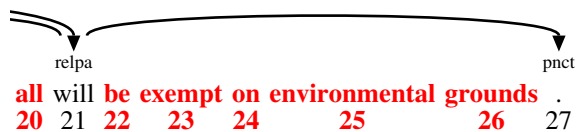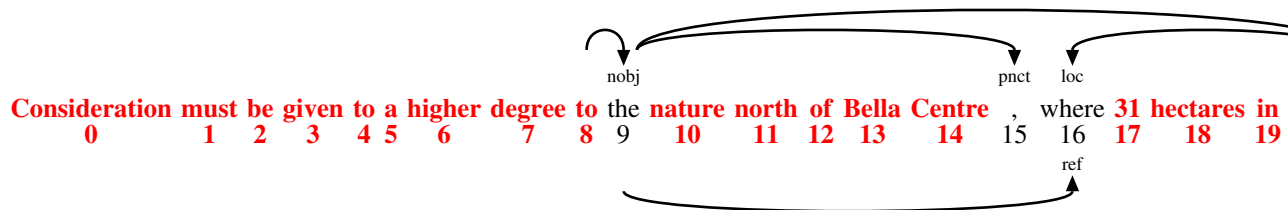
relr *Restrictive relative clause.*
isa rel   Related types: relelab relpa.
[120]   Confusion$_{61.4\%/90.9\%/70.5\%\%}^{44}$: relr$_{70.5\%}$ rel$_{13.6\%}$ relpa$_{9.1\%}$ relelab$_{4.5\%}$ vobj$_{2.3\%}$.

The flower Mary bought **was** red .
subj / nobj / subj / relr / preds / pnct / [dobj]

The flower that bloomed **was** red .
subj / nobj / subj / relr / preds / pnct / ref
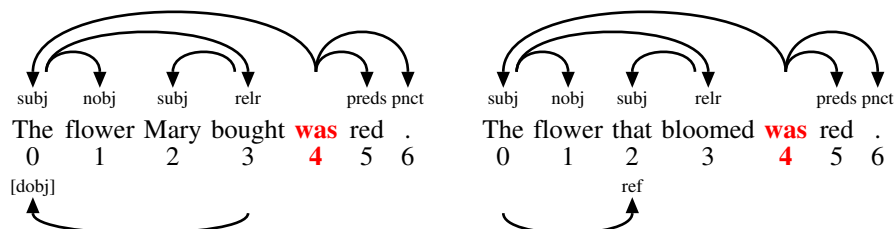
voc *Vocative.* Vocative specification. The person to whom the statement is directed.
isa SYNADJ
[129] $\text{Confusion}^1_{100\%/100\%/100\%\%}$: $\text{voc}_{100\%}$.

voc pnct subj vobj dobj pnct
Mary , **will** you help me ?
0 1 **2** 3 4 5 6
[subj]

subj vobj dobj pnct voc pnct
Will you help me , Mary ?
0 1 2 3 4 5 6
[subj]
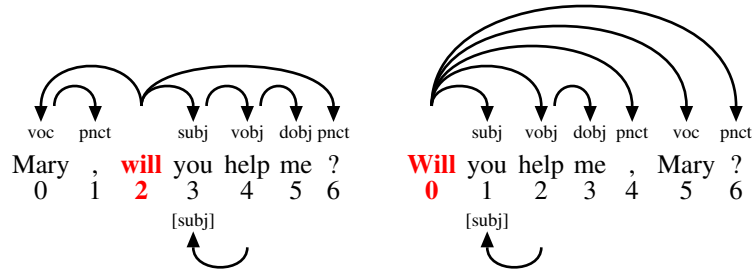
xtop *External topic with resuming pronoun.* An external topic is a sentence-initial NP whose only
isa SYNADJ function is to provide the antecedent for a pronoun later in the sentence. Eg in "John, he is a
[123] nice person". Here "John" is the "xtop" of "is", and "he" is the subject of "is".

Related types: cons ref xtop.
$\text{Confusion}^2_{100\%/100\%/100\%\%}$: $\text{xtop}_{100\%}$.

xtop pnct subj preds attr nobj pnct
John , he **is** a nice person .
0 1 2 **3** 4 5 6 7
ref

xtop nobj pnct subj preds pnct
That boy , he **is** nice .
0 1 2 3 **4** 5 6
ref
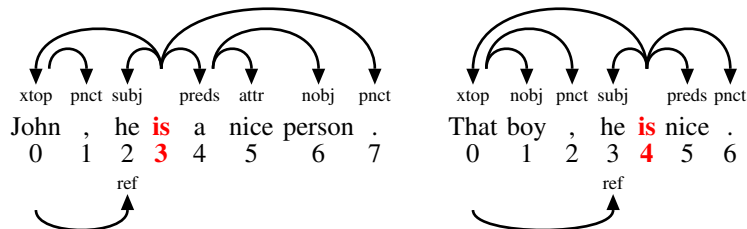
If you are having any problems, call me.

subj preds pnct xtop nobj pnct
He **is** nice , that boy .
0 **1** 2 3 4 5 6
ref

xtop subj vobj dobj nobj pnct cons goal dobj pnct
Hvis du har nogen problemer , så **ring** til mig .
If you have any problems then **call** to me
0 1 2 3 4 5 6 **7** 8 9 10
ref
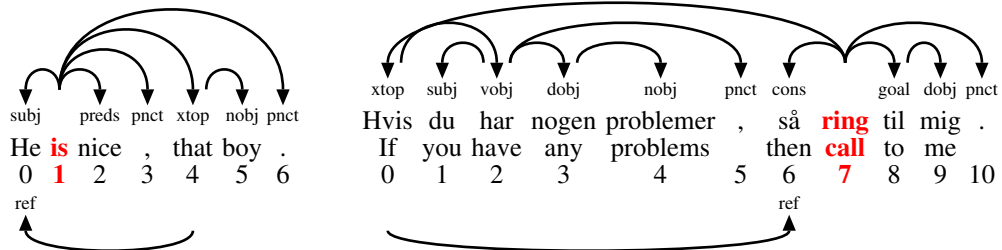
3.3 Adverbial adjunct relations: ADVERB

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

agent *Agent adverbial.* The passivized agent in passives.
isa ADVERB
[170] $\text{Confusion}^5_{0\%/100\%/0\%\%}$: $\text{AGENT:MC}_{20\%}$ $\text{CONST}_{20\%}$ $\text{ABOUT}_{20\%}$ $\text{AGENT}_{20\%}$ $\text{ARG}_{20\%}$.

subj nobj preds agent nobj pnct
The house **was** painted by Eric .
0 1 **2** 3 4 5 6

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

Figure 3.4: The relations matching ADVERB-!CDT1-TOPIC.

cause *Causation adverbial.* Causation adverbial. Describes why the event occurred.
isa ADVERB   Subtypes: goal.
[160]   Confusion$_{78.9\%/89.5\%/89.5\%\%}^{19}$: cause$_{89.5\%}$ conj$_{5.3\%}$ time$_{5.3\%}$.
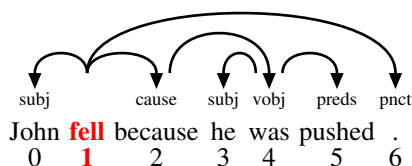
goal *Goal adverbial* (deprecated ben). Describes the intended goal of the event/action. Also used in
isa cause   connection with free datives.
[161]   Related types: reas.
    Confusion$_{28.6\%/85.7\%/39.3\%\%}^{28}$: goal$_{39.3\%}$ pobj$_{35.7\%}$ attr$_{7.1\%}$ dobj$_{7.1\%}$ other$_{3.6\%}$ scene$_{3.6\%}$ fpredo$_{3.6\%}$.

subj   vobj   goal   vobj   dobj   pnct

Kate **is** working to earn money .
0   **1**   2   3   4   5   6

[subj]
[subj]

subj   @dir   nobj   time   goal   nobj   subj   vobj   vobj   dobj   pobj   nobj   pnct

I **went** to bed early so that I could get plenty of sleep .
0   **1**   2   3   4   5   6   7   8   9   10   11   12   13

[subj]   {quant}

cond   subj   vobj   vobj   attr   dobj   pnct   goal   pnct   nobj   nobj   pnct pnct

If you are having health problems , **write** to " The Doctors " .
0   1   2   3   4   5   6   **7**   8   9   10   11   12 13

{about}#

[subj]
[subj]

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

isa ADVERB $\text{Confusion}^3_{0\%/100\%/0\%\%}$: $\text{prg}_{66.7\%}$ $\text{attr}_{33.3\%}$.
[164]

subj   dobj   conc   subj   vobj   preds   possd   pnct

I **said** it though he is my brother .
0   **1**   2   3   4   5   6   7   8

{arg}
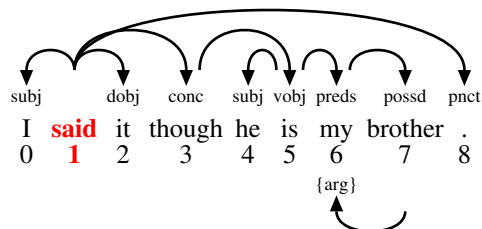
concom . Gerunds in Romance

isa ADVERB   Related types: vobj.
[168] $\text{Confusion}^3_{0\%/100\%/0\%\%}$: $\text{source}_{33.3\%}$ $\text{man}_{33.3\%}$ $\text{inst}_{33.3\%}$.

The agressor fled and/but got caught hours later.

subj   nobj   pnct   concom   vobj   time   avobj   pnct

El   agresor   **huyó**   ,   siendo   detenido   horas   después   .
The   agressor   **fled**   being   caught   hours   after
0   1   **2**   3   4   5   6   7   8

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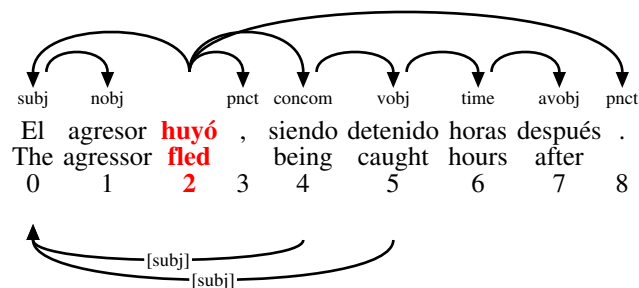
cond *Condition adverbial.* Describes the condition of the event/action.

isa ADVERB Related types: pcond.

[163] Confusion$_{66.7\%/75\%/83.3\%\%}^{12}$: cond$_{83.3\%}$ man$_{8.3\%}$ nobj$_{8.3\%}$.

cond	subj	vobj	vobj	attr	dobj	pnct		goal	pnct	nobj	nobj	pnct	pnct
If	you	are	having	health	problems	,	**write**	to	"	The	Doctors	"	.
0	1	2	3	4	5	6	**7**	8	9	10	11	12	13

{about}#

[subj]

[subj]

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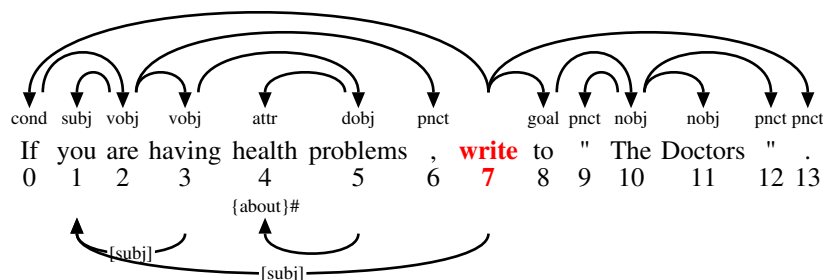
cons *Consequence adverbial.* Describes the consequence of the event/action.

isa ADVERB Related types: xtop.

[162] Confusion$_{44.4\%/77.8\%/66.7\%\%}^{9}$: cons$_{66.7\%}$ time$_{33.3\%}$.

---

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

isa ADVERB rather that time or place.

[156]

event	attr	nobj		subj	dobj	pnct		subj		iobj	attr	time		event	nobj		nobj	pnct
I	2.	sæt	**vandt**	han	15–6	.		He	**told**	us	last	Wednesday	at	the	meeting	.
0	1	2	**3**	4	5	6		0	**1**	2	3	4	5	6	7	8

---
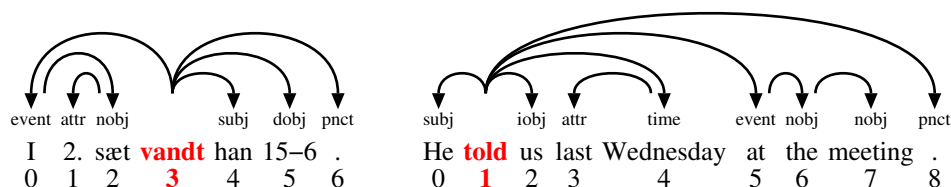
exem *Example adverbial* (long: exemplification, deprecated ex). Exemplification; subordinated the object

isa ADVERB which is added to a list.

[167] Confusion$_{60\%/80\%/80\%\%}^{5}$: exem$_{80\%}$ ex$_{20\%}$.

subj		exem	dobj	attr		nobj	pnct
Poe	**wrote**	e.g.	"The	Tell–tale	Heart"	.
0	**1**	2	3	4	5	6

---
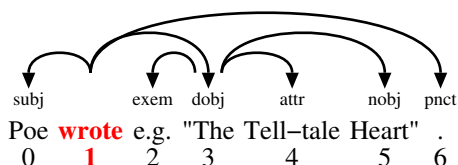
man *Manner adverbial.* The way things are done

isa ADVERB Subtypes: accom inst.

[157] Related types: fpredo.

Confusion$_{62.5\%/87.5\%/70\%\%}^{40}$: man$_{70\%}$ other$_{5\%}$ accom$_{5\%}$ cond$_{2.5\%}$ concom$_{2.5\%}$ prg$_{2.5\%}$ scene$_{2.5\%}$ fpredo$_{2.5\%}$ fpreds$_{2.5\%}$ quant$_{2.5\%}$ resem$_{2.5\%}$.

subj		man	pnct
He	**talks**	slowly	.
0	**1**	2	3
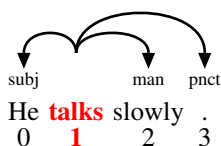
accom *Companionship adverbial* (deprecated comp). Companionship

isa man Related types: man.

[158] $\text{Confusion}_{50\%/100\%/50\%\%}^{6}$: $\text{accom}_{50\%}$ $\text{man}_{33.3\%}$ $\text{pobj}_{16.7\%}$.


```
        subj    nobj         accom  nobj  possd  pnct
   The husband  came   with  his   wife    .
    0     1      2      3     4      5      6
                                  {arg}
```
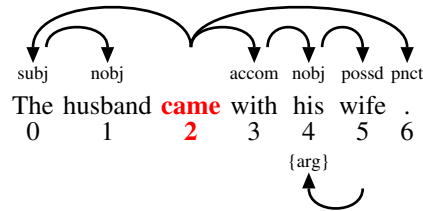
inst *Instrument adverbial.* Instrument/means

isa man Related types: man.

[159] $\text{Confusion}_{28.6\%/85.7\%/28.6\%\%}^{7}$: $\text{inst}_{28.6\%}$ $\text{predo}_{28.6\%}$ $\text{concom}_{14.3\%}$ $\text{loc}_{14.3\%}$ $\text{pobj}_{14.3\%}$.


```
      subj       dobj  nobj   inst  nobj  nobj  pnct
   He opened  the door  with  the   key    .
   0    1      2    3    4     5     6      7
```
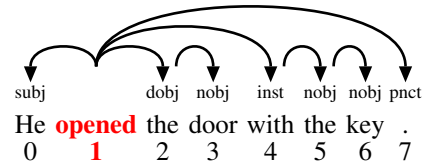
neg *Negation adverbial.* Negation of a verbal

isa ADVERB $\text{Confusion}_{91.7\%/95.8\%/95.8\%\%}^{24}$: $\text{neg}_{95.8\%}$ $\text{eval}_{4.2\%}$.

[171]
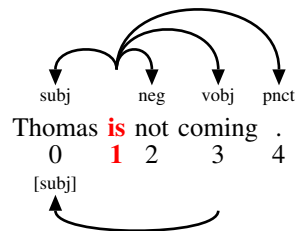
It's never a problem.

She never lied


```
     subj      neg  vobj  pnct
   Thomas is   not coming  .
    0     1    2    3      4
            [subj]
```

```
    neg        neg  preds  nobj   pnct
   Non è      mai   un   problema  .
   Not is-it  never  a    problem
   0   1      2     3     4        5
```

```
    subj neg        time
   Ella no  mintio nunca
   She  not lied   never
   0    1   2      3
```
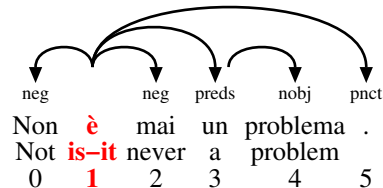
other *Other adverbial.* Unspecified adverbial relation.

isa ADVERB $\text{Confusion}_{17.1\%/85.4\%/17.1\%\%}^{41}$: $\text{other}_{17.1\%}$ $\text{pobj}_{17.1\%}$ $\text{loc}_{14.6\%}$ $\text{attr}_{9.8\%}$ $\text{avobj}_{7.3\%}$ $\text{source}_{4.9\%}$ $\text{nobj}_{4.9\%}$ $\text{add}_{4.9\%}$ $\text{man}_{4.9\%}$

[172] $\text{iter}_{2.4\%}$ $\text{focal}_{2.4\%}$ $\text{goal}_{2.4\%}$ $\text{contr}_{2.4\%}$ $\text{eval}_{2.4\%}$ $\text{xpl}_{2.4\%}$.


```
              pnct   other
   Colosseum  ,  Rome
     0        1   2
```
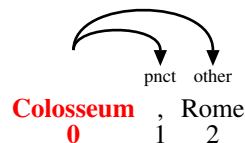
prg *Pragmatic adverbial* (long: pragmatic). Sentence level.

isa ADVERB Subtypes: discmark epi eval focal scene.

[142] $\text{Confusion}_{18.8\%/100\%/18.8\%\%}^{16}$: $\text{eval}_{31.3\%}$ $\text{prg}_{18.8\%}$ $\text{conc}_{12.5\%}$ $\text{quant}_{12.5\%}$ $\text{add}_{6.3\%}$ $\text{elab}_{6.3\%}$ $\text{man}_{6.3\%}$ $\text{contr}_{6.3\%}$.

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

isa prg Related types: coord.

[147] $\text{Confusion}_{13.6\%/90.9\%/13.6\%\%}^{22}$: $\text{coord}_{68.2\%}$ $\text{discmark}_{13.6\%}$ $\text{add}_{9.1\%}$ $\text{contr}_{4.5\%}$ $\text{qobj}_{4.5\%}$.

And I'm telling you...

discmark	dobj		subj	iobj	pnct
Og	det	**siger**	jeg	dig	...
And	that	**say**	I	you	
0	1	**2**	3	4	5
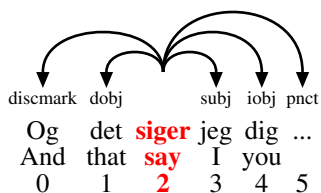
epi *Epistemic adverbial* (long: epistemic). Regarding the level of truth in the expression

isa prg Related types: eval.

[145] $\text{Confusion}^2_{50\%/100\%/50\%\%}$: $\text{epi}_{50\%}$ $\text{eval}_{50\%}$.

epi	subj		preds	pnct
Maybe	he	**is**	wrong	.
0	1	**2**	3	4
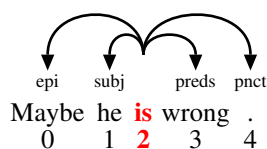
eval *Evaluation adverbial* (long: evaluation, deprecated evalatt). Evaluating and attitude adverbials

isa prg Related types: epi.

[146] $\text{Confusion}^1_{0\%/100\%/0\%\%}$: $\text{EVAL}_{100\%}$.

eval	pnct	subj		preds	pnct
However	,	I	**am**	fine	.
0	1	2	**3**	4	5

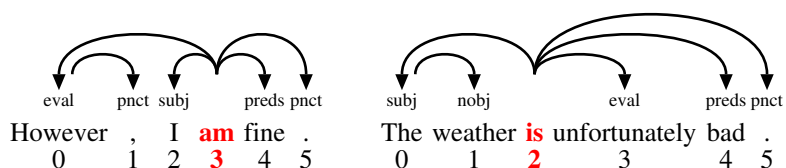| subj	nobj		eval	preds	pnct
The	weather	**is**	unfortunately	bad	.
0	1	**2**	3	4	5

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

isa prg Related types: quant.

[143] $\text{Confusion}^{11}_{27.3\%/63.6\%/45.5\%\%}$: $\text{focal}_{45.5\%}$ $\text{attr}_{27.3\%}$ $\text{loc}_{9.1\%}$ $\text{other}_{9.1\%}$ $\text{eval}_{9.1\%}$.

focal	subj		dobj	pnct
Even	Italy	**imports**	pasta	.
0	1	**2**	3	4
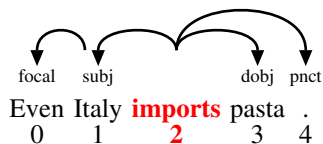
scene *Pragmatic condition and structural adverbial* (deprecated prgcondpcondbgstruct). Setting the

isa prg scene

[144] Subtypes: add contr elab.

Related types: cond.

$\text{Confusion}^{13}_{46.2\%/92.3\%/53.8\%\%}$: $\text{scene}_{53.8\%}$ $\text{contr}_{15.4\%}$ $\text{add}_{15.4\%}$ $\text{goal}_{7.7\%}$ $\text{man}_{7.7\%}$.

But I **have** not seen anything , if anyone asks .
0 1 **2** 3 4 5 6 7 8 9 10

As I mentioned earlier , there **is** no doubt about it .
0 1 2 3 4 5 **6** 7 8 9 10 11
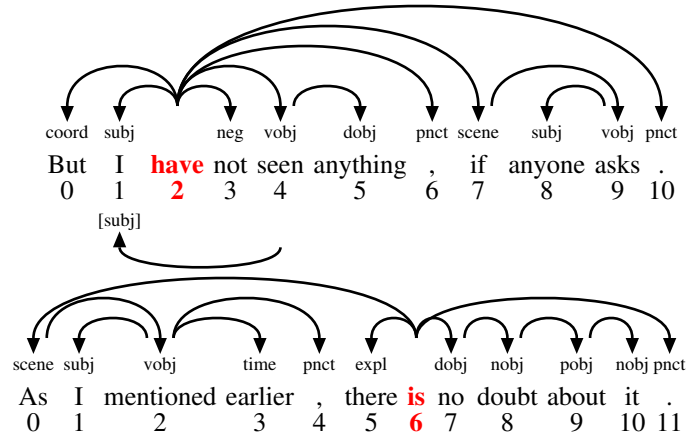
add *Additive adverbial* (long: additive). Additive information

isa scene
[150]

$\text{Confusion}^{21}_{66.7\%/100\%/66.7\%\%}$: $\text{add}_{66.7\%}$ $\text{discmark}_{9.5\%}$ $\text{other}_{9.5\%}$ $\text{scene}_{9.5\%}$ $\text{prg}_{4.8\%}$.

The house also **has** a terrace .
0 1 2 **3** 4 5 6
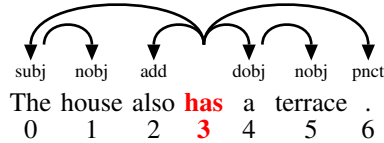
contr *Contrast adverbial* (long: contrast). Opposition

isa scene
[148]

Related types: struct.

$\text{Confusion}^{10}_{50\%/100\%/50\%\%}$: $\text{contr}_{50\%}$ $\text{scene}_{20\%}$ $\text{discmark}_{10\%}$ $\text{prg}_{10\%}$ $\text{other}_{10\%}$.

Instead of fruits , he **bought** two chocolate muffins .
0 1 2 3 4 **5** 6 7 8 9

elab *Elaboration adverbial* (long: elaboration). More detailed description
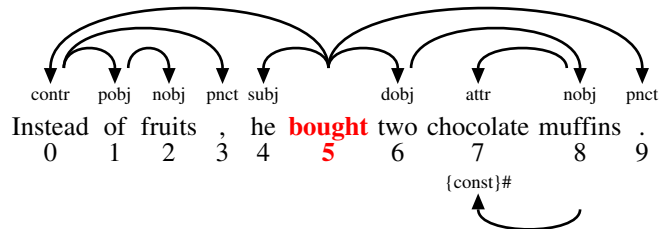
isa scene
[149]

$\text{Confusion}^{4}_{50\%/75\%/50\%\%}$: $\text{elab}_{50\%}$ $\text{prg}_{25\%}$ $\text{quant}_{25\%}$.

I **am** going to the place where I work best , i.e. the coffee shop .
0 **1** 2 3 4 5 6 7 8 9 10 11 12 13 14 15
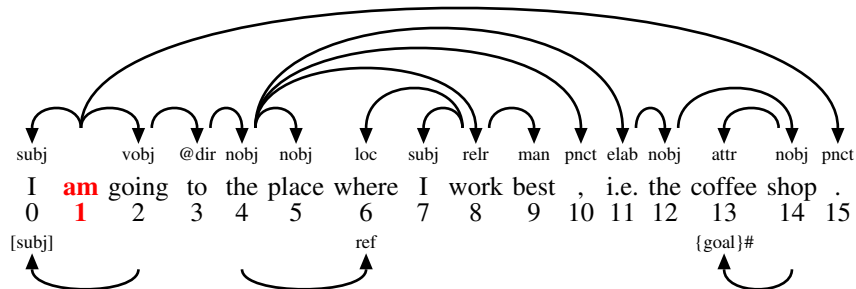
quant *Degree adverbial* (long: quantification, deprecated degr). Modifies the object or verbal by degree

isa ADVERB
[169]

Related types: focal.

$\text{Confusion}^{51}_{76.5\%/90.2\%/80.4\%\%}$: $\text{quant}_{80.4\%}$ $\text{prg}_{3.9\%}$ $\text{degr}_{3.9\%}$ $\text{elab}_{2\%}$ $\text{time}_{2\%}$ $\text{attr}_{2\%}$ $\text{dobj}_{2\%}$ $\text{man}_{2\%}$ $\text{eval}_{2\%}$.

Only two people **came** .
0   1   2   **3**   4
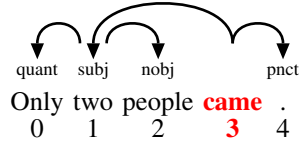
resem   *Comparison adverbial* (deprecated `comparecomp`). Comparison

isa ADVERB $\text{Confusion}^{3}_{33.3\%/33.3\%/66.7\%\%}$: $\text{resem}_{66.7\%}$ $\text{man}_{33.3\%}$.
[165]

She **walks** like a lady .
0   **1**   2   3   4   5
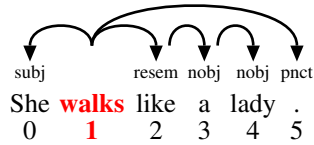
source   *Source attribution adverbial.* Reference/source

isa ADVERB $\text{Confusion}^{6}_{50\%/100\%/50\%\%}$: $\text{source}_{50\%}$ $\text{other}_{33.3\%}$ $\text{concom}_{16.7\%}$.
[166]

He **was** fired according to Anne .
0   **1**   2   3   4   5   6

space   *Space adverbial.* Space adverbials

isa ADVERB   Subtypes: dir loc.
[153]

     dir   *Direction adverbial.* Movement from one place to another; direction

    isa space   Related types: loc.
      [155] $\text{Confusion}^{23}_{17.4\%/95.7\%/17.4\%\%}$: $\text{loc}_{73.9\%}$ $\text{dir}_{17.4\%}$ $\text{attr}_{4.3\%}$ $\text{pobj}_{4.3\%}$.

He **ran** towards her
0   **1**   2   3
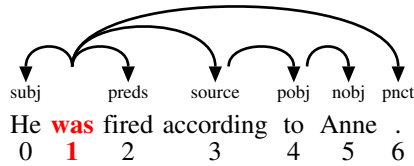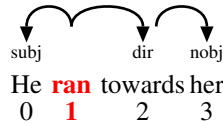
     loc   *Location adverbial.* Location

    isa space   Related types: dir.
      [154] $\text{Confusion}^{3}_{0\%/100\%/0\%\%}$: $\text{LOC}_{66.7\%}$ $\text{MOD:qual}_{33.3\%}$.

as we **say** in Denmark
0   1   **2**   3   4
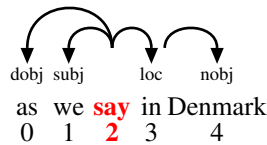
time   *Time adverbial.* Time relating adverbials

isa ADVERB   Subtypes: iter.
[151] $\text{Confusion}^{3}_{0\%/100\%/0\%\%}$: $\text{TIME:MC}_{100\%}$.

