The inventory of linguistic relations used in the Copenhagen Dependency Treebanks

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

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

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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.
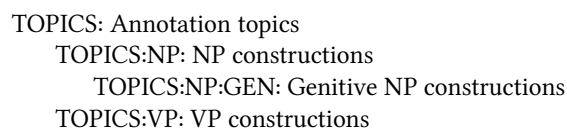
relation
isa super
[12]

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;

- *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

Annotation topics:: TOPICS

TOPICS: Annotation topics
    TOPICS:NP: NP constructions
        TOPICS:NP:GEN: Genitive NP constructions
    TOPICS:VP: VP constructions

Figure 2.1: The relations matching TOPICS-DIM.

TOPICS
isa ANY
[10]

Annotation topics. A detailed description of the annotation of specific constructions, to aid in the annotation and the understanding of the annotation in the treebanks.

Subtypes: TOPICS:NP TOPICS:VP.

TOPICS:NP
isa TOPICS
[375]

NP constructions. A detailed description of how different NP constructions are annotated.

Subtypes: TOPICS:NP:GEN.

TOPICS:NP:GEN   *Genitive NP constructions.*
    isa TOPICS:NP   Subtypes: gobj.
        [376]   Related types: gobj pobj.

     TOPICS:VP   *VP constructions.*
      isa TOPICS
        [379]

Chapter 3

Top-level relations: ANY

```
ANY: directed relation
    DIM: dimension
        DIM:LEVEL: dimension: linguistic level
        DIM:TYPE: dimension: relation type
            +: segment concatenation
            IDIOM: idiomatic relation
            PRIM: primary dependency relation
                ADJ: adjunct relation
                COMP: complement relation
            SEC: secondary dependency relation
            fill: licensed filler
```

Figure 3.1: The relations matching ANY-TOPICS-SYNTAX-MORPHOLOGY-DISCOURSE-ANAPHORA-SEMANTICS-ALIGNMENT-RULE.

ANY
[4]
Directed relation. An arbitrary directed relation between two tokens. The arrow goes from parent (head, governor, nucleus) to child (dependent, satellite).

Subtypes: DIM RULE TOPICS.

DIM
isa ANY
[5]
Dimension (long: DIMENSION). A dimension in the hierarchy. Eg, linguistic level and relation type.

Subtypes: DIM:LEVEL DIM:TYPE.

DIM:LEVEL
isa DIM
[6]
Dimension: linguistic level. Dimension specifying the linguistic level of the relation. The classification of relations into linguistic levels is slightly arbitrary (there will be borderline cases where there is no single natural classification), and does not carry any deep linguistic significance. It is more a question about linguistic convention and research tradition than about any deep underlying difference between relations.

Subtypes: ALIGN ANA DISC MORPH SEM SYN.

DIM:TYPE
isa DIM
[7]
Dimension: relation type. Dimension specifying the type of the relation.

Subtypes: + IDIOM PRIM SEC fill.

+
isa DIM:TYPE
[31]
Segment concatenation (long: CONCATENATION). A concatenation relation between two adjacent segments. This relation is used if an indecomposable lexeme has mistakenly been seg-

mented into two segments. Lexicalized complex expressions are instead marked as IDIOM relations with the "#" suffix.

Related types: IDIOM.

Pica ss o

IDIOM
isa DIM:TYPE
[32]

Idiomatic relation. An idiomatic relation. Ie, a relation between tokens in a complex lexicalized expression that form a single lexical unit.

Subtypes: PRIM"#".

PRIM
isa DIM:TYPE
[24]

Primary dependency relation (long: PRIMARY). A primary dependency relation. Ie, a relation which specifies the primary head (the governor) of a token (the dependent).

Subtypes: ADJ COMP.

ADJ
isa PRIM
[26]

Adjunct relation (long: ADJUNCT). A primary adjunct relation. The relation is licensed by the adjunct, ie, the lexical entry of the adjunct specifies the permissible adjunct frames for the adjunct (ie, the permissible adjunct roles and the restrictions on the governor, eg, with respect to word class). In the compositional semantics, the adjunct acts as functor with the governor as argument.

Subtypes: DISCOTHER DISCPRAG DISCSEM SYNADJ.

COMP
isa PRIM
[25]

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 (the complement frame specifies the permissible complement roles, and the lexical restrictions on the complements, eg, with respect to word class). In the compositional semantics, the complements act as arguments with the governor as functor.

Subtypes: "@"adverb SYNCOMP.

SEC
isa DIM:TYPE
[27]

Secondary dependency relation (long: SECONDARY). A secondary dependency relation. Eg, the secondary dependency relation in filler-gap constructions such as relatives without a relative pronoun (the relativized noun is a secondary dependent of the relative verb), raising and control constructions, and elliptic coordinations.

Subtypes: "["PRIM"]" "{"SEM"}".

fill
isa DIM:TYPE
[29]

Licensed filler. A relation from a filler licensor to a phonetically empty filler that it licenses. Filler relations are never annotated explicitly in the CDT annotation, 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 (eg, the relative verb in a relative construction acts as filler licensor for a filler that essentially provides a copy of the relativized noun, and in control constructions, the controlling verb passes on a copy of the controlled complement to the subordinate verb).

Chapter 4

Syntactic relations: **SYNTAX**

SYN: syntax level

Figure 4.1: The relations matching SYNTAX-SYNCOMP-SYNADJ-TOPICS.

SYN
isa DIM:LEVEL
[16]

Syntax level (long: SYNTAX). A relation at the syntactic level. Ie, a relation between two segments within a sentence, but not within a single word.

Subtypes: SYNADJ SYNCOMP.

4.1 Complement relations: **SYNCOMP**

SYNCOMP
isa COMP SYN
[74]

Syntactic complement. A syntactic complement role. Complements are lexically licensed by their governors. In the functor-argument structure, they act as functors with the complements as arguments.

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

@space
isa SYNCOMP
[83]

Valency-bound location/direction adverbial.

Related types: dir loc.
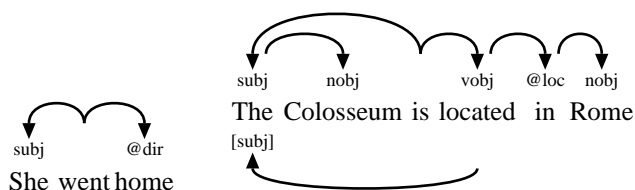
@time
isa SYNCOMP
[99]

Valency-bound time adverbial. A valency bound time expression. Formerly analyzed as locative object, but we have decided to provide a general mechanism (@) for converting adverbial relations into valency-bound relations.

