The inventory of linguistic relations used in the Copenhagen Dependency Treebanks

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Abstract

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

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

Contents

Chapter 1

Introduction

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

relation
isa super
[12]

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

- *long name*: we use short names in the annotation for brevity, but long names are sometimes more descriptive, so we provide these as an alias for the short relation name;

- *deprecated names*: when renaming relations, the old name is listed as a deprecated name for backwards compatibility, but it should be avoided in future annotation;

- *immediate subtypes*: the relation names that have been specified as the immediate subtypes of the relation;

- *related types*: lists the relations that are closely related to this relation, in some way or another, and which you might want to consult for clarification or additional information;

- *examples*: small annotated text examples that illustrate how the relation is used;

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

Chapter 2

Top-level relations: ANY

```
ANY: 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
```

Figure 2.1: The relations matching ANY-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.

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.

+
isa DIM:TYPE
[30]
Segment concatenation (long: CONCATENATION). A concatenation relation between two adjacent segments. This relation is used if an indecomposable lexeme has mistakenly been segmented into two segment. Lexicalized complex expressions are instead marked as IDIOM relations with the "#" suffix.

IDIOM
isa DIM:TYPE
[31]

Idiomatic relation. Idiomatic relation. Ie, relations between tokens in a complex lexicalized expression.

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.

Subtypes: DISCFUNC DISCSEM SYNADJ.

COMP
isa PRIM
[25]

Complement relation (long: COMPLEMENT). A primary complement relation.

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 "}".

Chapter 3
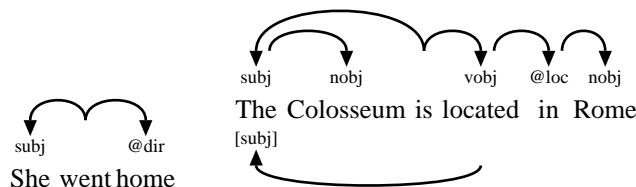
Syntactic relations: SYNTAX

SYN: syntax level

Figure 3.1: The relations matching SYNTAX-SYNCOMP-SYNADJ.

SYN
isa DIM:LEVEL
[16]

Syntax level (long: SYNTAX). A relation at the syntactic level. Ie, a relation between segments within a sentence, but between different lexical units.
Subtypes: SYNADJ SYNCOMP.

3.1 Complement relations: SYNCOMP

SYNCOMP
isa COMP SYN
[70]

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

@space
isa SYNCOMP
[79]

Valency-bound location/direction adverbial.
    Related types: dir loc.

subj   nobj   vobj   @loc   nobj
The Colosseum is located   in   Rome
[subj]

subj   @dir
She went home

@time
isa SYNCOMP
[95]

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.

subj nobj   @dur nobj
The film lasted two hours

```
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
```
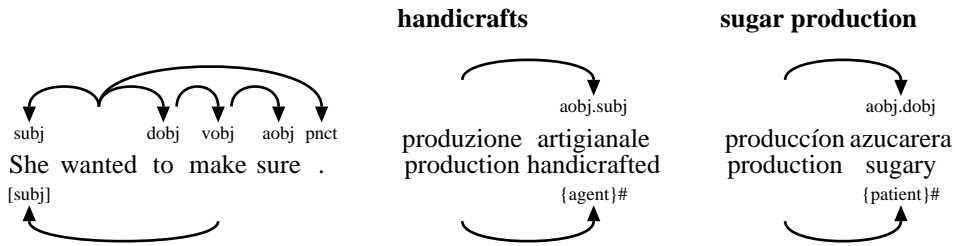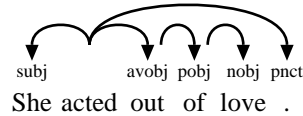
Figure 3.2: The relations matching SYNCOMP.

aobj
isa SYNCOMP
[86]

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.

avobj
isa SYNCOMP
[87]

Adverbial object.
Related types: aobj part.

dobj
isa SYNCOMP
[75]

Direct object.
Related types: iobj robj.