32

She never lied

subj	nobj		time	pnct
The	Smiths	**arrive**	sunday	.
0	1	**2**	3	4

subj	neg		time
Ella	no	**mintio**	nunca
She	not	**lied**	never
0	1	**2**	3
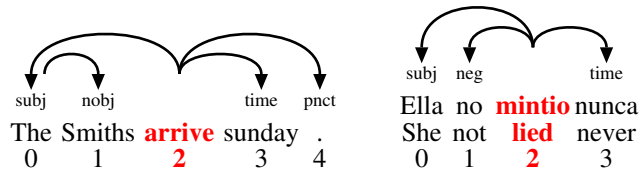
iter *Habituality adverb* (deprecated hab). Habitual; repeated habit

isa time Related types: dur ext.

[152] Confusion$_{18.2\%/72.7\%/27.3\%\%}^{11}$: time$_{54.5\%}$ iter$_{27.3\%}$ other$_{9.1\%}$ attr$_{9.1\%}$.

iter	subj	vobj	pnct	subj			pobj	vobj	pnct
Every_time	he	leaves	,	she	**begins**	to	cry	.	
0	1	2	3	4	**5**	6	7	8	

[subj]
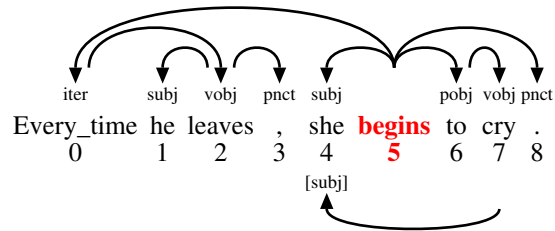
Chapter 4

Morphological relations: MORPH

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

Figure 4.1: The relations matching MORPH-!CDT1-!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
[273]

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 _DOBJ.patient _EVAL _FUNC _GOAL _LOC _OTHER _POSS _RESEM _SOURCE _TIME:MC.

MORPHDERIV
isa MORPH
[272]

Derivational semantic relations. A semantic relation is created between a base and an affix

Subtypes: PREFIX SUFFIX.

RuleMorph
isa MORPH RULE
[373]

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
[273]

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 _DOBJ.patient _EVAL _FUNC _GOAL _LOC _OTHER _POSS _RESEM _SOURCE _TIME:MC.

_ABOUT
isa MORPHCOMP
[360]

Noun-noun compound (about). Non-head has an aboutness meaning wrt. head.

MORPHCOMP: compositional semantic relations
  _ABOUT: noun-noun compound (about)
  _AGENT:MC: noun-noun compound (agentive)
  _CONST: noun-noun compound (constitutive)
  _DOBJ.patient:
  _EVAL: noun-noun compound (evaluative)
  _FUNC: noun-noun compound (function)
  _GOAL: noun-noun compound (goal)
  _LOC: noun-noun compound (position)
  _OTHER: noun-noun compound (other)
  _POSS: noun-noun compound (possession)
  _RESEM: noun-noun compound (resemblance)
  _SOURCE: noun-noun compound (origin)
  _TIME:MC: noun-noun compound (time)

Figure 4.2: The relations matching MORPHCOMP-!CDT1-TOPIC.

(theme: skattelov 'tax law' = lov –[skat]te/ABOUT)
0   1   2 3 4 5   6

_AGENT:MC *Noun-noun compound (agentive).* Non-head has an agentive meaning wrt. head.
isa MORPHCOMP
[351]
(agent: politikontrol 'police control' = kontrol –politi/AGENT)
0   1   2   3   4   5   6

_CONST *Noun-noun compound (constitutive).* Non-head has a constitutive meaning wrt. head.
isa MORPHCOMP
[350]
(constitutive: træbord 'wooden table' = bord –træ/CONST)
0   1   2   3 4 5   6

_DOBJ.patient .
isa MORPHCOMP

_EVAL *Noun-noun compound (evaluative).* Non-head has an evaluative meaning wrt. head.
isa MORPHCOMP
[358]
coche de lujo 'luksusbil'
0 1 2   3

_FUNC *Noun-noun compound (function).* Non-head has a functional/instrumental meaning wrt.
isa MORPHCOMP head.
[353]
(function: vindmølle 'wind mill' =mølle –vind/FUNC)
0   1   2   3   4   5

_GOAL *Noun-noun compound (goal).*
isa MORPHCOMP
[354]
(goal: krigsskib 'war ship' = skib –[krig]s/GOAL)
0   1   2   3 4 5   6

_LOC *Noun-noun compound (position).* Non-head has a locative meaning wrt. head.
isa MORPHCOMP
[356]

(position: loftlampe 'ceiling lamp' = lampe –loft/POS)
0   1   2   3 4 5   6

_OTHER *Noun-noun compound (other).* If in doubt about the meaning relation between head and
isa MORPHCOMP non-head.
[361]

_POSS *Noun-noun compound (possession).* Non-head has a possessive meaning wrt. head.
isa MORPHCOMP
[355]

(possession: politibil = bil –politi/POSS
0   1   2 3   4

_RESEM *Noun-noun compound (resemblance).* Denotations of head and non-head resemble each
isa MORPHCOMP other.
[359]

silla de tijeras 'saksestol' [klapstol], válvula de mariposa 'sommerfugleventil'
0 1   2   3   4   5   6   7   8

_SOURCE *Noun-noun compound (origin).* Non-head has a meaning of origin wrt. head.
isa MORPHCOMP
[352]

(origin: rørsukker 'cane sugar' = sukker –rør/ORIGIN)
0   1   2   3   4   5   6

_TIME:MC *Noun-noun compound (time).* Non-head has a temporal meaning wrt. head.
isa MORPHCOMP
[357]

(time: oktoberregn 'October rain' = regn –oktober/TIME)
0   1   2   3 4 5   6

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-!CDT1-!PREFIX-!SUFFIX-TOPIC.

MORPHDERIV *Derivational semantic relations.* A semantic relation is created between a base and an affix
isa MORPH Subtypes: PREFIX SUFFIX.
[272]

PREFIX *Semantic relations appearing with prefixes.* A semantic relation is created between a base
isa MORPHDERIV and a prefix.
[275]
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
isa MORPHDERIV and a suffix.
[276]
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-!CDT1-TOPIC.

4.2.1 Prefix relations: PREFIX

PREFIX
isa MORPHDERIV
[275]

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
[291]

Agentive (deprecated ASPEC:cause+reflex). Prefix conveys agentive action.

(causative: acallar 'silence' = callar –a/AGENT)
0   1   2   3   4   5

_ITER
isa PREFIX
[290]

Iteration (deprecated ASPEC:iter). Prefix conveys iteration.

(iterative: redefine = define –re/ITER)
0   1   2   3   4

_MOD
isa PREFIX
[294]

Modification. Prefix conveys modification in a broad sense.

Subtypes: _MOD:eval _MOD:qual _MOD:quant.

_MOD:eval
isa _MOD
[296]

Evaluation (deprecated MOD:man). Prefix conveys evaluation

(manner: maleducado = educado –mal/MOD:eval)
0   1   2   3   4

_MOD:qual
isa _MOD
[297]

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

37

<div style="text-align:center; color:red;">

(qualification: paleochristian = christian –paleo/MOD:qual)
0   **1**   **2**   **3**   **4**

</div>

_MOD:quant   *Quantification* (deprecated MOD:cuant+GRAD:size). Prefix conveys quantification.
isa _MOD
[295]

<div style="text-align:center; color:red;">

(quantification: multicultural = cultural –multi/MOD:quant)
0   **1**   **2**   **3**   **4**

</div>

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

_NEG:contr   *Contrast* (deprecated NEG:oppo). Prefix conveys contrast.
isa _NEG
[287]

<div style="text-align:center; color:red;">

(opposition: antihero = hero –anti/NEG:contr)
0   **1**   **2** **3**   **4**

</div>

_NEG:priv   *Privation.* Prefix conveys privation.
isa _NEG
[288]

<div style="text-align:center; color:red;">

(privation: desalt = salt –de/NEG:priv)
0   **1**   **2** **3**   **4**

</div>

_NEG:rev   *Reversion* (deprecated ASPEC:rev). Prefix conveys reversion.
isa _NEG
[289]

<div style="text-align:center; color:red;">

(reversion: deactivate = activate –de/NEG:rev)
0   **1**   **2**   **3**   **4**

</div>

_PRE:other   *Other prefix relation.* If in doubt about the meaning conveyed by the prefix
isa PREFIX
[298]

_SPACE   *Space* (deprecated LOC). Prefix expresses space in a broad sense.
isa PREFIX   Subtypes: _SPACE:dir _SPACE:loc _SPACE:source.
[278] $\text{Confusion}^2_{0\%/100\%/0\%\%}$: $\text{loc}_{100\%}$.

_SPACE:dir   *Direction* (deprecated LOC:dir). Prefix expresses direction.
isa _SPACE $\text{Confusion}^6_{16.7\%/100\%/16.7\%\%}$: $-_{50\%}$ $\text{SPACE:source}_{16.7\%}$ $\text{TELIC}_{16.7\%}$ $\text{LOC:dir}_{16.7\%}$.
[280]

<div style="text-align:center; color:red;">

(direction/origin: deverbal = verbal –de/SPACE:dir)
0   **1**   **2**   **3**   **4**

</div>

_SPACE:loc   *Location* (deprecated LOC:pos). Prefix expresses location.
isa _SPACE
[279]

<div style="text-align:center; color:red;">

(position: intramural = mural –intra/SPACE:pos)
0   **1**   **2** **3**   **4**

</div>

_SPACE:source   *Source* (deprecated LOC:proce). Prefix conveys source.
isa _SPACE
[281]

<div style="color: red; text-align: center;">

(origin: extraer: = traer –ex/SPACE:source)
    0   **1**   **2** **3**   **4**

</div>

_TELIC *Telic* (deprecated ASPEC:term+resul). Prefix conveys termination or result.
isa PREFIX
[292]

<div style="color: red; text-align: center;">

(terminative: oplåse 'open' = låse –op/TELIC)
  0   **1**   **2** **3** **4**   **5**

</div>

_TIME *Time.* Prefix conveys time in a broad sense.
isa PREFIX
[283] Subtypes: _TIME:post _TIME:pre.

_TIME:post *Temporal succession* (deprecated TIME:succ). Prefix conveys succession.
isa _TIME
[285]

<div style="color: red; text-align: center;">

(temporal succession: postmodernism = modernism –post/TIME:post)
  0   **1**   **2**   **3**   **4**   **5**

</div>

_TIME:pre *Temporal precedence* (deprecated TIME:prec). Prefix conveys precedence.
isa _TIME
[284]

<div style="color: red; text-align: center;">

(temporal precedence: prehistorical = historical –pre/TIME:pre)
  0   **1**   **2**   **3** **4**   **5**

</div>

_TRANS *Transitivity.* Prefix conveys transitivity.
isa PREFIX
[293]

<div style="color: red; text-align: center;">

(transitivising: påsejle 'collide': sejle –på/TRANS)
  0   **1**   **2** **3**   **4**

</div>

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.
[276]
Subtypes: _AUG _DENUM _DER _DERan:qual _DERna _DERnn _DERv _DIMIN _PEJ.

_AUG *Augmentation.* Suffix conveys augmentation.
isa SUFFIX
[299]

<div style="color: red; text-align: center;">

(augmentative: perrazo 'big dog' = perro +azo/AUG)
  0   **1** **2** **3** **4** **5**   **6**

</div>

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

_DENUM:apart *Adjective-partitive derivation* (deprecated DENUM:part). Suffix creates partitive numerals.
isa _DENUM
[348]

<div style="color: red; text-align: center;">

"kardinal=doce – partitiv=doceavo" 'tolv/tolvtedel'
  0   **1**   **2**   **3**

</div>

_DENUM:ord *Adjective-ordinal derivation.* Suffix creates ordinals.

isa _DENUM

[347]

<p style="color:red; text-align:center">"kardinal=dos – ordinal=segundo" 'to/anden'
0   1   2   3</p>

_DENUM:quant *Adjective-multiplicative derivation.* Suffix creates multiplicative numerals.

isa _DENUM

[349]

<p style="color:red; text-align:center">"kardinal=cinco – multiplikativ=quíntuplo" 'fem/femdobbelte'
0   1   2   3</p>

_DER *Verb derivation.* Suffix triggers a derivation

isa SUFFIX

[302]

Subtypes: _DERadvv _DERav _DERnv _DERva _DERvn _DERvv.

_DERadvv *Adverb-verb derivation.* Suffix triggers a derivation from an adverb to a verb

isa _DER

[306]

_DERav *Adjective-verb derivation* (deprecated §DER:av). Suffix triggers a derivation from an adjective

isa _DER to a verb.

[304]

<p style="color:red; text-align:center">(adjective–>verb derivation: darken = dark +en/§DERav)
0   1   2 3 4   5</p>

_DERnv *Noun-verb derivation* (deprecated §DER:nvPRED). Suffix triggers a derivation from a noun to a

isa _DER verb.

[303]

<p style="color:red; text-align:center">(noun–>verb derivation: salar 'to salt' = sal +ar/§DERnv)
0   1   2 3 4 5 6   7</p>

_DERva *Verb-adjective derivation* (deprecated §DERV). Suffix creates deverbal adjectives in a broad

isa _DER sense.

[327]

Subtypes: _DERva:act _DERva:pas.

_DERva:act *Verb-adjective derivation (pure)* (deprecated DEVERB:act.pure). Suffix creates active adjectives

isa _DERva with the meaning aspect "pure".

[328]

Subtypes: _DERva:act.disp _DERva:act.epi.

<p style="color:red; text-align:center">"que V" (conmovedor – "que conmueve" 'gribende/der griber')
0 1   2   3 4   5   6   7</p>

_DERva:act.disp *Verb-adjective derivation (disposition)* (deprecated DEVERB:act.disp). Suffix creates active ad-

isa _DERva:act jectives with the meaning aspect "disposition".

[329]

<p style="color:red">"que suele V, que tiende a V" (adulón – "que suele adular, que tiende a adular" 'smigre/som plejer eller
0 1 2 3   4   5 6   7   8 9   10   11   12   13 14   15   16   17   18</p>

<p style="color:red">har tendens til at være krybende
19   20   21 22 23   24</p>

_DERva:act.epi *Verb-adjective derivation (potentiality)* (deprecated DEVERB:act.poten). Suffix creates active ad-
isa _DERva:act jectives with the meaning aspect "potentiality".
[330]

<p align="center">"que puede V" (móvil – que puede moverse ´bevægelig/der kan bevæge sig)</p>
<p align="center">0   1   2   3   4 5   6   7   8   9   10   11</p>

_DERva:pas *Verb-adjective derivation (passive)* (deprecated DEVERB:pas). Suffix creates passive adjectives.
isa _DERva Subtypes: _DERva:pas.deon _DERva:pas.epi _DERva:pas.part.
[331]

_DERva:pas.deon *Verb-adjective derivation (passive deontic)* (deprecated DEVERB:pas.deon). Suffix creates passive
isa _DERva:pas adjectives with a deontic meaning.
[334]

<p align="center">"Que debe {ser PP/Vse} (abominable – "que debe ser abominado/que debe abominarse" áfskyelig/som må</p>
<p align="center">0   1   2   3   4   5 6 7 8   9   10   11   12   13</p>

<p align="center">forkastes)</p>
<p align="center">14</p>

_DERva:pas.epi *Verb-adjective derivation (passive potentiality)* (deprecated DEVERB:pas.poten). Suffix creates
isa _DERva:pas passive adjectives with the meaning aspect "potentiality".
[333]

<p align="center">"que puede {ser PP/Vse}" (transportable – "máquina que puede {ser transportada/transportarse}</p>
<p align="center">0   1   2   3   4   5   6   7   8   9   10</p>

<p align="center">'transportabel/maskine som kan blive transporteret/transporteres</p>
<p align="center">11   12   13   14   15</p>

_DERva:pas.part *Verb-adjective derivation (passive participles)* (deprecated DEVERB:pas.part). Suffix creates pas-
isa _DERva:pas sive adjectives with the form of participles.
[332]

<p align="center">"que {ha sido/está/es} PP" (comprado – "hombre que {ha sido/está/es} comprado 'mand som er</p>
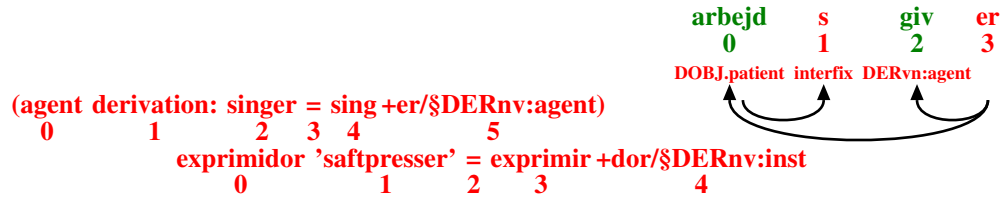<p align="center">0   1   2   3   4   5   6   7 8   9   10   11   12 13</p>

<p align="center">blevet/er/bliver købt"</p>
<p align="center">14   15</p>

_DERvn *Verb-noun derivation* (deprecated PREDDEVERBN). Suffix creates deverbal nouns in a broad
isa _DER sense.
[307]
Subtypes: _DERvn:agent _DERvn:core _DERvn:exper _DERvn:loc _DERvn:other _DERvn:patient _DERvn:recip.

_DERvn:agent *Verb-noun derivation (agent)* (deprecated PRED:agentPRED:inst). Suffix creates deverbal nouns
isa _DERvn absorbing the agent role.
[308]

arbejd s giv er
0 1 2 3
DOBJ.patient interfix DERvn:agent

(agent derivation: singer = sing +er/§DERnv:agent)
0 1 2 3 4 5
exprimidor 'saftpresser' = exprimir +dor/§DERnv:inst
0 1 2 3 4

_DERvn:core *Verb-noun derivation (core)* (deprecated PRED:core). Suffix creates deverbal nouns expressing a
isa _DERvn nominalized version of the situation denoted by the original verb.
[310]

(core derivation: exploitation = exploit@V +ation/§DERnv:core)
0 1 2 3 4 5

_DERvn:exper *Verb-noun derivation (experiencer)* (deprecated PRED:exper). Suffix creates deverbal nouns ab-
isa _DERvn sorbing the experiencer role.
[309]

(experiencer derivation: admirer = admire +r/§DERnv:exper
0 1 2 3 4 5

_DERvn:loc *Verb-noun derivation (location)* (deprecated PRED:loc). Suffix creates deverbal nouns expressing
isa _DERvn the location related to the meaning of the original noun.
[313]

(locative derivation: comedor 'spisestue' = comer +dor/§DERnv:loc)
0 1 2 3 4 5 6

_DERvn:other *Verb-noun derivation (other)* (deprecated PRED:other). If in doubt about the meaning conveyed
isa _DERvn by the suffix
[314]

_DERvn:patient *Verb-noun derivation (patient)* (deprecated PRED:result). Suffix creates deverbal nouns absorb-
isa _DERvn ing the patient role.
[311]

(result derivation: hallazgo 'fund' = hallar +azgo/§DERnv:result)
0 1 2 3 4 5 6

_DERvn:recip *Verb-noun derivation (recipient)* (deprecated PRED:recip). Suffix creates deverbal nouns absorb-
isa _DERvn ing the recipient role
[312]

_DERvv *Verb-verb derivation* (deprecated §DER:vv). Suffix triggers a derivation from a verb to another
isa _DER verb.
[305]

(verb–>verb derivation: adormecer 'lull to sleep' = dormir –+[a][ecer]/§DERvv)
0   1   2   3 4 5 6 7   8

_DERan:qual *Adjective derivation* (deprecated QUAL). Suffix creates deadjectival nouns.
isa SUFFIX
[315]

(deadjectival noun: bitterness = bitter +ness/§DERan:qual)
0   1   2   3 4   5

_DERna *Noun-adjective derivation* (deprecated DENOM). Suffix creates denominal adjectives in a broad
isa SUFFIX sense.
[335]
Subtypes: _DERna:deono _DERna:disp _DERna:other _DERna:poss _DERna:rel _DERna:resem _DERna:telic.

_DERna:deono *Noun-adjective derivation (naming)* (deprecated DENOM:rel.deono). Suffix creates relational ad-
isa _DERna jectives with the meaning of "naming".
[338]
Subtypes: _DERna:deono.loc _DERna:deono.pers.

_DERna:deono.loc *Noun-adjective derivation (naming places)* (deprecated DENOM:rel.deono.place). Suffix creates
isa _DERna:deono relational adjectives with the meaning of "naming" of places.
[340]

Madrileño 'som har at gøre med/kommer fra Madrid'
0   1 2 3 4   5   6   7

_DERna:deono.pers *Noun-adjective derivation (naming persons)* (deprecated DENOM:rel.deono.pers). Suffix creates
isa _DERna:deono relational adjectives with the meaning of "naming" persons.
[339]

Cervantino 'som har at gøre med Cervantes'
0   1 2 3 4 5   6

_DERna:disp *Noun-adjective derivation (disposition)* (deprecated DENOM:disp). Suffix creates denominal ad-
isa _DERna jectives that express disposition.
[343]

"que tiene afición por N" (mujeriego – "que afición por las mujeres" 'kvindeglad/som er glad for kvinder')
0 1   2   3 4   5   6 7   8   9 10   11   12   13 14 15   16

_DERna:other *Noun-adjective derivation (other)* (deprecated DENOM:other). If in doubt about the meaning
isa _DERna conveyed by the suffix
[345]

_DERna:poss *Noun-adjective derivation (possession)* (deprecated DENOM:poss). Suffix creates denominal ad-
isa _DERna jectives that express possession.
[342]

_DERna:rel
isa _DERna
[336]

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
[337]

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)
0   1   2   3   4   5

_DERna:resem
isa _DERna
[341]

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
0   1   2   3   4   5   6   7   8   9   10   11   12   13   14

Sancho Panza')
15   16

_DERna:telic
isa _DERna
[344]

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')
0   1   2   3   4   5   6   7   8   9   10

_DERnn
isa SUFFIX
[316]

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
[317]

Noun-noun derivation (agent) (deprecated NOPRED:agent). Suffix creates non-predicative nouns expressing an agent role.

(agent derivation: miller = mill +er/§DERnn:agent)
0   1   2   3   4   5

_DERnn:assoc
isa _DERnn
[324]

Noun-noun derivation (association) (deprecated NOPRED:script). Suffix creates non-predicative nouns expressing a script/notion related to the original noun.

_DERnn:capac *Noun-noun derivation (capacity)* (deprecated NOPRED:capac). Suffix creates non-predicative
isa _DERnn nouns expressing a capacity.
[322]

_DERnn:cont *Noun-noun derivation (container)* (deprecated NOPRED:cont). Suffix creates non-predicative
isa _DERnn nouns expressing a container.
[319]

_DERnn:loc *Noun-noun derivation (location)* (deprecated NOPRED:loc). Suffix creates non-predicative nouns
isa _DERnn expressing a location.
[323]

_DERnn:other *Noun-noun derivation (other)* (deprecated NOPRED:other). If in doubt about the meaning con-
isa _DERnn veyed by the suffix
[325]

_DERnn:quant *Noun-noun derivation (quantification)* (deprecated NOPRED:set). Suffix creates non-predicative
isa _DERnn nouns expressing a quantification.
[321]

_DERnn:telic *Noun-noun derivation (telic)* (deprecated NOPRED:result). Suffix creates non-predicative nouns
isa _DERnn expressing a telic result.
[318]

_DERnn:time *Noun-noun derivation (time)* (deprecated NOPRED:temp). Suffix creates non-predicative nouns
isa _DERnn expressing a temporal aspect.
[320]

_DERv (deprecated DEVERB).
isa SUFFIX
[326]

_DIMIN *Diminution.* Suffix conveys diminution.
isa SUFFIX
[300]

_PEJ *Pejoration.* Suffix conveys a pejorative sense.
isa SUFFIX
[301]

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
        _DERva: verb-adjective derivation
            _DERva:act: verb-adjective derivation (pure)
                _DERva:act.disp: verb-adjective derivation (disposition)
                _DERva:act.epi: verb-adjective derivation (potentiality)
            _DERva:pas: verb-adjective derivation (passive)
                _DERva:pas.deon: verb-adjective derivation (passive deontic)
                _DERva:pas.epi: verb-adjective derivation (passive potentiality)
                _DERva:pas.part: verb-adjective derivation (passive participles)
        _DERvn: verb-noun derivation
            _DERvn:agent: verb-noun derivation (agent)
            _DERvn:core: verb-noun derivation (core)
            _DERvn:exper: verb-noun derivation (experiencer)
            _DERvn:loc: verb-noun derivation (location)
            _DERvn:other: verb-noun derivation (other)
            _DERvn:patient: verb-noun derivation (patient)
            _DERvn:recip: verb-noun derivation (recipient)
        _DERvv: verb-verb derivation
    _DERan:qual: adjective derivation
    _DERna: noun-adjective derivation
        _DERna:deono: noun-adjective derivation (naming)
            _DERna:deono.loc: noun-adjective derivation (naming places)
            _DERna:deono.pers: noun-adjective derivation (naming persons)
        _DERna:disp: noun-adjective derivation (disposition)
        _DERna:other: noun-adjective derivation (other)
        _DERna:poss: noun-adjective derivation (possession)
        _DERna:rel: noun-adjective derivation (relational)
            _DERna:rel.norm: noun-adjective derivation (normal)
        _DERna:resem: noun-adjective derivation (resemblance)
        _DERna:telic: noun-adjective derivation (effect)
    _DERnn: noun-noun derivation
        _DERnn:agent: noun-noun derivation (agent)
        _DERnn:assoc: noun-noun derivation (association)
        _DERnn:capac: noun-noun derivation (capacity)
        _DERnn:cont: noun-noun derivation (container)
        _DERnn:loc: noun-noun derivation (location)
        _DERnn:other: noun-noun derivation (other)
        _DERnn:quant: noun-noun derivation (quantification)
        _DERnn:telic: noun-noun derivation (telic)
        _DERnn:time: noun-noun derivation (time)
    _DERv:
    _DIMIN: diminution
    _PEJ: pejoration

Figure 4.5: The relations matching SUFFIX-!CDT1-TOPIC.

Chapter 5

Discourse relations: DISC

DISC: discourse level
    DISCOTHER: other discourse relations
        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 DISC-!CDT1-!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
[220]

Other discourse relations. In two cases, REP and SCENE, the relations concern the formal structure of the text. In the last case, JOINT, there is no clear relation between the segments in question.

Subtypes: JOINT REP SCENE.

JOINT
isa DISCOTHER
[270]

No clear relation. No evident discourse relation between the segments. The new text segment adds a completely new content without any clear discourse relation to the preceding segment.

Confusion$_{21.4\%/42.9\%/35.7\%\%}^{14}$: CONJ:add$_{42.9\%}$ JOINT$_{35.7\%}$ SCENE$_{7.1\%}$ CONJ$_{7.1\%}$ CONST:exem$_{7.1\%}$.

REP
isa DISCOTHER
[269]

Repaired (deprecated STRUCT:rep). A repaired text segment. The dependent text segment is interrupted and unfinished and "repaired" by the following and governing text segment that completes it.

Would you... (Would you marry me, Lisa?)
0   1   2   3   4   5   6

SCENE
isa DISCOTHER
[268]

Scene (deprecated STRUCT:prepPREP). A scene or similar description. The dependent text segment describes the scene of the following and governing text.

Confusion$_{84.6\%/84.6\%/96.2\%\%}^{26}$: SCENE$_{96.2\%}$ JOINT$_{3.8\%}$.