Related types: cont dur ext hab prec succ.

```
SYNCOMP: syntactic complement
    @space: valency-bound location/direction adverbial
    @time: valency-bound time adverbial
    aobj: adjectival object
    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 4.2: The relations matching SYNCOMP.
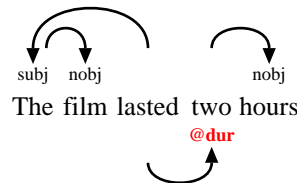
aobj
isa SYNCOMP
[90]

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

Related types: avobj.

Confusion$_3$: man$_{33\%}$ nobj$_{33\%}$ attr$_{33\%}$.
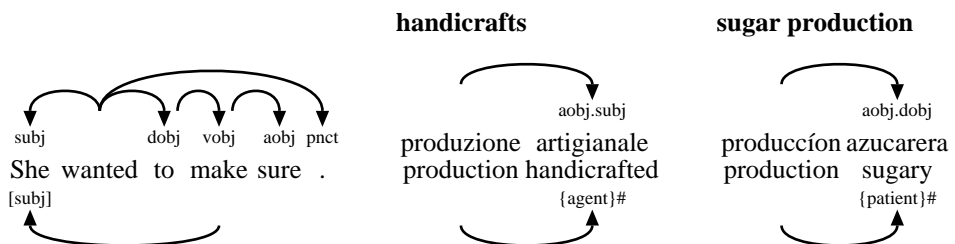
avobj
isa SYNCOMP
[91]

Adverbial object.

Related types: aobj part.

Confusion$_3$: degr$_{67\%}$ avobj$_{33\%}$.

subj   avobj pobj nobj pnct

She acted out of love .
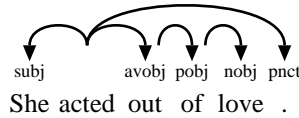
dobj
Direct object. A direct object relation. In languages with case, the direct object is typically
isa SYNCOMP
accusative-marked.
[79]

Related types: iobj robj.

Confusion$_{57}$: dobj$_{81\%}$ pobj$_{5\%}$ preds$_{4\%}$ iobj$_{4\%}$ nobj$_{2\%}$ predo$_{2\%}$ dir$_{2\%}$ pnct$_{2\%}$.

expl   dobj   nobj pnct

There are many people .

subj   dobj nobj pnct

He has a ball .

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
[92]
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 .

fill
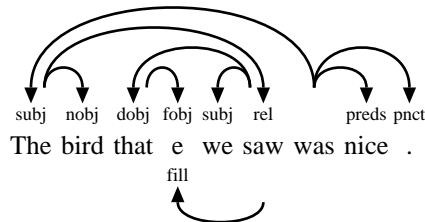
gobj
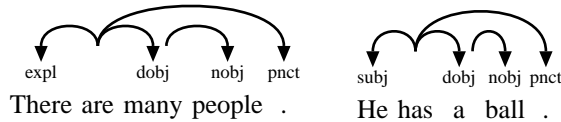*Genitive object.* If the genitve object is part of a NP which nucleus is deverbal, the following
isa SYNCOMP
annotation possibilities are available: gobj.subj{SEMROLE} gobj.dobj{SEMROLE} gobj.pobj{SEMROLE}
TOPICS:NP:GEN
gobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient,
[81]
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
{agent}
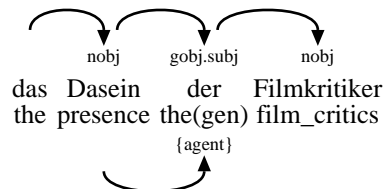
with help from the keyboard

nobj   gobj.subj   nobj

mit Hilfe   der   Tastatur
with help the keyboard
{agent}

the sale of the car　　　　　　　　**Denmark's attitude**

	nobj	gobj.dobj	nobj		nobj	gobj
der	Verkauf	des	Autos	die	Haltung	Dänemarks
the	sale	the(gen)	car(gen)	the	attitude	Denmark's

{patient}　　　　　　　　　　　　　　{arg}
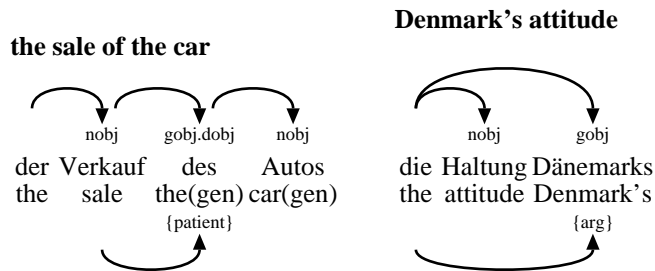
iobj *Indirect object.*
isa SYNCOMP　Related types: dobj.
[82]　Confusion$_2$: dobj$_{100\%}$.
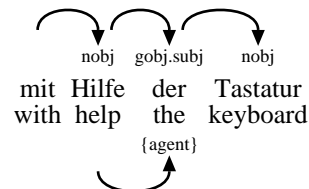

subj　iobj dobj nobj
He gave her a kiss
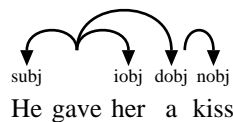
nobj *Nominal object.* If the nominal object is part of a NP which nucleus is deverbal, the following
isa SYNCOMP　annotation possibilities are available: nobj.subj{SEMROLE} nobj.dobj{SEMROLE} nobj.pobj{SEMROLE}
[89]　nobj.iobj{SEMROLE} The relevant semantic roles in this context are agent, patient, recipient,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

Confusion$_{347}$: nobj$_{95\%}$ attr$_{1\%}$ name$_{1\%}$ possd$_{1\%}$ pobj$_{1\%}$ vobj$_{1\%}$ conj$_{0\%}$ preds$_{0\%}$ subj$_{0\%}$ dobj$_{0\%}$ aobj$_{0\%}$ pnct$_{0\%}$.

They joined the party.
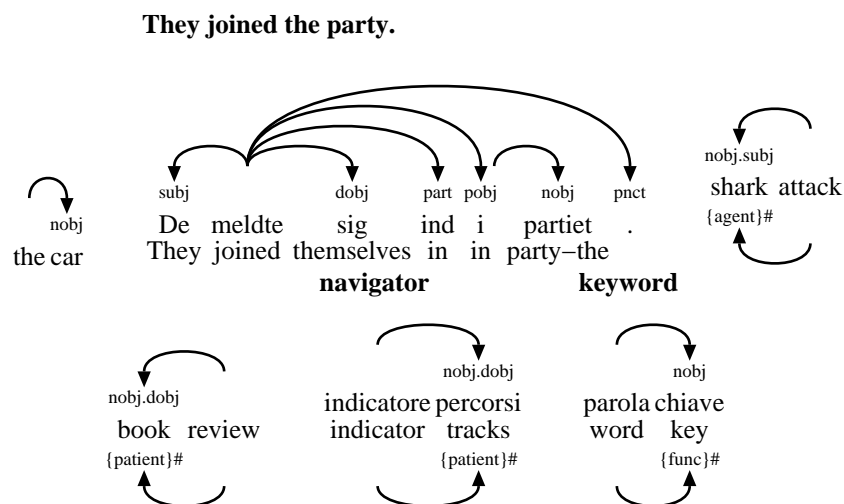
numa *Additive numeral complement.* An additive numeral complement relation. Numerals license
isa SYNCOMP　one additive and one numeral complement, both optional. The numerical value associated
[93]　with the expression is the value M * N + A, where M is the numerical value of the multi-
plicative complement, 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.

hundred two   two hundred three thousand and one
(numa)   (numm numm numa   coord numa)
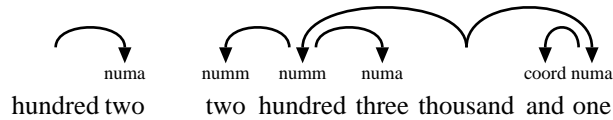
numm   *Multiplicative numeral complement.* An multiplicative numeral complement relation. Nu-
isa SYNCOMP   merals license one additive and one numeral complement, both optional. The numerical value
[94]   associated with the expression is the value M * N + A, where M is the numerical value of the
multiplicative complement, A is the numerical value of the additive complement, and N is
the numerical value associated with the lexical numeral itself. Eg, "two hundred four" has
value "2 * 100 + 4", "two hundred four thousand" has value "(2 * 100 + 4) * 1000", and "two
hundred four thousand and twenty three" has value "(2 * 100 + 4) * 1000 + (20 + (3))".

Related types: numa.
Confusion$_1$: numm$_{100\%}$.

two hundred   two hundred three thousand and one
(numm)   (numm numm numa   coord numa)
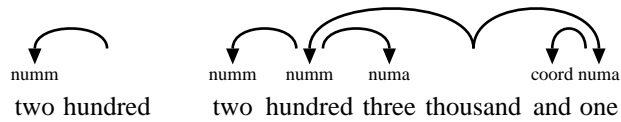
part   *Verbal particle.* Verbal particle.
isa SYNCOMP   Related types: avobj.
[95]   Confusion$_3$: part$_{67\%}$ dir$_{33\%}$.

the fair two years ago

la fiera di due anni fa
the fair of two years ago
(nobj attr nobj nobj part) {time}

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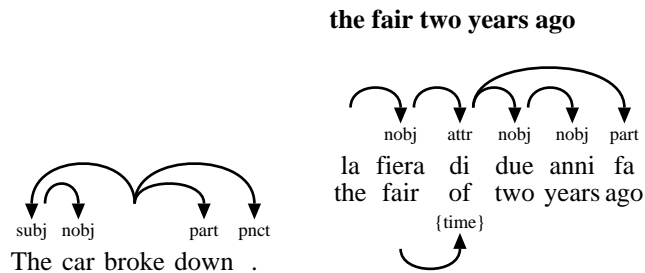
pobj   *Prepositional object.* A prepositional object relation. The governor may be a verb, noun,
isa SYNCOMP   adjective, adverbial, or another preposition. The preposition is analyzed as the head of the
[80]   prepositional object itself. If the prepositional object is part of a deverbal NP (ie, an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

Related types: SEMROLE avobj.
Confusion$_{66}$: pobj$_{58\%}$ attr$_{21\%}$ dir$_{6\%}$ dobj$_{5\%}$ source$_{3\%}$ nobj$_{3\%}$ loc$_{3\%}$ inst$_{2\%}$.

meeting of ministers

pobj.subj	nobj	nobj
riunione	fra	i	ministri
meeting	among	the	ministers

{agent}

subj	pobj	nobj	pnct
Paul	talked	about	Sarah	.

the discovering of the gold

nobj	pobj.dobj	nobj
el	descrubrimiento	del	oro
the	discovering	of–the	gold

{patient}

participation in the meeting

pobj.pobj	nobj
deltagelse	i	mødet
participation	in	meeting–the

{location}

sale to minors

pobj.iobj	nobj
salg	til	mindreårige
sale	to	minors

{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-
[96] 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$_{25}$: possd$_{88\%}$ nobj$_{8\%}$ attr$_{4\%}$.

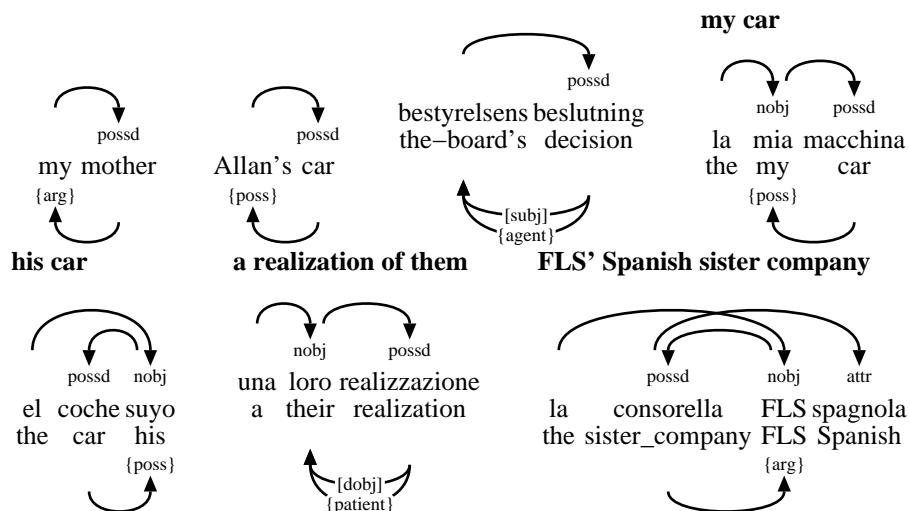| possd |
|---|
| my mother |

{arg}

possd
Allan's car

{poss}

possd
bestyrelsens beslutning
the–board's decision

[subj]
{agent}

my car

nobj	possd
la	mia	macchina
the	my	car

{poss}

his car

possd	nobj
el	coche	suyo
the	car	his

{poss}

a realization of them

nobj	possd
una	loro	realizzazione
a	their	realization

[dobj]
{patient}

FLS' Spanish sister company

| possd	nobj	attr
la	consorella	FLS	spagnola
the	sister_company	FLS	Spanish

{arg}

---

possr *Possessor complement.* NO LONGER IN USE
isa SYNCOMP The possessor complement in a possessive construction. Possession is understood in a
[97] 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.
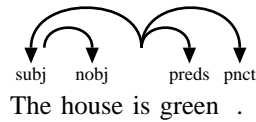
Related types: poss possd.

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

predo *Object predicative.*
isa pred Related types: preds.
[86] Confusion_1: $\text{dobj}_{100\%}$.

$$\text{subj} \quad \text{dobj} \quad \text{predo} \quad \text{nobj} \quad \text{pnct}$$
She called him a liar .
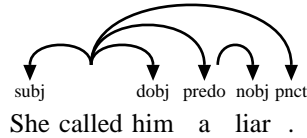
preds *Subject predicative.*
isa pred Related types: predo.
[85] Confusion_{30}: $\text{preds}_{80\%}$ $\text{dobj}_{7\%}$ $\text{nobj}_{3\%}$ $\text{comp}_{3\%}$ $\text{loc}_{3\%}$ $\text{inst}_{3\%}$.

$$\text{subj} \quad \text{nobj} \quad \text{preds} \quad \text{pnct}$$
The house is green .

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".
[98] Related types: xpl.
Confusion_2: $\text{qobj}_{100\%}$.

$$\text{pnct} \quad \text{subj} \quad \text{qobj} \quad \text{neg} \quad \text{vobj} \quad \text{dobj} \qquad \text{pnct} \quad \text{pnct} \quad \text{subj} \qquad \text{pnct}$$
" I do not love you anymore " , she said .
[subj] **dur**
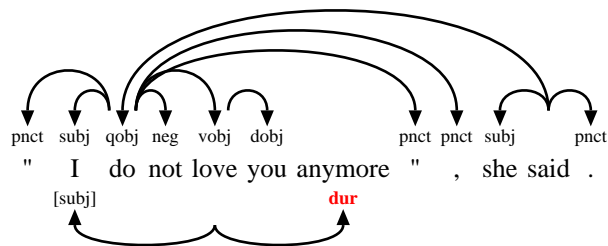
robj *Reflexive object.*
isa SYNCOMP Related types: dobj.
[88]

He decided to walk.

$$\text{subj} \qquad \text{robj} \quad \text{pobj} \quad \text{nobj} \quad \text{vobj} \quad \text{pnct}$$
Han besluttede sig for at gå .
He decided himself to to walk
[subj]
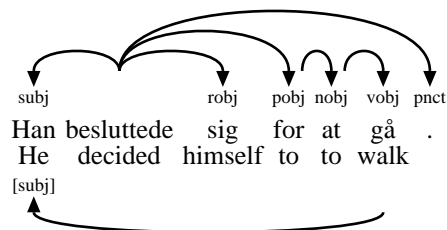
subj
isa SYNCOMP
[77]

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

Subtypes: expl.
Related types: expl.
Confusion$_{108}$: subj$_{99\%}$ nobj$_{1\%}$.

subj   dobj pnct
We like them   .
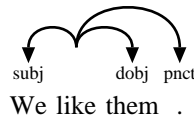
expl
isa subj
[78]

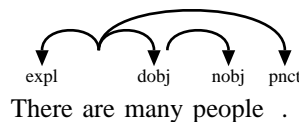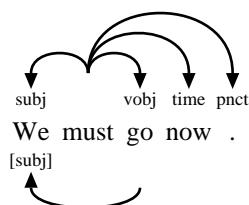*Expletive subject.* An expletive subject relation. The expletive subject is typically a situational place adverbial like "there" or time adverbial like "now", and is only possible for verbs that support the expletive alternation. The expletive alternation applies to all verbs that do not have a direct object (this observation, due to Richard Hudson, can be used as a test to distinguish between direct and indirect objects in verbs that take a single object). The alternation creates a new lexicalization of the verb by demoting the original subject to the vacant direct object role (with the restriction that only indefinites are allowed in this direct object role), and letting the subject role be filled by a situational place or time adverbial.

Related types: subj.
Confusion$_3$: expl$_{100\%}$.

expl   dobj   nobj   pnct
There are many people   .

vobj
isa SYNCOMP
[87]

Verbal object.
Related types: "["$PRIM"]".
Confusion$_{75}$: vobj$_{96\%}$ nobj$_{3\%}$ conj$_{1\%}$.

subj   vobj time pnct
We must go now   .
[subj]

4.2 Adverbial adjunct relations: ADVERB

ADVERB
isa SYNADJ
[138]

Adverbial (deprecated other). V/N/P->adverbial

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

agent
isa ADVERB
[166]

Agent adverbial. The passivized agent in passives.

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

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

Figure 4.3: The relations matching ADVERB.
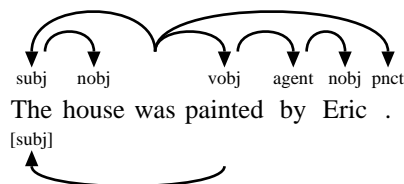
cause *Causation adverbial.* Causation adverbial. Describes why the event occurred.
isa ADVERB Subtypes: goal.
    [156]

subj · cause · subj · vobj · vobj · pnct
John fell because he was pushed .
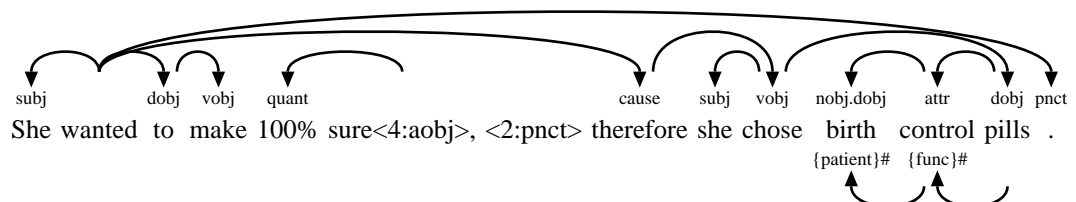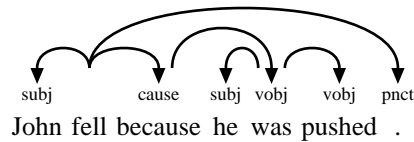
goal *Goal adverbial.* Describes the intended goal of the event/action.
isa cause Related types: reas.
[157]

subj · vobj · goal · vobj · dobj · pnct
Kate is working to earn money .

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 .
{apart}
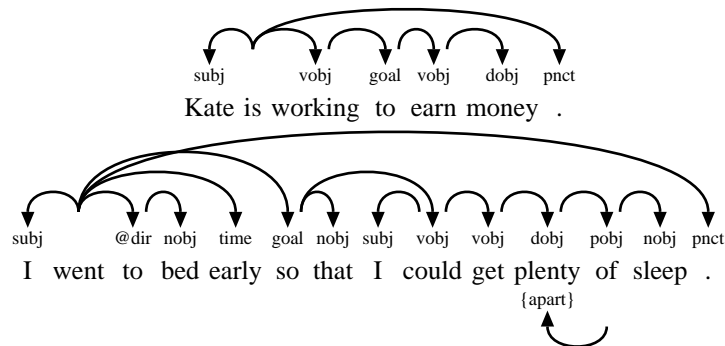
conc *Concession adverbial* (long: concession). Describes the concession of the event/action.
isa ADVERB Confusion$_3$: contr$_{67\%}$ conc$_{33\%}$.
[160]

subj · dobj · conc · subj · vobj · preds · possd · pnct
I said it though he is my brother .
{arg}
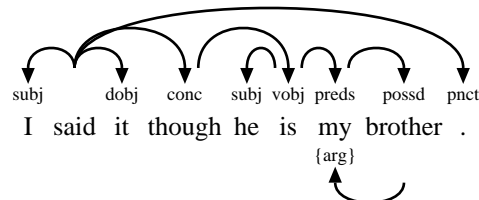
concom . Gerunds in Romance
isa ADVERB Related types: vobj.
[164]

The agressor fled and/but got caught hours later.

subj · nobj · pnct · concom · vobj · avobj · pnct
El agresor huyó , siendo detenido horas después .
The agressor fled being caught hours after
succ
[subj]
[subj]
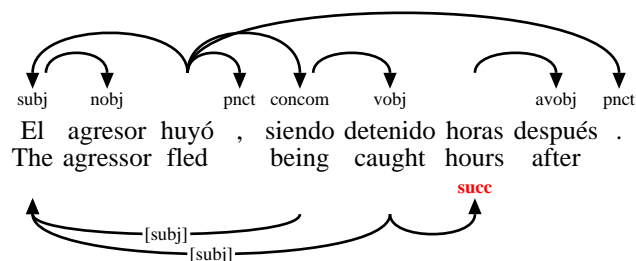
cond *Condition adverbial* (long: condition). Describes the condition of the event/action.
isa ADVERB Related types: pcond.
[159] Confusion$_1$: cond$_{100\%}$.

If you are having health problems , write to " The Doctors " .
{about}# ben
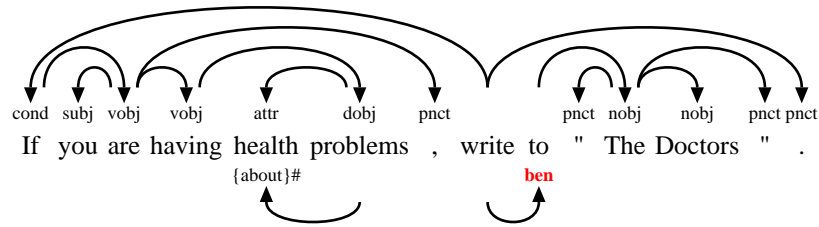
cons *Consequence adverbial* (long: consequence). Describes the consequence of the event/action.
isa ADVERB   Related types: xtop.
[158]   Confusion$_1$: cons$_{100\%}$.

exem *Example adverbial* (long: exemplification, deprecated ex). Exemplification; subordinated the object
isa ADVERB   which is added to a list.
[163]   Confusion$_1$: exem$_{100\%}$.

Poe wrote e.g. "The Tell–tale Heart" .
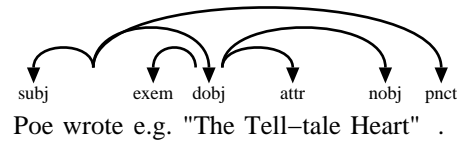
man *Manner adverbial* (long: manner). The way things are done
isa ADVERB   Subtypes: accom inst.
[153]   Related types: fpredo.
   Confusion$_{18}$: man$_{33\%}$ time$_{11\%}$ degr$_{11\%}$ other$_{11\%}$ source$_{6\%}$ epi$_{6\%}$ attr$_{6\%}$ aobj$_{6\%}$ accom$_{6\%}$ eval$_{6\%}$.

He talks slowly .
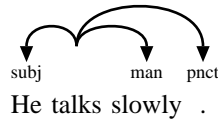
accom *Companionship adverbial* (long: accompainship, deprecated comp). Companionship
isa man   Related types: man.
[154]   Confusion$_1$: preds$_{100\%}$.

The husband came with his wife .
{arg}
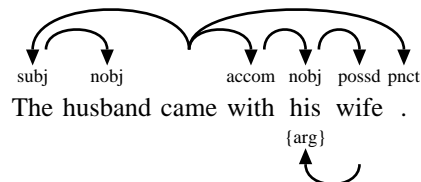
inst *Instrument adverbial* (long: instrument). Instrument/means
isa man   Related types: man.
[155]   Confusion$_8$: inst$_{50\%}$ loc$_{13\%}$ preds$_{13\%}$ bg$_{13\%}$ pobj$_{13\%}$.

He opened the door with the key .
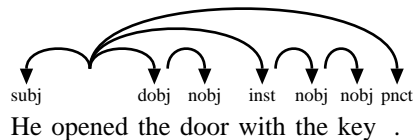
neg *Negation adverbial.* Negation of a verbal
isa ADVERB
[167]   Confusion$_8$: neg$_{100\%}$.

It's never a problem.

subj   neg   vobj   pnct
Thomas is not coming .
[subj]

neg   neg   preds   nobj   pnct
Non è mai un problema .
Not is–it never a problem

She never lied

subj neg   time
Ella no mintio nunca
She not lied never
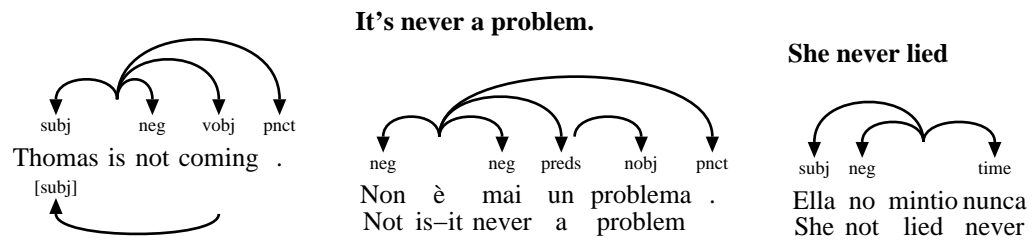
other *Other adverbial.*
isa ADVERB
[168]   Confusion$_7$: loc$_{43\%}$ man$_{29\%}$ focal$_{14\%}$ attr$_{14\%}$.

prg *Pragmatic adverbial* (long: pragmatic). Sentence level.
isa ADVERB
[139]   Subtypes: discmark epi eval focal scene.

discmark *Sentence-initial discourse marker* (long: discoursemarker). Discourse marker
isa prg   Related types: coord.
[144]   Confusion$_1$: add$_{100\%}$.

And I'm telling you...

discmark dobj   subj iobj pnct
Og det siger jeg dig ...
And that say I you

But I'm telling you...

discmark dobj   subj iobj pnct
Men det siger jeg dig ...
But that say I you
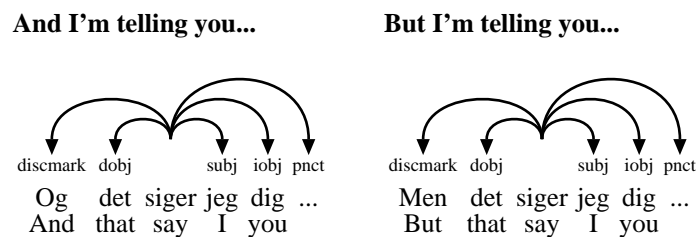
epi *Epistemic adverbial* (long: epistemic). Regarding the level of truth in the expression
isa prg   Related types: eval.
[142]   Confusion$_2$: epi$_{50\%}$ man$_{50\%}$.

subj   epi   preds   pnct
He is maybe wrong .
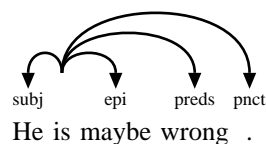
eval *Evaluation adverbial* (long: evaluation, deprecated evalatt). Evaluating and attitude adverbials
isa prg   Related types: epi.
[143]   Confusion$_8$: att$_{38\%}$ degr$_{25\%}$ eval$_{25\%}$ man$_{13\%}$.

eval   pnct subj   preds pnct
However , I am fine .

subj   nobj   eval   preds pnct
The weather is unfortunately bad .
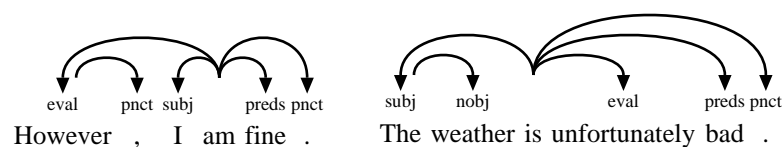