There are many people .

expl — dobj — nobj — pnct

He has a ball .

subj — dobj — nobj — pnct
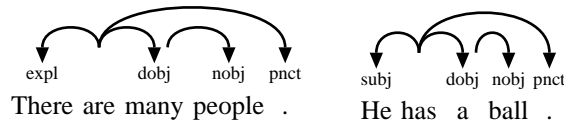
fobj *Filler object.* NO LONGER IN USE; see gapping constructions.
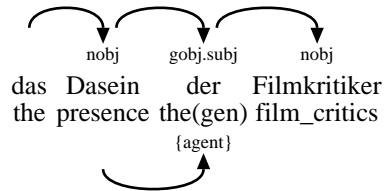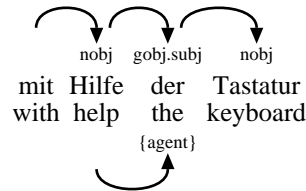isa SYNCOMP   Related types: GAP.
[88]

N/A

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

the presence of film critics

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

nobj   gobj.dobj   nobj

der Verkauf   des   Autos
the   sale   the(gen) car(gen)
{patient}

Denmark's attitude

nobj   gobj

die Haltung Dänemarks
the attitude Denmark's
{arg}

iobj *Indirect object.*
isa SYNCOMP   Related types: dobj.
[78]

subj   iobj dobj nobj

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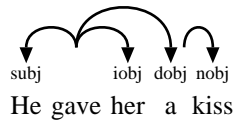
nobj *Nominal object.* If the nominal object is part of a NP which nucleus is deverbal, the
isa SYNCOMP following annotation possibilities are available: nobj.subj{SEMROLE} nobj.dobj{SEMROLE}
[85] nobj.pobj{SEMROLE} nobj.iobj{SEMROLE} The relevant semantic roles in this
context are agent, patient, recipient,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

They joined the party.

subj		dobj	part	pobj	nobj	pnct
De	meldte	sig	ind	i	partiet	.
They	joined	themselves	in	in	party–the	

nobj
the car

nobj.subj
shark attack
{agent}#

navigator

nobj.dobj
book review
{patient}#

indicatore percorsi
indicator tracks
nobj.dobj
{patient}#

keyword

nobj
parola chiave
word key
{func}#

---

numa *Additive numeral complement.*
isa SYNCOMP   Related types: numm.
[89]

numa
hundred two

---

numm *Multiplicative numeral complement.*
isa SYNCOMP   Related types: numa.
[90]

numm
two hundred

---

part *Verbal particle.* Verbal particle.
isa SYNCOMP   Related types: avobj.
[91]

the fair two years ago

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

subj	nobj	part	pnct
The	car	broke	down	.

---

pobj *Prepositional object.* If the prepositional object is part of a NP which nucleus is
isa SYNCOMP   deverbal, the following annotation possibilities are available: pobj.subj{SEMROLE}
[76]   pobj.dobj{SEMROLE} pobj.pobj{SEMROLE} pobj.iobj{SEMROLE} The relevant
semantic roles in this context are agent, patient, recipient, experient, location.
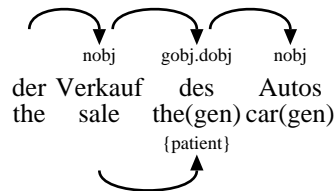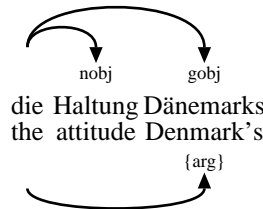   Related types: SEMROLE avobj.

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.
isa SYNCOMP Possession is understood in a syntactic sense as any construction with a clitic genitive
[92] marker, not necessarily as possession in a narrow semantic sense. A better name
may be chosen for this relation in the future.
   Related types: "{" "}" $PRIM SEMROLE poss possr.

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
[93] in a syntactic sense as any construction with a clitic genitive marker, not necessarily
as possession in a narrow semantic sense. A better name may be chosen for this
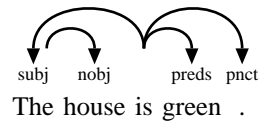relation in the future.
    Related types: poss possd.

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

V–>predicative, P–>predicative

predo *Object predicative.*
isa pred   Related types: preds.
[82]

She called him a liar .
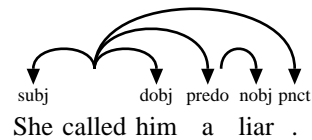
preds *Subject predicative.*
isa pred   Related types: predo.
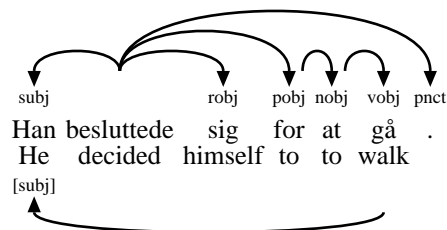[81]

The house is green .

qobj *Quotational object.* A phrase or discourse segment functioning as directly quoted
isa SYNCOMP speech, typically by an attribution verb. Indirect speech is analyzed as "dobj" or
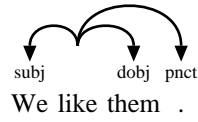[94]   "nobj".
        Related types: xpl.