DISCPRAG *Pragmatic and illocutionary discourse relations* (deprecated DISCFUNC). The dependent text seg-
isa ADJ DISC ment expresses a change in speech act or pragmatic function (speaker's intention) wrt the
[219] 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 *Semantic discourse relations.* The relations hold between the propositions of the governing
isa ADJ DISC and dependent text segments and are defined in semantic terms;
[218]

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

RuleDisc *Syntactic discourse relation* (long: "␣"(PRIM)). A primary syntactic relation that has been used
isa DISC RULE as a discourse relation for stilistic purposes.
[372]

5.1   Functional relations: DISCFUNC

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

Figure 5.2: The relations matching DISCFUNC-!CDT1-TOPIC.

DISCPRAG *Pragmatic and illocutionary discourse relations* (deprecated DISCFUNC). The dependent text seg-
isa ADJ DISC ment expresses a change in speech act or pragmatic function (speaker's intention) wrt the
[219] 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 *Answer.* An answer relation. The dependent text segment contains an answer or solution to
isa DISCPRAG a question or problem contained in the governing text segment.
[255]

Confusion$^1_{100\%/100\%/100\%\%}$: ANSW$_{100\%}$.

CONSOL *Consolidation* (deprecated SUPPORT?). The dependent text segment consolidates or strengthens
isa DISCPRAG the governing segment.
[263]

48

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

Confusion$^2_{0\%/50\%/0\%\%}$: CONJ:elab$_{100\%}$.

CONSOL:inst *Instrumental* (deprecated CONSOL:enabl). An instrumental or helpful text segment. The de-
isa CONSOL pendent text segment is instrumental in helping reader or recipient to carry out the action
[265] mentioned in the governing segment; frequent in directive texts.

<div align="center" style="color:red">

For a free catalogue, call...
0 1 2   3   4

</div>

CONSOL:motiv *Motivation.* Motivation or encouragement. The dependent text segment motivates, stimu-
isa CONSOL lates or encourages reader or recipient to carry out the action mentioned in the governing
[266] segment.

<div align="center" style="color:red">

Prices have never been so low.
0   1   2   3 4 5

</div>

CONSOL:source *Source* (deprecated JUSTCONSOL:just). A source or foundation. The dependent text segment
isa CONSOL expresses a source or foundation that justifies the governing segment wrt its content or the
[264] reason for mentioning it at this time and place, thereby strengthening it argumentatively.

Confusion$^5_{20\%/60\%/20\%\%}$: AGENTIVE:sbj$_{40\%}$ CONJ$_{20\%}$ CONST:exem$_{20\%}$ CONSOL:source$_{20\%}$.

<div align="center" style="color:red">

Joe Johnson is an expert at teaching small children. (He says that...). The Rent Act clearly states it.
0   1   2 3   4   5   6   7   8   9 10   11   12 13 14 15   16 17

</div>

DIREC *Directive act.* A directive act. The dependent text segment contains a directive act (order,
isa DISCPRAG command or request) somehow linked to the governing segment.
[256] Confusion$^3_{0\%/66.7\%/0\%\%}$: CONJ:elab$_{66.7\%}$ CONJ:seq$_{33.3\%}$.

<div align="center" style="color:red">

e.g. imperatives
0   1

</div>

EXPR *Expressive act.* An expressive act. The dependent text segment contains an expression of the
isa DISCPRAG speaker's attitudes or emotions, e.g. congratulations, excuses or thanks, somehow linked to
[257] the governing segment.

<div align="center" style="color:red">

[en] I'm sorry! My condolences! Thank you so much!
0 1   2   3   4   5   6 7 8

</div>

INTACT *Interaction signals.* The dependent text segment contains an interaction signal, i.e. a signal
isa DISCPRAG used to start, sustain or end a conversation.
[258] Subtypes: INTACT:attn INTACT:inter INTACT:start INTACT:stop.

INTACT:attn *Attention.* An attention signal. The dependent text segment contains an attention signal.
isa INTACT
[260]

INTACT:inter
isa INTACT
[261]

Interruption. An interruption signal. The dependent text segment contains an interruption signal

[en] Yeah?, Oh!, Really? [da] Ja; Nå; OK; [it] Sì; Beh
0   1   2   3   4   5   6   7 8 9 10

[en] But... But, Just a moment!; [da] Jamen... Men..., Må jeg lige; [it] Ma; Un momento; Scusami
0 1 2 3 4 5   6   7   8   9 10 11 12 13 14   15   16

INTACT:start
isa INTACT
[259]

Start signal. The dependent text segment contains a start signal.

[en] Hello? All right! Well, Well you see, Excuse me; [da] Hallo? Altså, Nå men altså, Jamen, Hør lige her!
0   1   2   3   4   5 6 7   8   9   10   11   12 13 14 15   16   17 18 19

Undskyld! Du Peter; [it] Pronto? Ciao, Ecco, Guarda, Scusami
20   21 22 23   24   25   26   27   28

INTACT:stop
isa INTACT
[262]

Stop. The dependent text segment contains a conversation stop signal.

[en] Goodbye; [da] Hej hej; [it] Ciao; Arrivederci
0   1   2 3   4 5   6   7

QUEST
isa DISCPRAG
[254]

Question . A question relation. The dependent text segment contains a question somehow linked to the governing segment. The following co-text may and may not contain an answer to the question.

Related types: answer.

5.2 Semantic relations: DISCSEM

DISCSEM
isa ADJ DISC
[218]

Semantic discourse relations. The relations hold between the propositions of the governing and dependent text segments and are defined in semantic terms;

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

AGENTIVE
isa DISCSEM
[222]

Cause relation (discourse). The dependent segment expresses "bringing about" or cause in a broad sense

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

Confusion$^5_{0\%/100\%/0\%\%}$: CONJ:elab$_{40\%}$ AGENTIVE:sbj$_{40\%}$ AGENTIVE:expl$_{20\%}$.

AGENTIVE:expl
isa AGENTIVE
[223]

Explanation relation in discourse. An explanation relation. The dependent segment explains the governing segment. The relation is more general and elaborating than "reason".

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: conjunction, sequence
    CONST: constitutive elaboration relation
        CONST:apart: part of relation
        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/goal 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-!CDT1-TOPIC.

Typical connectives: [en] In fact, Indeed; [da] Nemlig; [it] Infatti.
Related types: reason.
Confusion$_{63.6\%/100\%/63.6\%\%}^{11}$: AGENTIVE:expl$_{63.6\%}$ CONTR$_{9.1\%}$ AGENTIVE$_{9.1\%}$ CONST:rest$_{9.1\%}$ AGENTIVE:sbj$_{9.1\%}$
.

AGENTIVE:reas *Reason relation (discourse).* A reason relation. The dependent segment expresses a specific
isa AGENTIVE and concrete reason.
[224]   Typical connectives: [en] Since, Because; [da] Fordi, Eftersom; [it] Perché, Dato che.
Confusion$_{20\%/60\%/20\%\%}^{10}$: AGENTIVE:sbj$_{40\%}$ CONJ:elab$_{20\%}$ AGENTIVE:reas$_{20\%}$ CONJ:add$_{10\%}$ TELIC:cons.dir$_{10\%}$.

AGENTIVE:sbj *Subjective cause.* A subjective cause. The speaker uses the dependent segment as a subjec-
isa AGENTIVE tive/personal argument to support a claim.
[225]   Typical connectives: [en] Because, In fact, Indeed; [da] Fordi, Eftersom, Nemlig; [it] Perché, Dato che, Infatti.
Confusion$_{0\%/75\%/0\%\%}^{16}$: AGENTIVE:reas$_{25\%}$ CONJ:add$_{18.8\%}$ CONJ$_{12.5\%}$ CONJ:elab$_{12.5\%}$ AGENTIVE$_{12.5\%}$ CON-
SOL:source$_{12.5\%}$ AGENTIVE:expl$_{6.3\%}$.

CONC
isa DISCSEM
[237]

Concession. A concession relation. The dependent segment admits or acknowledges a fact wrt N, which may however not have the expected consequence or effect.

Typical connectives: [en] Though, Although, However; [da] Skønt; Selvom; [it] Anche se; Sebbene.

$\text{Confusion}^{20}_{40\%/65\%/40\%\%}$: $\text{CONC}_{40\%}$ $\text{CONJ:add}_{25\%}$ $\text{CONTR}_{5\%}$ $\text{FORMAL:eval}_{5\%}$ $\text{subj}_{5\%}$ $\text{CONJ}_{5\%}$ $\text{CONTR:sbj}_{5\%}$ $\text{CONST:exem}_{5\%}$ $\text{conj}_{2.5\%}$ $\text{CONTR:prg}_{2.5\%}$.

COND
isa DISCSEM
[238]

Condition. A condition relation. The dependent segment expresses a condition for the realisation of the content of the gonerning segment.

Typical connectives: [en] If, On the condition; [da] Hvis; I det tilfælde at; [it] A condizione che/di; Se.

$\text{Confusion}^{1}_{0\%/100\%/0\%\%}$: $\text{CONJ:add}_{100\%}$.

CONJ
isa DISCSEM
[243]

Conjunction. The dependent text segment elaborates and expans knowledge of the content of the governing text segment or adds a new subject somehow related to it

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

$\text{Confusion}^{48}_{10.4\%/54.2\%/18.8\%\%}$: $\text{CONJ:elab}_{35.4\%}$ $\text{CONJ:add}_{25\%}$ $\text{CONJ}_{18.8\%}$ $\text{AGENTIVE:sbj}_{4.2\%}$ $\text{TELIC:goal}_{2.1\%}$ $\text{TELIC:cons.sbj}_{2.1\%}$ $\text{FORMAL:eval}_{2.1\%}$ $\text{JOINT}_{2.1\%}$ $\text{CONSOL:source}_{2.1\%}$ $\text{TELIC:cons.dir}_{2.1\%}$ $\text{CONST:apart}_{2.1\%}$ $\text{CONC}_{2.1\%}$.

CONJ:add
isa CONJ
[244]

Conjunction, addition. An addition relation. The 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.

Typical connectives: [en] And, Moreover, In addition to that; [da] Endvidere, Desuden; [it] E, Oltre a ciò.

$\text{Confusion}^{133}_{37.2\%/63.5\%/47.2\%\%}$: $\text{CONJ:add}_{47.2\%}$ $\text{CONJ:elab}_{13.5\%}$ $\text{CONJ}_{9\%}$ $\text{JOINT}_{4.5\%}$ $\text{conj}_{4.4\%}$ $\text{CONC}_{3.8\%}$ $\text{TELIC:cons.sbj}_{2.3\%}$ $\text{AGENTIVE:sbj}_{2.3\%}$ $\text{CONJ:seq}_{1.5\%}$ $\text{CONST:exem}_{1.5\%}$ $\text{CONST:apart}_{1.5\%}$ $\text{CONTR}_{0.8\%}$ $\text{TIME:pre}_{0.8\%}$ $\text{CONTR:sbj}_{0.8\%}$ $\text{CONTR:prg}_{0.8\%}$ $\text{COND}_{0.8\%}$ $\text{qobj}_{0.8\%}$ $\text{TELIC}_{0.8\%}$ $\text{TELIC:cons.dir}_{0.8\%}$ $\text{DISJ:dir}_{0.8\%}$ $\text{AGENTIVE:reas}_{0.8\%}$ $\text{vobj}_{0.8\%}$ $\text{CONTR:dir}_{0.3\%}$.

CONJ:elab
isa CONJ
[245]

Conjunction, elaboration (deprecated ELAB:spec,ELAB:exp,CONST:elab). An elaboration relation. The dependent text segment elaborates and expans knowledge of the content of the governing text segment; in cases of uncertainty between add and elab we do not specify the subtype

$\text{Confusion}^{1}_{0\%/100\%/0\%\%}$: $\text{CONJ:elab}_{100\%}$.

CONJ:seq
isa CONJ
[246]

Conjunction, sequence. A sequence relation. The dependent text segment is part of list or sequence linked to the governing text segment as e.g. in recipes, sport results etc.

$\text{Confusion}^{13}_{61.5\%/92.3\%/69.2\%\%}$: $\text{CONJ:seq}_{69.2\%}$ $\text{CONJ:add}_{15.4\%}$ $\text{CONJ:elab}_{7.7\%}$ $\text{DIREC}_{7.7\%}$.

CONST
isa DISCSEM
[230]

Constitutive elaboration relation. The dependent segment adds more details regarding the constitution of the governing segments or part(s) of it.

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

$\text{Confusion}^{4}_{0\%/100\%/0\%\%}$: $\text{const}_{50\%}$ $\text{agent}_{25\%}$ $\text{func}_{25\%}$.

CONST:apart
isa CONST
[232]

Part of relation. A part-of relation. The dependent segment expresses a part of the governing segment or vice versa.

Typical connectives: [en] Including, Herein; [da] Herunder, Heri; [it] Incluso, Tra cui.

$\text{Confusion}^{12}_{16.7\%/58.3\%/25\%\%}$: $\text{CONJ:elab}_{25\%}$ $\text{CONST:apart}_{25\%}$ $\text{CONJ:add}_{16.7\%}$ $\text{CONST:exem}_{16.7\%}$ $\text{CONJ}_{8.3\%}$ $\text{nobj}_{8.3\%}$.

CONST:exem
isa CONST
[231]

Exemplification. A constitutive exemplification relation. The dependent segment gives examples of elements or phenomena regarding the governing segment.

Typical connectives: [en] For example; [da] For eksempel; [it] Per esempio.

$\text{Confusion}^{17}_{29.4\%/70.6\%/47.1\%\%}$: $\text{CONST:exem}_{47.1\%}$ $\text{CONJ:add}_{11.8\%}$ $\text{CONST:apart}_{11.8\%}$ $\text{CONJ:elab}_{5.9\%}$ $\text{JOINT}_{5.9\%}$ $\text{CONST:rest}_{5.9\%}$ $\text{CONSOL:source}_{5.9\%}$ $\text{CONC}_{5.9\%}$.

CONST:rest *Restatement.* A restatement relation. The dependent segment states the governing segment
isa CONST again in a different way

[233]

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

Confusion$^{11}_{22.7\%/59.1\%/25.8\%\%}$: CONJ:elab$_{27.3\%}$ CONST:rest$_{25.8\%}$ TELIC:cons.sbj$_{9.1\%}$ TELIC:cons.dir$_{9.1\%}$ AGEN-TIVE:expl$_{9.1\%}$ CONST:exem$_{9.1\%}$ conj$_{6.1\%}$ qobj$_{4.5\%}$.

CONTR *Contrast.* The dependent text segment expresses a contrast wrt the governing text segment.
isa DISCSEM Subtypes: CONTR:dir CONTR:sbj.

[247]

Confusion$^{4}_{0\%/100\%/0\%\%}$: CONJ:add$_{25\%}$ AGENTIVE:expl$_{25\%}$ CONTR:dir$_{25\%}$ CONC$_{25\%}$.

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

[248]

Typical connectives: [en] But, However; [da] Men, Derimod; [it] Ma, Invece.

Confusion$^{14}_{16.7\%/31\%/31\%\%}$: CONTR:dir$_{31\%}$ conj$_{20.2\%}$ CONTR:prg$_{10.7\%}$ CONTR$_{7.1\%}$ CONJ:elab$_{7.1\%}$ TELIC:cons.sbj$_{7.1\%}$
TELIC:cons.dir$_{7.1\%}$ CONTR:sbj$_{7.1\%}$ CONJ:add$_{2.4\%}$.

CONTR:sbj *Subjective contrast* (deprecated CONTR:prg). A subjective contrast relation. The contrast lies
isa CONTR between an explicit and a subjectively inferred text segment.

[249]

Typical connectives: [en] But, However; [da] Men, Derimod; [it] Ma, Invece.

Confusion$^{12}_{19.4\%/48.6\%/31.9\%\%}$: CONTR:sbj$_{31.9\%}$ conj$_{13.9\%}$ CONJ:elab$_{8.3\%}$ CONJ:add$_{8.3\%}$ CONTR:prg$_{8.3\%}$ qobj$_{8.3\%}$
CONTR:dir$_{8.3\%}$ CONC$_{8.3\%}$ TELIC:cons.dir$_{4.2\%}$.

DISJ *Disjunction.* There is a disjunction relation between the governing and dependent text seg-
isa DISCSEM ment.

[250]

Subtypes: DISJ:dir DISJ:sbj.

DISJ:dir *Direct disjunction.* A direct disjunction relation. The disjunction lies between the governing
isa DISJ and dependent text segment.

[251]

Typical connectives: [en] Or, Or else, Otherwise; [da] Eller, Ellers; [it] Oppure, Altrimenti.

Confusion$^{2}_{0\%/50\%/50\%\%}$: CONJ:add$_{50\%}$ DISJ:dir$_{50\%}$.

DISJ:sbj *Subjective disjunction* (deprecated DISJ:prg). An indirect or subjective disjunction relation. The
isa DISJ disjunction lies between the dependent and a subjectively inferred text segment.

[252]

Typical connectives: [en] Or, Or else, Otherwise; [da] Eller, Ellers; [it] Oppure, Altrimenti.

FORMAL *Formal description.* The dependent segment describes the governing segment wrt its formal
isa DISCSEM quale (form, dimension, colour, etc.). The governing segment may be a first-order or second-

[234]

order entity.

Subtypes: FORMAL:descr FORMAL:eval.

FORMAL:descr *Neutral description* (deprecated DESCR:qual). An objective and neutral description relation.
isa FORMAL The dependent segment expresses an objective and/or neutral description of the governing

[235]

segment.

Confusion$^{5}_{20\%/40\%/20\%\%}$: CONJ:elab$_{60\%}$ conj$_{20\%}$ FORMAL:descr$_{20\%}$.

FORMAL:eval *Positive/negative evaluation* (deprecated DESCR:eval). A personal and subjective description
isa FORMAL relation. The dependent segment expresses a personal and/or subjective description of the

[236]

governing segment.

Confusion$^{10}_{20\%/40\%/30\%\%}$: CONJ:elab$_{50\%}$ FORMAL:eval$_{30\%}$ CONJ$_{10\%}$ CONC$_{10\%}$.

TELIC
isa DISCSEM
[226]

Consequence/result/conclusion/goal relation (discourse). The dependent segment expresses consequence, result, purpose, conclusion or goal wrt the governing segment.

Subtypes: TELIC:cons.dir TELIC:cons.sbj TELIC:goal.

Confusion$_{16.7\%/100\%/16.7\%\%}^{18}$: $-_{61.1\%}$ TELIC$_{16.7\%}$ TRANS$_{5.6\%}$ MOD:qual$_{5.6\%}$ NEG:priv$_{5.6\%}$ LOC:dir$_{5.6\%}$.

TELIC:cons.dir
isa TELIC
[228]

Direct, physical consequence, result (deprecated TELIC:dir). A consequence or result relation. The dependent segment expresses a physical and/or objectively observed consequence or result wrt the governing segment.

Typical connectives: [en] Therefore, For this reason; [da] Derfor, Af den grund; [it] Perciò, Quindi.

Confusion$_{29.4\%/58.8\%/41.2\%\%}^{17}$: TELIC:cons.dir$_{41.2\%}$ TELIC:cons.sbj$_{11.8\%}$ CONJ:elab$_{8.8\%}$ CONST:rest$_{5.9\%}$ CONJ$_{5.9\%}$ CONJ:add$_{5.9\%}$ AGENTIVE:reas$_{5.9\%}$ CONTR:dir$_{5.9\%}$ conj$_{2.9\%}$ CONTR:sbj$_{2.9\%}$ qobj$_{2.9\%}$.

TELIC:cons.sbj
isa TELIC
[229]

Pragmatic/personal conclusion, deduction (deprecated TELIC:sbj). A personal conclusion or deduction relation. The dependent segment expresses a subjective conclusion or deduction on behalf of the speaker.

Typical connectives: [en] Therefore, For this reason; [da] Derfor, Af den grund; [it] Perciò, Quindi.

Confusion$_{21.4\%/64.3\%/28.6\%\%}^{14}$: TELIC:cons.sbj$_{28.6\%}$ CONJ:add$_{21.4\%}$ CONJ:elab$_{14.3\%}$ TELIC:cons.dir$_{14.3\%}$ CONJ$_{7.1\%}$ CONST:rest$_{7.1\%}$ CONTR:dir$_{7.1\%}$.

TELIC:goal
isa TELIC
[227]

Goal relation (discourse). A goal relation. The dependent segment expresses goal, purpose, aim or the like wrt the governing segment.

Confusion$_{0\%/100\%/0\%\%}^{1}$: CONJ$_{100\%}$.

TIME
isa DISCSEM
[239]

Temporal relation (deprecated CIRCUM). There is a clear temporal relation between the contents of the two text segments.

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

TIME:cont
isa TIME
[240]

Contemporaneity (deprecated nowincludesabolishedTIME:dur). A contemporaneity relation. The events of the two text segments occur simultaneously.

Typical connectives: [en] At the same time, Meanwhile; [da] Samtidig, Mens, Så længe, Da; [it] Contemporaneamente.

TIME:post
isa TIME
[242]

Temporal succession (deprecated TIME:succ). A succession relation. The event described in the dependent text segment succeeds the one described in the governing segment.

Typical connectives: [en] Later, Some time afterwards; [da] Senere, Nogen tid efter; [it] Dopo, Poco tempo dopo.

Confusion$_{100\%/100\%/100\%\%}^{1}$: TIME:post$_{100\%}$.

TIME:pre
isa TIME
[241]

Temporal precedence (deprecated TIME:prec). A precedence relation. The event described in the dependent text segment precedes the one described in the governing segment.

Typical connectives: [en] Earlier, Some days before; [da] Før det, Forinden; [it] Prima, Tre giorni prima.

Confusion$_{100\%/100\%/100\%\%}^{1}$: TIME:pre$_{100\%}$.

Chapter 6

Anaphor relations: ANA

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

Figure 6.1: The relations matching ANA-!CDT1-!coref-!assoc-TOPIC.

ANA
isa DIM:LEVEL
[14]

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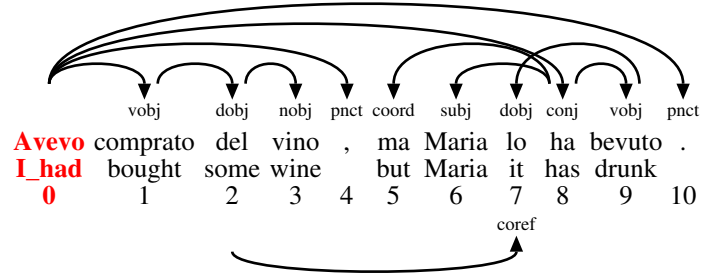
Subtypes: ANAREL anaphor.

ANAREL
isa ANA REL
[28]

Anaphor-antecedent relation. An anaphor-antecedent relation, i.e. a relation between an anaphor (pronoun, definite description, etc.) and an antecedent. The anaphor may be either coreferential, i.e. it designates the same discourse referent as the antecedent, or associative. In the latter case, the anaphor designates a non-previously mentioned referent that is associable with the antecedent either wrt the antecedent's qualia structure or wrt some other semantic relation. The relation arrow goes from antecedent to anaphor.

anaphor
isa ANA
[183]

. 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 arrow 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
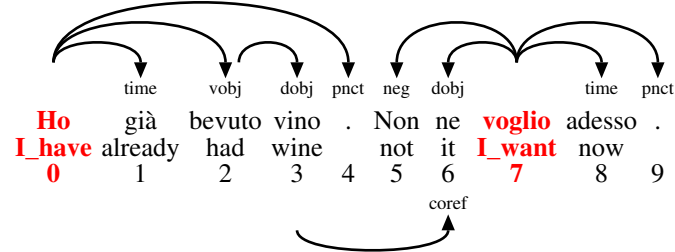isa anaphor
[193]

Associative anaphor. The anaphor designates an entity which is associated with the antecedent

Subtypes: assoc-OTHER assoc-QUALIA assoc-SEMROLE.

Confusion$_{33.3\%/83.3\%/33.3\%\%}^{6}$: assoc-const$_{66.7\%}$ assoc$_{33.3\%}$.

coref
isa anaphor
[186]

Coreference. The anaphor designates the same entity as the antecedent; all coreferential pronouns are labelled this way

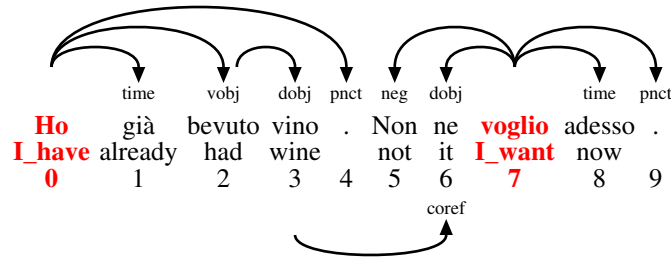Subtypes: coref-evol coref-iden coref-res coref-var ref.

Confusion$_{69\%/72.5\%/88.5\%\%}^{209}$: coref$_{88.5\%}$ coref-var$_{7.3\%}$ coref-res$_{1.4\%}$ ref$_{1\%}$ assoc-const$_{0.7\%}$ coref-iden$_{0.6\%}$ assoc-agentive.agent$_{0.5\%}$.

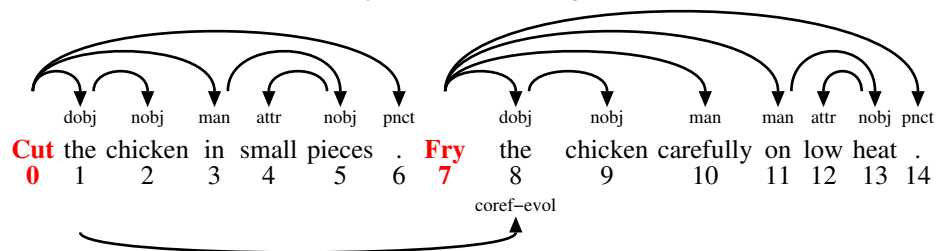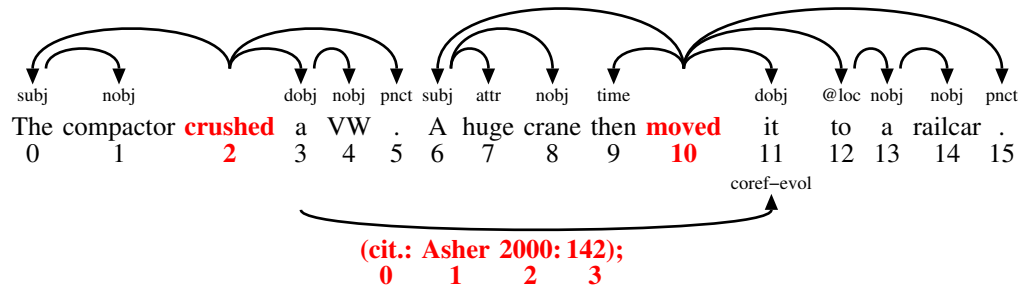**I had bought some wine but Maria has drunk it all.**

	vobj	dobj	nobj	pnct	coord	subj	dobj	conj	vobj	pnct
Avevo	comprato	del	vino	,	ma	Maria	lo	ha	bevuto	.
I_had	bought	some	wine		but	Maria	it	has	drunk	
0	1	2	3	4	5	6	7	8	9	10

coref

I've already had wine. I don't want anymore right now.

	time	vobj	dobj	pnct	neg	dobj		time	pnct
Ho	già	bevuto	vino	.	Non	ne	**voglio**	adesso	.
I_have	already	had	wine		not	it	**I_want**	now	
0	1	2	3	4	5	6	**7**	8	9

coref

6.1 Coreference relations: coref

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

Figure 6.2: The relations matching coref-!CDT1-TOPIC.

coref *Coreference.* The anaphor designates the same entity as the antecedent; all coreferential pro-
isa anaphor nouns are labelled this way
[186] Subtypes: coref-evol coref-iden coref-res coref-var ref.
Confusion$^{209}_{69\%/72.5\%/88.5\%\%}$: coref$_{88.5\%}$ coref-var$_{7.3\%}$ coref-res$_{1.4\%}$ ref$_{1\%}$ assoc-const$_{0.7\%}$ coref-iden$_{0.6\%}$ assoc-agentive.agent$_{0.5\%}$.