focal *Focalizer adverbial* (long: focalizator). Focalization of a noun
isa prg   Related types: quant.
[140]   Confusion$_6$: focal$_{33\%}$ other$_{17\%}$ correl$_{17\%}$ loc$_{17\%}$ attr$_{17\%}$.

focal subj   dobj pnct
Even Italy imports pasta .
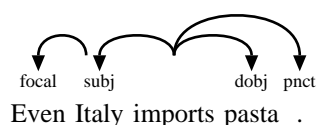
scene *Pragmatic condition and structural adverbial* (deprecated prgcondpcondbgstruct). Setting the
isa prg   scene
[141]   Subtypes: add contr elab.
Related types: cond.
Confusion$_1$: time$_{100\%}$.

coord subj   neg vobj   dobj pnct scene subj   vobj pnct
But   I   have not seen anything ,   if   anyone asks .
[subj]

scene subj   vobj   pnct   expl   dobj nobj pobj nobj pnct
As   I   mentioned earlier ,   there is no doubt about it   .
prec
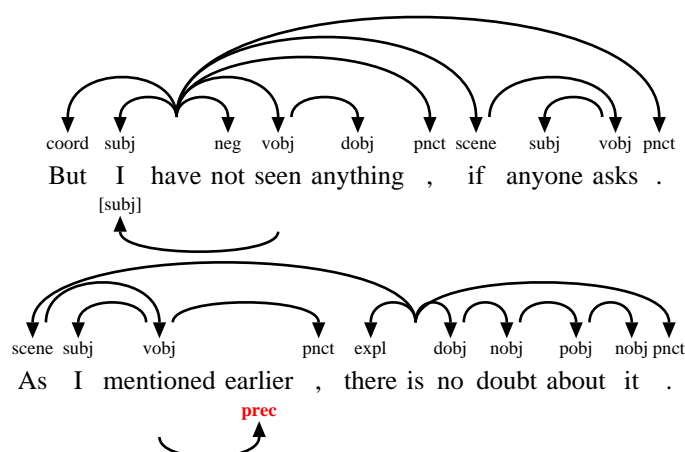
add *Additive adverbial* (long: additive). Additive information
isa scene   Confusion$_8$: add$_{88\%}$ discmark$_{13\%}$.
[147]

subj nobj   add dobj nobj pnct
The house has also a garage .
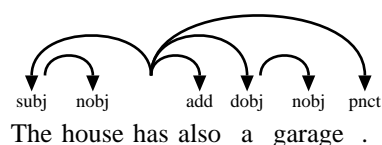
contr *Contrast adverbial* (long: contrast). Opposition
isa scene   Related types: struct.
[145]   Confusion$_3$: conc$_{67\%}$ coord$_{33\%}$.

contr pobj nobj pnct subj   dobj   attr   nobj pnct
Instead of fruits ,   he bought two chocolate muffins .
{const}#
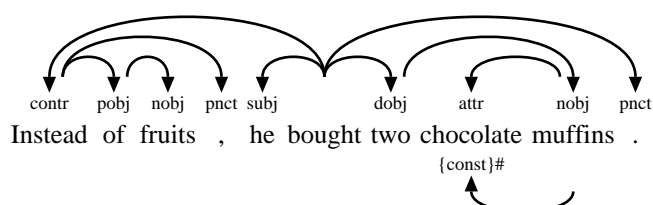
elab *Elaboration adverbial* (long: elaboration). More detailed description
isa scene
[146]

I am going to the place where I work best , i.e. the coffee shop .

subj — vobj — @dir — nobj — nobj — loc — subj — relr — man — pnct — elab — nobj — attr — nobj — pnct

[subj]   ref   {func}#
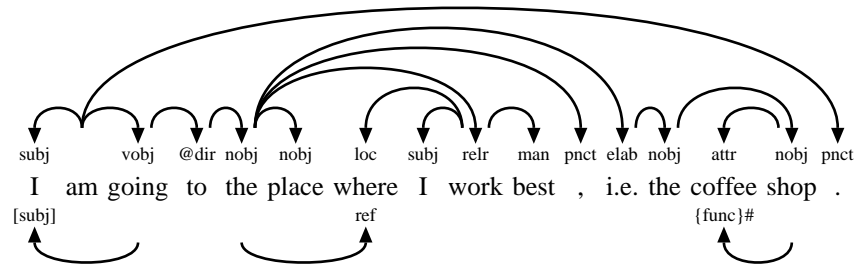
quant *Degree adverbial* (long: quantification, deprecated degr). Modifies the object or verbal by degree
isa ADVERB   Related types: focal.
[165]   Confusion$_{26}$: degr$_{77\%}$ man$_{8\%}$ avobj$_{8\%}$ eval$_{8\%}$.

quant — subj — nobj — pnct

Only two people came .
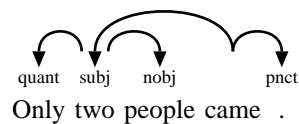
resem *Comparison adverbial* (long: resemblance, deprecated comparecomp). Comparison
isa ADVERB   Subtypes: ""QUALIA.
[161]

subj — resem — nobj — nobj — pnct

She walks like a lady .
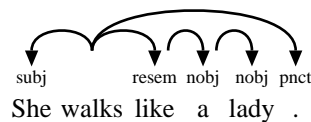
""QUALIA *Resemblance wrt. $qualia relation.*
isa RULE resem

source *Source attribution adverbial.* Reference/source
isa ADVERB   Confusion$_3$: pobj$_{67\%}$ man$_{33\%}$.
[162]

subj — vobj — source — pobj — nobj — nobj — pnct

Adam got fired according to the contract .

[subj]
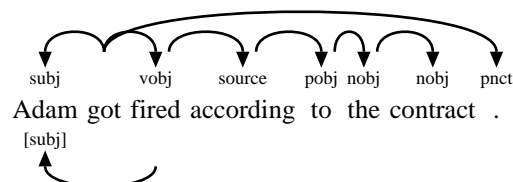
space *Space adverbial.* Space adverbials
isa ADVERB   Subtypes: dir loc.
[150]

dir *Direction adverbial* (long: direction). Movement from one place to another; direction
isa space   Related types: loc.
[152]   Confusion$_{10}$: pobj$_{40\%}$ dir$_{30\%}$ loc$_{10\%}$ part$_{10\%}$ dobj$_{10\%}$.

There is a long way from Japan to Germany .
(expl dobj attr nobj dir nobj pobj nobj pnct)
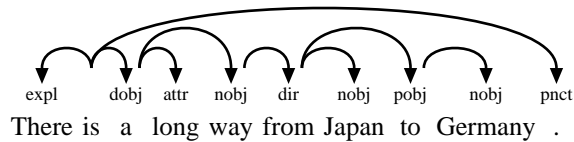
loc *Location adverbial* (long: location). Location
isa space   Related types: dir.
[151]   Confusion$_{34}$: loc$_{71\%}$ other$_{9\%}$ pobj$_{6\%}$ preds$_{3\%}$ focal$_{3\%}$ attr$_{3\%}$ dir$_{3\%}$ inst$_{3\%}$.

as we say in Denmark
(dobj subj loc nobj)
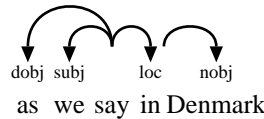
time *Time adverbial.* Time relating adverbials
isa ADVERB   Subtypes: iter.
[148]   Confusion$_{23}$: time$_{78\%}$ man$_{9\%}$ struct$_{4\%}$ hab$_{4\%}$ attr$_{4\%}$.

The Smiths arrive sunday .
(subj nobj time pnct)

She never lied

Ella no mintio nunca
She not lied never
(subj neg time)
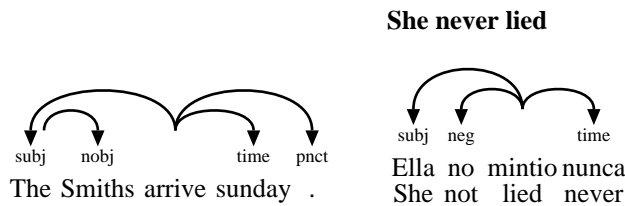
iter *Habituality adverb* (deprecated hab). Habitual; repeated habit
isa time   Related types: dur ext.
[149]   Confusion$_{1}$: time$_{100\%}$.

Every_time he leaves , she begins to cry .
(iter subj vobj pnct subj pobj vobj pnct)
[subj]
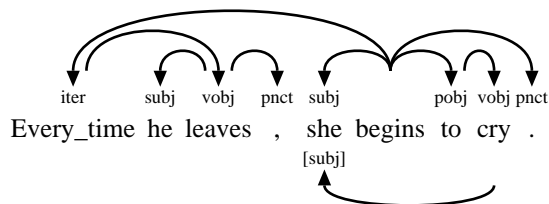
4.3 Other adjunct relations: **SYNADJ**

SYNADJ *Syntactic adjunct.* A syntactic adjunct role. Adjuncts license their governors. In the functor-
isa ADJ SYN   argument structure, they act as modifiers (ie, functors) which as their argument take the
[75]   governor along with its complements and lower-scoped adjuncts.

     Subtypes: ADVERB GAP app attr attrg conj coord correl fpred mod name pnct rel voc xtop.

GAP *Gapping dependent* (long: GAPPING). A relation between a gapping dependent in a secondary
isa SYNADJ   conjunct and the head of the first conjunct. In gapping coordinations, the secondary con-
[28]   juncts have an elided head, so the remaining material in the secondary conjuncts is instead

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

Figure 4.4: The relations matching SYNADJ-ADVERB.

analyzed as gapping dependents of the head of the first conjunct. In the final CDT annotation, the annotation of gapping dependents will eventually be used to insert a phonetically empty head for the gapped conjuncts, and the gapping dependents will be attached to this gapped head.

Subtypes: ”<”PRIM…”:”INTEGER”>”.
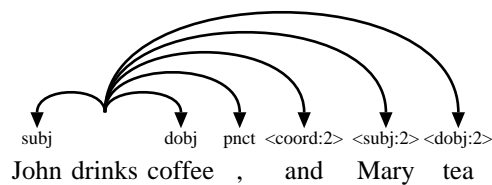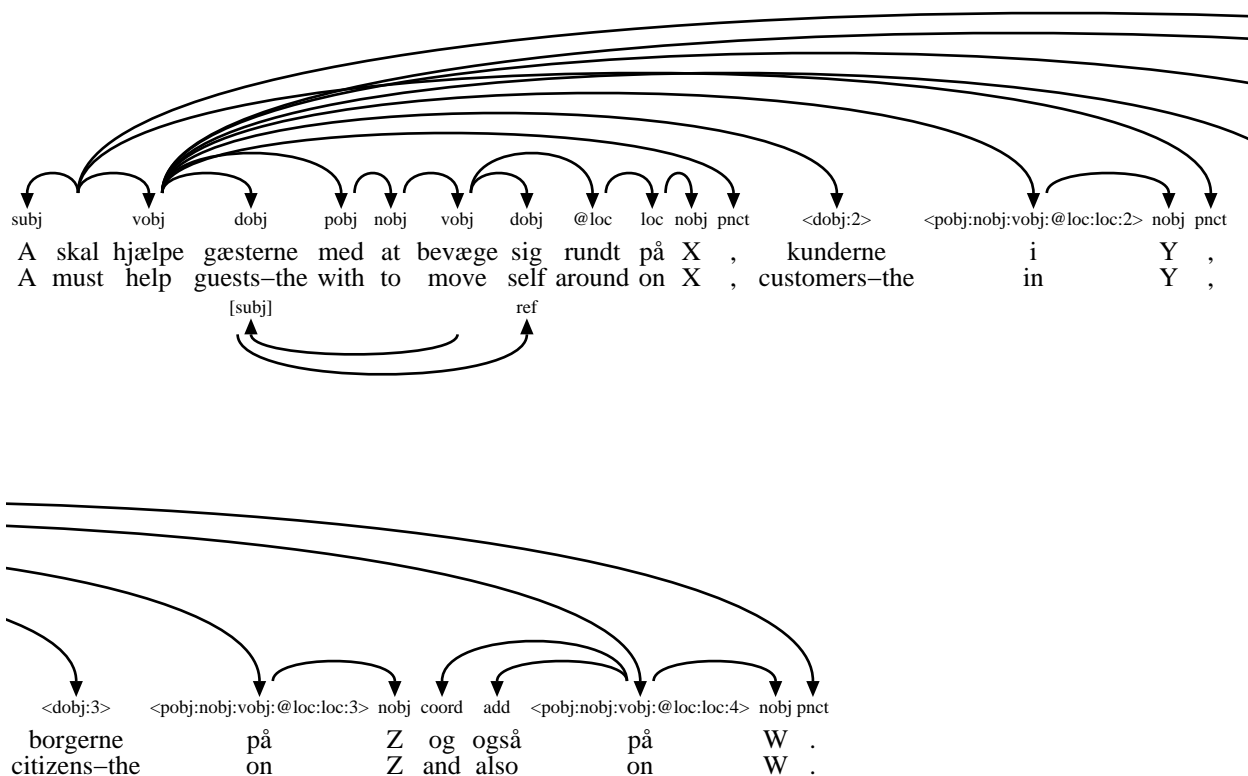
subj vobj dobj pobj nobj vobj dobj @loc loc nobj pnct <dobj:2> <pobj:nobj:vobj:@loc:loc:2> nobj pnct

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	,

[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	.

"<"PRIM…":"INTEGER">" *Gapping dependent.* First conjunct->gapping dependent
isa GAP RULE
[350]

subj dobj pnct <coord:2> <subj:2> pnct

Peter likes dogs , and Elizabeth cats .
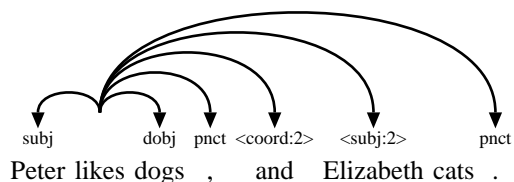
app *Apposition.* An appositional relation between two phrases, typically NPs. The head of the
isa SYNADJ first NP in the apposition is always analyzed as the head of the second NP.
[113] Subtypes: appa appr.

Related types: appa appr.

appa *Parenthetic apposition (comma).*
isa app Subtypes: xpl.
[114] Related types: appr xpl.
Confusion$_4$: appa$_{100\%}$.

pnct appa nobj   subj preds pnct appa attr nobj pnct

Einstein , the genius   He was angry , a bad habit .
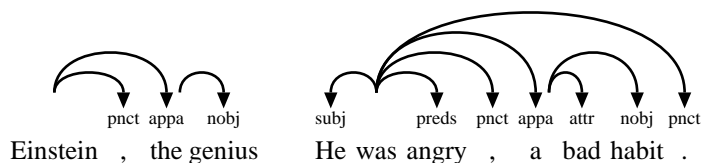
xpl *Explication.* Explication of an NP or VP.
isa appa Related types: qobj.
[127] Confusion$_2$: xpl$_{100\%}$.

The title of the plan : " The Virtuous Circle " .
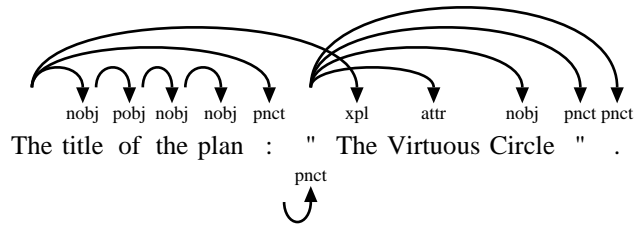
appr *Restrictive apposition (no comma).*
isa app Related types: appa.
[115] Confusion$_5$: appr$_{100\%}$.

the genius Einstein   the happy couple Ian and Martha

Goethe's novel Faust is brilliant .
{agent}
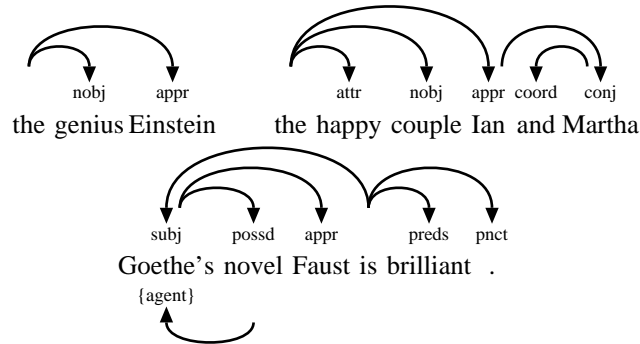
attr *Attributive* (deprecated `attrdattrr`). An attributive relation, typically between an adjective and a
isa SYNADJ noun/determiner. In Germanic languages, adjectives are assumed to modify the determiner
[111] (because of the strong/weak congruence between determiner and adjective), or the noun if
no determiner is present; in Romance languages, adjectives are assumed to modify the noun
even if there is a determiner, and the determiner is only analyzed as the head if no noun is
present (eg, in partitive constructions). The only exception to this rule is when the adjective
and the noun form a compound, in which case the adjective is always analyzed as a "attr#"
dependent of the lexical noun in both Germanic and Romance languages, even if a determiner
is present.

Related types: SEMROLE attrg pobj.
Confusion$_{189}$: attr$_{85\%}$ pobj$_{7\%}$ nobj$_{2\%}$ conj$_{1\%}$ time$_{1\%}$ name$_{1\%}$ focal$_{1\%}$ possd$_{1\%}$ man$_{1\%}$ aobj$_{1\%}$ other$_{1\%}$ loc$_{1\%}$.

new books   the new book   the new red book   a nice , varm , friendly welcome **warship**

barco de guerra
ship of war
{func}#

the three wonderful books   a house built of bricks

28

the parliamentary groups   **vanilla sugar**

nobj   attr   attr

i gruppi parlamentari   zucchero vanigliato
the groups parliamentary   sugar   vanillarized
          {func}#   {const}#

attr   nobj

una bella giornata
a beautiful day

nobj pobj.subj nobj nobj attr nobj attr nobj

a meeting between the directors in Spain in 2002
                  {agent}   {location}   {time}

attrg *Genitive attributive.*
isa SYNADJ Related types: SEMROLE gobj.
[112]

the lady's car   **Peter's car**

nobj attrg nobj   nobj attrg

das Auto der Frau   das Auto Peters
the car the(gen) lady   the car Peter's
        {poss}   {poss}
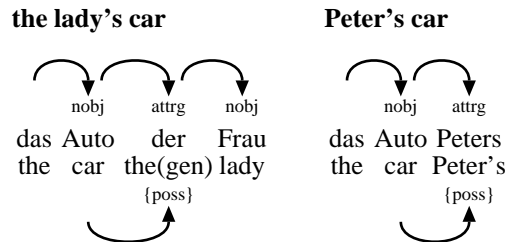
conj *Conjunct relation.* A dependency relation relating the conjuncts in a coordination. Secondary
isa SYNADJ conjuncts are analyzed as "conj"-dependents of the first conjunct. Coordinators are analyzed
[103] as dependents of the secondary conjuncts.

Related types: coord correl.
Confusion$_{79}$: conj$_{95\%}$ attr$_{3\%}$ nobj$_{1\%}$ vobj$_{1\%}$.

subj dobj coord conj pnct   subj   dobj pnct conj coord conj pnct
We met John and Mary .   We met John , Mary and Sue .
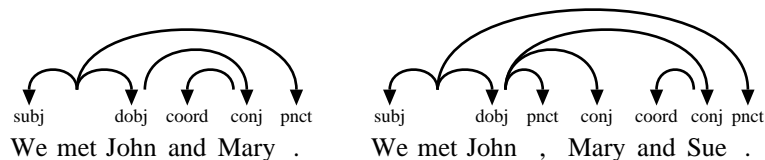
coord *Coordinator relation.* A dependency relation between a coordinating conjunction and a sec-
isa SYNADJ ondary conjunct. The coordinator is analyzed as a dependent of the secondary conjunct.
[104] Secondary conjuncts are in turn analyzed as "conj"-dependents of the first conjunct.

Related types: conj correl discmark.
Confusion$_{52}$: coord$_{98\%}$ contr$_{2\%}$.

subj dobj coord conj pnct   subj   dobj pnct conj coord conj pnct
We met John and Mary .   We met John , Mary and Sue .
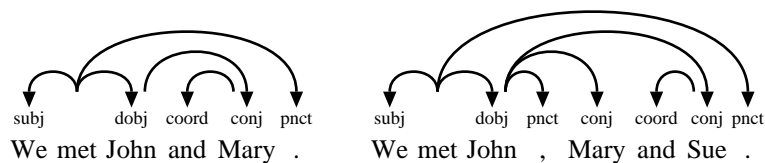
correl *Correlative coordinator relation.*
isa SYNADJ Related types: conj coord.
[105] Confusion$_2$: correl$_{50\%}$ focal$_{50\%}$.

subj   correl dobj pnct coord conj pnct

We met neither John , nor Mary .

subj correl   dobj pnct coord conj pnct

We neither met John , nor Mary .
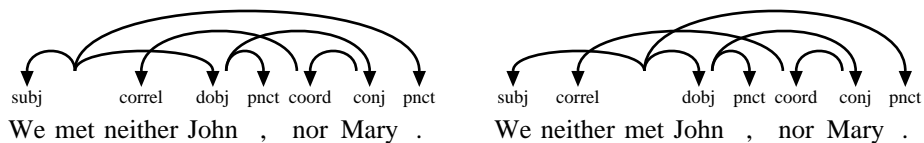
fpred *Free predicative.*
isa SYNADJ Subtypes: fpredo fpreds.
[108] Related types: fpredo fpreds.

V–>free predicative

fpredo *Free direct-object predicative.*
isa fpred Related types: fpreds man.
[110]
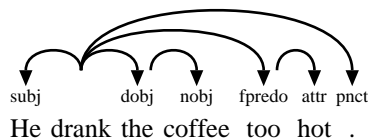
subj   dobj nobj fpredo attr pnct

He drank the coffee too hot .

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

fpreds subj   @dir nobj nobj pnct

Terrified she walked down the street .
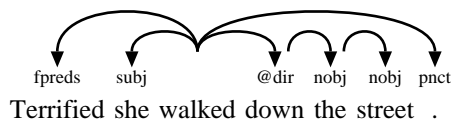
mod *Modifier/adverbial.* Deprecated name for adverbials
isa SYNADJ
[133] Subtypes: modp.

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

name *Part of name.* Part of a name.
isa SYNADJ Subtypes: namef namel title.
[121] Confusion$_{14}$: name$_{79\%}$ nobj$_{14\%}$ attr$_{7\%}$.

name nobj

a Garrett engine

nobj name

a Citroen X2
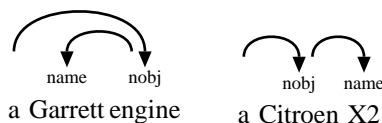
namef *First name.* A first name.
isa name Related types: namel title.
[122] Confusion$_{19}$: namef$_{100\%}$.

30

namef

John Travolta
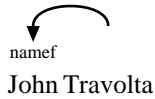
namel *Last name.* A second last name
isa name   Related types: namef title.
  [123]   Confusion$_4$: namel$_{100\%}$.

namef   namel

Matthias Trautner Kromann
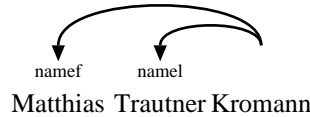
title *Person title.* A title in a name. If the is the title is determinated by an article, eg. the director
isa name   Smith, the title must be annotated as "nobj" and the name as "appr".
  [124]   Related types: namef namel.
  Confusion$_3$: title$_{100\%}$.

title

Dr. Zhivago
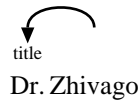
pnct *Punctuation.*
isa SYNADJ   Confusion$_{194}$: pnct$_{99\%}$ nobj$_{1\%}$ dobj$_{1\%}$.
  [106]

subj   dobj   pnct   conj   coord   conj   pnct

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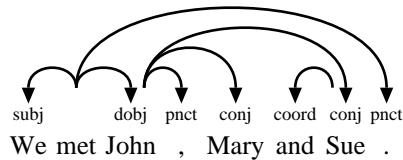
rel *Relative clause.* A relation between a relative clause and a relativized NP/VP. The finite verb
isa SYNADJ   in the relative clause is analyzed as a "rel" dependent of the head of the relativized NP/VP
  [116]   (ie, the determiner if present, otherwise the noun). If there is a relative pronoun,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

attr   nobj   subj   relr   dobj   nobj   nobj   coord   conj   nobj   subj   relr

the five girls who meet (each other)   the boy and the girl who meet

ref   ref
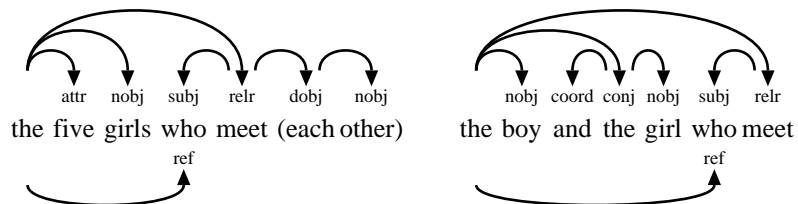
relelab *Elaborating relative clause.* Ledsætning med sætningsantecedent i hovedsætning; da: hvilket,
isa rel it: il che, cosa che
[119] Related types: relpa relr.

$$V{-}{>}V$$

relpa *Parenthetic relative clause.*
isa rel Related types: relelab relr.
[118] Confusion$_{10}$: relr$_{70\%}$ relpa$_{30\%}$.

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

will be exempt on environmental grounds .
relpa *pnct*
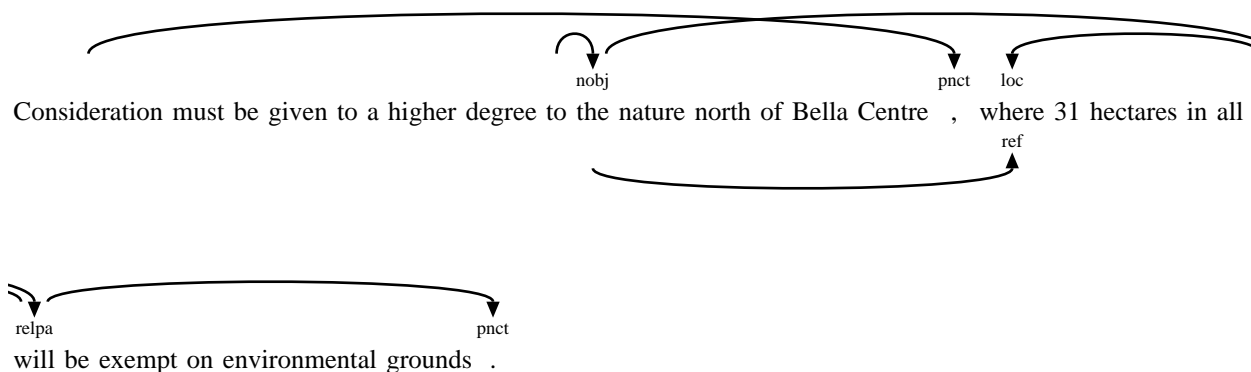
relr *Restrictive relative clause.*
isa rel Related types: relelab relpa.
[117] Confusion$_{17}$: relr$_{59\%}$ relpa$_{41\%}$.

The part of the Amager Commons , which has not become a part of Ørestaden is to be preserved .
subj *pnct* *subj* *relr* *pnct*
ref
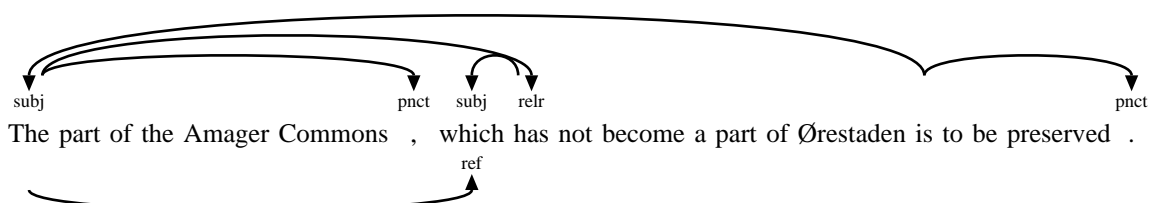
voc *Vocative.* Vocative specification. The person to whom the statement is directed.
isa SYNADJ
[126]

Mary , will you help me ? Will you help me , Mary ?
voc *pnct* *subj* *vobj* *pnct* *subj* *vobj* *dobj* *pnct* *voc* *pnct*
[subj] dobj [subj]
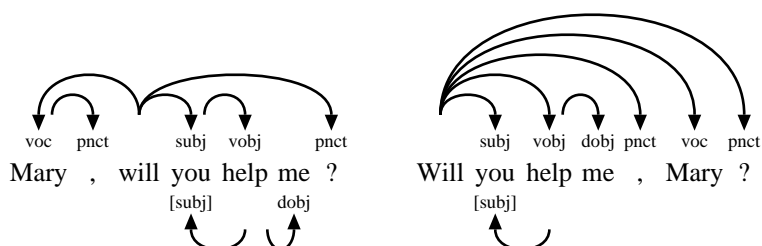
xtop *External topic with resuming pronoun.* An external topic is a sentence-initial NP whose only
isa SYNADJ function is to provide the antecedent for a pronoun later in the sentence. Eg in "John, he is a
[120] nice person". Here "John" is the "xtop" of "is", and "he" is the subject of "is".
Related types: cons ref xtop.

xtop pnct subj preds attr nobj pnct
John , he is a nice person .
ref

xtop nobj pnct subj preds pnct
That boy , he is nice .
ref
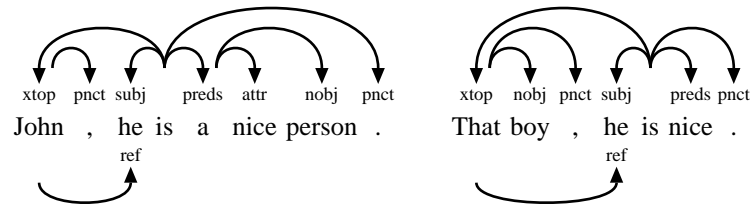
If you are having any problems, call me.

subj preds pnct xtop nobj pnct
He is nice , that boy .
ref

xtop subj vobj dobj nobj pnct cons dobj pnct
Hvis du har nogen problemer , så ring til mig .
If you have any problems then call to me
ref **ben**
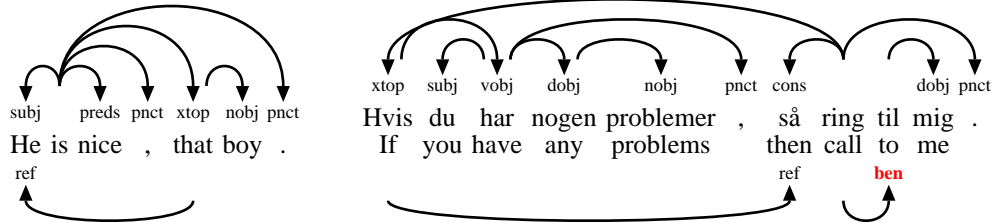
Chapter 5

Morphological relations: MORPHOLOGY