" I do not love you anymore " , she said .
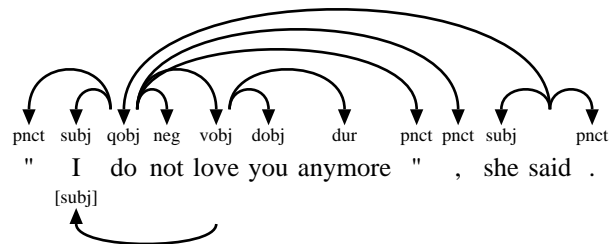
robj *Reflexive object.*
isa SYNCOMP Related types: dobj.
[84]

He decided to walk.

Han besluttede sig for at gå .
He decided himself to to walk

10

subj *Subject.* A subject relation.
isa SYNCOMP Subtypes: expl.
[73]   Related types: expl.

subj   dobj   pnct
We like them .

expl *Expletive subject.*
isa subj   Related types: subj.
[74]

expl   dobj   nobj   pnct
There are many people .
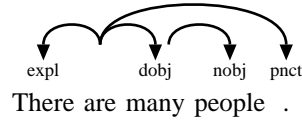
vobj *Verbal object.*
isa SYNCOMP   Related types: "[" "]" $PRIM.
[83]

subj   vobj   time   pnct
We must go now .
[subj]
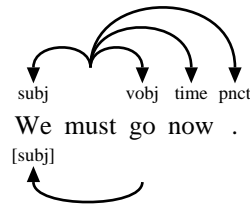
3.2 Adverbial adjunct relations: ADVERB

ADVERB *Adverbial* (deprecated other). V/N/P->adverbial
isa SYNADJ Subtypes: agent ben cause comp conc concom cond cons degr exem man neg other prg source space
[134]   struct time.

agent *Agent adverbial.* The passivized agent in passives.
isa ADVERB
[172]

subj   nobj   vobj   agent   nobj   pnct
The house was painted by Eric .
[subj]
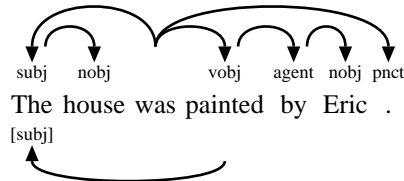
ben *Benefactive adverbial.* Free dative
isa ADVERB   Related types: pobj.
[171]

subj   dobj   nobj   ben   nobj   pnct   subj   neg   preds   nobj   ben   nobj   pnct
I gave the keys to him .   It is never a problem for him .