I had bought some wine but Maria has drunk it all.

	vobj	dobj	nobj	pnct	coord	subj	dobj	conj	vobj	pnct
Avevo	comprato	del	vino	,	ma	Maria	lo	ha	bevuto	.
I_had	bought	some	wine		but	Maria	it	has	drunk	
0	1	2	3	4	5	6	7	8	9	10

coref

I've already had wine. I don't want anymore right now.

	time	vobj	dobj	pnct	neg	dobj		time	pnct
Ho	già	bevuto	vino	.	Non	ne	**voglio**	adesso	.
I_have	already	had	wine		not	it	**I_want**	now	
0	1	2	3	4	5	6	**7**	8	9
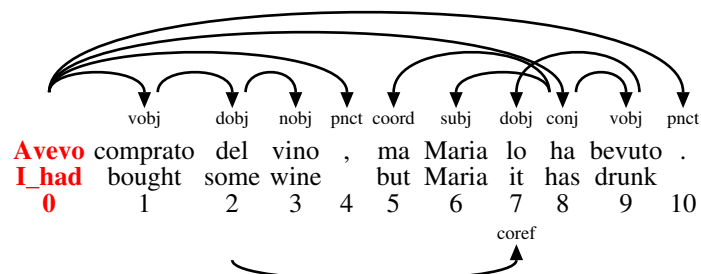
coref

coref-evol *Evolving anaphor.* The anaphor refers to the same discourse referent as the antecedent, but
isa coref after it has undergone radical changes in its ontological status
[191] $\text{Confusion}^1_{0\%/100\%/0\%}$: coref-var$_{100\%}$.

subj		nobj		dobj	nobj	pnct	subj	attr	nobj	time		dobj	@loc	nobj	nobj	pnct
The	compactor	**crushed**	a	VW	.	A	huge	crane	then	**moved**	it	to	a	railcar	.
0	1	**2**	3	4	5	6	7	8	9	**10**	11	12	13	14	15

coref–evol

(cit.: Asher 2000: 142);
0   1   2   3

	dobj	nobj	man	attr	nobj	pnct		dobj		nobj	man	man	attr	nobj	pnct
Cut	the	chicken	in	small	pieces	.	**Fry**	the	chicken	carefully	on	low	heat	.
0	1	2	3	4	5	6	**7**	8	9	10	11	12	13	14

coref–evol

coref-iden *Coreferential NP with lexical identity* (deprecated coref-id). The anaphor designates the same
isa coref entity as the antecedent and the lexical noun is identical to that of the antecedent; if the
[187] antecedent NP contains attributives or other modifiers, these too must be identical in the
anaphor NP. In cases such as example 3., the apposition functions as antecedent:

$\text{Confusion}^{62}_{72.6\%/81.2\%/77.4\%}$: coref-iden$_{77.4\%}$ coref-var$_{16.7\%}$ coref$_{2.7\%}$ assoc-telic$_{1.6\%}$ assoc-const$_{1.6\%}$.

1.

	nobj			nobj	
...a	car...		**...the**	car...	
0	1		**2**	3	

coref–iden

2.

	attr	nobj		attr	nobj
...a	yellow	car...	**...the**	yellow	car...
0	1	2	**3**	4	5

coref–iden

3.

nobj · namef · appr · namef

...the genius Albert Einstein... ...Albert **Einstein...**
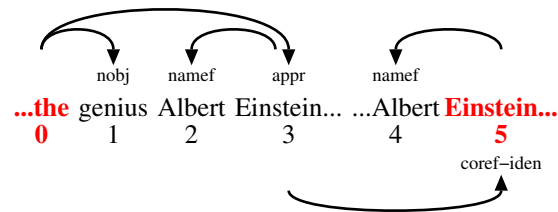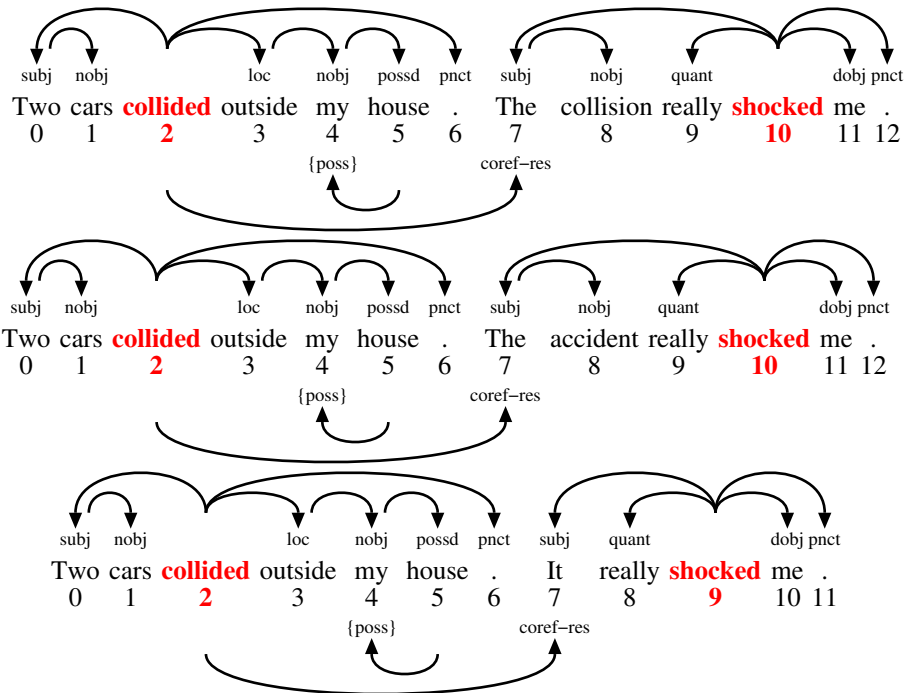**0**   1   2   3   4   **5**

coref−iden

---
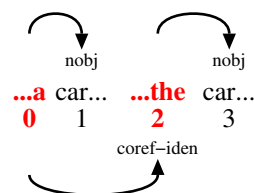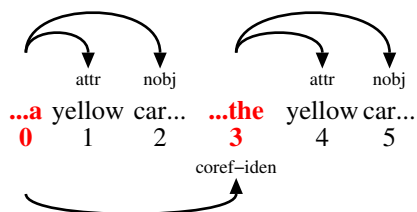
coref-res *Resumptive anaphor* (deprecated nowincludescoref-res.cause). The anaphor summarises a sentence,
isa coref clause or predicate
[189]

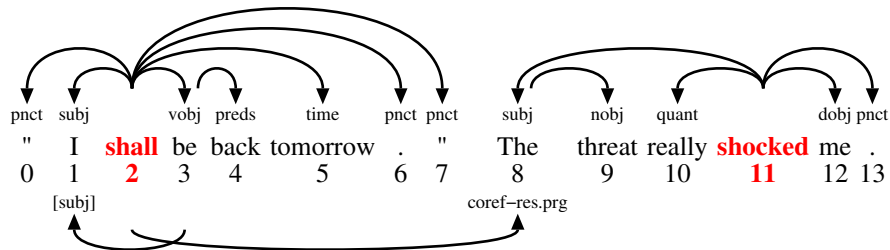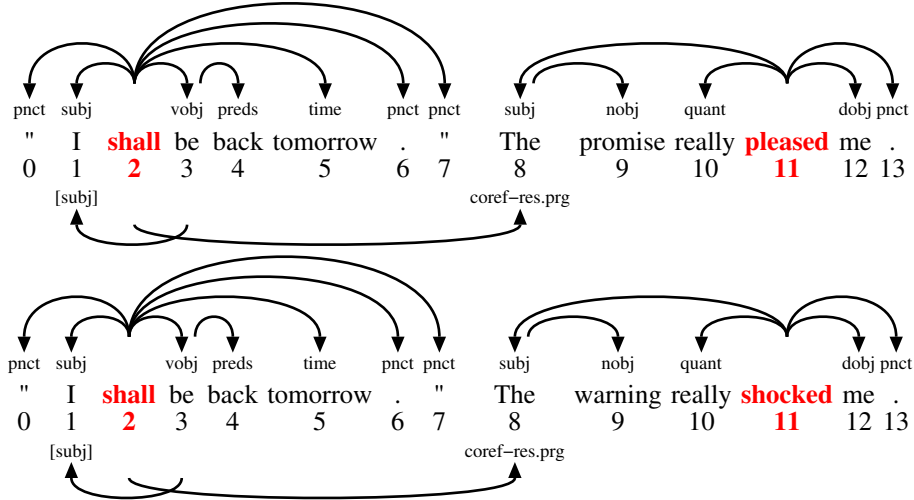Subtypes: coref-res.prg.

Confusion$_{63.4\%/69.1\%/74.3\%\%}^{35}$: coref-res$_{74.3\%}$ coref-var$_{11.4\%}$ coref$_{8.6\%}$ assoc-telic$_{2.9\%}$ ref$_{2.9\%}$.

subj nobj · loc nobj possd pnct · subj · nobj · quant · dobj pnct

Two cars **collided** outside my house . The collision really **shocked** me .
0   1   **2**   3   4   5   6   7   8   9   **10** 11 12

{poss}   coref−res

subj nobj · loc nobj possd pnct · subj · nobj · quant · dobj pnct

Two cars **collided** outside my house . The accident really **shocked** me .
0   1   **2**   3   4   5   6   7   8   9   **10** 11 12

{poss}   coref−res

subj nobj · loc nobj possd pnct · subj · quant · dobj pnct

Two cars **collided** outside my house . It really **shocked** me .
0   1   **2**   3   4   5   6   7   8   **9** 10 11

{poss}   coref−res

---

coref-res.prg *Pragmatic resumptive anaphor.* The anaphor summarises a sentence, clause or predicate and
isa coref-res evaluates it with respect to speech act
[190]

pnct subj · vobj preds time pnct pnct · subj · nobj · quant · dobj pnct

" I **shall** be back tomorrow . " The threat really **shocked** me .
0   1   **2**   3   4   5   6 7   8   9   10   **11** 12 13

[subj]   coref−res.prg

" I **shall** be back tomorrow . " The promise really **pleased** me .
0 1 **2** 3 4 5 6 7 8 9 10 **11** 12 13

pnct subj vobj preds time pnct pnct subj nobj quant dobj pnct
[subj]   coref−res.prg

" I **shall** be back tomorrow . " The warning really **shocked** me .
0 1 **2** 3 4 5 6 7 8 9 10 **11** 12 13

pnct subj vobj preds time pnct pnct subj nobj quant dobj pnct
[subj]   coref−res.prg

coref-var *Coreferential NP with lexical variety.* The anaphor designates the same entity as the an-
isa coref tecedent; the lexical noun and/or attributives or other modifiers are different from those of
[188] the antecedent

Confusion$^{144}_{59.5\%/72.5\%/73.7\%\%}$: coref-var$_{73.7\%}$ coref$_{10.8\%}$ coref-iden$_{7.2\%}$ assoc-const$_{4.2\%}$ coref-res$_{2.8\%}$ coref-evol$_{0.7\%}$ assoc-agentive$_{0.7\%}$.

nobj nobj attr nobj nobj
...a car... **...the** vehicle... **...a** yellow car... **...the** car...
0 1 **2** 3 **0** 1 2 **3** 4
coref−var coref−var

namef
...Albert **Einstein... ...Einstein...**
0 **1** **2**
coref−var
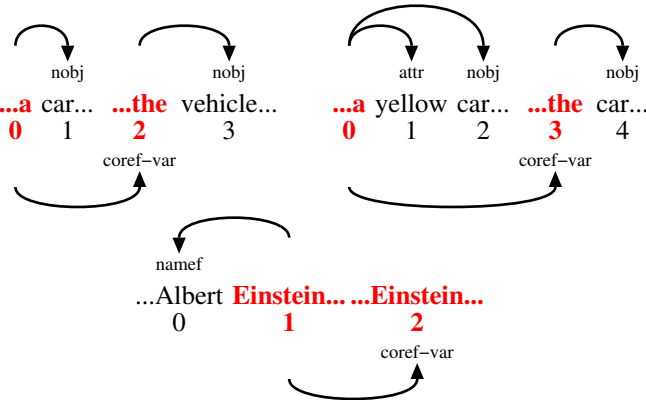
ref *Syntactically determined coreference* (long: _). Syntactically determined coreference (e.g. rel-
isa SEC coref ative pronouns, external topics). In the DG theory, "ref" is a shorthand for the label "[fobj]"
[184] with reversed direction of the arc, ie, a secondary filler object. It is typically used in relative
clauses with a relative pronoun, in which the relative pronoun "consumes" the filler for the
relativized noun generated by the relative verb.

Confusion$^{69}_{91.3\%/92.8\%/95.7\%\%}$: ref$_{95.7\%}$ coref$_{2.9\%}$ coref-res$_{1.4\%}$.

subj nobj dobj subj relr time preds
the car that John bought yesterday **was** yellow
0 1 2 3 4 5 **6** 7
ref
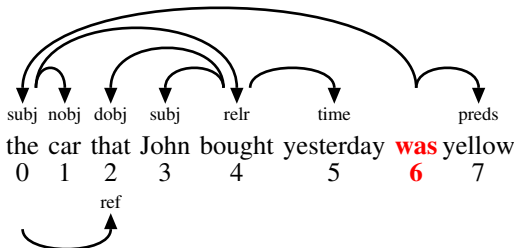
6.2 Associative anaphor relations: assoc

```
assoc: associative anaphor
    assoc-OTHER: other anaphoric relations
        assoc-event: associative anaphor (event)
        assoc-loc: associative anaphor (location)
        assoc-time: associative anaphor (time)
    assoc-QUALIA: associative anaphor wrt. qualia
        assoc-agentive: associative anaphor (agentive)
            assoc-agentive.agent: associative anaphor (agentive-agent)
            assoc-agentive.inst: associative anaphor (agentive-inst)
        assoc-const: associative anaphor (constitutive)
        assoc-formal: associative anaphor (formal)
        assoc-telic: associative anaphor (telic)
            assoc-telic.agent: associative anaphor (telic-agent)
            assoc-telic.exper: associative anaphor (telic-experiencer)
            assoc-telic.inst: associative anaphor (telic-instrument)
            assoc-telic.patient: associative anaphor (telic-patient)
            assoc-telic.rec: associative anaphor (telic-recipient)
    assoc-SEMROLE: associative anaphor wrt. semantic role
        assoc-agent: associative anaphor (agent)
        assoc-exper: associative anaphor (experiencer)
        assoc-inst: associative anaphor (instrument)
        assoc-patient: associative anaphor (patient)
        assoc-rec: associative anaphor (recipient)
```

Figure 6.3: The relations matching assoc-!CDT1-TOPIC.

assoc *Associative anaphor.* The anaphor designates an entity which is associated with the an-
isa anaphor tecedent
[193]
Subtypes: assoc-OTHER assoc-QUALIA assoc-SEMROLE.

Confusion$^6_{33.3\%/83.3\%/33.3\%\%}$: assoc-const$_{66.7\%}$ assoc$_{33.3\%}$.

assoc-OTHER *Other anaphoric relations.* These cases include for example locative relations (the anaphor is
isa assoc located in the antecedent), time relations (the anaphor expresses a point in time linked to the
[212] antecedent), and event relations (the anaphor designates an event in which the antecedent
plays a part).

Subtypes: assoc-event assoc-loc assoc-time.

assoc-event *Associative anaphor (event).* The anaphor is a predicate noun or similar which expresses an
isa assoc-OTHER event that can be associated with the antecedent or in which the antecedent plays a part
[215]
Confusion$^2_{100\%/100\%/100\%\%}$: assoc-event$_{100\%}$.
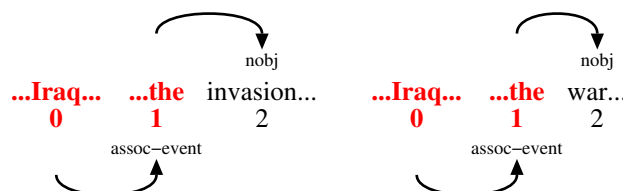
assoc-loc *Associative anaphor (location).* The anaphor is located in the antecedent
isa assoc-OTHER $\text{Confusion}^2_{0\%/100\%/0\%\%}$: $\text{assoc-const}_{100\%}$.
[213]
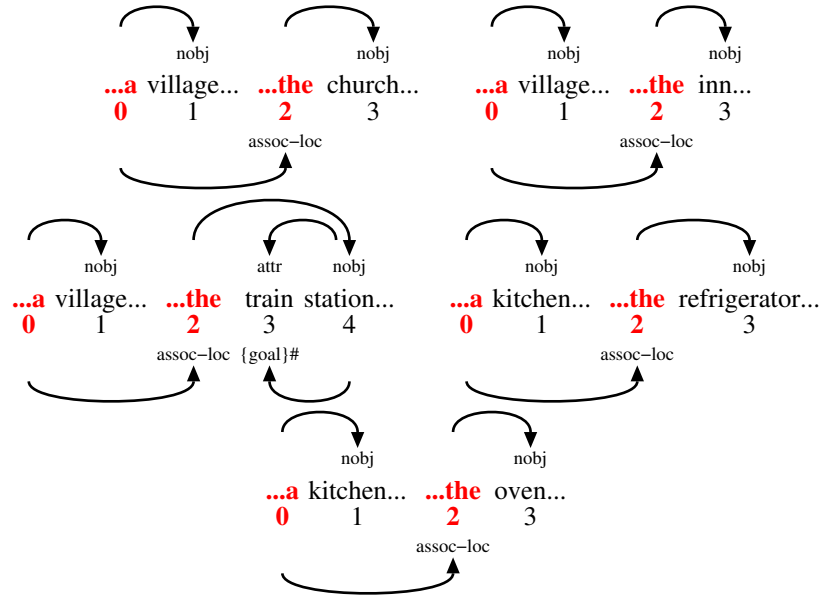
assoc-time *Associative anaphor (time).* The antecedent is a predicate or predicative noun, a time indi-
isa assoc-OTHER cation or a more general narrative frame, the anaphor expresses a point in time linked to it
[214]
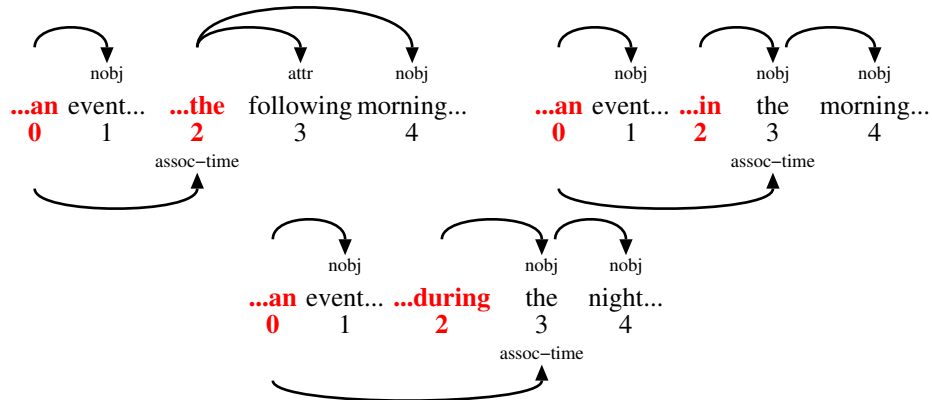
assoc-QUALIA *Associative anaphor wrt. qualia.* The anaphor denotes an entity which is associated with the
isa assoc antecedent with regard to the antecedent's qualia structure
[194]

Subtypes: assoc-agentive assoc-const assoc-formal assoc-telic.

assoc-agentive *Associative anaphor (agentive)* (deprecated `assoc-agent`?). The anaphor is associated with the
isa assoc-QUALIA antecedent wrt its agentive quale (the "bringing about" of the antecedent)
[197]

Subtypes: assoc-agentive.agent assoc-agentive.inst.
$\text{Confusion}^2_{50\%/100\%/50\%\%}$: $\text{coref-var}_{50\%}$ $\text{assoc-agentive}_{50\%}$.
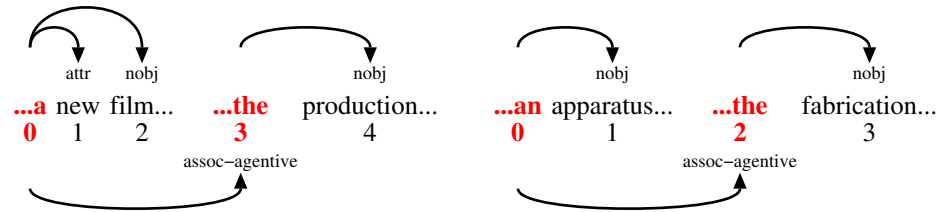
assoc-agentive.agent *Associative anaphor (agentive-agent).* The anaphor plays the semantic role of agent wrt the
isa assoc-agentive "bringing about" of the antecedent
[198] Related types: assoc-agentive.inst.
Confusion$_{0\%/66.7\%/0\%\%}^{3}$: assoc-telic$_{66.7\%}$ coref$_{33.3\%}$.
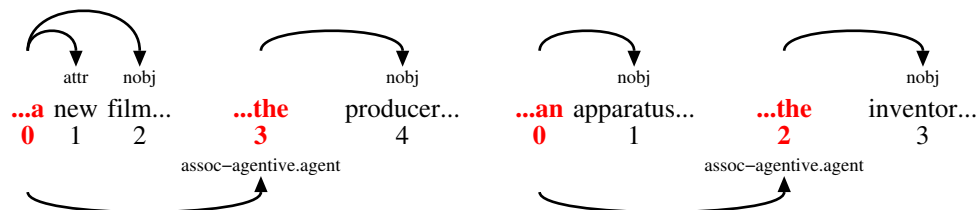
assoc-agentive.inst *Associative anaphor (agentive-inst).* The anaphor plays the semantic role of instrument wrt
isa assoc-agentive the "bringing about" of the antecedent
[199] Related types: assoc-agentive.agent.
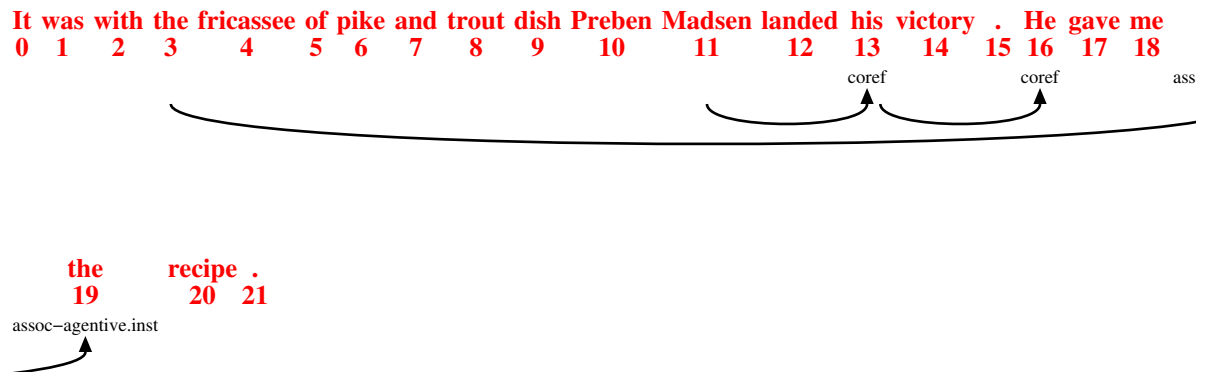
assoc-const *Associative anaphor (constitutive).* The anaphor is associated with the antecedent wrt its
isa assoc-QUALIA constitutive quale (parts, elements, material, etc.)
[195] Confusion$_{50\%/75\%/57.5\%\%}^{40}$: assoc-const$_{57.5\%}$ coref-var$_{15\%}$ assoc$_{10\%}$ assoc-telic$_{5\%}$ coref$_{5\%}$ assoc-loc$_{5\%}$ coref-iden$_{2.5\%}$
.

...a car... **...the** driver's seat...
0 · 1 · **2** · 3 · 4
nobj / nobj · possd
assoc−const · {goal}

...a bunch of flowers... **...the** roses...
0 · 1 · 2 · 3 · **4** · 5
nobj · pobj · nobj · nobj
{arg} · assoc−const

...a couple... **...the** man...
0 · 1 · **2** · 3
nobj · nobj
assoc−const
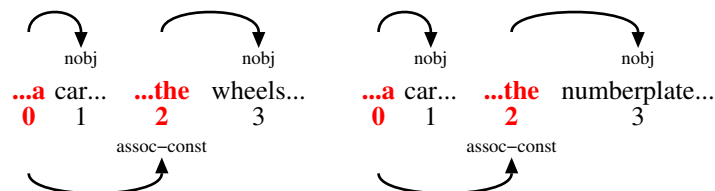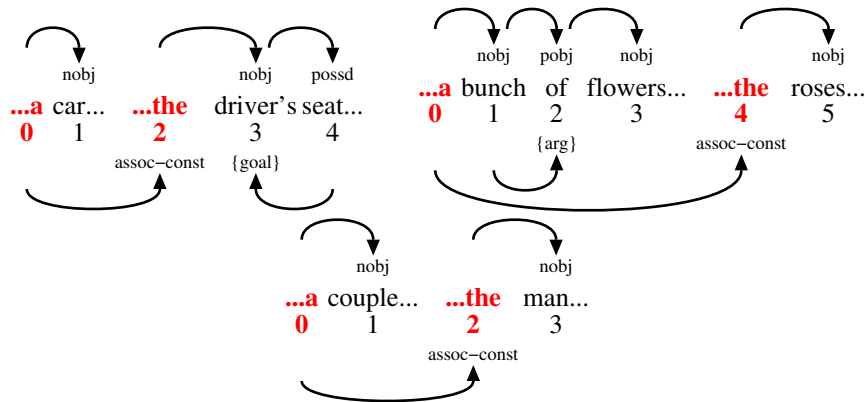
I have bought a bottle of wine. Do you want some of it?

Ho comprato una bottiglia di vino . Ne **vuoi** ?
I_have bought a bottle of wine . of_it **you_want** ?
0 · 1 · 2 · 3 · 4 · 5 · 6 · 7 · **8** · 9
vobj · dobj · nobj · pobj · nobj · pnct · pobj · pnct
{apart} · assoc−const

---
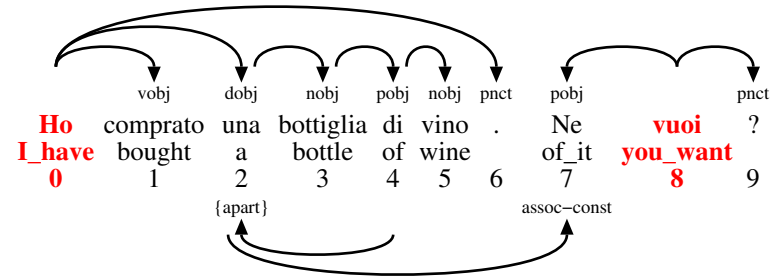
assoc-formal *Associative anaphor (formal).* The anaphor is associated with the antecedent wrt its formal
isa assoc-QUALIA quale (shape, dimension, colour, etc.)
[196] $\text{Confusion}^{1}_{100\%/100\%/100\%\%}$: assoc-formal$_{100\%}$.

...a car... **...the** size...
0 · 1 · **2** · 3
nobj · nobj
assoc−formal

...a car... **...the** colour...
0 · 1 · **2** · 3
nobj · nobj
assoc−formal

...a building... **...the** heigth...
0 · 1 · **2** · 3
nobj · nobj
assoc−formal

---
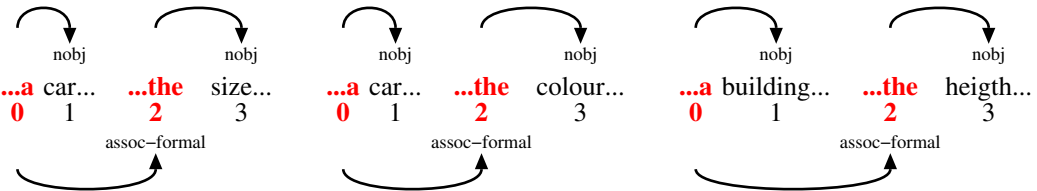
assoc-telic *Associative anaphor (telic)* (deprecated `assoc-scope?`). The anaphor is associated with antecedent
isa assoc-QUALIA wrt its telic quale (purpose, function, result, consequence etc.)
[200] Subtypes: assoc-telic.agent assoc-telic.exper assoc-telic.inst assoc-telic.patient assoc-telic.rec.
$\text{Confusion}^{25}_{40\%/76\%/56\%\%}$: assoc-telic$_{56\%}$ assoc-agentive.agent$_{8\%}$ assoc-telic.patient$_{8\%}$ assoc-const$_{8\%}$ assoc-telic.agent$_{8\%}$
coref-iden$_{4\%}$ assoc-telic.inst$_{4\%}$ coref-res$_{4\%}$.