```
MORPH: morphology level
    "§"PRIM: morphology specification
```

Figure 5.1: The relations matching MORPHOLOGY-MORPHCOMP-MORPHDERIV-TOPICS.

MORPH
isa DIM:LEVEL
[15]

Morphology level (long: MORPHOLOGY). A relation at the morphological level. Ie, a relation between two word segments within a single word.

Subtypes: "§"PRIM MORPHCOMP MORPHDERIV.

"§"PRIM
isa MORPH RULE
[353]

Morphology specification.

5.1 Compositional relations: MORPHCOMP

MORPHCOMP
isa MORPH
[253]

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 CONST EVAL FUNC LOC OTHER POSS RESEM SOURCE TIME:MC.

ABOUT
isa MORPHCOMP
[340]

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

$$(\text{theme: skattelov 'tax law'} = \text{lov} -[\text{skat}]\text{te/ABOUT})$$

AGENT
isa MORPHCOMP
[332]

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

$$(\text{agent: politikontrol 'police control'} = \text{kontrol} -\text{politi/AGENT})$$

CONST
isa MORPHCOMP
[331]

Noun-noun compound (constitutive). Non-head has a constitutive meaning wrt. head.

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

```
MORPHCOMP: compositional semantic relations
    ABOUT: noun-noun compound (about)
    AGENT: noun-noun compound (agentive)
    CONST: noun-noun compound (constitutive)
        CONST:apart: part of relation
        CONST:elab: elaboration
        CONST:exem: exemplification
        CONST:rest: restatement
    EVAL: noun-noun compound (evaluative)
    FUNC: noun-noun compound (function)
    LOC: noun-noun compound (position)
    OTHER: noun-noun compound (other)
    POSS: noun-noun compound (possession)
    RESEM: noun-noun compound (resemblance)
    SOURCE: noun-noun compound (origin)
    TIME:MC: noun-noun compound (time)
```

Figure 5.2: The relations matching MORPHCOMP.

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

CONST:apart
isa CONST
[213]

Part of relation. S is a part of N

Typical connectives: [da] Herunder, Heri.

CONST:elab
isa CONST
[212]

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

Typical connectives: [it] Cioè.

Related types: CONJ.

CONST:exem
isa CONST
[211]

Exemplification. S gives examples of elements or phenomena mentioned in N

Typical connectives: [en] For example.

CONST:rest
isa CONST
[214]

Restatement. S states N again in a different way

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

EVAL
isa MORPHCOMP
[338]

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

coche de lujo 'luksusbil'

FUNC
isa MORPHCOMP
[334]

Noun-noun compound (function). Non-head has a functional meaning wrt. head.

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

LOC
isa MORPHCOMP
[336]

Noun-noun compound (position). Non-head has a locative meaning wrt. head.

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

OTHER
isa MORPHCOMP
[341]

Noun-noun compound (other). If in doubt about the meaning relation between head and non-head.

POSS
isa MORPHCOMP
[335]

Noun-noun compound (possession). Non-head has a possessive meaning wrt. head.

(possession: politibil = bil –politi/POSS

RESEM
isa MORPHCOMP
[339]

Noun-noun compound (resemblance). Denotations of head and non-head resemble each other.

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

SOURCE
isa MORPHCOMP
[333]

Noun-noun compound (origin). Non-head has a meaning of origin wrt. head.

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

TIME:MC
isa MORPHCOMP
[337]

Noun-noun compound (time). Non-head has a temporal meaning wrt. head.

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

5.2   Derivational relations: MORPHDERIV

MORPHDERIV: derivational semantic relations

Figure 5.3: The relations matching MORPHDERIV-PREFIX-SUFFIX.

MORPHDERIV
isa MORPH
[252]

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

Subtypes: PREFIX SUFFIX.

5.2.1   Prefix relations: PREFIX

PREFIX
isa MORPHDERIV
[255]

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.

ITER
isa PREFIX
[270]

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

(iterative: redefine = define –re/ITER)