11

```
ADVERB: adverbial
    agent: agent adverbial
    ben: benefactive adverbial
    cause: causation adverbial
        goal: goal adverbial
        reas: reason adverbial
    comp: comparison adverbial
    conc: concession adverbial
    concom:
    cond: condition adverbial
    cons: consequence adverbial
    degr: degree adverbial
    exem: example adverbial
    man: manner adverbial
        accom: companionship adverbial
        inst: instrument adverbial
    neg: negation adverbial
    other: other adverbial
    prg: pragmatic adverbial
        att: attitude adverbial
        discmark: sentence-initial discourse marker
        epi: epistemic adverbial
        eval: evaluation adverbial
        focal: focalizer adverbial
        pcond: pragmatic condition adverbial
    source: source attribution adverbial
    space: space adverbial
        dir: direction adverbial
        loc: location adverbial
    struct: text-structuring or connective adverbial
        add: additive adverbial
        bg: background adverbial
        contr: contrast adverbial
        elab: elaboration advebial
    time: time adverbial
        cont: contemporaneity adverbial
        dur: duration adverbial
        ext: extent/frequency adverbial
        hab: habituality adverb
        prec: precedence adverbial
        succ: succession adverbial
```
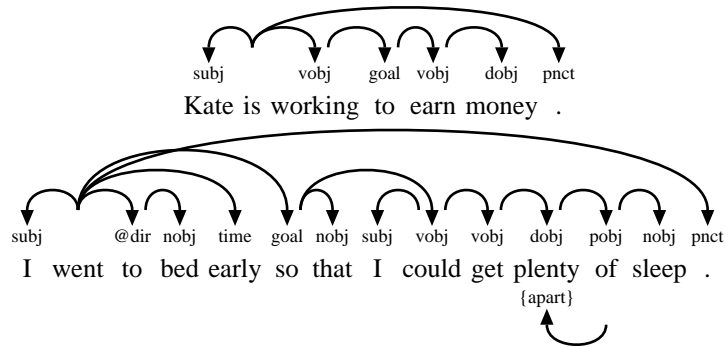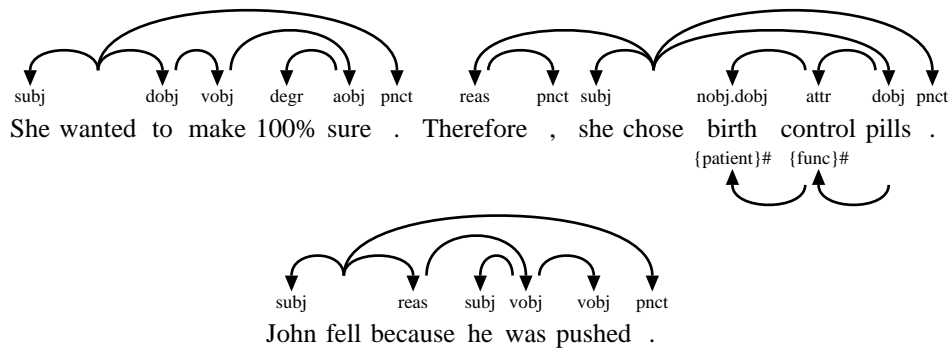
Figure 3.3: The relations matching ADVERB.

cause   *Causation adverbial.* Causation adverbial. Describes why the event occurred.
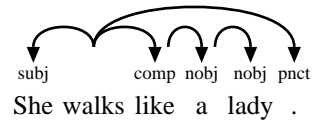isa ADVERB   Subtypes: goal reas.
[160]

goal   *Goal adverbial.* Describes the intended goal of the event/action.
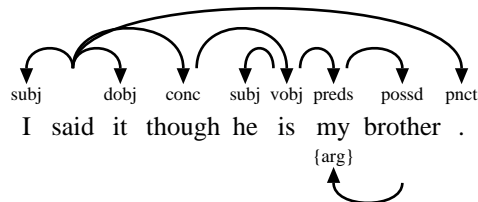isa cause   Related types: reas.
[161]

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}

reas *Reason adverbial.* Describes the cause of the event/action.
isa cause   Related types: goal.
[162]

subj dobj vobj degr aobj pnct   reas pnct subj nobj.dobj attr dobj pnct
She wanted to make 100% sure . Therefore , she chose birth control pills .
{patient}# {func}#

subj reas subj vobj vobj pnct
John fell because he was pushed .

comp *Comparison adverbial* (deprecated compare). Comparison
isa ADVERB
[166]

subj comp nobj nobj pnct
She walks like a lady .

conc *Concession adverbial.* Describes the concession of the event/action.
isa ADVERB
[165]

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.
[169]

13

The agressor fled and/but got caught hours later.

subj nobj pnct concom vobj succ avobj pnct

El agresor huyó , siendo detenido horas después .
The agressor fled being caught hours after

[subj]
[subj]
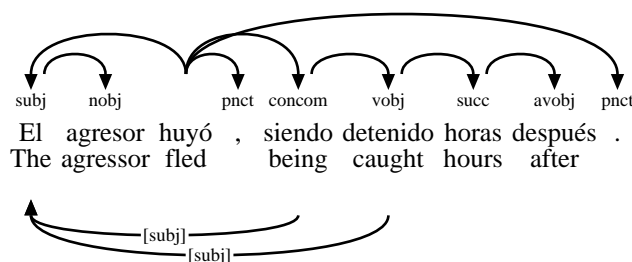
cond *Condition adverbial.* Describes the condition of the event/action.
isa ADVERB Related types: pcond.
[164]

cond subj vobj vobj attr dobj pnct ben pnct nobj nobj pnct pnct

If you are having health problems , write to " The Doctors " .
{about}#
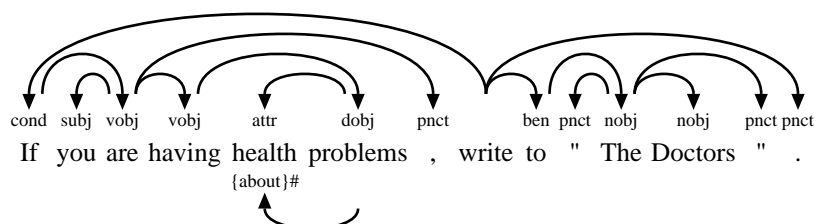
cons *Consequence adverbial.* Describes the consequence of the event/action.
isa ADVERB Related types: xtop.
[163]