...the invasion of Iraq... **...the** consequences...
0 · 1 · 2 · 3 · **4** · 5
nobj · pobj.dobj · nobj · nobj
{patient} · assoc−telic

...dancing... **...the** dance...
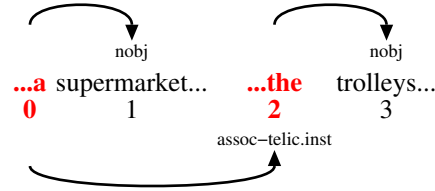**0** · **1** · 2
nobj
assoc−telic

---
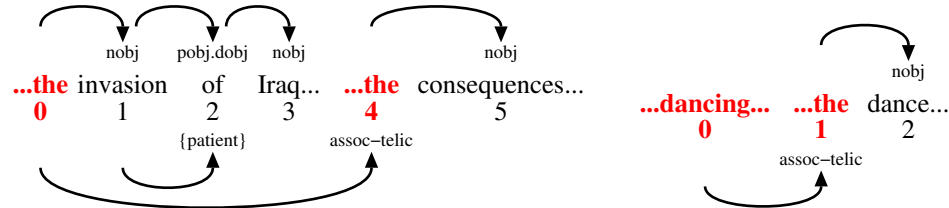
assoc-telic.agent *Associative anaphor (telic-agent).* The anaphor plays the semantic role of agent wrt the telic
isa assoc-telic quale of the antecedent (NB: the precise analysis of the semantic role will depend on the
[201] inferred predicate)
$\text{Confusion}^{2}_{0\%/100\%/0\%\%}$: assoc-telic$_{100\%}$.

...a car... **...the** driver...   ...an airplane... **...the** pilot...
nobj · nobj · nobj · nobj
assoc−telic.agent   assoc−telic.agent
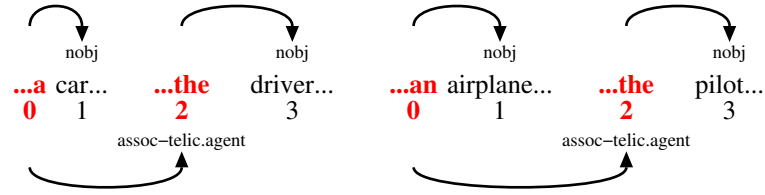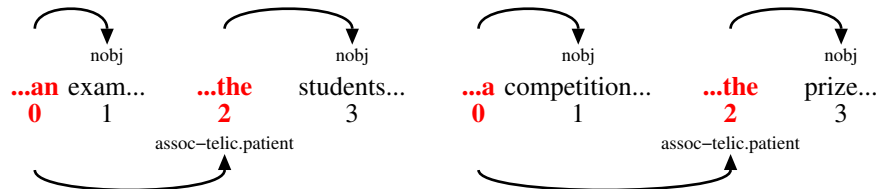
assoc-telic.exper
isa assoc-telic
[204]

Associative anaphor (telic-experiencer). The anaphor plays the semantic role of experiencer wrt the telic quale of the antecedent (NB: the precise analysis of the semantic role will depend on the inferred predicate)
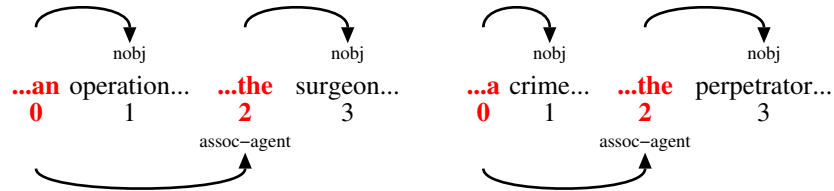

...a TV−film... **...the** viewers...
nobj · nobj
assoc−telic.exper
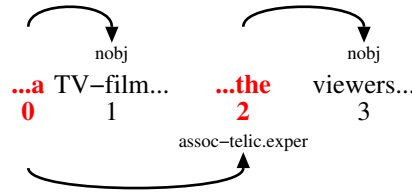
assoc-telic.inst
isa assoc-telic
[205]

Associative anaphor (telic-instrument). The anaphor plays the semantic role of instrument wrt the telic quale of the antecedent (NB: the precise analysis of the semantic role will depend on the inferred predicate)

$\text{Confusion}^1_{0\%/100\%/0\%\%}$: assoc-telic$_{100\%}$.

...a supermarket... **...the** trolleys...
nobj · nobj
assoc−telic.inst

assoc-telic.patient
isa assoc-telic
[202]

Associative anaphor (telic-patient). The anaphor plays the semantic role of patient wrt the telic quale of the antecedent (NB: the precise analysis of the semantic role will depend on the inferred predicate)

$\text{Confusion}^2_{0\%/100\%/0\%\%}$: assoc-telic$_{100\%}$.

...an exam... **...the** students...   ...a competition... **...the** prize...
nobj · nobj · nobj · nobj
assoc−telic.patient   assoc−telic.patient

assoc-telic.rec
isa assoc-telic
[203]

Associative anaphor (telic-recipient). The anaphor plays the semantic role of recipient wrt the telic quale of the antecedent (NB: the precise analysis of the semantic role will depend on the inferred predicate)

$$\text{...a}_0 \quad \text{newspaper...}_1 \quad \text{...the}_2 \quad \text{readers...}_3$$
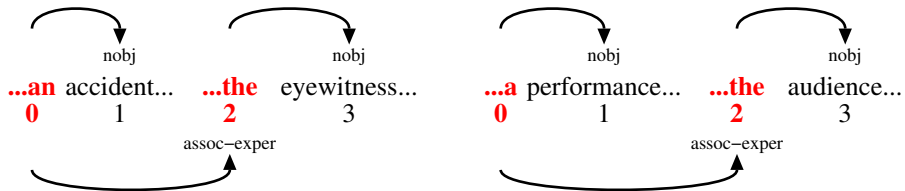nobj ... nobj ... assoc−telic.rec
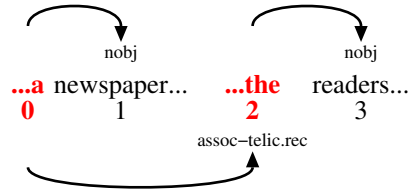
assoc-SEMROLE
isa assoc
[206]

Associative anaphor wrt. semantic role. The antecedent is a predicate or predicative noun, and the anaphor designates an entity or individual that plays a semantic role wrt the antecedent predication

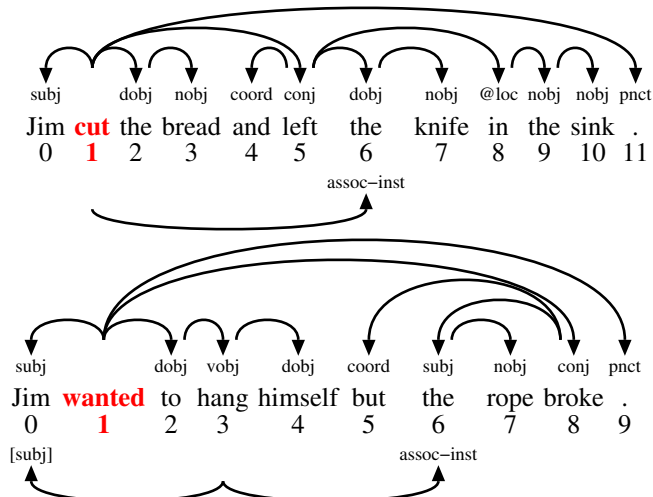Subtypes: assoc-agent assoc-exper assoc-inst assoc-patient assoc-rec.

assoc-agent
isa assoc-SEMROLE
[207]

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

...an operation... 0 1 ...the surgeon... 2 3 assoc−agent
...a crime... 0 1 ...the perpetrator... 2 3 assoc−agent

assoc-exper
isa assoc-SEMROLE
[210]

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

...an accident... 0 1 ...the eyewitness... 2 3 assoc−exper
...a performance... 0 1 ...the audience... 2 3 assoc−exper

assoc-inst
isa assoc-SEMROLE
[211]

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

Jim cut the bread and left the knife in the sink .
0 1 2 3 4 5 6 7 8 9 10 11
assoc−inst

Jim wanted to hang himself but the rope broke .
0 1 2 3 4 5 6 7 8 9
[subj] assoc−inst

65

assoc-patient *Associative anaphor (patient).* The antecedent is a predicate or predicative noun, and the
isa assoc-SEMROLE anaphor is the semantic patient
[208]
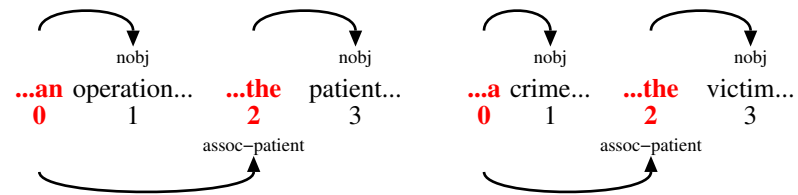
assoc-rec *Associative anaphor (recipient).* The antecedent is a predicate or predicative noun, and the
isa assoc-SEMROLE anaphor is the semantic recipient
[209]
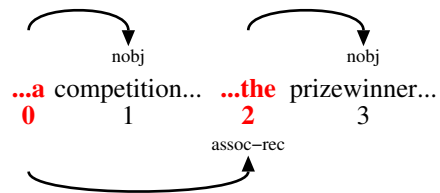
Chapter 7

Semantic relations: SEM

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

Figure 7.1: The relations matching SEM-!CDT1-!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.

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

Subtypes: QUALIA {about} {agent} {apart} {arg} {cause} {class} {const} {elab} {eval} {event} {experiencer} {form} {func} {goal} {iden} {location} {loc} {other} {patient} {poss} {quant} {recipient} {resem} {source} {time}.
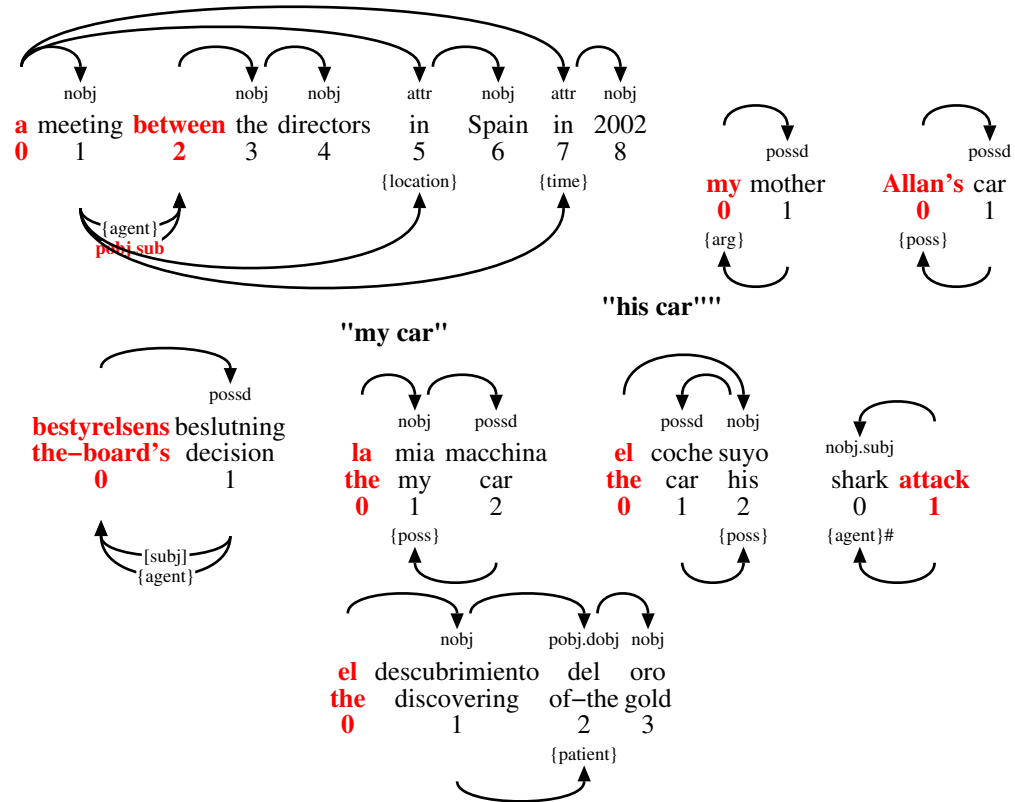
QUALIA
isa SEMREL
[30]

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
[62]

. Used in noun phrases where the modifier indicates the content or genre of the head, which typically denotes a semiotic artefact.

Confusion$_{41.7\%/100\%/41.7\%\%}^{12}$: {about}$_{41.7\%}$ {patient}$_{25\%}$ {arg}$_{16.7\%}$ {goal}$_{16.7\%}$.

{agent} *An object or a person that performs an action.* Used in noun phrases where the modifier is
isa SEMREL the object or the person that performs the volitional action indicated by the head.
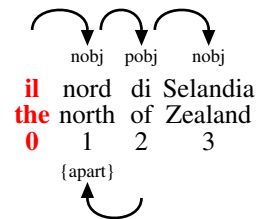[50] $\text{Confusion}^{30}_{53.3\%/100\%/53.3\%\%}$: {agent}$_{53.3\%}$ {arg}$_{36.7\%}$ {patient}$_{6.7\%}$ {goal}$_{3.3\%}$.

police **violence**
0   **1**

{agent}#

{apart} . Used in noun phrases where the modifier specifies an arbitary part of the head. Please note
isa SEMREL that the semantic relation goes from the modifier to the head in opposition to the main part
[63] of the other semantic roles.

$\text{Confusion}^{10}_{10\%/100\%/10\%\%}$: {quant}$_{90\%}$ {apart}$_{10\%}$.

Northern Zealand   **North America**

nobj   pobj   nobj

il   nord   di   Selandia
the north   of   Zealand
0   1   2   3

{apart}

pobj   nobj

America del nord
America of north
0   1   2

{apart}
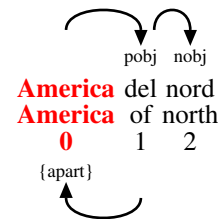
{arg} . Used in noun phrases with relational nouns.
isa SEMREL $\text{Confusion}^{86}_{52.3\%/98.8\%/52.3\%\%}$: {arg}$_{52.3\%}$ {agent}$_{12.8\%}$ {goal}$_{9.3\%}$ {loc}$_{5.8\%}$ {patient}$_{5.8\%}$ {poss}$_{4.7\%}$ {const}$_{3.5\%}$ {about}$_{2.3\%}$
[68]   {time}$_{1.2\%}$ {source}$_{1.2\%}$ {other}$_{1.2\%}$.

certain types of hardware   **the overall investment**

possd

John's mother
0   1

{arg}

nobj   nobj

gewissen Typen Hardware
certain types hardware
0   1   2

{arg}

nobj   pobj   nobj

il   totale   degli   investimenti
the total   of–the investments
0   1   2   3

{arg}

Denmark's attitude

nobj   gobj

die Haltung Dänemarks
the attitude Denmark's
0   1   2

{arg}

pobj   nobj

north of Copenhagen
0   1   2

{arg}
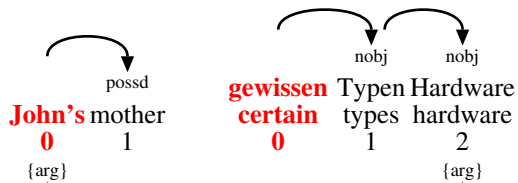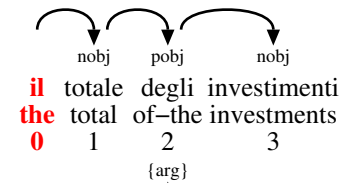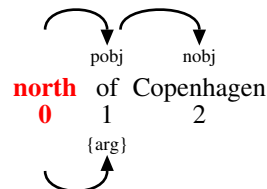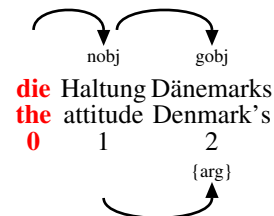
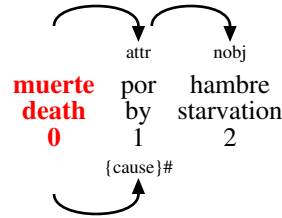**{cause}** . Used in noun phrases where the modifier is the person or object that performs the non-
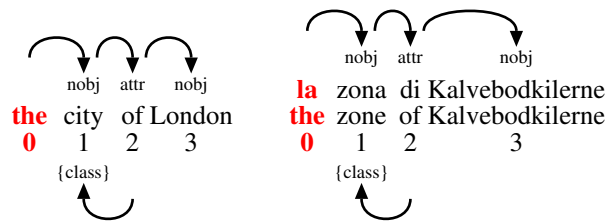isa SEMREL volitional action indicated by the head.
[53] $\text{Confusion}^{1}_{0\%/100\%/0\%\%}$: {goal}$_{100\%}$.

$$\overset{\displaystyle\frown}{\underset{\underset{\{cause\}\#}{\underbrace{}}}{\begin{array}{ccc} \text{attr} & & \text{nobj} \\ \textbf{\textcolor{red}{muerte}} & \text{por} & \text{hambre} \\ \textbf{\textcolor{red}{death}} & \text{by} & \text{starvation} \\ \textbf{\textcolor{red}{0}} & 1 & 2 \end{array}}}$$

{class} . Used in noun phrases where the modifier indicates the super type or classification of the
isa SEMREL head. Please note that the modifier is the semantic head of the NP in opposition to the main
[64] part of the other semantic roles.

Related types: {iden}.

Confusion$_{0\%/100\%/0\%\%}^{2}$: {other}$_{100\%}$.

$$\begin{array}{cccc} \text{nobj} & \text{attr} & \text{nobj} \\ \textbf{\textcolor{red}{the}} & \text{city} & \text{of London} \\ \textbf{\textcolor{red}{0}} & 1 & 2 & 3 \\ & \{class\} \end{array} \qquad \begin{array}{cccc} \text{nobj} & \text{attr} & & \text{nobj} \\ \textbf{\textcolor{red}{la}} & \text{zona} & \text{di} & \text{Kalvebodkilerne} \\ \textbf{\textcolor{red}{the}} & \text{zone} & \text{of} & \text{Kalvebodkilerne} \\ \textbf{\textcolor{red}{0}} & 1 & 2 & 3 \\ & \{class\} \end{array}$$

{const} . Used in noun phrases that expresses a part-whole or whole-part relation between the mod-
isa SEMREL ifier and the head or where the modifier denotes the material of or an essential constituent of
[49] the head.

Confusion$_{68\%/96\%/72\%\%}^{25}$: {const}$_{72\%}$ {arg}$_{12\%}$ {source}$_{8\%}$ {goal}$_{4\%}$ {poss}$_{4\%}$.

plastic lighter

$$\begin{array}{ccc} \text{attr} & \text{nobj} \\ \textbf{\textcolor{red}{mechero}} & \text{de} & \text{plástico} \\ \textbf{\textcolor{red}{lighter}} & \text{of} & \text{plastic} \\ \textbf{\textcolor{red}{0}} & 1 & 2 \\ & \{const\}\# \end{array} \qquad \begin{array}{cc} \text{attr} \\ \text{church} & \textbf{\textcolor{red}{tower}} \\ 0 & \textbf{\textcolor{red}{1}} \\ \{const\}\# \end{array}$$
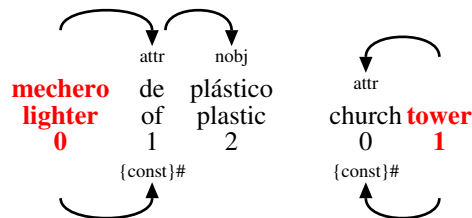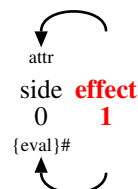
{elab} .
isa SEMREL Related types: modp.
[48] Confusion$_{100\%/100\%/100\%\%}^{3}$: {elab}$_{100\%}$.

{eval} . Used in noun phrases where there is a descriptive or evaluative relation between the mod-
isa SEMREL ifier and the head.
[60]

$$\begin{array}{cc} \text{attr} \\ \text{side} & \textbf{\textcolor{red}{effect}} \\ 0 & \textbf{\textcolor{red}{1}} \\ \{eval\}\# \end{array}$$

{event}
isa SEMREL
[59]

. Used in noun phrases where the modifier denotes an event rather than a location or temporal relation. Often used in connection with predicative head nouns.

Related types: {loc} {time}.
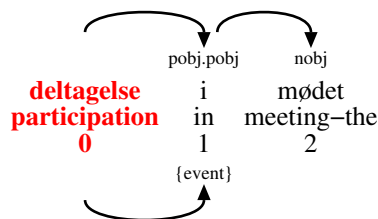
{experiencer}
isa SEMREL
[71]

The receiver of an emotion or a physical impact. Used in noun phrases with a predicative head. Most often the modifier functions as the logical direct object of the predicate and semantically as the experiencer of an emotion or physical impact.

{form}
isa SEMREL
[66]

. Used in noun phrases where the satellite indicates the shape or form of the nucleus.

$Confusion^3_{66.7\%/100\%/66.7\%\%}$: {form}$_{66.7\%}$ {loc}$_{33.3\%}$.
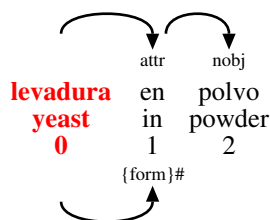
**baking powder**   **country ham in julienne strips**
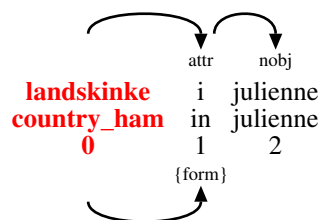
{func}
isa SEMREL
[55]

. Used in noun phrases where the satellite determinates the instrumental function of the nucleus.

$Confusion^4_{50\%/100\%/50\%\%}$: {goal}$_{50\%}$ {func}$_{50\%}$.
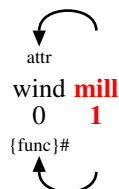
{goal}
isa SEMREL
[54]

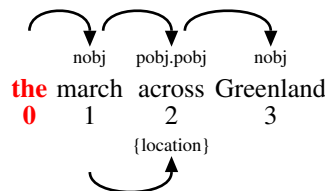. Used in noun phrases where the satellite determinates the goal or the intention for which the nucleus is destinated.

$Confusion^{48}_{54.2\%/97.9\%/56.3\%\%}$: {goal}$_{56.3\%}$ {arg}$_{16.7\%}$ {loc}$_{4.2\%}$ {func}$_{4.2\%}$ {about}$_{4.2\%}$ {cause}$_{2.1\%}$ {resem}$_{2.1\%}$ {const}$_{2.1\%}$ {agent}$_{2.1\%}$ {recipient}$_{2.1\%}$ {patient}$_{2.1\%}$ {other}$_{2.1\%}$.
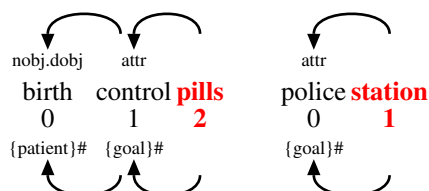
{iden}
isa SEMREL
[67]

. Used in noun phrases where the satellite indicates the identity of the nucleus. In this case it is also possible to equate the satellite to the nucleus i.e. that the nucleus represents the super type of the satellite.

Related types: {class}.

$$\text{rock } \overset{\text{attr}}{\underset{\{iden\}\#}{\mathbf{music}}}$$

{location}
isa SEMREL
[73]

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

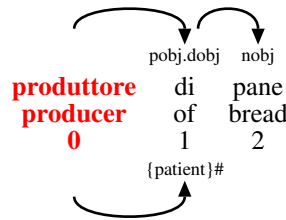Confusion$_{100\%/100\%/100\%\%}^{1}$: {location}$_{100\%}$.

{loc}
isa SEMREL
[57]

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

Related types: {event}.

Confusion$_{50\%/92.1\%/55.3\%\%}^{38}$: {loc}$_{55.3\%}$ {arg}$_{13.2\%}$ {source}$_{13.2\%}$ {goal}$_{5.3\%}$ {patient}$_{5.3\%}$ {form}$_{2.6\%}$ {other}$_{2.6\%}$ {poss}$_{2.6\%}$.

$$\text{floor } \overset{\text{attr}}{\underset{\{loc\}\#}{\mathbf{lamp}}}$$

{other}
isa SEMREL
[74]

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

Confusion$_{0\%/100\%/0\%\%}^{9}$: {poss}$_{33.3\%}$ {class}$_{22.2\%}$ {loc}$_{11.1\%}$ {quant}$_{11.1\%}$ {arg}$_{11.1\%}$ {goal}$_{11.1\%}$.

{patient}
isa SEMREL
[70]
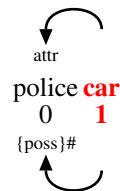
An object or a person that is the subject of the action or the one who is located somewhere. Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a direct object

Confusion$_{51.9\%/100\%/51.9\%\%}^{27}$: {patient}$_{51.9\%}$ {arg}$_{18.5\%}$ {about}$_{11.1\%}$ {loc}$_{7.4\%}$ {agent}$_{7.4\%}$ {goal}$_{3.7\%}$.

bread producer

$$\text{produttore} \quad \overset{\text{pobj.dobj}}{\text{di}} \quad \overset{\text{nobj}}{\text{pane}}$$

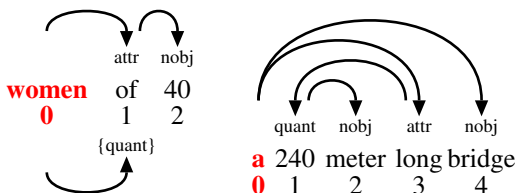| produttore	di	pane
producer	of	bread
0	1	2

{patient}#

{poss} . Used in noun phrases where there is a possession relation between the nucleus and the
isa SEMREL satellite. Often the satelitte is the owner or possessor of the nucleus.
[56] $\text{Confusion}^{14}_{21.4\%/92.9\%/28.6\%\%}$: {arg}$_{28.6\%}$ {poss}$_{28.6\%}$ {other}$_{21.4\%}$ {loc}$_{7.1\%}$ {const}$_{7.1\%}$ {source}$_{7.1\%}$.

attr

police **car**
0   **1**

{poss}#

{quant} . Used in noun phrases where the satellite indicates the quantity in numbers or another
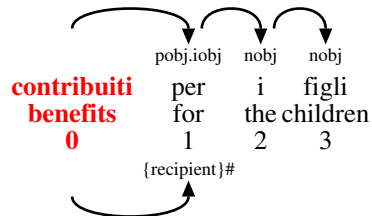isa SEMREL countable unit of the nucleus.
[65] $\text{Confusion}^{15}_{33.3\%/100\%/33.3\%\%}$: {apart}$_{60\%}$ {quant}$_{33.3\%}$ {other}$_{6.7\%}$.

	attr	nobj
women	of	40
0	1	2

{quant}

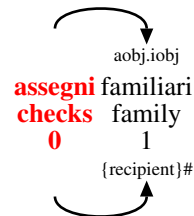|	quant	nobj	attr	nobj
a	240	meter	long	bridge
0	1	2	3	4

{recipient} *The receiver of something.* Used in noun phrases where there is a deverbal relation between
isa SEMREL the nucleus and the satellite. Often realized as an indirect object
[72] $\text{Confusion}^{1}_{0\%/100\%/0\%\%}$: {goal}$_{100\%}$.

child benefits

	pobj.iobj	nobj	nobj
contribuiti	per	i	figli
benefits	for	the	children
0	1	2	3

{recipient}#

child maintenance

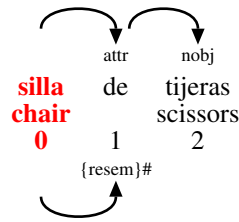|	aobj.iobj
assegni	familiari
checks	family
0	1

{recipient}#

{resem} . Used in noun phrases where there is a resemblance between the nucleus and the satellite.
isa SEMREL $\text{Confusion}^{2}_{50\%/100\%/50\%\%}$: {resem}$_{50\%}$ {goal}$_{50\%}$.
[61]

folding chair   **spring cabbage**

attr   nobj   attr

silla   de   tijeras   **cavolo** cappuccio
chair   scissors   **cabbage** hooded
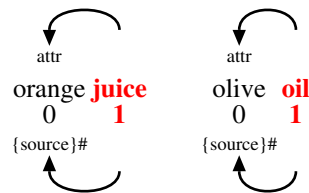**0**   1   2   **0**   1

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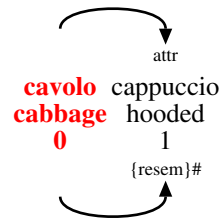
{source} (deprecated {origin}). Used in noun phrases where the satellite is the source from which the
isa SEMREL nucleus derives or is deduced.