```
PREFIX: semantic relations appearing with prefixes
    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
        TELIC:cons.dir: direct, physical consequence, result
        TELIC:cons.sbj: pragmatic/personal conclusion, deduction
        TELIC:goal: goal relation (discourse)
    TIME§: time
    TRANS: transitivity
```

Figure 5.4: The relations matching PREFIX.

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

MOD:eval *Evaluation* (deprecated MOD:man). Prefix conveys evaluation
isa MOD
[276]

$$(\text{manner: maleducado} = \text{educado} -\text{mal/MOD:eval})$$

MOD:qual *Qualification* (deprecated MOD:qual+MOD:rel+GRAD:qual). Prefix conveys qualification.
isa MOD
[277]

$$(\text{qualification: paleochristian} = \text{christian} -\text{paleo/MOD:qual})$$

MOD:quant *Quantification* (deprecated MOD:cuant+GRAD:size). Prefix conveys quantification.
isa MOD
[275]

$$(\text{quantification: multicultural} = \text{cultural} -\text{multi/MOD:quant})$$

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

NEG:contr *Contrast* (deprecated NEG:oppo). Prefix conveys contrast.
isa NEG
[267]

$$(\text{opposition: antihero} = \text{hero} -\text{anti/NEG:contr})$$

NEG:priv *Privation.* Prefix conveys privation.
 isa NEG
 [268]
                            (privation: desalt = salt –de/NEG:priv)

NEG:rev *Reversion* (deprecated ASPEC:rev). Prefix conveys reversion.
 isa NEG
 [269]
                            (reversion: deactivate = activate –de/NEG:rev)

PRE:other *Other prefix relation.* If in doubt about the meaning conveyed by the prefix
 isa PREFIX
  SPACE *Space* (deprecated LOC). Prefix expresses space in a broad sense.
 isa PREFIX
 [258] Subtypes: SPACE:dir SPACE:loc SPACE:source.

SPACE:dir *Direction* (deprecated LOC:dir). Prefix expresses direction.
 isa SPACE
 [260]
                        (direction/origin: deverbal = verbal –de/SPACE:dir)

SPACE:loc *Location* (deprecated LOC:pos). Prefix expresses location.
 isa SPACE
 [259]
                        (position: intramural = mural –intra/SPACE:pos)

SPACE:source *Source* (deprecated LOC:proce). Prefix conveys source.
 isa SPACE
 [261]
                        (origin: extraer: = traer –ex/SPACE:source)

TELIC *Telic* (deprecated ASPEC:term+resul). Prefix conveys termination or result.
 isa PREFIX Subtypes: TELIC:cons.dir TELIC:cons.sbj TELIC:goal.
 [272]
                        (terminative: oplåse 'open' = låse –op/TELIC)

TELIC:cons.dir *Direct, physical consequence, result* (deprecated TELIC:dir). Physical, objectivally observed consequence or result
 isa TELIC
 [208]
  Typical connectives: [da] Derfor, Af den grund.

TELIC:cons.sbj *Pragmatic/personal conclusion, deduction* (deprecated TELIC:sbj). Subjective conclusion or deduction on behalf of the speaker
 isa TELIC
 [209]
  Typical connectives: [da] Derfor, Af den grund.

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

  TIME§ *Time.* Prefix conveys time in a broad sense.
 isa PREFIX
  TRANS *Transitivity.* Prefix conveys transitivity.
 isa PREFIX
 [273]
                        (transitivising: påsejle 'collide': sejle –på/TRANS)

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

Figure 5.5: The relations matching SUFFIX.

5.2.2 Suffix relations: SUFFIX

SUFFIX
isa MORPHDERIV
[256]

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

Subtypes: AUG DENUM DER$v DERan:qual DERna DERnn DERnv DERv DIMIN PEJ.

AUG
isa SUFFIX
[279]

Augmentation. Suffix conveys augmentation.

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

DENUM isa SUFFIX [327]	*Adjective-numeral derivation.* Suffix creates denumeral adjectives in a broad sense. Subtypes: DENUM:apart DENUM:ord DENUM:quant.
DENUM:apart isa DENUM [329]	*Adjective-partitive derivation* (deprecated DENUM:part). Suffix creates partitive numerals. "kardinal=doce – partitiv=doceavo" 'tolv/tolvtedel'
DENUM:ord isa DENUM [328]	*Adjective-ordinal derivation.* Suffix creates ordinals. "kardinal=dos – ordinal=segundo" 'to/anden'
DENUM:quant isa DENUM [330]	*Adjective-multiplicative derivation.* Suffix creates multiplicative numerals. "kardinal=cinco – multiplikativ=quíntuplo" 'fem/femdobbelte'
DER$v isa SUFFIX [282]	*Verb derivation.* Suffix triggers a derivation
DERan:qual isa SUFFIX [296]	*Adjective derivation* (deprecated QUAL). Suffix creates deadjectival nouns. (deadjectival noun: bitterness = bitter +ness/DERan:qual)
DERna isa SUFFIX [316]	*Noun-adjective derivation* (deprecated DENOM). Suffix creates denominal adjectives in a broad sense. Subtypes: DERna:disp DERna:other DERna:poss DERna:rel DERna:resem DERna:telic.
DERna:disp isa DERna [324]	*Noun-adjective derivation (disposition)* (deprecated DENOM:disp). Suffix creates denominal adjectives that express disposition. "que tiene afición por N" (mujeriego – "que afición por las mujeres" 'kvindeglad/som er glad for kvinder')
DERna:other isa DERna [326]	*Noun-adjective derivation (other)* (deprecated DENOM:other). If in doubt about the meaning conveyed by the suffix
DERna:poss isa DERna [323]	*Noun-adjective derivation (possession)* (deprecated DENOM:poss). Suffix creates denominal adjectives that express possession. "que posee/tiene/lleva N" (barbudo – "que lleva barba" 'skægget/som bærer skæg')

DERna:rel *Noun-adjective derivation (relational)* (deprecated DENOM:rel). Suffix creates denominal adjec-
isa DERna tives with a relational meaning.
[317]
Subtypes: DERna:deono DERna:rel.norm.

DERna:deono *Noun-adjective derivation (naming)* (deprecated DENOM:rel.deono). Suffix creates relational ad-
isa DERna:rel jectives with the meaning of "naming".
[319]
Subtypes: DERna.deono.place DERna:deono.pers.

DERna.deono.place *Noun-adjective derivation (naming places)* (deprecated DENOM:rel.deono.place). Suffix creates
isa DERna:deono relational adjectives with the meaning of "naming" of places.
[321]

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

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.
[320]

Cervantino 'som har at gøre med Cervantes'

DERna:rel.norm *Noun-adjective derivation (normal)* (deprecated DENOM:rel.norm). Suffix creates relational ad-
isa DERna:rel jectives with a "normal" meaning aspect.
[318]

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

DERna:resem *Noun-adjective derivation (resemblance)* (deprecated DENOM:resem). Suffix creates denominal
isa DERna adjectives that express resemblance.
[322]

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

DERna:telic *Noun-adjective derivation (effect)* (deprecated DENOM:eff). Suffix creates denominal adjectives
isa DERna that express an effect.
[325]

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

DERnn *Noun-noun derivation* (deprecated NOPRED). Suffix creates non-predicative nouns (from other
isa SUFFIX nouns) in a broad sense.
[297]
Subtypes: DERnn:agent DERnn:assoc DERnn:capac DERnn:cont DERnn:loc DERnn:other DERnn:quant DERnn:telic
DERnn:time.

DERnn:agent *Noun-noun derivation (agent)* (deprecated NOPRED:agent). Suffix creates non-predicative nouns
isa DERnn expressing an agent role.
[298]

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

DERnn:assoc *Noun-noun derivation (association)* (deprecated NOPRED:script). Suffix creates non-predicative
isa DERnn nouns expressing a script/notion related to the original noun.
[305]

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

DERnn:capac *Noun-noun derivation (capacity)* (deprecated NOPRED:capac). Suffix creates non-predicative
isa DERnn nouns expressing a capacity.
[303]

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

DERnn:cont *Noun-noun derivation (container)* (deprecated NOPRED:cont). Suffix creates non-predicative
isa DERnn nouns expressing a container.
[300]

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

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

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

DERnn:other *Noun-noun derivation (other)* (deprecated NOPRED:other). If in doubt about the meaning con-
isa DERnn veyed by the suffix
[306]

DERnn:quant *Noun-noun derivation (quantification)* (deprecated NOPRED:set). Suffix creates non-predicative
isa DERnn nouns expressing a quantification.
[302]

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

DERnn:telic *Noun-noun derivation (telic)* (deprecated NOPRED:result). Suffix creates non-predicative nouns
isa DERnn expressing a telic result.
[299]

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

DERnn:time *Noun-noun derivation (time)* (deprecated NOPRED:temp). Suffix creates non-predicative nouns
isa DERnn expressing a temporal aspect.
[301]

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

DERnv *Verb-noun derivation* (long: DEVERBN, deprecated PRED). Suffix creates deverbal nouns in a
isa SUFFIX broad sense.
[287]
Subtypes: DERnv:agent DERnv:core DERnv:exper DERnv:inst DERnv:loc DERnv:other DERnv:patient DERnv:recip.

DERnv:agent *Verb-noun derivation (agent).* Suffix creates deverbal nouns absorbing the agent role.
isa DERnv
[288]

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

DERnv:core *Verb-noun derivation (core).* Suffix creates deverbal nouns expressing a nominalized version
isa DERnv of the situation denoted by the original verb.
[290]

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

DERnv:exper *Verb-noun derivation (experiencer).* Suffix creates deverbal nouns absorbing the experiencer
isa DERnv role.
[289]

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

DERnv:inst *Verb-noun derivation (instrument).* Suffix creates deverbal nouns expressing the instrument
isa DERnv related to the meaning of the original noun.
[294]

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

DERnv:loc *Verb-noun derivation (location).* Suffix creates deverbal nouns expressing the location related
isa DERnv to the meaning of the original noun.
[293]

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

DERnv:other *Verb-noun derivation (other).* If in doubt about the meaning conveyed by the suffix
isa DERnv
[295]
DERnv:patient *Verb-noun derivation (patient).* Suffix creates deverbal nouns absorbing the patient role.
isa DERnv
[291]

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

DERnv:recip *Verb-noun derivation (recipient).* Suffix creates deverbal nouns absorbing the recipient role
isa DERnv
[292]

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

DERv (long: DEVERB, deprecated DEVERB).
isa SUFFIX
DIM *Diminution.* Suffix conveys diminution.
isa SUFFIX
[280]

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

PEJ *Pejoration.* Suffix conveys a pejorative sense.
isa SUFFIX
[281]

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

Chapter 6

Discourse relations: DISCOURSE

```
DISC: discourse level
    "¤"PRIM: discourse specification
    DISCOTHER:
        JOINT: no clear relation
        REP: repaired
        SCENE: scene
```

Figure 6.1: The relations matching DISCOURSE-DISCFUNC-DISCSEM-TOPICS.

DISC
isa DIM:LEVEL
[17]

Discourse level (long: DISCOURSE). A relation at the discourse level. Ie, a relation between segments in different sentences or clauses.

Subtypes: "¤"PRIM DISCOTHER DISCPRAG DISCSEM.

"¤"PRIM
isa DISC RULE
[352]

Discourse specification. A primary syntactic relation that has been used as a discourse relation for stilistic purposes.

DISCOTHER
isa ADJ DISC
[200]

.

Subtypes: JOINT REP SCENE.

JOINT
isa DISCOTHER
[250]

No clear relation. The dependent text segment adds a completely new content without any clear discourse relation to the governing segment

Confusion$_4$: CONJ$_{50\%}$ JOINT$_{50\%}$.

REP
isa DISCOTHER
[249]

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

SCENE
isa DISCOTHER
[248]

Scene (deprecated STRUCT:prepPREP). Dependent text segment expresses the scene of the following and governing text, e.g. headings, titles

Confusion$_4$: SCENE$_{100\%}$.

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

Figure 6.2: The relations matching DISCFUNC.

6.1 Functional relations: DISCFUNC

DISCPRAG
isa ADJ DISC
[199]

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

Subtypes: ANSW CONSOL DIREC EXPR INTACT QUEST.

ANSW
isa DISCPRAG
[237]

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

Confusion_1: $\text{ANSW}_{100\%}$.

CONSOL
isa DISCPRAG
[243]

Consolidation (deprecated SUPPORT?).

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

CONSOL:inst
isa CONSOL
[245]

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

CONSOL:motiv
isa CONSOL
[246]

Motivation. S motivates reader or recipient to carry out the action mentioned in N

Confusion_1: $\text{AGENTIVE:expl}_{100\%}$.

CONSOL:source
isa CONSOL
[244]

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

Typical connectives: [da] Fordi, Eftersom.

Confusion_1: $\text{AGENTIVE:reas}_{50\%}$ $\text{AGENTIVE:expl}_{50\%}$.

DIREC
isa DISCPRAG
[238]

Directive act. Dependent text segment contains an order, command or request

e.g. imperatives

EXPR
isa DISCPRAG
[239]

Expressive act. Dependent text segment contains an expression of the speaker's attitudes or emotions, e.g. congratulations, excuses or thanks

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

INTACT *Interactional signals.*
isa DISCPRAG Subtypes: INTACT:attn INTACT:inter.
[240]

INTACT:attn *Attention.* S contains an attention signal
isa INTACT
[241]

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

INTACT:inter *Interruption.* S contains an interruption signal
isa INTACT
[242]

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

QUEST *Question .* The dependent text segment contains a question with or withour an answer
isa DISCPRAG
[236]

6.2 Semantic relations: DISCSEM

```
DISCSEM: semantic discourse relations
    AGENTIVE: cause relation (discourse)
        AGENTIVE:expl: explanation relation in discourse
        AGENTIVE:reas: reason relation (discourse)
        AGENTIVE:sbj: subjective cause
    CONC: concession
    COND: condition
    CONJ: conjunction
        CONJ:add: conjunction, addition
        CONJ:elab: conjunction, elaboration
        CONJ:seq: sequence
    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
    TIME: temporal relation
        TIME:cont: contemporaneity
        TIME:post: temporal succession
        TIME:pre: temporal precedence
```

Figure 6.3: The relations matching DISCSEM.

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; relations are mono- or mult-
[198] inuclear; the four "prg"-subtypes express changes of speech act like the DISCPRAG, however

the semantic relations are so dominant that they should determine the main type of the relation

Subtypes: AGENTIVE CONC COND CONJ CONTR DISJ FORMAL TIME.

AGENTIVE
isa DISCSEM
[202]

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

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

AGENTIVE:expl
isa AGENTIVE
[203]

Explanation relation in discourse. An explanation relation. The satellite explains the nucleus. The relation is more general and elaborating than "reason".

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

$Confusion_{11}$: AGENTIVE:$reas_{30\%}$ CONJ$_{27\%}$ AGENTIVE:$expl_{18\%}$ CONSOL:$motiv_{9\%}$ vobj$_{6\%}$ conj$_{5\%}$ CONSOL:$source_{5\%}$.

AGENTIVE:reas
isa AGENTIVE
[204]

Reason relation (discourse). S expresses a specific and concrete reason

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

$Confusion_{7}$: AGENTIVE:$expl_{48\%}$ vobj$_{24\%}$ DESCR:$eval_{14\%}$ conj$_{7\%}$ CONSOL:$source_{7\%}$.

AGENTIVE:sbj
isa AGENTIVE
[205]

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

Typical connectives: Because, In fact, Indeed.

CONC
isa DISCSEM
[218]

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

$Confusion_{2}$: CONJ$_{50\%}$ CONC$_{25\%}$ CONTR:$dir_{25\%}$.

COND
isa DISCSEM
[2N]

Condition.

CONJ
isa DISCSEM
[225]

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

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

$Confusion_{28}$: CONJ$_{60\%}$ AGENTIVE:$expl_{11\%}$ JOINT$_{5\%}$ CONTR:$sbj_{5\%}$ conj$_{5\%}$ rel$_{4\%}$ qobj$_{4\%}$ CONC$_{4\%}$ DESCR:$eval_{2\%}$ CONTR:$dir_{2\%}$.

CONJ:add
isa CONJ
[226]

Conjunction, addition. Dependent text segment adds a new subject somehow related to the governing text segment; in cases of uncertainty between add and elab we do not specify the subtype

CONJ:elab
isa CONJ
[227]

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

CONJ:seq
isa CONJ
[228]

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

CONTR
isa DISCSEM
[229]

Contrast.

Subtypes: CONTR:dir CONTR:sbj.

$Confusion_{1}$: CONTR:$sbj_{33\%}$ conj$_{33\%}$ CONTR:$dir_{33\%}$.

CONTR:dir
isa CONTR
[230]

Direct contrast. The contrast lies between the governing and dependent text segment

Typical connectives: [da] Men, Derimod.

Confusion$_6$: CONTR:sbj$_{33\%}$ expl$_{17\%}$ CONC$_{17\%}$ conj$_{11\%}$ CONJ$_{8\%}$ CONTR:dir$_{8\%}$ CONTR$_{6\%}$.

CONTR:sbj
isa CONTR
[231]

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

Typical connectives: [da] Men.

Confusion$_{11}$: conj$_{30\%}$ CONTR:sbj$_{24\%}$ CONTR:dir$_{20\%}$ CONJ$_{14\%}$ coord$_{9\%}$ CONTR$_{3\%}$.

DISJ
isa DISCSEM
[232]

Disjunction.

Typical connectives: [da] Eller.

Subtypes: DISJ:dir DISJ:sbj.

DISJ:dir
isa DISJ
[233]

Direct disjunction. The disjunction lies between the governing and dependent text segment

DISJ:sbj
isa DISJ
[234]

Subjective disjunction (deprecated DISJ:prg). The disjunction lies between the dependent and a subjectively inferred text segment

FORMAL
isa DISCSEM
[215]

Formal description. S describes N, N may be a first-order or second-order entity

Subtypes: FORMAL:descr FORMAL:eval.

FORMAL:descr
isa FORMAL
[216]

Neutral description (deprecated DESCR:qual). S expresses an objective and/or neutral description of N

FORMAL:eval
isa FORMAL
[217]

Positive/negative evaluation (deprecated DESCR:eval). S expresses a personal and/or subjective positive or negative description of N

Confusion$_2$: CONJ$_{50\%}$ AGENTIVE:reas$_{50\%}$.

TIME
isa DISCSEM
[220]

Temporal relation (deprecated CIRCUM). There is a clear temporal relation between N and S

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

TIME:cont
isa TIME
[221]

Contemporaneity. S is contemporary with N (now includes abolished TIME:dur)

Typical connectives: [da] Samtidig, Mens, Så længe, Da.

TIME:post
isa TIME
[265]

Temporal succession (deprecated TIME:succ). Prefix conveys succession.

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

TIME:pre
isa TIME
[264]

Temporal precedence (deprecated TIME:prec). Prefix conveys precedence.

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

Chapter 7

Anaphor relations: ANAPHORA