degr *Degree adverbial.* Modifies the object or verbal by degree
isa ADVERB Related types: focal.
[170]

degr subj nobj   pnct

Only two people came .
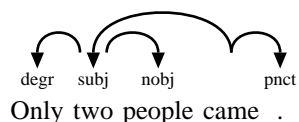
exem *Example adverbial* (deprecated ex). Exemplification; subordinated the object which is
isa ADVERB added to a list.
[168]

subj   exem dobj attr nobj pnct

Poe wrote e.g. "The Tell–tale Heart" .
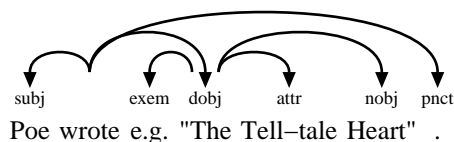
man *Manner adverbial.* The way things are done
isa ADVERB Subtypes: accom inst.
[157]   Related types: fpredo.

subj   man pnct

He talks slowly .

14
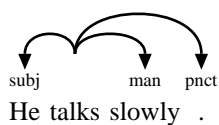
accom *Companionship adverbial* (deprecated `comp`). Companionship
isa man   Related types: man.
[158]

The husband came with his wife .
subj nobj   accom nobj possd pnct
{arg}
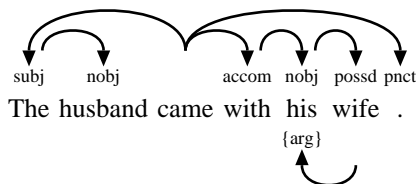
inst *Instrument adverbial.* Instrument/means
isa man   Related types: man.
[159]

He opened the door with the key .
subj   dobj nobj inst nobj nobj pnct
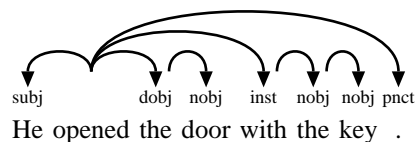
neg *Negation adverbial.* Negation of a verbal
isa ADVERB
[173]

It's never a problem.

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

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

She never lied

Ella no mintio nunca
She not lied never
subj neg   time
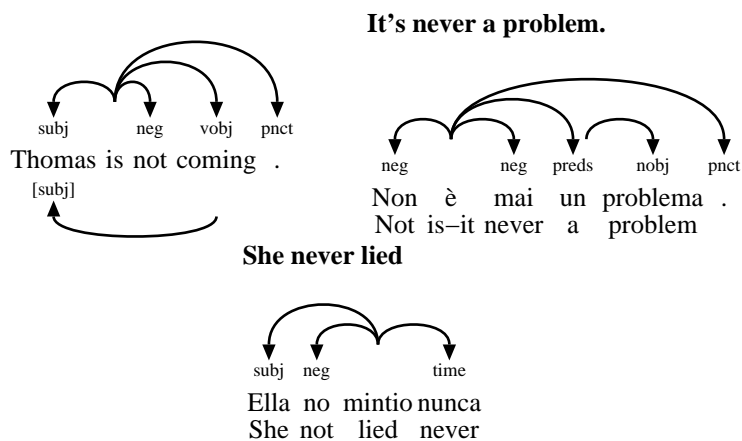
other *Other adverbial.*
isa ADVERB
[174]

prg *Pragmatic adverbial.* Sentence level.
isa ADVERB   Subtypes: att discmark epi eval focal pcond.
[135]

att *Attitude adverbial.* Regarding attitude
isa prg   Related types: epi eval.
[139]

The weather is unfortunately bad .
subj nobj   att   preds pnct
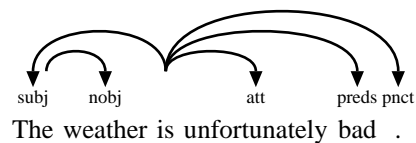
discmark *Sentence-initial discourse marker.* Discourse marker
isa prg   Related types: coord.
[141]