[52] $Confusion^{16}_{31.3\%/75\%/37.5\%\%}$: {source}$_{37.5\%}$ {loc}$_{31.3\%}$ {const}$_{12.5\%}$ {time}$_{6.3\%}$ {arg}$_{6.3\%}$ {poss}$_{6.3\%}$.

attr   attr

orange **juice**   olive **oil**
0   **1**   0   **1**

{source}#   {source}#

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

[58] Related types: {event}.

$Confusion^{11}_{72.7\%/81.8\%/81.8\%\%}$: {time}$_{81.8\%}$ {arg}$_{9.1\%}$ {source}$_{9.1\%}$.

attr

november **rain**
0   **1**

{time}#

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-!CDT1.

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

[30]

Subtypes: agentive const formal resemblance telic.

agentive
isa QUALIA
[41]
Agentive qualia. A relation which describes the origin of an object. E.g., its creator, artifact, natural kind, causal chain (cf. Pustejovsky 1995).

const
isa QUALIA
[38]
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).

$\text{Confusion}^9_{0\%/100\%/0\%\%}$: $\text{ABOUT}_{33.3\%}$ $-_{22.2\%}$ $\text{CONST}_{22.2\%}$ $\text{MOD:qual}_{11.1\%}$ $\text{GOAL}_{11.1\%}$.

formal
isa QUALIA
[39]
Formal qualia. A property that distinguishes the object within a larger domain. E.g., its orientation, magnitude, shape, dimensionality, color, position (cf. Pustejovsky 1995).

Subtypes: location.

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

resemblance
isa QUALIA
[44]
Resemblance wrt. qualia role. Resemblance wrt. some qualia role

Subtypes: ""QUALIA.

""QUALIA
isa RULE resemblance
[45]
Resemblance wrt. $qualia relation.

telic
isa QUALIA
[40]
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).

Subtypes: about.

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

$\text{Confusion}^4_{25\%/100\%/25\%\%}$: $\text{ABOUT}_{75\%}$ $\text{about}_{25\%}$.

7.2 Thematic role relations: SEMROLE

Figure 7.3: The relations matching SEMROLE-!CDT1.

Chapter 8

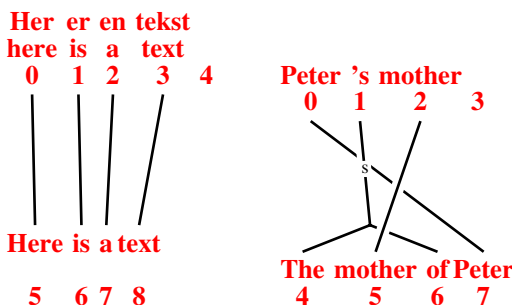# Word alignment relations: **ALIGN**

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

Figure 8.1: The relations matching ALIGN-!CDT1-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
[390]

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
[391]

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

Here is a car
0   1 2 3 4

f
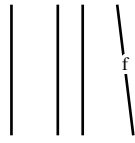
Here is a vehicle
5   6 7 8

Chapter 9

Rule schemata for complex relations: RULE

RULE: generative type specification rule
    ""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-!CDT1-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: ""QUALIA RuleAnd RuleAttr RuleAttrD RuleAttrH RuleDisc RuleExpConn RuleGap RuleIdiom RuleImpConn RuleMorph RuleOblAdv RuleOr RulePar RuleSec.

""QUALIA
isa RULE resemblance
[45]

Resemblance wrt. $qualia relation.

78

RuleAnd
isa RULE
[365]

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
[377]

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)
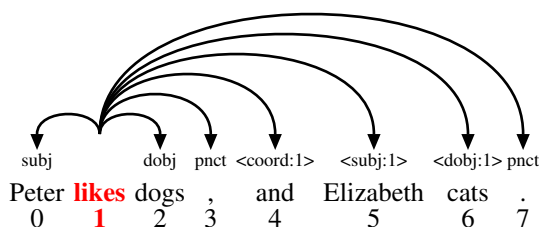
RuleAttrD
isa RULE
[379]

Down-dependent in attribution (long: DISC"*"). The dependent in the relation is one step further down in the attribution chain

RuleAttrH
isa RULE
[378]

Down-head in attribution (long: "*"DISC). The head in the relation is one step further down in the attribution chain
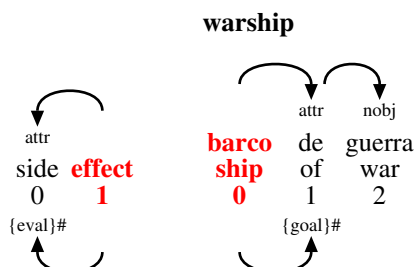
RuleDisc
isa DISC RULE
[372]

Syntactic discourse relation (long: "_"(PRIM)). A primary syntactic relation that has been used as a discourse relation for stilistic purposes.

RuleExpConn
isa RULE
[380]

Explicit connector (long: PRIM"/"CONNECTOR). The discourse relation has explicit connector $CONNECTOR

RuleGap
isa RULE gapd
[370]

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
[374]

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
isa RULE
[381]

Implicit connector (long: PRIM"/("CONNECTOR")"). The discourse relation has implicit connector $CONNECTOR

RuleMorph
isa MORPH RULE
[373]

Syntactic morphlogy relation (long: "_"(PRIM)). A primary syntactic relation that has been used as a morphology relation for stilistic purposes.

RuleOblAdv
isa COMP RULE
[371]

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.
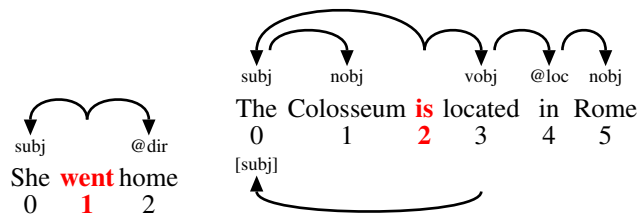
RuleOr
isa RULE
[366]

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.

RulePar
isa RULE
[367]

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.

RuleSec
isa RULE SEC
[369]

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

Related types: SEC.
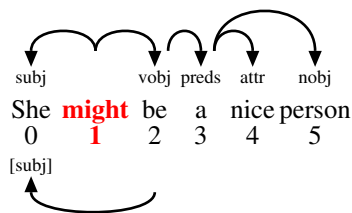
Chapter 10

Ontological relations: ONTO

ONTO: ontology level
    ONTOCLASS: ontological class
      _top: ontological entity
        _abstract: abstract entity
        _concrete: concrete entity

Figure 10.1: The relations matching ONTO-!CDT1-TOPIC.

ONTO
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 ONTO
[460]

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
[461]

Ontological entity.

Subtypes: _abstract _concrete.

_abstract
isa _top
[462]

Abstract entity.

_concrete
isa _top
[463]

Concrete entity.

Chapter 11

Deprecated relations from DDT: CDT1

CDT1: Deprecated CDT1 relations
    CDT1ADJ: Deprecated CDT1 adjunct relations
        err: Deprecated error relation.
        list: Deprecated list element.
        mod: modifier/adverbial
            modo: object-oriented modifier
            modp: parenthetic modifier
            modr: restrictive modifier
        mods:
        obl:
        rep:
    CDT1COMP: Deprecated CDT1 complement relations
        lobj: Deprecated locative object.
        tobj: Deprecated temporal object.
    CDT1GAP: Deprecated CDT1 gap relations
        <avobj>:
        <dobj>:
        <lobj>:
        <mod>:
        <nobj>:
        <pobj:nobj>:
        <pobj>:
        <possd>:
        <pred>:
        <qobj>:
        <subj:pobj>:
        <subj>:
        <vobj>:
        <xpl>:

Figure 11.1: The relations matching CDT1.

CDT1 *Deprecated CDT1 relations.* Deprecated relations from the CDT1+2 treebanks.
isa ANY
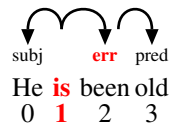[395]   Subtypes: CDT1ADJ CDT1COMP CDT1GAP.

CDT1ADJ *Deprecated CDT1 adjunct relations.* Deprecated adjunct relations from the CDT1+2 tree-
isa CDT1 SYNADJ
[397]

banks.

Subtypes: err list mod mods obl rep.

err
isa CDT1ADJ
[402]

Deprecated error relation.. Deprecated error relation. Used when connecting two phrases that do not fit together, often because of errors in the text.

list
isa CDT1ADJ
[401]

Deprecated list element.. Deprecated list element. Used when two or more phrases form a unit, but the internal structure is hard to analyze with the existing set of relations (eg, addresses, phone numbers, etc). The secondary elements are analyzed as list adjuncts of the first element.

mod
isa CDT1ADJ
[421]
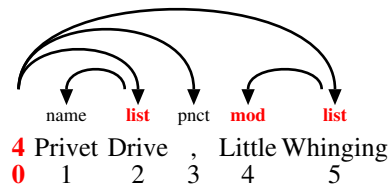
Modifier/adverbial. Deprecated name for adverbials

Subtypes: modo modp modr.

modo
isa mod
[424]

Object-oriented modifier. Deprecated name for object-oriented modifiers

modp
isa mod
[423]

Parenthetic modifier. Deprecated name for parenthetic modifiers

Related types: {elab}.

modr
isa mod
[422]

Restrictive modifier. Deprecated name for restrictive modifiers

mods
isa CDT1ADJ
[404]

.

obl
isa CDT1ADJ
[403]

.

rep
isa CDT1ADJ
[405]

.

CDT1COMP
isa CDT1 SYNCOMP
[396]

Deprecated CDT1 complement relations. Deprecated complement relations from the CDT1+2 treebanks.

Subtypes: lobj tobj.

lobj
isa CDT1COMP
[399]
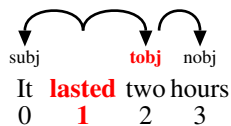
Deprecated locative object.. Deprecated locative object.
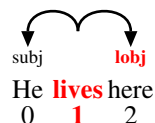
tobj *Deprecated temporal object..* Deprecated temporal object.
isa CDT1COMP
[400]

CDT1GAP *Deprecated CDT1 gap relations.* Deprecated gapping relations from the CDT1+2 treebanks.
isa CDT1 gapd
[398]

Subtypes: <avobj> <dobj> <lobj> <mod> <nobj> <pobj:nobj> <pobj> <possd> <pred> <qobj> <subj:pobj> <subj> <vobj> <xpl>.

<avobj> .
isa CDT1GAP
[419]

<dobj> .
isa CDT1GAP
[408]

<lobj> .
isa CDT1GAP
[411]

<mod> .
isa CDT1GAP
[401]

<nobj> .
isa CDT1GAP
[410]

<pobj:nobj> .
isa CDT1GAP
[418]

<pobj> .
isa CDT1GAP
[411]

<possd> .
isa CDT1GAP
[413]

<pred> .
isa CDT1GAP
[407]

<qobj> .
isa CDT1GAP
[415]

<subj:pobj> .
isa CDT1GAP
[417]

<subj> .
isa CDT1GAP
[409]

<vobj> .
isa CDT1GAP
[414]

<xpl> .
isa CDT1GAP
[416]

Chapter 12

Relations misplaced outside the ANY hierarchy

MISPLACED: misplaced relation
_interfix:

Figure 12.1: The relations matching -ANY.

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

_interfix .
[277]

Chapter 13

Annotation topics:: **TOPIC**

TOPIC: annotation topic
    %ALIGN: Alignment constructions
    %DISC: Discourse constructions
        %DISC:ANAPHORA:
    %MORPH: Morphological constructions
    %SEM: Semantic constructions
    %SYN: Syntactic constructions
        %SYN:FPRED: Free Predicatives
        %SYN:NP: Complex NP constructions
            %SYN:NP:CP: Compounds
            %SYN:NP:GEN: Genitive NP constructions
            %SYN:NP:MOD: NP-modifiers
                %SYN:NP:MOD:ADJ: Adjectives modifying a NP construction
                %SYN:NP:MOD:ADV: Adverbial modifying a NP construction
            %SYN:NP:RELN: NP constructions with relational nouns
            %SYN:NP:VRN: NP constructions with verb-related nouns
        %SYN:PP: PP constructions
        %SYN:VP: VP constructions
            %SYN:VP:PREDS: VP constructions with subject predicative
            %SYN:VP:VOBJ: VP constructions with a verbal object

Figure 13.1: The relations matching TOPIC-DIM.

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.

%ALIGN
isa TOPIC
[455]

Alignment constructions (long: %alignment).
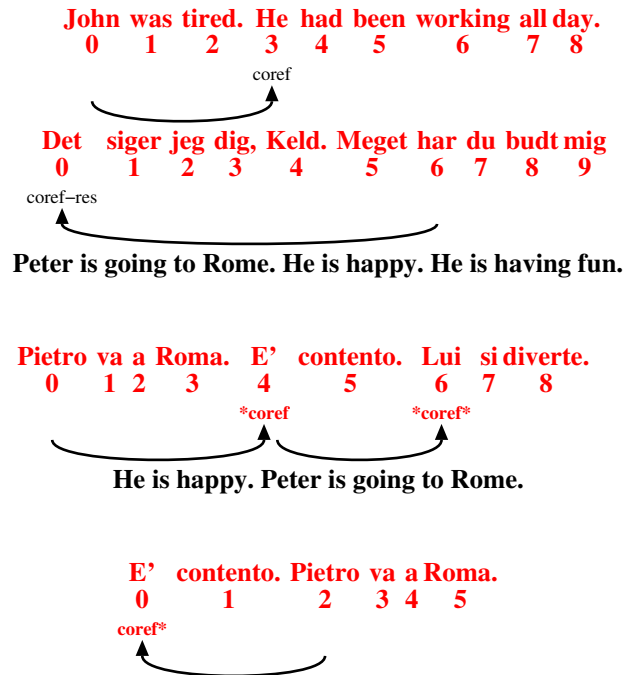
%DISC
isa TOPIC
[435]

Discourse constructions (long: %discourse).

Subtypes: %DISC:ANAPHORA.

%DISC:ANAPHORA
isa %DISC
[457]

(long: %anaphora). In the annotation of anaphors, the anaphor is dependent on the antecedent (see example). In the annotation of cataphors, the cataphor is dependent on the postcedent (see example). Cataphors are annotated with the same relations as anaphors.

In the Romance languages it is common to have finite verbs without any subjects. Secondary subject relations are added a "*" in front of the "[subj]" relation. The implicit subject in the finite verb is annotated as "*coref" when the subject is the antecedent, "*coref*" when the subject is the anaphor, and "coref*" when the subject is a cataphor. "$*coref" is used when no subject is explicited neither before nor after, i.e. when the finite verb refers to the reader/writer (Volvemos al debate sobre...)

John was tired. He had been working all day.
0   1   2   3   4   5   6   7 8
coref

Det siger jeg dig, Keld. Meget har du budt mig
0   1   2   3   4   5   6   7   8   9
coref–res

Peter is going to Rome. He is happy. He is having fun.

Pietro va a Roma. E' contento. Lui si diverte.
0   1 2   3   4   5   6   7   8
*coref   *coref*

He is happy. Peter is going to Rome.

E' contento. Pietro va a Roma.
0   1   2   3 4   5
coref*

%MORPH   *Morphological constructions* (long: %morphology). Some of the results of the meeting held on
isa TOPIC   17.06.10. These are the new principles of how to annotate complex compounds and words
[434]   containing interfixes or another nuclearity change

sommerhuskøbsaftale|cottage deed

aftal +e/DERvn:patient −[køb@V /DERvn:core [hus −sommer/TIME]/DOBJ.patient]s/ABOUT
 0   1   2   3   4   5
  aftaler   **disappeared**

 aftal +e/DERvn:core ~r   **aftal +e/DERvn:core ~n**   **appear −dis/NEG:rev ~ed**
 0   1   2   0   1   2   0   1   2
  drab|kill   **blegne|fade**

 dræb !!ab/DERvn:core   **foreslå !!!!slag/DERvn:core ~et**   **bleg +ne/DERav**
 0   1   0   1   2   0   1
                              compra|purchase

 comprar !! +a/DERvn:core
 0   1   2

87

healthy

0   1   2   3   4   5   6   7

X (!*)(interfix)?(suffix)?

0   **1**

%SEM *Semantic constructions* (long: %semantics).

isa TOPIC

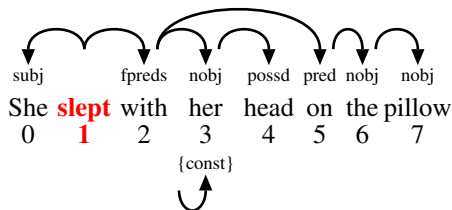[431]

%SYN *Syntactic constructions* (long: %syntax).

isa TOPIC   Subtypes: %SYN:FPRED %SYN:NP %SYN:PP %SYN:VP.

[433]

%SYN:FPRED *Free Predicatives* (long: %freepredicatives).

isa %SYN

[453]

subj   fpreds   nobj   possd pred nobj   nobj

She **slept** with   her   head on the pillow

0   1   2   3   4   5   6   7

{const}

%SYN:NP *Complex NP constructions* (long: %np). A detailed description of how different complex NP

isa %SYN   constructions are annotated. En general, all complex NP constructions have a syntactic as

[438]   well a semantic annotation.

Subtypes: %SYN:NP:CP %SYN:NP:GEN %SYN:NP:MOD %SYN:NP:RELN %SYN:NP:VRN.

example1   **example2**

0   **0**

%SYN:NP:CP *Compounds* (long: %np_compounds).

isa %SYN:NP

[444]

%SYN:NP:GEN *Genitive NP constructions* (long: %genitives). In genitive constructions (X's Y) the dependent

isa %SYN:NP   (Y) is always annotated as "possd" in the syntactic annotation. In the semantic annotation

[445]   X is analysed as the dependent and the semantic relation annotated depends on the type

of noun or entity represented by Y. The "s" functions as a determiner, thus attributives are

annotated as dependents to the X, with the exception of compounds of the type [Adj. ø N]#

(Lotte's green card) Genitive constructions with verb-related nouns: Genitive constructions

with relational nouns: Other genitive constructions:

%SYN:NP:MOD *NP-modifiers* (long: %np_modifiers).

isa %SYN:NP   Subtypes: %SYN:NP:MOD:ADJ %SYN:NP:MOD:ADV aobj attr.

[439]

%SYN:NP:MOD:ADJ *Adjectives modifying a NP construction* (long: %np_adjectives). Adjectives modifying a NP

isa %SYN:NP:MOD   construction are annotated using the syntactic label "attr" when the adjective functions as a

[440]   syntactic adjunct, or "aobj" when the adjective modifies a verb-related or relational noun. In

the analysis of Germanic languages, the adjective is analysed as a dependent of the pronoun

where it is present, and as a dependent of the noun otherwise, whereas in the analysis of

Romanic languages the adjective is always analysed as a dependent of the noun. However,

when forming part of a compound of the type [Adj. ø N#] (e.g. "high school") the adjective is

always analysed as dependent on the noun. In the case of relational adjectives, the semantic

relation between the noun and adjective is also annotated. In the semantic annotation, the adjective is always analysed as a dependent of the noun.

%SYN:NP:MOD:ADV *Adverbial modifying a NP construction* (long: %np_adverbials).
isa %SYN:NP:MOD

%SYN:NP:RELN *NP constructions with relational nouns* (long: %np_relational).
isa %SYN:NP

%SYN:NP:VRN *NP constructions with verb-related nouns* (long: %np_deverbal).
isa %SYN:NP

%SYN:PP *PP constructions* (long: %pp). When the complement in a PP consists of a noun or a pronoun
isa %SYN the complement is annotated as "nobj". In the Romance languages, when an infinit verb
[451] functions as the complement of a preposition, the infinite is annotated as "vobj". In English, where the preposition can take an "ing-form" of the verb as it's complement, the verb is annotated as "nobj". In Danish, a preposition can take an infinitive with an infinitive marker as is complement. In these constructions the infinitive marker "at" is annotated as "nobj" (complement) to the preposition and the infinitive as "vobj" to the infinitive marker.

%SYN:VP *VP constructions* (long: %vp).
isa %SYN
[448] Subtypes: %SYN:VP:PREDS %SYN:VP:VOBJ.

%SYN:VP:PREDS *VP constructions with subject predicative* (long: %subjectpredicatives). Passive sentences The
isa %SYN:VP participle in passive sentences (e.g. The book is printed in Copenhagen) is always annotated
[449] as "preds". In Danish passive sentences with compound tense (er/var blevet) "blevet" is annotated as vobj to the finite verb and the participle as preds to "blevet" (example 2). Note that the Danish verb "være" can also be used in passive sentences with transitive verbs, probably as a variant of "være +blevet" (example 3: Bogen er (blevet) trykt i København). In this case the participle is annotated as preds according to the annotation of participles in passive sentences with the verb "blive". In italian passive sentences with compound tense, "stata/stato" is annotated as vobj to the finite verb in spite of it's concord inflection, whereas the participle following "stata/stato" is annotated as preds (example 4) This annotation of the passive sentences allows direct and indirect complements as well as adjuncts (e.g. "agent"-adverbs) to be analysed as dependent on the subject predicative.

Special constructions with free predicatives (example) (Hun skjulte med en rødmen i kinderne ansigtet i sin hænder; Han arbejdede med hænderne i lommen)
Related types: %SYN:VP:VOBJ.

1. The Government was beaten by the Opposition

subj		preds	agent	nobj
Regeringen	**blev**	slået	af	oppositionen
government_the	**was**	beaten	by	opposition_the
0	**1**	2	3	4

2. The Government has been beaten by the Opposition

subj		vobj	preds	agent	nobj
Regeringen	**er**	blevet	slået	af	oppositionen
government_the	**is**	been	beaten	by	opposition_the
0	**1**	2	3	4	5
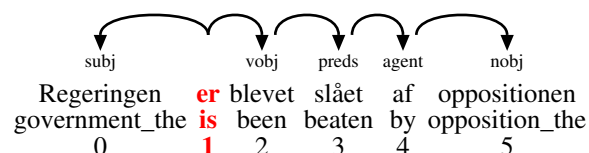
3. The book is printed in Copenhagen

4. The door has been opened by Luisa

subj	preds	loc		nobj

Bogen **er** trykt i København
book_the **is** printed in Copenhagen
0 **1** 2 3 4

subj	nobj	vobj	preds	agent	nobj

La porta **é** stata aperta da Luisa
The door **is** been opened by Luisa
0 1 **2** 3 4 5 6

subj | fpreds | nobj | possd | preds | nobj | nobj

She **slept** with her head on the pillow
0 **1** 2 3 4 5 6 7
{const}

subj | preds

Peter **is** gone
0 **1** 2
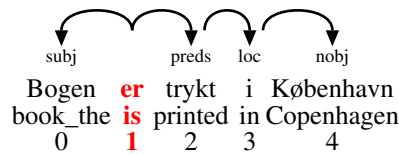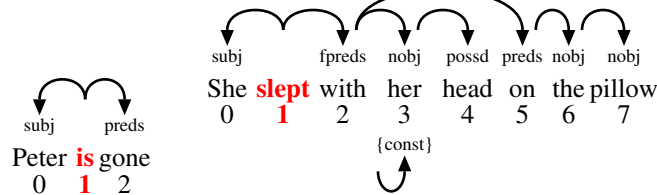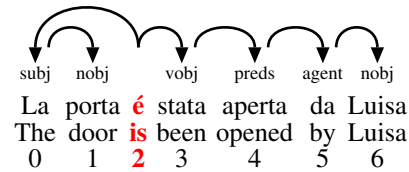
%SYN:VP:VOBJ
isa %SYN:VP
[450]

VP constructions with a verbal object (long: %verbalobjects). In compound tenses the infinite verb(s) are annotated as vobj.Note that in Danish, both the verb "have" and "være" are used as an aux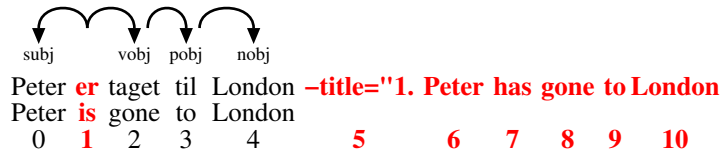iliary verb in the compound tenses. The verb "være" is used as an auxiliary verb in constructions with intransitive verbs of movement.Normally the verb "være" takes a subject complement or predicative, but when used as an auxiliary verb, the participle is annotated as vobj and not preds (example 1). In italian passive sentences with compound tense, "stata/stato" is annotated as vobj to the finite verb in spite of it's concord inflection, whereas the participle following "stata/stato" is annotated as preds (example 2) (see also %SYN:VP:PREDS)
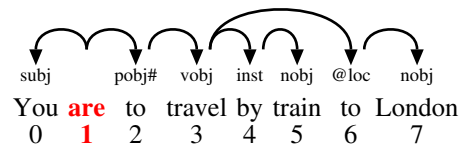
In verbal periphrases with copula verbs (e.g. English: be +x-ing; Spanish: estar +gerund) the infinite verb is annotated as vobj to the finite verb.

Special constructions (see examples) English: obligation/future: "you are to…" (see example) "#" marks the periphrastic nature of the verbal. (0152: Now muscles were to be used)

Related types: %SYN:VP:PREDS.

subj	vobj	pobj	nobj

Peter **er** taget til London **–title="1. Peter has gone to London**
Peter **is** gone to London
0 **1** 2 3 4 **5 6 7 8 9 10**

2. The door has been opened by Luisa

subj	nobj	vobj	preds	agent	nobj

La porta **é** stata aperta da Luisa
The door **is** been opened by Luisa
0 1 **2** 3 4 5 6

subj	pobj#	vobj	inst	nobj	@loc	nobj

You **are** to travel by train to London
0 **1** 2 3 4 5 6 7
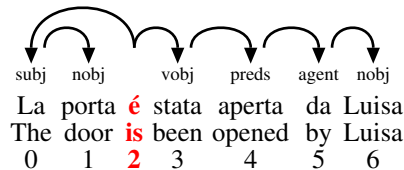
Appendix A

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
    CDT1: Deprecated CDT1 relations
    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-!CDT1.

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

The relations matching
DIM:LEVEL-!SYNTAX-!MORPH-!DISC-!ANA-!SEM-!ALIGN-!ONTO-!RULE-!TOPIC-!CDT1.

```
DIM:TYPE: dimension: annotation type
    FEAT: lexical feature
    REL: directed bilexical relation
        IDIOM: idiomatic relation
            RuleIdiom: idiomatic relation pattern
        LAND: landing relation
            fill: licensed filler
            land: landed lexical element
        PRIM: primary dependency relation
            +: segment concatenation
            ADJ: adjunct relation
            COMP: complement relation
                RuleOblAdv: valency-bound adverbial
        SEC: secondary dependency relation
            RuleSec: secondary relation pattern
            repl: replacement in gapping coordination
```

The relations matching
DIM:TYPE-!SYNTAX-!MORPH-!DISC-!ANA-!SEM-!ALIGN-!ONTO-!TOPIC-!CDT1.

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

The relations matching SYNTAX-!SYNCOMP-!SYNADJ-!CDT1-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-!CDT1-TOPIC.

```
SYNADJ: syntactic adjunct
    ADVERB: adverbial
    app: apposition
        appa: parenthetic apposition (comma)
            xpl: explication
        appr: restrictive apposition (no comma)
    attrg: genitive attributive
    conj: conjunct relation
    coord: coordinator relation
    correl: correlative coordinator relation
    fpred: free predicative
        fpredo: free direct-object predicative
        fpreds: free subject predicative
    gapd: gapping dependent
        RuleGap: gapping dependent
    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-!CDT1-!ADVERB-TOPIC.

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

The relations matching ADVERB-!CDT1-TOPIC.

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

The relations matching MORPH-!CDT1-!MORPHCOMP-!MORPHDERIV-TOPIC.