```
ANA: anaphoric level
     anaphor:
```

Figure 7.1: The relations matching ANAPHORA-coref-assoc-TOPICS.

ANA
isa DIM:LEVEL
[20]

Anaphoric level (long: ANAPHORA). An anaphoric relation. Ie, a relation between an anaphor (pronoun, definite description, etc.) and an antecedent which either is a coreferent, or which provides access to a coreferent via its qualia structure. The relation goes from antecedent to anaphor.

Subtypes: anaphor.

anaphor
isa ANA
[180]

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

Subtypes: assoc coref.

7.1 Coreference relations: coref

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

Figure 7.2: The relations matching coref.

coref
isa anaphor
[181]

Coreference. Anaphor denotes same entity as antecedent; all coreferential pronouns are labelled this way

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

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

coref-iden *Coreferential NP with lexical identity* (deprecated coref-id).
isa coref
[183]
(antecedent−>anaphor) a car −> the car // a yellow car −> the yellow car

coref-res *Resumptive anaphor* (deprecated nowincludescoref-res.cause).
isa coref Subtypes: coref-res.prg.
[185] Confusion$_1$: coref-res$_{100\%}$.

coref-res.prg *Pragmatic coreference.* Takes up a statement and evaluates it with respect to speech act; I will
isa coref-res be there tomorrow -> the threat / promise / warning / statement
[186]

coref-var *Coreferential NP with lexical variety.*
isa coref
[184]
a car −> the vehicle // a yellow car −> the car

ref *Syntactically determined coreference.* Syntactically determined coreference (eg, relative pro-
isa coref nouns, external topics)
[182] Confusion$_{38}$: ref$_{100\%}$.

antecedent−>anaphor

7.2 Associative anaphor relations: assoc

```
assoc: associative anaphor
    "assoc-"QUALIA: associative anaphor wrt. qualia
    assoc-agentive: associative anaphor (agentive)
    assoc-const: associative anaphor (constitutive)
    assoc-formal: associative anaphor (formal)
        assoc-formal.loc: associative locative anaphor
    assoc-telic: associative anaphor (telic)
```

Figure 7.3: The relations matching assoc.

assoc *Associative anaphor.* Anaphor denotes entity which is associated with antecedent
isa anaphor
[188] Subtypes: "assoc-"QUALIA assoc-agentive assoc-const assoc-formal assoc-telic.

"assoc-"QUALIA *Associative anaphor wrt. qualia.* Anaphor denotes entity which is associated with antecedent
isa RULE assoc
[189]

assoc-agentive *Associative anaphor (agentive)* (deprecated assoc-agent?). Anaphor is associated with antecedent
isa assoc wrt its agentive qualia (creator, factory, producer, author, etc.)
[191]

a car −> the factory; a piece of music −> the composer

assoc-const
isa assoc
[190]
Associative anaphor (constitutive) (deprecated `assoc-loc`?). Anaphor is associated with antecedent wrt its constitutive qualia (parts, material, etc.)

ex. a car −> the wheels, the numberplate, the driver's seat; a hotel −> the kitchen; a bunch of flowers −> the roses; a couple −> the man; the Italian partitive "ne", ex. some wine −> ne vuoi (un po')?

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

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

assoc-formal.loc
isa assoc-formal
[193]
Associative locative anaphor. The anaphor is located in the antecedent

a village −> the church, the inn, the train station

assoc-telic
isa assoc
[194]
Associative anaphor (telic) (deprecated `assoc-scope`?). Anaphor is associated with antecedent wrt its telic qualia (purpose, function, etc.)

a car −> the driver, the passengers; a hotel −> the guests, the receptionist

Chapter 8

Semantic relations: SEMANTICS

SEM: semantic level

Figure 8.1: The relations matching SEMANTICS-QUALIA-SEMROLE-TOPICS.

SEM
isa DIM:LEVEL
[18]

Semantic level (long: SEMANTICS). A relation at the semantic level. Ie, a relation between functors, arguments, and modifiers.

Subtypes: QUALIA SEMROLE.

8.1   Qualia relations: QUALIA

QUALIA: qualia roles
    const: constitutive qualia
    formal: formal qualia
        agentive: agentive qualia
    telic: telic qualia
        about: about qualia

Figure 8.2: The relations matching QUALIA.

QUALIA
isa SEM
[33]

Qualia roles. A semantic qualia role. Ie, a relation that links a lexeme to a particular role associated with that lexeme. Eg, "music" to the act of "composing" (agentive), "performing" (telic), etc.

Subtypes: const formal telic.

const
isa QUALIA
[40]

Constitutive qualia. Relates to material or part-whole qualia

$$N->P.material/part$$

formal
isa QUALIA
[37]

Formal qualia. A qualia role that relates a lexeme to a hyperonym (super type) wrt. form, dimension, quality, shape, size, etc.

Subtypes: agentive.

agentive
isa formal
[38]

Agentive qualia. A qualia role that relates a lexeme to its agentive qualia, ie, the act that made it come into being.

N–>P.agent

telic
isa QUALIA
[41]

Telic qualia. Relates to purpose qualia

Subtypes: about.

about
isa telic
[42]

About qualia. Relates to hyponym (subtype)

8.2   Thematic role relations: SEMROLE

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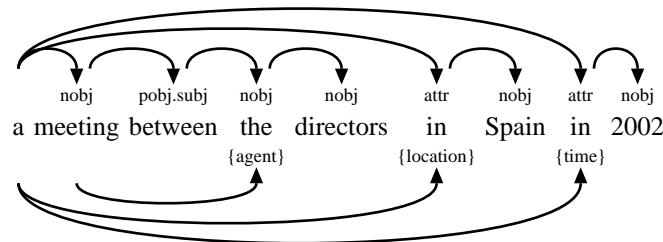   {about}:
    {agent}: An object or a person that performs an action
    {apart}:
    {arg}:
    {cause}:
    {class}:
    {const}:
    {elab}:
    {eval}:
    {experiencer}: The receiver of an emotion or a physical impact
    {form}:
    {func}:
    {goal}:
    {iden}:
    {location}: The location where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

Figure 8.3: The relations matching SEMROLE.

SEMROLE
isa SEM
[47]

. A semantic relation. All the relations of the semantic roles run under the text line. The syntactic relation that runs over the text line is determined by the word class of the lemma

in question. In NP constructions, the syntactic head of an adjunct is assumed to also act as the semantic head of the adjunct, ie, the semantic relation mirrors the syntactic relation in this respect.

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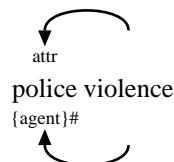

{about} . Used in noun phrases where the satellite indicates the content or genre of the nucleus.

isa SEMROLE [60]

Confusion$_{11}$: {about}$_{36\%}$ {arg}$_{18\%}$ {patient}$_{18\%}$ {func}$_{18\%}$ {pos}$_{9\%}$.


{agent} *An object or a person that performs an action.* Used in noun phrases where there is a deverbal

isa SEMROLE [67]

relation between the nucleus and the satellite. Often realized as a subject.

Confusion$_{16}$: {agent}$_{38\%}$ {arg}$_{25\%}$ {experiencer}$_{19\%}$ {pos}$_{6\%}$ {origin}$_{6\%}$ {patient}$_{6\%}$.

{apart} (long: arbitrarypart). Used in noun phrases where the satellite represents an arbitary part of

isa SEMROLE [61]

the nucleus. Please note that the semantic relation goes from the satellite to the nucleus in opposition to the main part of the other semantic roles.

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

Northern Zealand
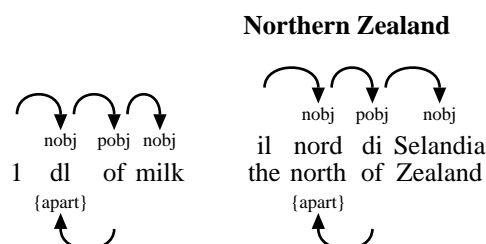
{arg} (long: argument). Used in noun phrases where there is a deadjectival relation or another

isa SEMROLE [66]

similiar relationship between the nucleus and the satellite.

Confusion$_{37}$: {arg}$_{35\%}$ {func}$_{22\%}$ {agent}$_{11\%}$ {const}$_{5\%}$ {origin}$_{5\%}$ {pos}$_{5\%}$ {about}$_{5\%}$ {patient}$_{5\%}$ {other}$_{5\%}$.

certain types of hardware

gewissen Typen Hardware
certain types hardware
{arg}

nobj — nobj

the overall investment

il totale degli investimenti
the total of–the investments
{arg}

nobj — pobj — nobj

John's mother
{arg}

possd

Denmark's attitude

die Haltung Dänemarks
the attitude Denmark's
{arg}

nobj — gobj

north of Copenhagen
{arg}

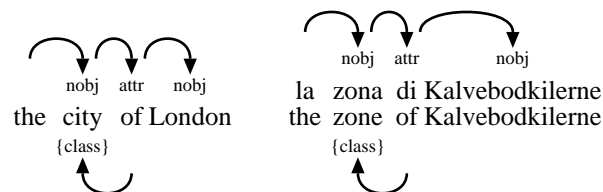pobj — nobj

{cause}
isa SEMROLE
[52]
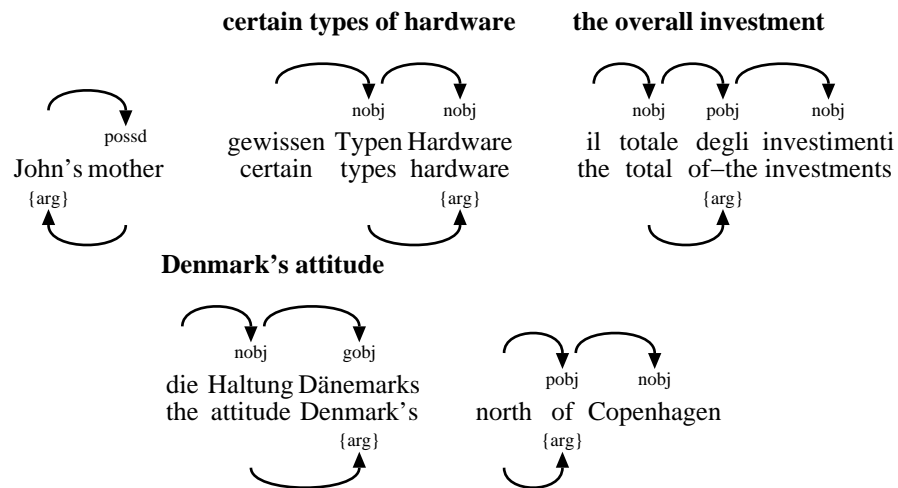
. Used in noun phrases where there the satellite is the person or object that performs the non-volitional action indicated by the nucleus.
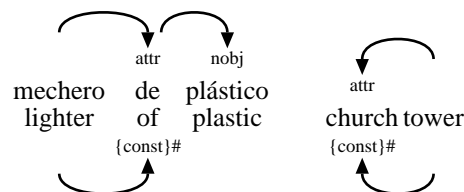
ildebrand sultedød

{class}
isa SEMROLE
[62]

. Used in noun phrases where the satellite indicates the super type or classification of the nucleus. This is in opposition to the identity relation which denotes the opposit relationship between the two units. Please note that the semantic relation goes from the satellite to the nucleus in opposition to the main part of the other semantic roles.

Related types: {iden}.
Confusion$_1$: {const}$_{100\%}$.

the city of London
{class}

nobj — attr — nobj

la zona di Kalvebodkilerne
the zone of Kalvebodkilerne
{class}

nobj — attr — nobj

{const}
isa SEMROLE
[49]
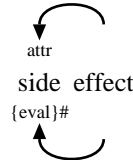
(long: constituent). Used in noun phrases where the satellite represents a part, material or essential constituent of the nucleus.

Confusion$_{14}$: {const}$_{36\%}$ {form}$_{14\%}$ {arg}$_{14\%}$ {apart}$_{7\%}$ {pos}$_{7\%}$ {class}$_{7\%}$ {origin}$_{7\%}$ {func}$_{7\%}$.

plastic lighter

mechero de plástico
lighter of plastic
{const}#

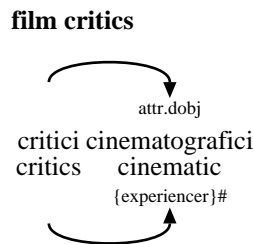attr — nobj

church tower
{const}#

attr

{elab} (long: elaboration). Often used together with parenthetic modifiers
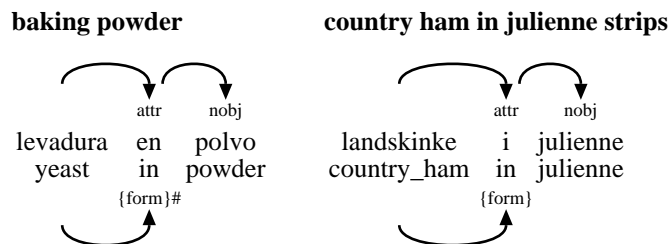isa SEMROLE Related types: modp.
[48]

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

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

attr
side effect
{eval}#

{experiencer} *The receiver of an emotion or a physical impact.* Used in noun phrases where there is a
isa SEMROLE deverbal relation between the nucleus and the satellite. Often realized as a direct object
[69] Confusion$_4$: {agent}$_{75\%}$ {patient}$_{25\%}$.

film critics

attr.dobj
critici cinematografici
critics   cinematic
{experiencer}#

{form} . Used in noun phrases where the satellite indicates the shape or form of the nucleus.
isa SEMROLE Confusion$_2$: {const}$_{100\%}$.
[64]

baking powder   **country ham in julienne strips**

attr   nobj   attr   nobj
levadura   en   polvo   landskinke   i   julienne
yeast   in   powder   country_ham   in   julienne
{form}#   {form}

{func} (long: function). Used in noun phrases where the satellite determinates the function of the
isa SEMROLE nucleus.
[54] Confusion$_{32}$: {func}$_{50\%}$ {arg}$_{25\%}$ {pos}$_{9\%}$ {about}$_{6\%}$ {const}$_{3\%}$ {patient}$_{3\%}$ {iden}$_{3\%}$.

nobj.dobj   attr   attr
birth   control pills   police station
{patient}#   {func}#   {func}#
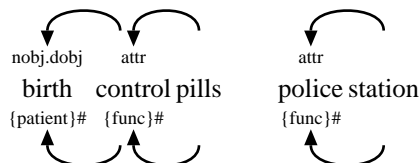
{goal}
isa SEMROLE
[53]

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

{iden}
isa SEMROLE
[65]

(long: identity). 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}.
Confusion$_1$: {func}$_{100\%}$.

attr

rock   music

{iden}#

{location}
isa SEMROLE
[71]

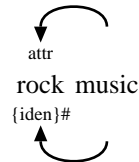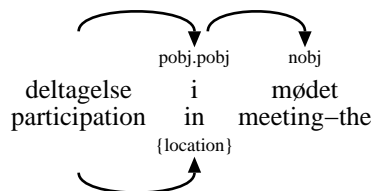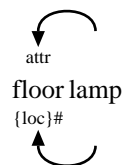*The location where something is situated or happens.* Used in noun phrases where there is a deverbal relation between the nucleus and the satellite. Often realized as a prepositional object

pobj.pobj   nobj

deltagelse   i   mødet
participation   in   meeting–the

{location}

{loc}
isa SEMROLE
[56]

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

Confusion$_{23}$: {pos}$_{61\%}$ {func}$_{13\%}$ {arg}$_{9\%}$ {const}$_{4\%}$ {about}$_{4\%}$ {poss}$_{4\%}$ {agent}$_{4\%}$.

attr

floor lamp

{loc}#

{other}
isa SEMROLE
[72]

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

Confusion$_3$: {arg}$_{67\%}$ {time}$_{33\%}$.

{patient}
isa SEMROLE
[68]

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$_{18}$: {patient}$_{61\%}$ {about}$_{11\%}$ {arg}$_{11\%}$ {func}$_{6\%}$ {experiencer}$_{6\%}$ {agent}$_{6\%}$.

bread producer

pobj.dobj   nobj

produttore   di   pane
producer   of   bread
{patient}#

{poss} (long: possession). Used in noun phrases where there is a possession relation between the
isa SEMROLE nucleus and the satellite. Often the satelitte is the owner or possessor of the nucleus.
[55] Confusion$_6$: {poss}$_{83\%}$ {pos}$_{17\%}$.

attr

police car
{poss}#
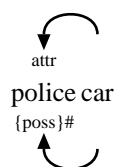
{quant} (long: quantity). Used in noun phrases where the satellite indicates the quantity in numbers
isa SEMROLE or another countable unit of the nucleus.
[63]

attr   nobj   attr   nobj   attr   nobj

women   of   40   a   240   meter   long   bridge
{quant}   {quant}
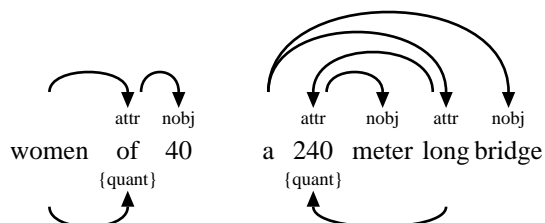
{recipient} *The receiver of something.* Used in noun phrases where there is a deverbal relation between
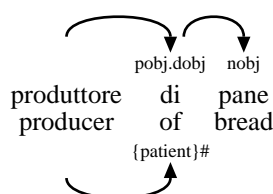isa SEMROLE the nucleus and the satellite. Often realized as an indirect object
[70]

child benefits   **child maintenance**

pobj.iobj   nobj   nobj   attr.iobj

contribuiti   per   i   figli   assegni familiari
benefits   for   the children   checks   family
{recipient}#   {recipient}#
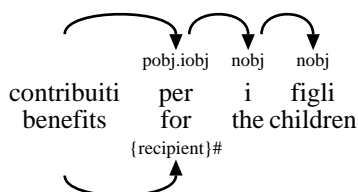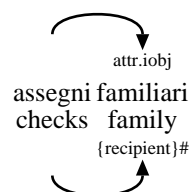
{resem} (long: resemblance). Used in noun phrases where there is a resemblance between the nucleus
isa SEMROLE and the satellite.
[59]

folding chair   **spring cabbage**

attr   nobj   attr

silla   de   tijeras   cavolo cappuccio
chair   scissors   cabbage   hooded
{resem}#   {resem}#
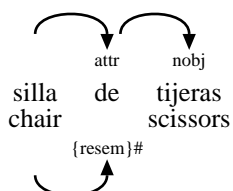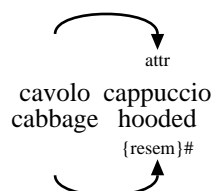
{source} (deprecated {origin}). Used in noun phrases where the satellite is the source from which the
isa SEMROLE nucleus derives or is deduced.

[51] Confusion$_{15}$: {origin}$_{60\%}$ {time}$_{13\%}$ {arg}$_{13\%}$ {const}$_{7\%}$ {agent}$_{7\%}$.

<div align="center">

attr   attr

orange juice   olive oil

{source}#   {source}#

</div>
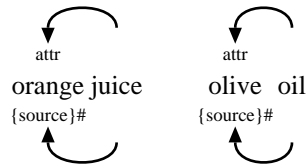
{time} . Used in noun phrases where the satellite indicates some kind of temporal aspect of the
isa SEMROLE nucleus.

[57] Confusion$_{11}$: {time}$_{73\%}$ {origin}$_{18\%}$ {other}$_{9\%}$.

<div align="center">

attr

november rain

{time}#

</div>

Chapter 9

Word alignment relations: **ALIGN**

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

Figure 9.1: The relations matching ALIGN-TOPICS.

ALIGN
isa DIM:LEVEL
[19]

Alignment level (long: ALIGNMENT). A relation at the word alignment level. Ie, an alignment relation that expresses a translational equivalence between two sets of words (and their iated 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 ALIGN
[370]

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 ALIGN
[371]
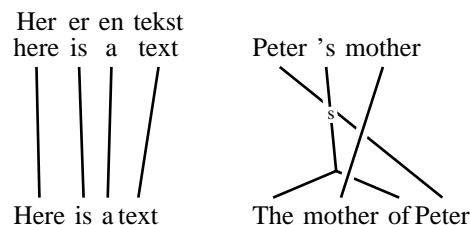
Fuzzy word alignment (long: fuzzy). A semantically fuzzy word alignment.
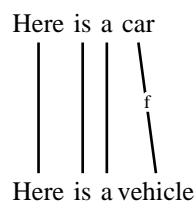
Chapter 10

Rule schemata for complex relations: RULE

RULE: relation rule
    ”(”ANY”)”: disambiguation
    ”*”DISC: down-head in attribution
    ”<”PRIM...”:”INTEGER”>”: gapping dependent
    ”@”adverb: valency-bound adverbial
    ”[”PRIM”]”: pattern for secondary syntactic dependency relation formed from primary syntactic dependency relation
    ”assoc-”QUALIA: associative anaphor wrt. qualia
    ”{”SEM”}”: pattern for secondary semantic dependency realtion formed from primary semantic dependency relation
    ””QUALIA: resemblance wrt. $qualia relation
    ”¤”PRIM: discourse specification
    ”§”PRIM: morphology specification
    ANY”&”ANY: both-and relation
    ANY”|”ANY: either-or relation
    DISC”*”: down-dependent in attribution
    PRIM”#”: pattern for idiomatic primary dependency
    PRIM”/”CONNECTOR: explicit connector
    PRIM”/(”CONNECTOR”)”: implicit connector
    PRIM”/ATTR”INTEGER: attribution
    PRIM”{”THEM”}”: pattern for primary dependency relation with thematic role

Figure 10.1: The relations matching RULE-TOPICS.

RULE
isa ANY
[8]

Relation rule. Rule for specifying complex relations.

Subtypes: ”(”ANY”)” ”*”DISC ”<”PRIM...”:”INTEGER”>” ”@”adverb ”[”PRIM”]” ”assoc-”QUALIA ”{”SEM”}” ””QUALIA ”¤”PRIM ”§”PRIM ANY”&”ANY ANY”|”ANY DISC”*” PRIM”#” PRIM”/”CONNECTOR PRIM”/(”CONNECTOR”)” PRIM”/ATTR”INTEGER PRIM”{”THEM”}”.

”(”ANY”)”
isa RULE

Disambiguation.

”*”DISC
isa RULE
[362]

Down-head in attribution. The head in the relation is one step further down in the attribution chain

"<"PRIM..":"INTEGER">" *Gapping dependent.* First conjunct->gapping dependent
 isa GAP RULE
 [350]

subj   dobj pnct <coord:2>   <subj:2>   pnct
Peter likes dogs ,   and Elizabeth cats .
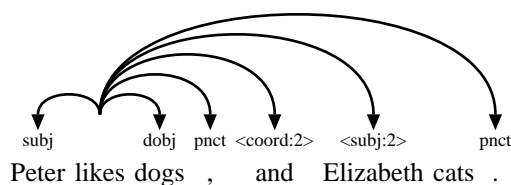
"@"adverb *Valency-bound adverbial.* A complement relation which can be interpreted as an obligatory,
 isa COMP RULE valency-bound adverbial relation.
 [364]   Related types: cont dir dur ext hab loc prec succ time.
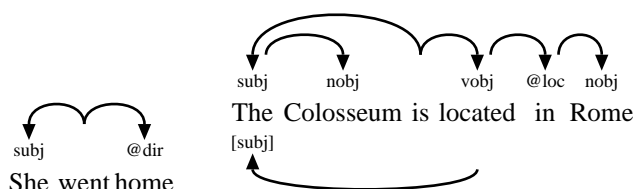
subj   nobj   vobj @loc nobj
The Colosseum is located in Rome
[subj]

subj   @dir
She went home

"["PRIM"]" *Pattern for secondary syntactic dependency relation formed from primary syntactic depen-*
 isa RULE SEC *dency relation.* Governor->secondary syntactic dependent; $PRIM must be non-secondary
 [348]   Related types: "{"$PRIM"}".
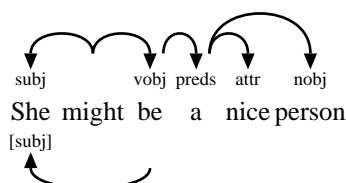
subj   vobj preds attr nobj
She might be a nice person
[subj]

"assoc-"QUALIA *Associative anaphor wrt. qualia.* Anaphor denotes entity which is associated with antecedent
 isa RULE assoc
 [189]

"{"SEM"}" *Pattern for secondary semantic dependency realtion formed from primary semantic depen-*
 isa RULE SEC *dency relation.* Governor->secondary semantic dependent; $PRIM must be non-secondary
 [349]

Related types: "["$PRIM"]".
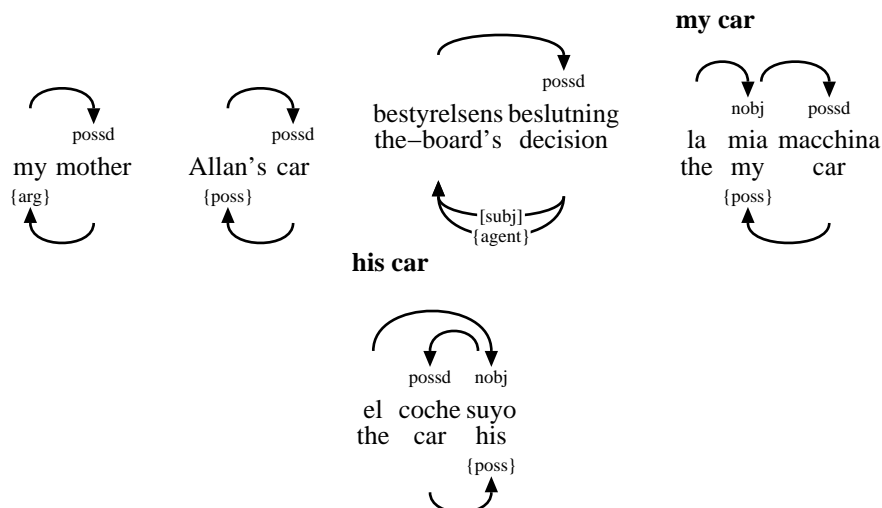
my car

possd
bestyrelsens beslutning
the–board's decision
[subj]
{agent}

nobj   possd
la mia macchina
the my   car
{poss}

possd   possd
my mother   Allan's car
{arg}   {poss}

his car

possd nobj
el coche suyo
the car his
{poss}

""QUALIA isa RULE resem	*Resemblance wrt. $qualia relation.*
"¤"PRIM isa DISC RULE [352]	*Discourse specification.* A primary syntactic relation that has been used as a discourse relation for stilistic purposes.
"§"PRIM isa MORPH RULE [373]	*Morphology specification.*
ANY"&"ANY isa RULE [354]	*Both-and relation.* Both relations hold
ANY"|"ANY isa RULE [355]	*Either-or relation.* One of the relations holds
DISC isa RULE [363]	*Down-dependent in attribution.* The dependent in the relation is one step further down in the attribution chain
PRIM"#" isa IDIOM RULE [346]	*Pattern for idiomatic primary dependency.* Head->dependent within idiom

warship
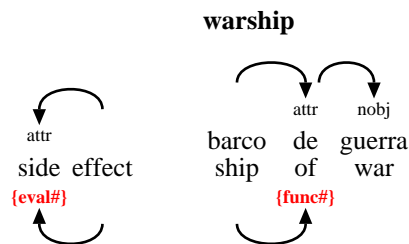
PRIM"/"CONNECTOR isa RULE [360]	*Explicit connector.* The discourse relation has explicit connector $CONNECTOR
PRIM"/("CONNECTOR")" isa RULE [361]	*Implicit connector.* The discourse relation has implicit connector $CONNECTOR
PRIM"/ATTR"INTEGER isa RULE [351]	*Attribution.* Specifies the person to whom the utterance is attributed (ATTR or ATTR1, ATTR2, … when there is more than one person)
PRIM"{"THEM"}" isa RULE [347]	*Pattern for primary dependency relation with thematic role.* $PRIM must be non-thematic; the thematic roles can be agent, patient, recipient, experient, location.
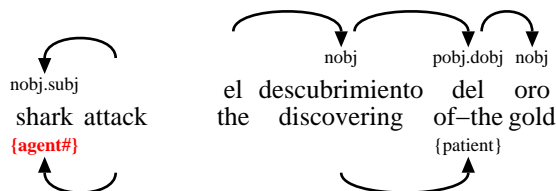
Chapter 11

Relations misplaced outside the ANY hierarchy