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

discmark dobj　　　subj iobj pnct　　discmark dobj　　　subj iobj pnct
Og　det　siger　jeg　dig ...　　Men　det　siger　jeg　dig ...
And　that　say　I　you　　　But　that　say　I　you
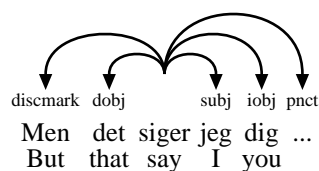
epi *Epistemic adverbial.* Regarding the level of truth in the expression
isa prg　　　Related types: att eval.
[138]

subj　　epi　　preds　pnct
He　is　maybe　wrong　.
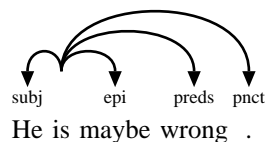
eval *Evaluation adverbial.* Evaluating adverbials
isa prg　　　Related types: att epi.
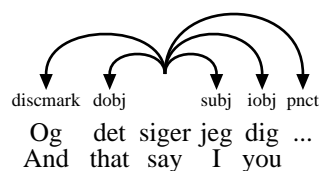[140]

eval　　pnct subj　　preds pnct
However　,　I　am　fine　.
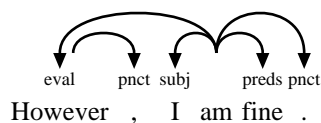
focal *Focalizer adverbial.* Focalization of a noun
isa prg　　　Related types: degr.
[136]

focal　subj　　　dobj　pnct
Even　Italy　imports　pasta　.
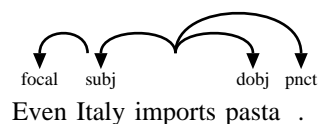
pcond *Pragmatic condition adverbial* (deprecated `prgcond`). Pragmatic condition
isa prg　　　Related types: cond.
[137]

coord subj　　　neg　vobj　　dobj　　pnct pcond　　subj　　vobj pnct
But　I　have　not　seen　anything　,　if　anyone　asks　.
　　　[subj]
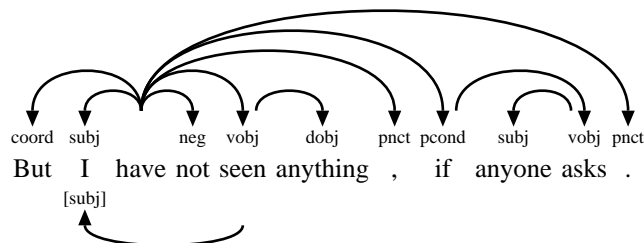
source *Source attribution adverbial.* Reference/source
isa ADVERB
[167]

subj　　vobj　source　pobj nobj　nobj　pnct
Adam　got　fired　according　to　the　contract　.
　　　[subj]
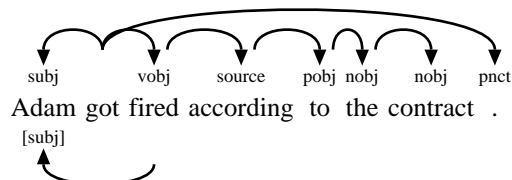
space   *Space adverbial.* Space adverbials
isa ADVERB   Subtypes: dir loc.
[154]

dir   *Direction adverbial.* Movement from one place to another; direction
isa space   Related types: loc.
[156]

expl	dobj	attr	nobj	dir	nobj	pobj	nobj	pnct
There	is	a	long	way	from	Japan	to	Germany	.
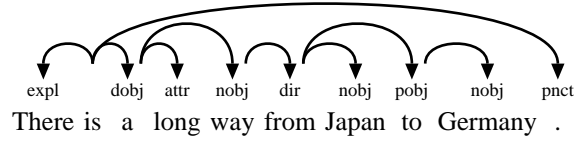
loc   *Location adverbial.* Location
isa space   Related types: dir.
[155]

dobj	subj	loc	nobj
as	we	say	in Denmark
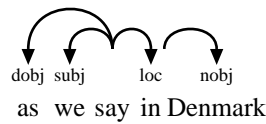
struct   *Text-structuring or connective adverbial.* Connectives and text structuring adverbials
isa ADVERB   bials
[142]   Subtypes: add bg contr elab.
     Related types: bg contr.