```
MORPHCOMP: compositional semantic relations
    _ABOUT: noun-noun compound (about)
    _AGENT:MC: noun-noun compound (agentive)
    _CONST: noun-noun compound (constitutive)
    _DOBJ.patient:
    _EVAL: noun-noun compound (evaluative)
    _FUNC: noun-noun compound (function)
    _GOAL: noun-noun compound (goal)
    _LOC: noun-noun compound (position)
    _OTHER: noun-noun compound (other)
    _POSS: noun-noun compound (possession)
    _RESEM: noun-noun compound (resemblance)
    _SOURCE: noun-noun compound (origin)
    _TIME:MC: noun-noun compound (time)
```

The relations matching MORPHCOMP-!CDT1-TOPIC.

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

The relations matching MORPHDERIV-!CDT1-!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
```

```
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
        _DERva: verb-adjective derivation
            _DERva:act: verb-adjective derivation (pure)
                _DERva:act.disp: verb-adjective derivation (disposition)
                _DERva:act.epi: verb-adjective derivation (potentiality)
            _DERva:pas: verb-adjective derivation (passive)
                _DERva:pas.deon: verb-adjective derivation (passive deontic)
                _DERva:pas.epi: verb-adjective derivation (passive potentiality)
                _DERva:pas.part: verb-adjective derivation (passive participles)
        _DERvn: verb-noun derivation
            _DERvn:agent: verb-noun derivation (agent)
            _DERvn:core: verb-noun derivation (core)
            _DERvn:exper: verb-noun derivation (experiencer)
            _DERvn:loc: verb-noun derivation (location)
            _DERvn:other: verb-noun derivation (other)
            _DERvn:patient: verb-noun derivation (patient)
            _DERvn:recip: verb-noun derivation (recipient)
        _DERvv: verb-verb derivation
    _DERan:qual: adjective derivation
    _DERna: noun-adjective derivation
        _DERna:deono: noun-adjective derivation (naming)
            _DERna:deono.loc: noun-adjective derivation (naming places)
            _DERna:deono.pers: noun-adjective derivation (naming persons)
        _DERna:disp: noun-adjective derivation (disposition)
        _DERna:other: noun-adjective derivation (other)
        _DERna:poss: noun-adjective derivation (possession)
        _DERna:rel: noun-adjective derivation (relational)
            _DERna:rel.norm: noun-adjective derivation (normal)
        _DERna:resem: noun-adjective derivation (resemblance)
        _DERna:telic: noun-adjective derivation (effect)
    _DERnn: noun-noun derivation
        _DERnn:agent: noun-noun derivation (agent)
        _DERnn:assoc: noun-noun derivation (association)
        _DERnn:capac: noun-noun derivation (capacity)
        _DERnn:cont: noun-noun derivation (container)
        _DERnn:loc: noun-noun derivation (location)
        _DERnn:other: noun-noun derivation (other)
        _DERnn:quant: noun-noun derivation (quantification)
        _DERnn:telic: noun-noun derivation (telic)
        _DERnn:time: noun-noun derivation (time)
    _DERv:
    _DIMIN: diminution
    _PEJ: pejoration
```

The relations matching SUFFIX-!CDT1-TOPIC.

```
DISC: discourse level
    DISCOTHER: other discourse relations
        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 DISC-!CDT1-!DISCFUNC-!DISCSEM-TOPIC.

```
DISCPRAG: pragmatic and illocutionary discourse relations
    ANSW: answer
    CONSOL: consolidation
        CONSOL:inst: instrumental
        CONSOL:motiv: motivation
        CONSOL:source: source
    DIREC: directive act
    EXPR: expressive act
    INTACT: interaction signals
        INTACT:attn: attention
        INTACT:inter: interruption
        INTACT:start: start signal
        INTACT:stop: stop
    QUEST: question
```

The relations matching DISCFUNC-!CDT1-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: conjunction, sequence
    CONST: constitutive elaboration relation
        CONST:apart: part of relation
        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/goal 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-!CDT1-TOPIC.

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

The relations matching ANA-!CDT1-!coref-!assoc-TOPIC.

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

The relations matching coref-!CDT1-TOPIC.

```
assoc: associative anaphor
    assoc-OTHER: other anaphoric relations
        assoc-event: associative anaphor (event)
        assoc-loc: associative anaphor (location)
        assoc-time: associative anaphor (time)
    assoc-QUALIA: associative anaphor wrt. qualia
        assoc-agentive: associative anaphor (agentive)
            assoc-agentive.agent: associative anaphor (agentive-agent)
            assoc-agentive.inst: associative anaphor (agentive-inst)
        assoc-const: associative anaphor (constitutive)
        assoc-formal: associative anaphor (formal)
        assoc-telic: associative anaphor (telic)
            assoc-telic.agent: associative anaphor (telic-agent)
            assoc-telic.exper: associative anaphor (telic-experiencer)
            assoc-telic.inst: associative anaphor (telic-instrument)
            assoc-telic.patient: associative anaphor (telic-patient)
            assoc-telic.rec: associative anaphor (telic-recipient)
    assoc-SEMROLE: associative anaphor wrt. semantic role
        assoc-agent: associative anaphor (agent)
        assoc-exper: associative anaphor (experiencer)
        assoc-inst: associative anaphor (instrument)
        assoc-patient: associative anaphor (patient)
        assoc-rec: associative anaphor (recipient)
```

The relations matching assoc-!CDT1-TOPIC.

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

The relations matching SEM-!CDT1-!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-!CDT1.

The relations matching SEMROLE-!CDT1.

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

The relations matching ALIGN-!CDT1-TOPIC.

```
RULE: generative type specification rule
    ""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-!CDT1-TOPIC.

```
ONTO: ontology level
    ONTOCLASS: ontological class
        _top: ontological entity
            _abstract: abstract entity
            _concrete: concrete entity
```

The relations matching ONTO-!CDT1-TOPIC.

```
CDT1: Deprecated CDT1 relations
    CDT1ADJ: Deprecated CDT1 adjunct relations
        err: Deprecated error relation.
        list: Deprecated list element.
        mod: modifier/adverbial
            modo: object-oriented modifier
            modp: parenthetic modifier
            modr: restrictive modifier
        mods:
        obl:
        rep:
    CDT1COMP: Deprecated CDT1 complement relations
        lobj: Deprecated locative object.
        tobj: Deprecated temporal object.
    CDT1GAP: Deprecated CDT1 gap relations
        <avobj>:
        <dobj>:
        <lobj>:
        <mod>:
        <nobj>:
        <pobj:nobj>:
        <pobj>:
        <possd>:
        <pred>:
        <qobj>:
        <subj:pobj>:
        <subj>:
        <vobj>:
        <xpl>:
```

The relations matching CDT1.

```
MISPLACED: misplaced relation
_interfix:
```

The relations matching -ANY.

Appendix B

Agreement and confusion tables

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

- *Relation name R:* the name of the relation.

- *Full labeled agreement A:* the probability that another annotator assigns the same label and out-node to the relation.

- *Unlabeled agreement A_U:* the probability that another annotator assigns the same out-node (but not necessarily label) to the relation.

- *Label agreement A_L:* the probability that another annotator assigns the same label (but not necessarily out-node) to the relation.

- *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.

Agreement is computed differently for morphology than for the other linguistic levels (by comparing label sequences), and the scores for morphology are therefore used differently: in particular, $A = A_L$ always denotes the probability that the other annotator selects the same label in the sequence of labels (but no claim about outnode), and $A_U = 100\%$ always because out-nodes cannot be compared.

B.1   Confusion table: syntax

R	N	$A/A_U/A_L$	Confusion list
numm	1	100/100/100%	numm$_{100\%}$
voc	1	100/100/100%	voc$_{100\%}$
xtop	2	100/100/100%	xtop$_{100\%}$
namef	44	98/98/100%	namef$_{100\%}$
subj	383	97/98/98%	subj$_{98\%}$ nobj$_{1\%}$ preds$_{1\%}$ appr$_{0\%}$ expl$_{0\%}$
possd	69	95/95/98%	possd$_{98\%}$ nobj$_{1\%}$ pnct$_{1\%}$
expl	18	94/100/94%	expl$_{94\%}$ subj$_{6\%}$
neg	24	92/96/96%	neg$_{96\%}$ eval$_{4\%}$
appa	11	91/91/100%	appa$_{100\%}$

nobj	881	91/95/92%	$\text{nobj}_{92\%}$ $\text{attr}_{3\%}$ $\text{dobj}_{1\%}$ $\text{aobj}_{1\%}$ $\text{preds}_{1\%}$ $\text{vobj}_{1\%}$ $\text{time}_{0\%}$ $\text{subj}_{0\%}$ $\text{conj}_{0\%}$ $\text{other}_{0\%}$ $\text{pnct}_{0\%}$ $\text{numa}_{0\%}$ $\text{cond}_{0\%}$ $\text{name}_{0\%}$ $\text{possd}_{0\%}$ $\text{appr}_{0\%}$ $\text{loc}_{0\%}$
vobj	292	90/98/92%	$\text{vobj}_{92\%}$ $\text{preds}_{5\%}$ $\text{nobj}_{1\%}$ $\text{relr}_{0\%}$ $\text{pnct}_{0\%}$ $\text{dobj}_{0\%}$ $\text{predo}_{0\%}$
conj	153	90/92/96%	$\text{conj}_{96\%}$ $\text{nobj}_{1\%}$ $\text{coord}_{1\%}$ $\text{qobj}_{1\%}$ $\text{cause}_{1\%}$ $\text{attr}_{1\%}$ $\text{pnct}_{0\%}$
dobj	235	90/97/91%	$\text{dobj}_{91\%}$ $\text{nobj}_{4\%}$ $\text{robj}_{1\%}$ $\text{pobj}_{1\%}$ $\text{goal}_{1\%}$ $\text{iobj}_{1\%}$ $\text{quant}_{0\%}$ $\text{vobj}_{0\%}$
pnct	588	90/90/99%	$\text{pnct}_{99\%}$ $\text{nobj}_{0\%}$ $\text{conj}_{0\%}$ $\text{appr}_{0\%}$ $\text{possd}_{0\%}$ $\text{vobj}_{0\%}$
title	9	89/100/89%	$\text{title}_{89\%}$ $\text{appr}_{11\%}$
xpl	8	88/100/88%	$\text{xpl}_{88\%}$ $\text{other}_{13\%}$
qobj	26	83/83/83%	$\text{qobj}_{83\%}$ $\text{coord}_{8\%}$ $\text{conj}_{4\%}$ $\text{discmark}_{4\%}$ $\text{CONJ:add}_{2\%}$
coord	117	80/92/85%	$\text{coord}_{85\%}$ $\text{discmark}_{13\%}$ $\text{qobj}_{2\%}$ $\text{conj}_{1\%}$
cause	19	79/90/90%	$\text{cause}_{90\%}$ $\text{conj}_{5\%}$ $\text{time}_{5\%}$
preds	160	77/100/77%	$\text{preds}_{77\%}$ $\text{vobj}_{9\%}$ $\text{loc}_{5\%}$ $\text{nobj}_{3\%}$ $\text{predo}_{3\%}$ $\text{time}_{1\%}$ $\text{subj}_{1\%}$ $\text{fpredo}_{1\%}$ $\text{pobj}_{1\%}$
quant	51	77/90/80%	$\text{quant}_{80\%}$ $\text{prg}_{4\%}$ $\text{degr}_{4\%}$ $\text{elab}_{2\%}$ $\text{time}_{2\%}$ $\text{attr}_{2\%}$ $\text{dobj}_{2\%}$ $\text{man}_{2\%}$ $\text{eval}_{2\%}$
attr	356	72/86/78%	$\text{attr}_{78\%}$ $\text{nobj}_{7\%}$ $\text{pobj}_{6\%}$ $\text{time}_{2\%}$ $\text{loc}_{2\%}$ $\text{other}_{1\%}$ $\text{focal}_{1\%}$ $\text{goal}_{1\%}$ $\text{aobj}_{1\%}$ $\text{conj}_{0\%}$ $\text{iter}_{0\%}$ $\text{conc}_{0\%}$ $\text{predo}_{0\%}$ $\text{dir}_{0\%}$ $\text{agent}_{0\%}$ $\text{quant}_{0\%}$
pobj	175	71/94/72%	$\text{pobj}_{72\%}$ $\text{attr}_{12\%}$ $\text{goal}_{6\%}$ $\text{other}_{4\%}$ $\text{dobj}_{2\%}$ $\text{loc}_{1\%}$ $\text{preds}_{1\%}$ $\text{avobj}_{1\%}$ $\text{dir}_{1\%}$ $\text{inst}_{1\%}$ $\text{agent}_{1\%}$ $\text{accom}_{1\%}$
time	110	71/88/79%	$\text{time}_{79\%}$ $\text{attr}_{6\%}$ $\text{iter}_{6\%}$ $\text{nobj}_{3\%}$ $\text{cons}_{3\%}$ $\text{preds}_{2\%}$ $\text{quant}_{1\%}$ $\text{cause}_{1\%}$
add	21	67/100/67%	$\text{add}_{67\%}$ $\text{discmark}_{10\%}$ $\text{other}_{10\%}$ $\text{scene}_{10\%}$ $\text{prg}_{5\%}$
cond	12	67/75/83%	$\text{cond}_{83\%}$ $\text{man}_{8\%}$ $\text{nobj}_{8\%}$
iobj	6	67/100/67%	$\text{iobj}_{67\%}$ $\text{dobj}_{33\%}$
part	6	67/100/67%	$\text{part}_{67\%}$ $\text{avobj}_{33\%}$
man	40	63/88/70%	$\text{man}_{70\%}$ $\text{other}_{5\%}$ $\text{accom}_{5\%}$ $\text{cond}_{3\%}$ $\text{concom}_{3\%}$ $\text{prg}_{3\%}$ $\text{scene}_{3\%}$ $\text{fpredo}_{3\%}$ $\text{fpreds}_{3\%}$ $\text{quant}_{3\%}$ $\text{resem}_{3\%}$
relr	44	61/91/71%	$\text{relr}_{71\%}$ $\text{rel}_{14\%}$ $\text{relpa}_{9\%}$ $\text{relelab}_{5\%}$ $\text{vobj}_{2\%}$
agent	5	60/100/60%	$\text{agent}_{60\%}$ $\text{attr}_{20\%}$ $\text{pobj}_{20\%}$
appr	10	60/80/60%	$\text{appr}_{60\%}$ $\text{nobj}_{10\%}$ $\text{pnct}_{10\%}$ $\text{title}_{10\%}$ $\text{subj}_{10\%}$
exem	5	60/80/80%	$\text{exem}_{80\%}$ $\text{ex}_{20\%}$
avobj	16	56/100/56%	$\text{avobj}_{56\%}$ $\text{other}_{19\%}$ $\text{part}_{13\%}$ $\text{aobj}_{6\%}$ $\text{pobj}_{6\%}$
loc	98	51/92/54%	$\text{loc}_{54\%}$ $\text{dir}_{17\%}$ $\text{preds}_{8\%}$ $\text{attr}_{7\%}$ $\text{other}_{6\%}$ $\text{fpredo}_{2\%}$ $\text{pobj}_{2\%}$ $\text{nobj}_{1\%}$ $\text{focal}_{1\%}$ $\text{inst}_{1\%}$
accom	6	50/100/50%	$\text{accom}_{50\%}$ $\text{man}_{33\%}$ $\text{pobj}_{17\%}$
contr	10	50/100/50%	$\text{contr}_{50\%}$ $\text{scene}_{20\%}$ $\text{discmark}_{10\%}$ $\text{prg}_{10\%}$ $\text{other}_{10\%}$
elab	4	50/75/50%	$\text{elab}_{50\%}$ $\text{prg}_{25\%}$ $\text{quant}_{25\%}$
epi	2	50/100/50%	$\text{epi}_{50\%}$ $\text{eval}_{50\%}$
name	2	50/100/50%	$\text{nobj}_{50\%}$ $\text{name}_{50\%}$
source	6	50/100/50%	$\text{source}_{50\%}$ $\text{other}_{33\%}$ $\text{concom}_{17\%}$
eval	19	47/100/47%	$\text{eval}_{47\%}$ $\text{prg}_{26\%}$ $\text{epi}_{5\%}$ $\text{other}_{5\%}$ $\text{quant}_{5\%}$ $\text{focal}_{5\%}$ $\text{neg}_{5\%}$
scene	13	46/92/54%	$\text{scene}_{54\%}$ $\text{contr}_{15\%}$ $\text{add}_{15\%}$ $\text{goal}_{8\%}$ $\text{man}_{8\%}$
cons	9	44/78/67%	$\text{cons}_{67\%}$ $\text{time}_{33\%}$
aobj	14	36/64/36%	$\text{nobj}_{43\%}$ $\text{aobj}_{36\%}$ $\text{attr}_{14\%}$ $\text{avobj}_{7\%}$
resem	3	33/33/67%	$\text{resem}_{67\%}$ $\text{man}_{33\%}$
goal	28	29/86/39%	$\text{goal}_{39\%}$ $\text{pobj}_{36\%}$ $\text{attr}_{7\%}$ $\text{dobj}_{7\%}$ $\text{other}_{4\%}$ $\text{scene}_{4\%}$ $\text{fpredo}_{4\%}$

inst	7	29/86/29%	$inst_{29\%}$ $predo_{29\%}$ $concom_{14\%}$ $loc_{14\%}$ $pobj_{14\%}$
focal	11	27/64/46%	$focal_{46\%}$ $attr_{27\%}$ $loc_{9\%}$ $other_{9\%}$ $eval_{9\%}$
robj	4	25/100/25%	$dobj_{75\%}$ $robj_{25\%}$
relpa	5	20/100/20%	$relr_{80\%}$ $relpa_{20\%}$
prg	16	19/100/19%	$eval_{31\%}$ $prg_{19\%}$ $conc_{13\%}$ $quant_{13\%}$ $add_{6\%}$ $elab_{6\%}$ $man_{6\%}$ $contr_{6\%}$
iter	11	18/73/27%	$time_{55\%}$ $iter_{27\%}$ $other_{9\%}$ $attr_{9\%}$
dir	23	17/96/17%	$loc_{74\%}$ $dir_{17\%}$ $attr_{4\%}$ $pobj_{4\%}$
other	41	17/85/17%	$other_{17\%}$ $pobj_{17\%}$ $loc_{15\%}$ $attr_{10\%}$ $avobj_{7\%}$ $source_{5\%}$ $nobj_{5\%}$ $add_{5\%}$ $man_{5\%}$ $iter_{2\%}$ $focal_{2\%}$ $goal_{2\%}$ $contr_{2\%}$ $eval_{2\%}$ $xpl_{2\%}$
discmark	22	14/91/14%	$coord_{68\%}$ $discmark_{14\%}$ $add_{9\%}$ $contr_{5\%}$ $qobj_{5\%}$
predo	10	10/70/10%	$preds_{40\%}$ $inst_{20\%}$ $attr_{10\%}$ $fpredo_{10\%}$ $vobj_{10\%}$ $predo_{10\%}$
conc	3	0/100/0%	$prg_{67\%}$ $attr_{33\%}$
concom	3	0/100/0%	$source_{33\%}$ $man_{33\%}$ $inst_{33\%}$
degr	2	0/50/0%	$quant_{100\%}$
ex	1	0/100/0%	$exem_{100\%}$
fpredo	6	0/67/0%	$loc_{33\%}$ $goal_{17\%}$ $man_{17\%}$ $preds_{17\%}$ $predo_{17\%}$
fpreds	1	0/100/0%	$man_{100\%}$
numa	1	0/100/0%	$nobj_{100\%}$
rel	6	0/100/0%	$relr_{100\%}$
relelab	2	0/100/0%	$relr_{100\%}$

TOTAL	4287	81/93/85%	

B.2 Confusion table: semantics

R	N	A/A_U/A_L	Confusion list
elab	3	100/100/100%	$elab_{100\%}$
location	1	100/100/100%	$location_{100\%}$
time	11	73/82/82%	$time_{82\%}$ $arg_{9\%}$ $source_{9\%}$
const	25	68/96/72%	$const_{72\%}$ $arg_{12\%}$ $source_{8\%}$ $goal_{4\%}$ $poss_{4\%}$
form	3	67/100/67%	$form_{67\%}$ $loc_{33\%}$
goal	48	54/98/56%	$goal_{56\%}$ $arg_{17\%}$ $loc_{4\%}$ $func_{4\%}$ $about_{4\%}$ $cause_{2\%}$ $resem_{2\%}$ $const_{2\%}$ $agent_{2\%}$ $recipient_{2\%}$ $patient_{2\%}$ $other_{2\%}$
agent	30	53/100/53%	$agent_{53\%}$ $arg_{37\%}$ $patient_{7\%}$ $goal_{3\%}$
arg	86	52/99/52%	$arg_{52\%}$ $agent_{13\%}$ $goal_{9\%}$ $loc_{6\%}$ $patient_{6\%}$ $poss_{5\%}$ $const_{4\%}$ $about_{2\%}$ $time_{1\%}$ $source_{1\%}$ $other_{1\%}$
patient	27	52/100/52%	$patient_{52\%}$ $arg_{19\%}$ $about_{11\%}$ $loc_{7\%}$ $agent_{7\%}$ $goal_{4\%}$
func	4	50/100/50%	$goal_{50\%}$ $func_{50\%}$
loc	38	50/92/55%	$loc_{55\%}$ $arg_{13\%}$ $source_{13\%}$ $goal_{5\%}$ $patient_{5\%}$ $form_{3\%}$ $other_{3\%}$ $poss_{3\%}$
resem	2	50/100/50%	$resem_{50\%}$ $goal_{50\%}$
about	12	42/100/42%	$about_{42\%}$ $patient_{25\%}$ $arg_{17\%}$ $goal_{17\%}$
quant	15	33/100/33%	$apart_{60\%}$ $quant_{33\%}$ $other_{7\%}$
source	16	31/75/38%	$source_{38\%}$ $loc_{31\%}$ $const_{13\%}$ $time_{6\%}$ $arg_{6\%}$ $poss_{6\%}$
poss	14	21/93/29%	$arg_{29\%}$ $poss_{29\%}$ $other_{21\%}$ $loc_{7\%}$ $const_{7\%}$ $source_{7\%}$
apart	10	10/100/10%	$quant_{90\%}$ $apart_{10\%}$
cause	1	0/100/0%	$goal_{100\%}$
class	2	0/100/0%	$other_{100\%}$

| other | 9 | 0/100/0% | poss$_{33\%}$ class$_{22\%}$ loc$_{11\%}$ quant$_{11\%}$ arg$_{11\%}$ goal$_{11\%}$ |
| recipient | 1 | 0/100/0% | goal$_{100\%}$ |

| TOTAL | 358 | 48/96/50% | |

B.3   Confusion table: discourse

R	N	A/A$_U$/A$_L$	Confusion list
ANSW	1	100/100/100%	ANSW$_{100\%}$
SCENE	26	85/85/96%	SCENE$_{96\%}$ JOINT$_{4\%}$
AGENTIVE:expl	11	64/100/64%	AGENTIVE:expl$_{64\%}$ CONTR$_{9\%}$ AGENTIVE$_{9\%}$ CONST:rest$_{9\%}$ AGENTIVE:sbj$_{9\%}$
CONJ:seq	13	62/92/69%	CONJ:seq$_{69\%}$ CONJ:add$_{15\%}$ CONJ:elab$_{8\%}$ DIREC$_{8\%}$
CONC	20	40/65/40%	CONC$_{40\%}$ CONJ:add$_{25\%}$ CONTR$_{5\%}$ FORMAL:eval$_{5\%}$ subj$_{5\%}$ CONJ$_{5\%}$ CONTR:sbj$_{5\%}$ CONST:exem$_{5\%}$ conj$_{3\%}$ CONTR:prg$_{3\%}$
CONJ:add	133	37/64/47%	CONJ:add$_{47\%}$ CONJ:elab$_{14\%}$ CONJ$_{9\%}$ JOINT$_{5\%}$ conj$_{4\%}$ CONC$_{4\%}$ TELIC:cons.sbj$_{2\%}$ AGENTIVE:sbj$_{2\%}$ CONJ:seq$_{2\%}$ CONST:exem$_{2\%}$ CONST:apart$_{2\%}$ CONTR$_{1\%}$ TIME:pre$_{1\%}$ CONTR:sbj$_{1\%}$ CONTR:prg$_{1\%}$ COND$_{1\%}$ qobj$_{1\%}$ TELIC$_{1\%}$ TELIC:cons.dir$_{1\%}$ DISJ:dir$_{1\%}$ AGENTIVE:reas$_{1\%}$ vobj$_{1\%}$ CONTR:dir$_{0\%}$
CONST:exem	17	29/71/47%	CONST:exem$_{47\%}$ CONJ:add$_{12\%}$ CONST:apart$_{12\%}$ CONJ:elab$_{6\%}$ JOINT$_{6\%}$ CONST:rest$_{6\%}$ CONSOL:source$_{6\%}$ CONC$_{6\%}$
TELIC:cons.dir	17	29/59/41%	TELIC:cons.dir$_{41\%}$ TELIC:cons.sbj$_{12\%}$ CONJ:elab$_{9\%}$ CONST:rest$_{6\%}$ CONJ$_{6\%}$ CONJ:add$_{6\%}$ AGENTIVE:reas$_{6\%}$ CONTR:dir$_{6\%}$ conj$_{3\%}$ CONTR:sbj$_{3\%}$ qobj$_{3\%}$
CONJ:elab	110	23/53/34%	CONJ:elab$_{34\%}$ CONJ:add$_{16\%}$ CONJ$_{16\%}$ FORMAL:eval$_{5\%}$ FORMAL:descr$_{3\%}$ CONST:rest$_{3\%}$ CONST:apart$_{3\%}$ qobj$_{2\%}$ TELIC:cons.sbj$_{2\%}$ AGENTIVE$_{2\%}$ subj$_{2\%}$ AGENTIVE:sbj$_{2\%}$ AGENTIVE:reas$_{2\%}$ DIREC$_{2\%}$ CONSOL$_{2\%}$ TELIC:cons.dir$_{1\%}$ CONJ:seq$_{1\%}$ CONTR:sbj$_{1\%}$ CONTR:prg$_{1\%}$ CONST:exem$_{1\%}$ CONTR:dir$_{1\%}$ CONST:elab$_{1\%}$
CONST:rest	11	23/59/26%	CONJ:elab$_{27\%}$ CONST:rest$_{26\%}$ TELIC:cons.sbj$_{9\%}$ TELIC:cons.dir$_{9\%}$ AGENTIVE:expl$_{9\%}$ CONST:exem$_{9\%}$ conj$_{6\%}$ qobj$_{5\%}$
JOINT	14	21/43/36%	CONJ:add$_{43\%}$ JOINT$_{36\%}$ SCENE$_{7\%}$ CONJ$_{7\%}$ CONST:exem$_{7\%}$
TELIC:cons.sbj	14	21/64/29%	TELIC:cons.sbj$_{29\%}$ CONJ:add$_{21\%}$ CONJ:elab$_{14\%}$ TELIC:cons.dir$_{14\%}$ CONJ$_{7\%}$ CONST:rest$_{7\%}$ CONTR:dir$_{7\%}$
AGENTIVE:reas	10	20/60/20%	AGENTIVE:sbj$_{40\%}$ CONJ:elab$_{20\%}$ AGENTIVE:reas$_{20\%}$ CONJ:add$_{10\%}$ TELIC:cons.dir$_{10\%}$
CONSOL:source	5	20/60/20%	AGENTIVE:sbj$_{40\%}$ CONJ$_{20\%}$ CONST:exem$_{20\%}$ CONSOL:source$_{20\%}$
FORMAL:descr	5	20/40/20%	CONJ:elab$_{60\%}$ conj$_{20\%}$ FORMAL:descr$_{20\%}$
FORMAL:eval	10	20/40/30%	CONJ:elab$_{50\%}$ FORMAL:eval$_{30\%}$ CONJ$_{10\%}$ CONC$_{10\%}$
CONTR:sbj	12	19/49/32%	CONTR:sbj$_{32\%}$ conj$_{14\%}$ CONJ:elab$_{8\%}$ CONJ:add$_{8\%}$ CONTR:prg$_{8\%}$ qobj$_{8\%}$ CONTR:dir$_{8\%}$ CONC$_{8\%}$ TELIC:cons.dir$_{4\%}$