```
DERva: verb-adjective derivation
    DERva:act: verb-adjective derivation (active)
        DERva:act.disp: verb-adjective derivation (pure)
        DERva:act.epi: verb-adjective derivation (disposition)
    DERva:pas: verb-adjective derivation (potentiality)
        DERva:pas.deon: verb-adjective derivation (passive potentiality)
        DERva:pas.epi: verb-adjective derivation (passive participles)
    DERva:pas.part: verb-adjective derivation (passive)
 DERvv: verb-verb derivation
 MISPLACED: misplaced relation
 DERav: adjective-verb derivation
 DERadvv: adverb-verb derivation
```

Figure 11.1: The relations matching -ANY.

DERva *Verb-adjective derivation* (deprecated DERV). Suffix creates deverbal adjectives in a broad sense.
[308]

    Subtypes: DERva:act DERva:pas DERva:pas.part.

DERva:act *Verb-adjective derivation (active)* (deprecated DEVERB:act.pure). Suffix creates active adjectives.
isa DERva
[309]
    Subtypes: DERva:act.disp DERva:act.epi.

DERva:act.disp *Verb-adjective derivation (pure)* (deprecated DEVERB:act.disp). Suffix creates active adjectives
isa DERva:act with the meaning aspect "pure".
[310]

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

DERva:act.epi *Verb-adjective derivation (disposition)* (deprecated DEVERB:act.poten). Suffix creates active ad-
isa DERva:act jectives with the meaning aspect "disposition".
[311]

"que suele V, que tiende a V" (adulón – "que suele adular, que tiende a adular" 'smigre/som plejer eller har

tendens til at være krybende

DERva:pas
isa DERva
[312]
Verb-adjective derivation (potentiality) (deprecated DEVERB:pas). Suffix creates active adjectives with the meaning aspect "potentiality".
Subtypes: DERva:pas.deon DERva:pas.epi.

(deverbal adjective: transportable = transport +able/DERva:pas.epi)

DERva:pas.deon
isa DERva:pas
[315]
Verb-adjective derivation (passive potentiality) (deprecated DEVERB:pas.deon). Suffix creates passive adjectives with the meaning aspect "potentiality".

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

'transportabel/maskine som kan blive transporteret/transporteres

DERva:pas.epi
isa DERva:pas
[314]
Verb-adjective derivation (passive participles) (deprecated DEVERB:pas.poten). Suffix creates passive adjectives with the form of participles.

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

købt"

DERva:pas.part
isa DERva
[313]
Verb-adjective derivation (passive) (deprecated DEVERB:pas.part). Suffix creates passive adjectives.

DERvv
[285]
Verb-verb derivation (deprecated DER:vv). Suffix triggers a derivation from a verb to another verb.

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

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

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

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

DERadvv *Adverb-verb derivation.* Suffix triggers a derivation from an adverb to a verb
[286]

Appendix A

Overview tables

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

```
ANY: directed relation
    DIM: dimension
        DIM:LEVEL: dimension: linguistic level
        DIM:TYPE: dimension: relation type
            +: segment concatenation
            IDIOM: idiomatic relation
            PRIM: primary dependency relation
                ADJ: adjunct relation
                COMP: complement relation
            SEC: secondary dependency relation
            fill: licensed filler
```

The relations matching ANY-TOPICS-SYNTAX-MORPHOLOGY-DISCOURSE-ANAPHORA-
SEMANTICS-ALIGNMENT-RULE.

```
SYN: syntax level
```

The relations matching SYNTAX-SYNCOMP-SYNADJ-TOPICS.

SYNCOMP: syntactic complement
    @space: valency-bound location/direction adverbial
    @time: valency-bound time adverbial
    aobj: adjectival object
    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.

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

The relations matching ADVERB.

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

The relations matching SYNADJ-ADVERB.

```
MORPH: morphology level
    ”§”PRIM: morphology specification
```

The relations matching MORPHOLOGY-MORPHCOMP-MORPHDERIV-TOPICS.