struct	subj	vobj	prec	pnct	expl	dobj	nobj	pobj	nobj	pnct
As	I	mentioned	earlier	,	there	is	no	doubt	about	it	.
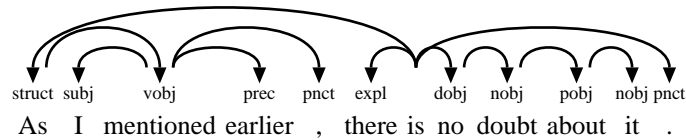
add   *Additive adverbial.* Additive information
isa struct
[146]

subj	nobj	add	dobj	nobj	pnct
The	house	has	also	a	garage	.
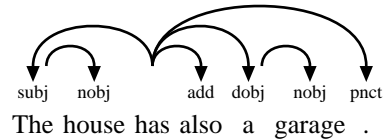
bg   *Background adverbial.* Background information
isa struct   Related types: struct.
[143]

bg	nobj	nobj	possd	pnct	subj	nobj	neg	vobj	iobj	dobj	pnct
Regarding	the	man's	whereabouts	,	the	police	could	not	tell	us	anything	.

{arg}   [subj]
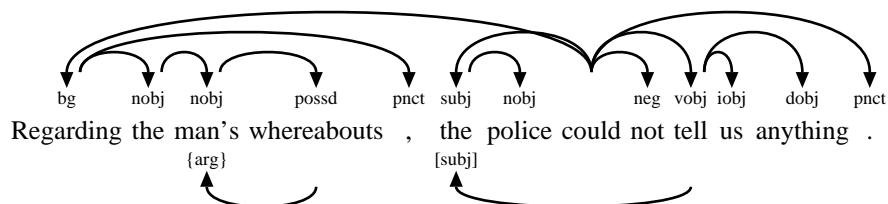
contr   *Contrast adverbial.* Opposition
isa struct   Related types: struct.
[144]

Instead of fruits , he bought two chocolate muffins .

contr · pobj · nobj · pnct · subj · dobj · attr · nobj · pnct

{const}#

elab *Elaboration advebial.* More detailed description
isa struct
[145]

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}#

time *Time adverbial.* Time relating adverbials
isa ADVERB Subtypes: cont dur ext hab prec succ.
[147]

She never lied

The Smiths arrive sunday .

subj · nobj · time · pnct

Ella no mintio nunca
She not lied never

subj · neg · time

cont *Contemporaneity adverbial.* Contemporaneity
isa time Related types: time.
[151]

I was eating , when you called me .

subj · vobj · pnct · cont · subj · vobj · dobj · pnct

[subj]

dur *Duration adverbial.* Duration
isa time Related types: ext hab.
[148]

The dog was barking all night long .

subj · nobj · vobj · dur · nobj · aobj · pnct

[subj]

ext *Extent/frequency adverbial* (deprecated freq). Frequency; extention
isa time   Related types: dur hab.
[153]

He called her seven times .
subj   dobj   ext   nobj   pnct
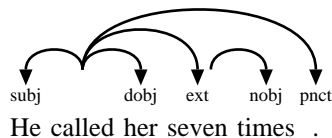
hab *Habituality adverb.* Habitual; repeated habit
isa time   Related types: dur ext.
[152]

Every_time he leaves , she begins to cry .
hab   subj vobj pnct   subj   pobj vobj pnct
[subj]
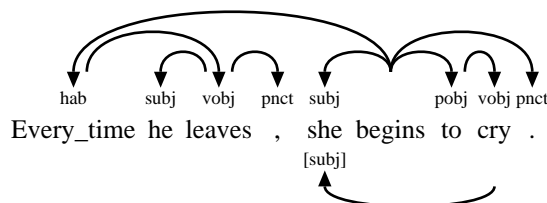
prec *Precedence adverbial.* Precedence
isa time
[149]

Before she arrived , there were only men in the room .
prec subj vobj pnct expl   degr dobj loc nobj nobj pnct
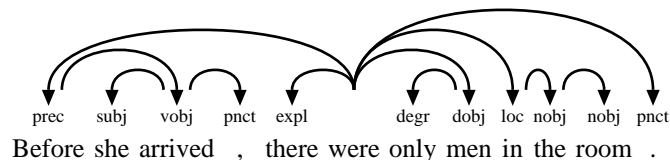
succ *Succession adverbial.* Succesion
isa time
[150]

After she left , there were only men in the room .
prec subj vobj pnct expl   degr dobj loc nobj nobj pnct
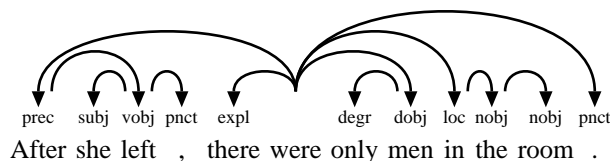
3.3 Other adjunct relations: SYNADJ