R	N	A/A$_U$/A$_L$	Confusion list
CONST:apart	12	17/58/25%	CONJ:elab$_{25\%}$ CONST:apart$_{25\%}$ CONJ:add$_{17\%}$ CONST:exem$_{17\%}$ CONJ$_{8\%}$ nobj$_{8\%}$
CONTR:dir	14	17/31/31%	CONTR:dir$_{31\%}$ conj$_{20\%}$ CONTR:prg$_{11\%}$ CONTR$_{7\%}$ CONJ:elab$_{7\%}$ TELIC:cons.sbj$_{7\%}$ TELIC:cons.dir$_{7\%}$ CONTR:sbj$_{7\%}$ CONJ:add$_{2\%}$
CONJ	48	10/54/19%	CONJ:elab$_{35\%}$ CONJ:add$_{25\%}$ CONJ$_{19\%}$ AGENTIVE:sbj$_{4\%}$ TELIC:goal$_{2\%}$ TELIC:cons.sbj$_{2\%}$ FORMAL:eval$_{2\%}$ JOINT$_{2\%}$ CONSOL:source$_{2\%}$ TELIC:cons.dir$_{2\%}$ CONST:apart$_{2\%}$ CONC$_{2\%}$
AGENTIVE	5	0/100/0%	CONJ:elab$_{40\%}$ AGENTIVE:sbj$_{40\%}$ AGENTIVE:expl$_{20\%}$
AGENTIVE:sbj	16	0/75/0%	AGENTIVE:reas$_{25\%}$ CONJ:add$_{19\%}$ CONJ$_{13\%}$ CONJ:elab$_{13\%}$ AGENTIVE$_{13\%}$ CONSOL:source$_{13\%}$ AGENTIVE:expl$_{6\%}$
COND	1	0/100/0%	CONJ:add$_{100\%}$
CONSOL	2	0/50/0%	CONJ:elab$_{100\%}$
CONST:elab	1	0/100/0%	CONJ:elab$_{100\%}$
CONTR	4	0/100/0%	CONJ:add$_{25\%}$ AGENTIVE:expl$_{25\%}$ CONTR:dir$_{25\%}$ CONC$_{25\%}$
CONTR:prg	7	0/14/0%	conj$_{29\%}$ CONTR:dir$_{21\%}$ CONTR:sbj$_{14\%}$ CONJ:add$_{14\%}$ CONJ:elab$_{14\%}$ CONC$_{7\%}$
DIREC	3	0/67/0%	CONJ:elab$_{67\%}$ CONJ:seq$_{33\%}$
DISJ:dir	2	0/50/50%	CONJ:add$_{50\%}$ DISJ:dir$_{50\%}$
TELIC	1	0/100/0%	CONJ:add$_{100\%}$
TELIC:goal	1	0/100/0%	CONJ$_{100\%}$
TIME:pre	1	0/100/0%	CONJ:add$_{100\%}$
TOTAL	547	29/61/37%	

B.4 Confusion table: anaphora

R	N	A/A$_U$/A$_L$	Confusion list
assoc-event	2	100/100/100%	assoc-event$_{100\%}$
assoc-formal	1	100/100/100%	assoc-formal$_{100\%}$
ref	69	91/93/96%	ref$_{96\%}$ coref$_{3\%}$ coref-res$_{1\%}$
coref-iden	62	73/81/77%	coref-iden$_{77\%}$ coref-var$_{17\%}$ coref$_{3\%}$ assoc-telic$_{2\%}$ assoc-const$_{2\%}$
coref	209	69/73/89%	coref$_{89\%}$ coref-var$_{7\%}$ coref-res$_{1\%}$ ref$_{1\%}$ assoc-const$_{1\%}$ coref-iden$_{1\%}$ assoc-agentive.agent$_{1\%}$
coref-res	35	63/69/74%	coref-res$_{74\%}$ coref-var$_{11\%}$ coref$_{9\%}$ assoc-telic$_{3\%}$ ref$_{3\%}$
coref-var	144	60/73/74%	coref-var$_{74\%}$ coref$_{11\%}$ coref-iden$_{7\%}$ assoc-const$_{4\%}$ coref-res$_{3\%}$ coref-evol$_{1\%}$ assoc-agentive$_{1\%}$
assoc-agentive	2	50/100/50%	coref-var$_{50\%}$ assoc-agentive$_{50\%}$
assoc-const	40	50/75/58%	assoc-const$_{58\%}$ coref-var$_{15\%}$ assoc$_{10\%}$ assoc-telic$_{5\%}$ coref$_{5\%}$ assoc-loc$_{5\%}$ coref-iden$_{3\%}$
assoc-telic	25	40/76/56%	assoc-telic$_{56\%}$ assoc-agentive.agent$_{8\%}$ assoc-telic.patient$_{8\%}$ assoc-const$_{8\%}$ assoc-telic.agent$_{8\%}$ coref-iden$_{4\%}$ assoc-telic.inst$_{4\%}$ coref-res$_{4\%}$
assoc	6	33/83/33%	assoc-const$_{67\%}$ assoc$_{33\%}$
assoc-agentive.agent	3	0/67/0%	assoc-telic$_{67\%}$ coref$_{33\%}$
assoc-loc	2	0/100/0%	assoc-const$_{100\%}$

assoc-telic.agent	2	0/100/0%	assoc-telic$_{100\%}$
assoc-telic.inst	1	0/100/0%	assoc-telic$_{100\%}$
assoc-telic.patient	2	0/100/0%	assoc-telic$_{100\%}$
coref-evol	1	0/100/0%	coref-var$_{100\%}$

TOTAL	606	65/76/78%

B.5 Confusion table: morphology

R	N	A/A$_U$/A$_L$	Confusion list
TIME:post	1	100/100/100%	TIME:post$_{100\%}$
TIME:pre	1	100/100/100%	TIME:pre$_{100\%}$
DERav	4	75/100/75%	DERav$_{75\%}$ $-_{25\%}$
DERan:qual	14	71/100/71%	DERan:qual$_{71\%}$ $-_{14\%}$ DERnn:loc$_{7\%}$ DERna:rel.deono.loc$_{7\%}$
NEG:contr	5	60/100/60%	NEG:contr$_{60\%}$ NEG:priv$_{20\%}$ MOD:eval$_{20\%}$
DERvn:core	65	59/100/59%	DERvn:core$_{59\%}$ $-_{23\%}$ DERvn:patient$_{12\%}$ DERnv$_{3\%}$ DERvn:other$_{2\%}$ TELIC DERvn:patient$_{2\%}$
DER:aa	2	50/100/50%	$-_{50\%}$ DER:aa$_{50\%}$
DERnn:agent	10	50/100/50%	DERnn:agent$_{50\%}$ $-_{40\%}$ DERna:rel.deono.loc$_{10\%}$
DERva:act	12	42/100/42%	DERva:act$_{42\%}$ $-_{42\%}$ DERva:pas.part$_{8\%}$ DEVERB:rel.norm$_{8\%}$
DERvn:agent	12	42/100/42%	$-_{58\%}$ DERvn:agent$_{42\%}$
DERnv	18	39/100/39%	$-_{44\%}$ DERnv$_{39\%}$ DERvn:core$_{11\%}$ DERva:pas.part$_{6\%}$
MOD:qual	13	39/100/39%	MOD:qual$_{39\%}$ $-_{31\%}$ const$_{8\%}$ loc$_{8\%}$ MOD:quant$_{8\%}$ TELIC$_{8\%}$
DERna:disp	3	33/100/33%	DERna:rel$_{67\%}$ DERna:disp$_{33\%}$
DERva:pas.part	12	33/100/33%	$-_{50\%}$ DERva:pas.part$_{33\%}$ DERva:act$_{8\%}$ DERnv$_{8\%}$
MOD:quant	11	27/100/27%	$-_{55\%}$ MOD:quant$_{27\%}$ MOD:qual$_{9\%}$ QUANT$_{9\%}$
about	4	25/100/25%	ABOUT$_{75\%}$ about$_{25\%}$
LOC:dir	6	17/100/17%	$-_{50\%}$ SPACE:source$_{17\%}$ TELIC$_{17\%}$ LOC:dir$_{17\%}$
TELIC	18	17/100/17%	$-_{61\%}$ TELIC$_{17\%}$ TRANS$_{6\%}$ MOD:qual$_{6\%}$ NEG:priv$_{6\%}$ LOC:dir$_{6\%}$
DERvn:patient	11	9/100/9%	DERvn:core$_{73\%}$ $-_{18\%}$ DERvn:patient$_{9\%}$
TRANS	12	8/100/8%	$-_{83\%}$ TRANS$_{8\%}$ TELIC$_{8\%}$
func	34	6/100/6%	GOAL$_{50\%}$ ABOUT$_{15\%}$ OTHER$_{12\%}$ ARG$_{6\%}$ $-_{6\%}$ func$_{6\%}$ CONST$_{3\%}$ QUANT$_{3\%}$
–	145	0/100/0%	DERna:rel.deono.loc$_{12\%}$ DERvn:core$_{10\%}$ TELIC$_{8\%}$ TRANS$_{7\%}$ DERnv$_{6\%}$ DERvn:agent$_{5\%}$ MOD:quant$_{4\%}$ DERva:pas.part$_{4\%}$ DERva:act$_{3\%}$ DERna:rel.norm$_{3\%}$ DERnn:agent$_{3\%}$ DERna:rel$_{3\%}$ MOD:qual$_{3\%}$ LOC:dir$_{2\%}$ DERvn:core LOC:dir$_{2\%}$ DERvn:patient$_{1\%}$ TRANS DERva:act$_{1\%}$ const$_{1\%}$ func DERvn:core$_{1\%}$ ABOUT$_{1\%}$ DERan:qual$_{1\%}$ SPACE:loc$_{1\%}$ func$_{1\%}$ DERvn:agent LOC:loc$_{1\%}$ DERaa$_{1\%}$ iden$_{1\%}$ NOPRED:core$_{1\%}$ DERvn:core MOD:quant$_{1\%}$ DERva:act.epi$_{1\%}$ SPACE:dir$_{1\%}$ DERav$_{1\%}$ SOURCE$_{1\%}$ DERna:resem$_{1\%}$ DERnv TELIC DERvn:core$_{1\%}$ func func$_{1\%}$ DERva:pas.epi$_{1\%}$ DER:aa$_{1\%}$ DERnn:loc$_{1\%}$ DERvn:other$_{1\%}$ DERnv DERvn:core$_{1\%}$ DERvn:patient func DERvn:agent$_{1\%}$ ARG$_{1\%}$ DERan:qual ARG$_{1\%}$ DERvn:core LOC:loc$_{1\%}$

ABOUT	19	0/100/0%	func$_{26\%}$ const$_{16\%}$ about$_{16\%}$ $-_{11\%}$ arg$_{11\%}$ DERvn:agent dobj.patient$_{5\%}$ NEG:priv$_{5\%}$ agent$_{5\%}$ func arg DERvn:patient$_{5\%}$
AGENT	2	0/100/0%	DERvn:core LOC:dir subj.agent func$_{50\%}$ agent$_{50\%}$
AGENT:MC	1	0/100/0%	agent$_{100\%}$
ARG	14	0/100/0%	arg$_{64\%}$ func$_{14\%}$ $-_{7\%}$ agent$_{7\%}$ const LOC:dir$_{7\%}$
CONST	4	0/100/0%	const$_{50\%}$ agent$_{25\%}$ func$_{25\%}$
DERaa	1	0/100/0%	$-_{100\%}$
DERan:qual ARG	1	0/100/0%	$-_{100\%}$
DERan:rel DERav DERvn:core	1	0/100/0%	DERna:rel.norm$_{100\%}$
DERna:rel	12	0/100/0%	DERna:rel.norm$_{50\%}$ $-_{33\%}$ DERna:disp$_{17\%}$
DERna:rel DERan:qual	1	0/100/0%	DERna:rel.norm DER:aa$_{100\%}$
DERna:rel.deono.loc	19	0/100/0%	$-_{90\%}$ DERan:qual$_{5\%}$ DERnn:agent$_{5\%}$
DERna:rel.norm	13	0/100/0%	DERna:rel$_{46\%}$ $-_{39\%}$ DERan:rel DERav DERvn:core$_{8\%}$ DERva:rel$_{8\%}$
DERna:rel.norm DENOM:rel.place	1	0/100/0%	DERnn:assoc DERna:rel$_{100\%}$
DERna:rel.norm DER:aa	1	0/100/0%	DERna:rel DERan:qual$_{100\%}$
DERna:resem	1	0/100/0%	$-_{100\%}$
DERnn:agent func	1	0/100/0%	GOAL$_{100\%}$
DERnn:assoc DERna:rel	1	0/100/0%	DERna:rel.norm DENOM:rel.place$_{100\%}$
DERnn:loc	2	0/100/0%	$-_{50\%}$ DERan:qual$_{50\%}$
DERnv DERvn:core	1	0/100/0%	$-_{100\%}$
DERnv TELIC DERvn:core	1	0/100/0%	$-_{100\%}$
DERva:act.epi	1	0/100/0%	$-_{100\%}$
DERva:pas.epi	1	0/100/0%	$-_{100\%}$
DERva:rel	1	0/100/0%	DERna:rel.norm$_{100\%}$
DERvn:agent LOC:loc	1	0/100/0%	$-_{100\%}$
DERvn:agent dobj.patient	1	0/100/0%	ABOUT$_{100\%}$
DERvn:core LOC:dir	3	0/100/0%	$-_{100\%}$
DERvn:core LOC:dir subj.agent func	1	0/100/0%	AGENT$_{100\%}$
DERvn:core LOC:loc	1	0/100/0%	$-_{100\%}$
DERvn:core MOD:quant	1	0/100/0%	$-_{100\%}$
DERvn:core agent	1	0/100/0%	GOAL$_{100\%}$
DERvn:core arg	1	0/100/0%	GOAL$_{100\%}$
DERvn:core dobj.patient	2	0/100/0%	DERvn:other GOAL$_{100\%}$

DERvn:core eval	1	0/100/0%	MOD:eval$_{100\%}$
DERvn:core iobj.recipient	7	0/100/0%	DERvn:patient GOAL$_{100\%}$
DERvn:core subj.agent	1	0/100/0%	DERvn:other ABOUT$_{100\%}$
DERvn:other	2	0/100/0%	$-_{50\%}$ DERvn:core$_{50\%}$
DERvn:other ABOUT	1	0/100/0%	DERvn:core subj.agent$_{100\%}$
DERvn:other GOAL	2	0/100/0%	DERvn:core dobj.patient$_{100\%}$
DERvn:patient GOAL	7	0/100/0%	DERvn:core iobj.recipient$_{100\%}$
DERvn:patient func DERvn:agent	1	0/100/0%	$-_{100\%}$
DEVERB:rel.norm	1	0/100/0%	DERva:act$_{100\%}$
DOBJ.patient	1	0/100/0%	dobj.patient$_{100\%}$
EVAL	1	0/100/0%	eval$_{100\%}$
FUNC	1	0/100/0%	iden$_{100\%}$
GOAL	24	0/100/0%	func$_{71\%}$ iden$_{8\%}$ DERvn:core agent$_{4\%}$ DERnn:agent func$_{4\%}$ const$_{4\%}$ DERvn:core arg$_{4\%}$ loc MOD:qual$_{4\%}$
GOAL SOURCE	1	0/100/0%	MOD:qual arg$_{100\%}$
LOC	2	0/100/0%	loc$_{100\%}$
LOC:loc	1	0/100/0%	SPACE:loc$_{100\%}$
MOD:eval	2	0/100/0%	NEG:contr$_{50\%}$ DERvn:core eval$_{50\%}$
MOD:qual arg	1	0/100/0%	GOAL SOURCE$_{100\%}$
NEG:priv	3	0/100/0%	NEG:contr$_{33\%}$ TELIC$_{33\%}$ ABOUT$_{33\%}$
NOPRED:core	1	0/100/0%	$-_{100\%}$
OTHER	9	0/100/0%	iden$_{44\%}$ func$_{44\%}$ apart$_{11\%}$
QUANT	2	0/100/0%	func$_{50\%}$ MOD:quant$_{50\%}$
SOURCE	1	0/100/0%	$-_{100\%}$
SPACE:dir	1	0/100/0%	$-_{100\%}$
SPACE:loc	3	0/100/0%	$-_{67\%}$ LOC:loc$_{33\%}$
SPACE:source	1	0/100/0%	LOC:dir$_{100\%}$
SUBJ.agent	5	0/100/0%	subj.agent$_{100\%}$
TELIC DERvn:patient	1	0/100/0%	DERvn:core$_{100\%}$
TIME:MC	3	0/100/0%	time$_{100\%}$
TRANS DERva:act	2	0/100/0%	$-_{100\%}$
agent	5	0/100/0%	AGENT:MC$_{20\%}$ CONST$_{20\%}$ ABOUT$_{20\%}$ AGENT$_{20\%}$ ARG$_{20\%}$
apart	1	0/100/0%	OTHER$_{100\%}$
arg	11	0/100/0%	ARG$_{82\%}$ ABOUT$_{18\%}$
const	9	0/100/0%	ABOUT$_{33\%}$ $-_{22\%}$ CONST$_{22\%}$ MOD:qual$_{11\%}$ GOAL$_{11\%}$
const LOC:dir	1	0/100/0%	ARG$_{100\%}$
dobj.patient	1	0/100/0%	DOBJ.patient$_{100\%}$
eval	1	0/100/0%	EVAL$_{100\%}$
func DERvn:core	2	0/100/0%	$-_{100\%}$
func arg DERvn:patient	1	0/100/0%	ABOUT$_{100\%}$

func func	1	0/100/0%	$-_{100\%}$
iden	8	0/100/0%	OTHER$_{50\%}$ GOAL$_{25\%}$ $-_{13\%}$ FUNC$_{13\%}$
loc	3	0/100/0%	LOC$_{67\%}$ MOD:qual$_{33\%}$
loc MOD:qual	1	0/100/0%	GOAL$_{100\%}$
subj.agent	5	0/100/0%	SUBJ.agent$_{100\%}$
time	3	0/100/0%	TIME:MC$_{100\%}$

TOTAL	667	15/100/15%

B.6 Confusion table: morphology-no-null

R	N	A/A$_U$/A$_L$	Confusion list
DER:aa	1	100/100/100%	DER:aa$_{100\%}$
DERav	3	100/100/100%	DERav$_{100\%}$
DERvn:agent	5	100/100/100%	DERvn:agent$_{100\%}$
TIME:post	1	100/100/100%	TIME:post$_{100\%}$
TIME:pre	1	100/100/100%	TIME:pre$_{100\%}$
DERan:qual	12	83/100/83%	DERan:qual$_{83\%}$ DERnn:loc$_{8\%}$ DERna:rel.deono.loc$_{8\%}$
DERnn:agent	6	83/100/83%	DERnn:agent$_{83\%}$ DERna:rel.deono.loc$_{17\%}$
DERvn:core	50	76/100/76%	DERvn:core$_{76\%}$ DERvn:patient$_{16\%}$ DERnv$_{4\%}$ DERvn:other$_{2\%}$ TELIC DERvn:patient$_{2\%}$
DERva:act	7	71/100/71%	DERva:act$_{71\%}$ DERva:pas.part$_{14\%}$ DEVERB:rel.norm$_{14\%}$
DERnv	10	70/100/70%	DERnv$_{70\%}$ DERvn:core$_{20\%}$ DERva:pas.part$_{10\%}$
DERva:pas.part	6	67/100/67%	DERva:pas.part$_{67\%}$ DERva:act$_{17\%}$ DERnv$_{17\%}$
MOD:quant	5	60/100/60%	MOD:quant$_{60\%}$ MOD:qual$_{20\%}$ QUANT$_{20\%}$
NEG:contr	5	60/100/60%	NEG:contr$_{60\%}$ NEG:priv$_{20\%}$ MOD:eval$_{20\%}$
MOD:qual	9	56/100/56%	MOD:qual$_{56\%}$ const$_{11\%}$ loc$_{11\%}$ MOD:quant$_{11\%}$ TELIC$_{11\%}$
TRANS	2	50/100/50%	TRANS$_{50\%}$ TELIC$_{50\%}$
TELIC	7	43/100/43%	TELIC$_{43\%}$ TRANS$_{14\%}$ MOD:qual$_{14\%}$ NEG:priv$_{14\%}$ LOC:dir$_{14\%}$
DERna:disp	3	33/100/33%	DERna:rel$_{67\%}$ DERna:disp$_{33\%}$
LOC:dir	3	33/100/33%	SPACE:source$_{33\%}$ TELIC$_{33\%}$ LOC:dir$_{33\%}$
about	4	25/100/25%	ABOUT$_{75\%}$ about$_{25\%}$
DERvn:patient	9	11/100/11%	DERvn:core$_{89\%}$ DERvn:patient$_{11\%}$
func	32	6/100/6%	GOAL$_{53\%}$ ABOUT$_{16\%}$ OTHER$_{13\%}$ func$_{6\%}$ ARG$_{6\%}$ QUANT$_{3\%}$ CONST$_{3\%}$
ABOUT	17	0/100/0%	func$_{29\%}$ const$_{18\%}$ about$_{18\%}$ arg$_{12\%}$ DERvn:agent dobj.patient$_{6\%}$ NEG:priv$_{6\%}$ agent$_{6\%}$ func arg DERvn:patient$_{6\%}$
AGENT	2	0/100/0%	DERvn:core LOC:dir subj.agent func$_{50\%}$ agent$_{50\%}$
AGENT:MC	1	0/100/0%	agent$_{100\%}$
ARG	13	0/100/0%	arg$_{69\%}$ func$_{15\%}$ agent$_{8\%}$ const LOC:dir$_{8\%}$
CONST	4	0/100/0%	const$_{50\%}$ agent$_{25\%}$ func$_{25\%}$
DERan:rel DERav DERvn:core	1	0/100/0%	DERna:rel.norm$_{100\%}$
DERna:rel	8	0/100/0%	DERna:rel.norm$_{75\%}$ DERna:disp$_{25\%}$
DERna:rel DERan:qual	1	0/100/0%	DERna:rel.norm DER:aa$_{100\%}$

DERna:rel.deono.loc	2	0/100/0%	DERan:qual$_{50\%}$ DERnn:agent$_{50\%}$
DERna:rel.norm	8	0/100/0%	DERna:rel$_{75\%}$ DERan:rel DERav DERvn:core$_{13\%}$ DERva:rel$_{13\%}$
DERna:rel.norm DENOM:rel.place	1	0/100/0%	DERnn:assoc DERna:rel$_{100\%}$
DERna:rel.norm DER:aa	1	0/100/0%	DERna:rel DERan:qual$_{100\%}$
DERnn:agent func	1	0/100/0%	GOAL$_{100\%}$
DERnn:assoc DERna:rel	1	0/100/0%	DERna:rel.norm DENOM:rel.place$_{100\%}$
DERnn:loc	1	0/100/0%	DERan:qual$_{100\%}$
DERva:rel	1	0/100/0%	DERna:rel.norm$_{100\%}$
DERvn:agent dobj.patient	1	0/100/0%	ABOUT$_{100\%}$
DERvn:core LOC:dir subj.agent func	1	0/100/0%	AGENT$_{100\%}$
DERvn:core agent	1	0/100/0%	GOAL$_{100\%}$
DERvn:core arg	1	0/100/0%	GOAL$_{100\%}$
DERvn:core dobj.patient	2	0/100/0%	DERvn:other GOAL$_{100\%}$
DERvn:core eval	1	0/100/0%	MOD:eval$_{100\%}$
DERvn:core iobj.recipient	7	0/100/0%	DERvn:patient GOAL$_{100\%}$
DERvn:core subj.agent	1	0/100/0%	DERvn:other ABOUT$_{100\%}$
DERvn:other	1	0/100/0%	DERvn:core$_{100\%}$
DERvn:other ABOUT	1	0/100/0%	DERvn:core subj.agent$_{100\%}$
DERvn:other GOAL	2	0/100/0%	DERvn:core dobj.patient$_{100\%}$
DERvn:patient GOAL	7	0/100/0%	DERvn:core iobj.recipient$_{100\%}$
DEVERB:rel.norm	1	0/100/0%	DERva:act$_{100\%}$
DOBJ.patient	1	0/100/0%	dobj.patient$_{100\%}$
EVAL	1	0/100/0%	eval$_{100\%}$
FUNC	1	0/100/0%	iden$_{100\%}$
GOAL	24	0/100/0%	func$_{71\%}$ iden$_{8\%}$ DERvn:core agent$_{4\%}$ DERnn:agent func$_{4\%}$ const$_{4\%}$ DERvn:core arg$_{4\%}$ loc MOD:qual$_{4\%}$
GOAL SOURCE	1	0/100/0%	MOD:qual arg$_{100\%}$
LOC	2	0/100/0%	loc$_{100\%}$
LOC:loc	1	0/100/0%	SPACE:loc$_{100\%}$
MOD:eval	2	0/100/0%	NEG:contr$_{50\%}$ DERvn:core eval$_{50\%}$
MOD:qual arg	1	0/100/0%	GOAL SOURCE$_{100\%}$
NEG:priv	3	0/100/0%	NEG:contr$_{33\%}$ TELIC$_{33\%}$ ABOUT$_{33\%}$
OTHER	9	0/100/0%	iden$_{44\%}$ func$_{44\%}$ apart$_{11\%}$
QUANT	2	0/100/0%	func$_{50\%}$ MOD:quant$_{50\%}$
SPACE:loc	1	0/100/0%	LOC:loc$_{100\%}$
SPACE:source	1	0/100/0%	LOC:dir$_{100\%}$
SUBJ.agent	5	0/100/0%	subj.agent$_{100\%}$

R		N	A/A$_U$/A$_L$	Confusion list
TELIC		1	0/100/0%	DERvn:core$_{100\%}$
DERvn:patient				
TIME:MC		3	0/100/0%	time$_{100\%}$
agent		5	0/100/0%	AGENT:MC$_{20\%}$ CONST$_{20\%}$ ABOUT$_{20\%}$ AGENT$_{20\%}$
				ARG$_{20\%}$
apart		1	0/100/0%	OTHER$_{100\%}$
arg		11	0/100/0%	ARG$_{82\%}$ ABOUT$_{18\%}$
const		7	0/100/0%	ABOUT$_{43\%}$ CONST$_{29\%}$ MOD:qual$_{14\%}$ GOAL$_{14\%}$
const LOC:dir		1	0/100/0%	ARG$_{100\%}$
dobj.patient		1	0/100/0%	DOBJ.patient$_{100\%}$
eval		1	0/100/0%	EVAL$_{100\%}$
func	arg	1	0/100/0%	ABOUT$_{100\%}$
DERvn:patient				
iden		7	0/100/0%	OTHER$_{57\%}$ GOAL$_{29\%}$ FUNC$_{14\%}$
loc		3	0/100/0%	LOC$_{67\%}$ MOD:qual$_{33\%}$
loc MOD:qual		1	0/100/0%	GOAL$_{100\%}$
subj.agent		5	0/100/0%	SUBJ.agent$_{100\%}$
time		3	0/100/0%	TIME:MC$_{100\%}$

TOTAL		377	27/100/27%

B.7   Confusion table: alignment

R	N	A/A$_U$/A$_L$	Confusion list
TOTAL	0	0/0/0%	

Appendix C

Annotation status

C.1   All texts

	alignment	discourse	morphology	postag	status	syntax
none	950	1890	2162		911	
auto				1774	65	
outdated-final	536				372	
first	45	47	97	1	1	131
discussed	132	98	1		89	
final	112	286	60	536	755	

C.2   da texts

	discourse	morphology	postag	syntax
none	383	463		
auto				
outdated-final				1
first	11	55	1	7
discussed	24	1		3
final	119	17	535	525

C.3   de texts

	discourse	morphology	postag	syntax
none	405	412		326
auto			413	
outdated-final				
first	9	1		56
discussed				8
final				23

C.4   en texts

	discourse	morphology	postag	syntax
none	445	535		
auto			536	65
outdated-final				371

first	22	30
discussed		1
final	72	1	69

C.5 es texts

	discourse	morphology	postag	syntax
none	341	341		341
auto			413	
outdated-final				
first	2	30		
discussed				
final	72	42		72

C.6 it texts

	discourse	morphology	postag	syntax
none	316	411		244
auto			412	
outdated-final				
first		5		38
discussed	74			77
final	23		1	57

C.7 da-de texts

	alignment	morphology	syntax
none	368		
auto			
outdated-final			
first	45	2	
discussed			
final			4

C.8 da-en texts

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

C.9 da-es texts

	alignment	discourse	morphology	syntax
none	331			

	alignment	discourse	morphology	status	syntax
auto					
outdated-final					
first			1	2	
discussed		39			
final		43			2

C.10 da-it texts

	alignment	discourse	morphology	status	syntax
none		251			
auto					
outdated-final					
first			1	1	1
discussed		93			
final		69			2

Appendix D

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