```
MORPHCOMP: compositional semantic relations
    ABOUT: noun-noun compound (about)
    AGENT: noun-noun compound (agentive)
    CONST: noun-noun compound (constitutive)
        CONST:apart: part of relation
        CONST:elab: elaboration
        CONST:exem: exemplification
        CONST:rest: restatement
    EVAL: noun-noun compound (evaluative)
    FUNC: noun-noun compound (function)
    LOC: noun-noun compound (position)
    OTHER: noun-noun compound (other)
    POSS: noun-noun compound (possession)
    RESEM: noun-noun compound (resemblance)
    SOURCE: noun-noun compound (origin)
    TIME:MC: noun-noun compound (time)
```

The relations matching MORPHCOMP.

```
MORPHDERIV: derivational semantic relations
```

The relations matching MORPHDERIV-PREFIX-SUFFIX.

```
PREFIX: semantic relations appearing with prefixes
    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
        TELIC:cons.dir: direct, physical consequence, result
        TELIC:cons.sbj: pragmatic/personal conclusion, deduction
        TELIC:goal: goal relation (discourse)
    TIME§: time
    TRANS: transitivity
```

The relations matching PREFIX.

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

The relations matching SUFFIX.

```
DISC: discourse level
    "¤"PRIM: discourse specification
    DISCOTHER:
        JOINT: no clear relation
        REP: repaired
        SCENE: scene
```

The relations matching DISCOURSE-DISCFUNC-DISCSEM-TOPICS.

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

The relations matching DISCFUNC.

```
DISCSEM: semantic discourse relations
    AGENTIVE: cause relation (discourse)
        AGENTIVE:expl: explanation relation in discourse
        AGENTIVE:reas: reason relation (discourse)
        AGENTIVE:sbj: subjective cause
    CONC: concession
    COND: condition
    CONJ: conjunction
        CONJ:add: conjunction, addition
        CONJ:elab: conjunction, elaboration
        CONJ:seq: sequence
    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
    TIME: temporal relation
        TIME:cont: contemporaneity
        TIME:post: temporal succession
        TIME:pre: temporal precedence
```

The relations matching DISCSEM.

```
ANA: anaphoric level
    anaphor:
```

The relations matching ANAPHORA-coref-assoc-TOPICS.

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

The relations matching coref.

assoc: associative anaphor
    "assoc-"QUALIA: associative anaphor wrt. qualia
    assoc-agentive: associative anaphor (agentive)
    assoc-const: associative anaphor (constitutive)
    assoc-formal: associative anaphor (formal)
       assoc-formal.loc: associative locative anaphor
    assoc-telic: associative anaphor (telic)

The relations matching assoc.

SEM: semantic level

The relations matching SEMANTICS-QUALIA-SEMROLE-TOPICS.

QUALIA: qualia roles
    const: constitutive qualia
    formal: formal qualia
       agentive: agentive qualia
    telic: telic qualia
       about: about qualia

The relations matching QUALIA.

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

The relations matching SEMROLE.

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

The relations matching ALIGN-TOPICS.

```
RULE: relation rule
    ”(”ANY”)”: disambiguation
    ”*”DISC: down-head in attribution
    ”<”PRIM...”:”INTEGER”>”: gapping dependent
    ”@”adverb: valency-bound adverbial
    ”[”PRIM”]”:  pattern for secondary syntactic dependency relation formed from
primary syntactic dependency relation
    ”assoc-”QUALIA: associative anaphor wrt. qualia
    ”{”SEM”}”:  pattern for secondary semantic dependency realtion formed from
primary semantic dependency relation
    ””QUALIA: resemblance wrt. $qualia relation
    ”¤”PRIM: discourse specification
    ”§”PRIM: morphology specification
    ANY”&”ANY: both-and relation
    ANY”|”ANY: either-or relation
    DISC”*”: down-dependent in attribution
    PRIM”#”: pattern for idiomatic primary dependency
    PRIM”/”CONNECTOR: explicit connector
    PRIM”/(”CONNECTOR”)”: implicit connector
    PRIM”/ATTR”INTEGER: attribution
    PRIM”{”THEM”}”: pattern for primary dependency relation with thematic role
```

The relations matching RULE-TOPICS.

```
DERva: verb-adjective derivation
    DERva:act: verb-adjective derivation (active)
        DERva:act.disp: verb-adjective derivation (pure)
        DERva:act.epi: verb-adjective derivation (disposition)
    DERva:pas: verb-adjective derivation (potentiality)
        DERva:pas.deon: verb-adjective derivation (passive potentiality)
        DERva:pas.epi: verb-adjective derivation (passive participles)
    DERva:pas.part: verb-adjective derivation (passive)
 DERvv: verb-verb derivation
 MISPLACED: misplaced relation
 DERav: adjective-verb derivation
 DERadvv: adverb-verb derivation
```

The relations matching -ANY.

Appendix B

Agreement and confusion tables

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

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

- *Agreement A:* the estimated level of agreement, defined as the probability that another annotator assigns the same label to the relation (this number may be inaccurate if N is small).

- *Relation count N:* the number of distinct multiply annotated tokens in the corpus that were annotated with the relation by at least one annotator.

- *Confusion table:* the relations that other annotators used, with a percentage that indicates the probability that each relation was used by the other annotator instead of R.

B.1 Confusion table: syntax

R	A	N	Confusion list
xpl	100%	2	$xpl_{100\%}$
title	100%	3	$title_{100\%}$
qobj	100%	2	$qobj_{100\%}$
numm	100%	1	$numm_{100\%}$
neg	100%	8	$neg_{100\%}$
namel	100%	4	$namel_{100\%}$
namef	100%	19	$namef_{100\%}$
expl	100%	3	$expl_{100\%}$
exem	100%	1	$exem_{100\%}$
cons	100%	1	$cons_{100\%}$
cond	100%	1	$cond_{100\%}$
appr	100%	5	$appr_{100\%}$
appa	100%	4	$appa_{100\%}$
agent	100%	1	$agent_{100\%}$
subj	99%	108	$subj_{99\%}$ $nobj_{1\%}$
pnct	99%	194	$pnct_{99\%}$ $nobj_{1\%}$ $dobj_{1\%}$
coord	98%	52	$coord_{98\%}$ $contr_{2\%}$
vobj	96%	75	$vobj_{96\%}$ $nobj_{3\%}$ $conj_{1\%}$
nobj	95%	347	$nobj_{95\%}$ $attr_{1\%}$ $name_{1\%}$ $possd_{1\%}$ $pobj_{1\%}$ $vobj_{1\%}$ $conj_{0\%}$ $preds_{0\%}$ $subj_{0\%}$ $dobj_{0\%}$ $aobj_{0\%}$ $pnct_{0\%}$
conj	95%	79	$conj_{95\%}$ $attr_{3\%}$ $nobj_{1\%}$ $vobj_{1\%}$
possd	88%	25	$possd_{88\%}$ $nobj_{8\%}$ $attr_{4\%}$
add	88%	8	$add_{88\%}$ $discmark_{13\%}$
attr	85%	189	$attr_{85\%}$ $pobj_{7\%}$ $nobj_{2\%}$ $conj_{1\%}$ $time_{1\%}$ $name_{1\%}$ $focal_{1\%}$ $possd_{1\%}$ $man_{1\%}$ $aobj_{1\%}$ $other_{1\%}$ $loc_{1\%}$
dobj	81%	57	$dobj_{81\%}$ $pobj_{5\%}$ $preds_{4\%}$ $iobj_{4\%}$ $nobj_{2\%}$ $predo_{2\%}$ $dir_{2\%}$ $pnct_{2\%}$
preds	80%	30	$preds_{80\%}$ $dobj_{7\%}$ $nobj_{3\%}$ $comp_{3\%}$ $loc_{3\%}$ $inst_{3\%}$
name	79%	14	$name_{79\%}$ $nobj_{14\%}$ $attr_{7\%}$
time	78%	23	$time_{78\%}$ $man_{9\%}$ $struct_{4\%}$ $hab_{4\%}$ $attr_{4\%}$
degr	77%	26	$degr_{77\%}$ $man_{8\%}$ $avobj_{8\%}$ $eval_{8\%}$
loc	71%	34	$loc_{71\%}$ $other_{9\%}$ $pobj_{6\%}$ $preds_{3\%}$ $focal_{3\%}$ $attr_{3\%}$ $dir_{3\%}$ $inst_{3\%}$
part	67%	3	$part_{67\%}$ $dir_{33\%}$
accom	67%	3	$accom_{67\%}$ $man_{33\%}$
relr	59%	17	$relr_{59\%}$ $relpa_{41\%}$
pobj	58%	66	$pobj_{58\%}$ $attr_{21\%}$ $dir_{6\%}$ $dobj_{5\%}$ $source_{3\%}$ $nobj_{3\%}$ $loc_{3\%}$ $inst_{2\%}$
inst	50%	8	$inst_{50\%}$ $loc_{13\%}$ $preds_{13\%}$ $bg_{13\%}$ $pobj_{13\%}$
epi	50%	2	$epi_{50\%}$ $man_{50\%}$
correl	50%	2	$correl_{50\%}$ $focal_{50\%}$
man	33%	18	$man_{33\%}$ $time_{11\%}$ $degr_{11\%}$ $other_{11\%}$ $source_{6\%}$ $epi_{6\%}$ $attr_{6\%}$ $aobj_{6\%}$ $accom_{6\%}$ $eval_{6\%}$
focal	33%	6	$focal_{33\%}$ $other_{17\%}$ $correl_{17\%}$ $loc_{17\%}$ $attr_{17\%}$
conc	33%	3	$contr_{67\%}$ $conc_{33\%}$
avobj	33%	3	$degr_{67\%}$ $avobj_{33\%}$
relpa	30%	10	$relr_{70\%}$ $relpa_{30\%}$
dir	30%	10	$pobj_{40\%}$ $dir_{30\%}$ $loc_{10\%}$ $part_{10\%}$ $dobj_{10\%}$
eval	25%	8	$att_{38\%}$ $degr_{25\%}$ $eval_{25\%}$ $man_{13\%}$
struct	0%	1	$time_{100\%}$
source	0%	3	$pobj_{67\%}$ $man_{33\%}$
predo	0%	1	$dobj_{100\%}$
other	0%	7	$loc_{43\%}$ $man_{29\%}$ $focal_{14\%}$ $attr_{14\%}$
iobj	0%	2	$dobj_{100\%}$
hab	0%	1	$time_{100\%}$

B.2 Confusion table: semantics

R	A	N	Confusion list
eval	100%	1	$\text{eval}_{100\%}$
poss	83%	6	$\text{poss}_{83\%}$ $\text{pos}_{17\%}$
time	73%	11	$\text{time}_{73\%}$ $\text{origin}_{18\%}$ $\text{other}_{9\%}$
pos	61%	23	$\text{pos}_{61\%}$ $\text{func}_{13\%}$ $\text{arg}_{9\%}$ $\text{const}_{4\%}$ $\text{about}_{4\%}$ $\text{poss}_{4\%}$ $\text{agent}_{4\%}$
patient	61%	18	$\text{patient}_{61\%}$ $\text{about}_{11\%}$ $\text{arg}_{11\%}$ $\text{func}_{6\%}$ $\text{experiencer}_{6\%}$ $\text{agent}_{6\%}$
origin	60%	15	$\text{origin}_{60\%}$ $\text{time}_{13\%}$ $\text{arg}_{13\%}$ $\text{const}_{7\%}$ $\text{agent}_{7\%}$
func	50%	32	$\text{func}_{50\%}$ $\text{arg}_{25\%}$ $\text{pos}_{9\%}$ $\text{about}_{6\%}$ $\text{const}_{3\%}$ $\text{patient}_{3\%}$ $\text{iden}_{3\%}$
agent	38%	16	$\text{agent}_{38\%}$ $\text{arg}_{25\%}$ $\text{experiencer}_{19\%}$ $\text{pos}_{6\%}$ $\text{origin}_{6\%}$ $\text{patient}_{6\%}$
const	36%	14	$\text{const}_{36\%}$ $\text{form}_{14\%}$ $\text{arg}_{14\%}$ $\text{apart}_{7\%}$ $\text{pos}_{7\%}$ $\text{class}_{7\%}$ $\text{origin}_{7\%}$ $\text{func}_{7\%}$
about	36%	11	$\text{about}_{36\%}$ $\text{arg}_{18\%}$ $\text{patient}_{18\%}$ $\text{func}_{18\%}$ $\text{pos}_{9\%}$
arg	35%	37	$\text{arg}_{35\%}$ $\text{func}_{22\%}$ $\text{agent}_{11\%}$ $\text{const}_{5\%}$ $\text{origin}_{5\%}$ $\text{pos}_{5\%}$ $\text{about}_{5\%}$ $\text{patient}_{5\%}$ $\text{other}_{5\%}$
other	0%	3	$\text{arg}_{67\%}$ $\text{time}_{33\%}$
iden	0%	1	$\text{func}_{100\%}$
form	0%	2	$\text{const}_{100\%}$
experiencer	0%	4	$\text{agent}_{75\%}$ $\text{patient}_{25\%}$
class	0%	1	$\text{const}_{100\%}$
apart	0%	1	$\text{const}_{100\%}$

B.3 Confusion table: discourse

R	A	N	Confusion list
SCENE	100%	4	$\text{SCENE}_{100\%}$
ANSW	100%	1	$\text{ANSW}_{100\%}$
CONJ	60%	28	$\text{CONJ}_{60\%}$ $\text{AGENTIVE:expl}_{11\%}$ $\text{JOINT}_{5\%}$ $\text{CONTR:sbj}_{5\%}$ $\text{conj}_{5\%}$ $\text{rel}_{4\%}$ $\text{qobj}_{4\%}$ $\text{CONC}_{4\%}$ $\text{DESCR:eval}_{2\%}$ $\text{CONTR:dir}_{2\%}$
JOINT	50%	4	$\text{CONJ}_{50\%}$ $\text{JOINT}_{50\%}$
CONTR	33%	1	$\text{CONTR:sbj}_{33\%}$ $\text{conj}_{33\%}$ $\text{CONTR:dir}_{33\%}$
CONC	25%	2	$\text{CONJ}_{50\%}$ $\text{CONC}_{25\%}$ $\text{CONTR:dir}_{25\%}$
CONTR:sbj	24%	11	$\text{conj}_{30\%}$ $\text{CONTR:sbj}_{24\%}$ $\text{CONTR:dir}_{20\%}$ $\text{CONJ}_{14\%}$ $\text{coord}_{9\%}$ $\text{CONTR}_{3\%}$
AGENTIVE:expl	18%	11	$\text{AGENTIVE:reas}_{30\%}$ $\text{CONJ}_{27\%}$ $\text{AGENTIVE:expl}_{18\%}$ $\text{CONSOL:motiv}_{9\%}$ $\text{vobj}_{6\%}$ $\text{conj}_{5\%}$ $\text{CONSOL:source}_{5\%}$
CONTR:dir	8%	6	$\text{CONTR:sbj}_{33\%}$ $\text{expl}_{17\%}$ $\text{CONC}_{17\%}$ $\text{conj}_{11\%}$ $\text{CONJ}_{8\%}$ $\text{CONTR:dir}_{8\%}$ $\text{CONTR}_{6\%}$
DESCR:eval	0%	2	$\text{CONJ}_{50\%}$ $\text{AGENTIVE:reas}_{50\%}$
CONSOL:source	0%	1	$\text{AGENTIVE:reas}_{50\%}$ $\text{AGENTIVE:expl}_{50\%}$
CONSOL:motiv	0%	1	$\text{AGENTIVE:expl}_{100\%}$
AGENTIVE:reas	0%	7	$\text{AGENTIVE:expl}_{48\%}$ $\text{vobj}_{24\%}$ $\text{DESCR:eval}_{14\%}$ $\text{conj}_{7\%}$ $\text{CONSOL:source}_{7\%}$

B.4 Confusion table: anaphora

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

B.5 Confusion table: morphology

R	A	N	Confusion list

B.6 Confusion table: alignment

R	A	N	Confusion list

Appendix C

Annotation status

C.1 All texts

	alignment	discourse	morphology	postag	syntax
none	1016	2098	2226		971
auto				1775	75
outdated-final	536				943
first	45	20	84		73
discussed	178	193	1		175
final				536	74

C.2 da texts

	discourse	morphology	postag	syntax
none	439	473		
auto				
outdated-final				502
first	12	62		24
discussed	85	1		3
final			536	7

C.3 de texts

	discourse	morphology	postag	syntax
none	405	413		346
auto			413	
outdated-final				
first	8			38
discussed				6
final				23

C.4 en texts

	discourse	morphology	postag	syntax
none	536	536		
auto			536	75
outdated-final				441

	first	10
	discussed	4
	final	6

C.5 es texts

	discourse	morphology	postag	syntax
none	388	393		343
auto			413	
outdated-final				
first		20		1
discussed	25			65
final				4

C.6 it texts

	discourse	morphology	postag	syntax
none	330	411		282
auto			413	
outdated-final				
first		2		
discussed	83			97
final				34

C.7 da-de texts

	alignment
none	368
auto	
outdated-final	
first	45
discussed	
final	

C.8 da-en texts

	alignment
none	
auto	
outdated-final	536
first	
discussed	
final	

C.9 da-es texts

	alignment
none	332

```
              auto
      outdated-final
             first
         discussed          81
             final
```

C.10 da-it texts

```
                       alignment
              none          316
              auto
      outdated-final
             first
         discussed          97
             final
```

Appendix D

Index