SYNADJ *Syntactic adjunct.*
isa ADJ SYN   Subtypes: ADVERB GAP app attr attrg conj coord correl fpred mod name pnct rel voc xtop.
[71]

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

```
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 3.4: The relations matching SYNADJ-ADVERB.
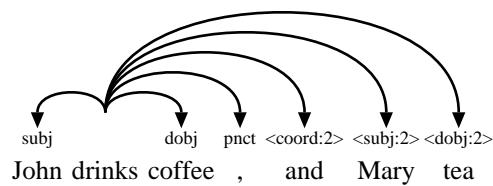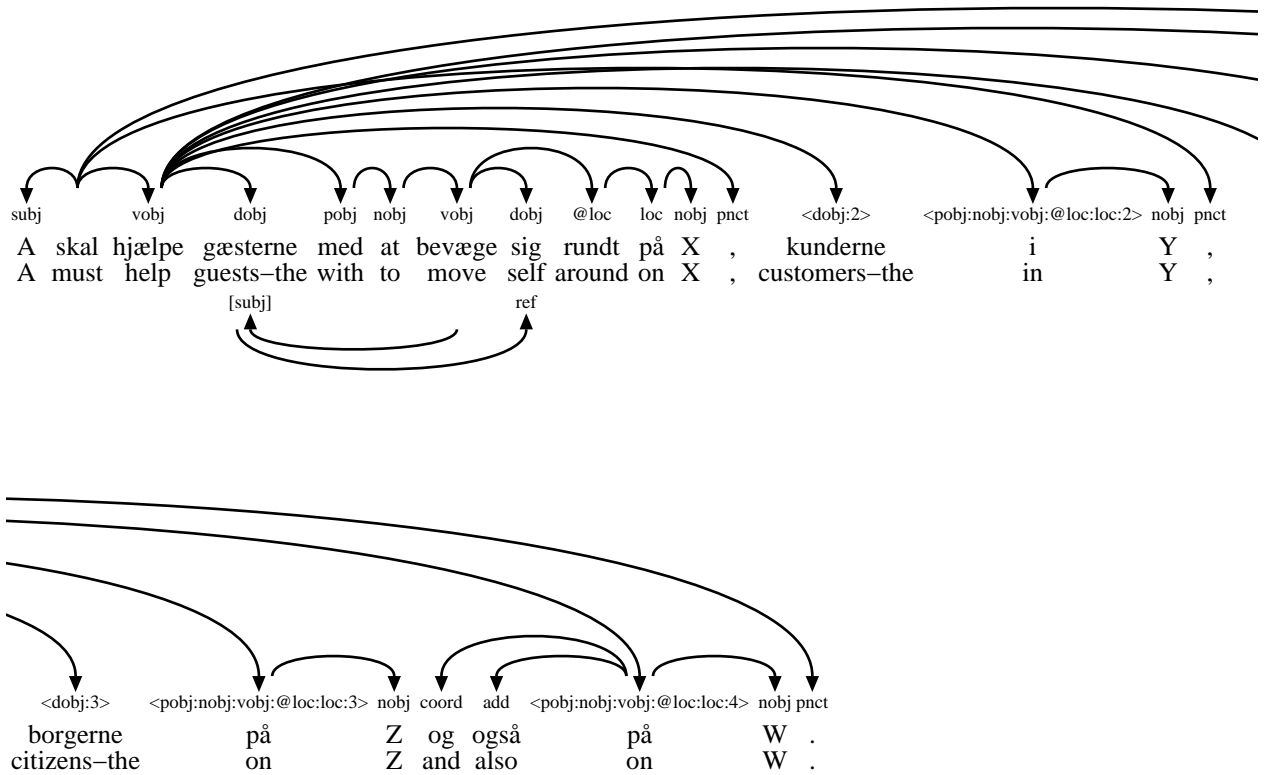
| subj | vobj | dobj | pobj | nobj | vobj | dobj | @loc | loc | nobj | pnct | <dobj:2> | <pobj:nobj:vobj:@loc:loc:2> | nobj | pnct |

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 ">"
isa GAP RULE
[357]

Gapping dependent. First conjunct->gapping dependent

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

Peter likes dogs , and Elizabeth cats .

---

app
isa SYNADJ
[109]
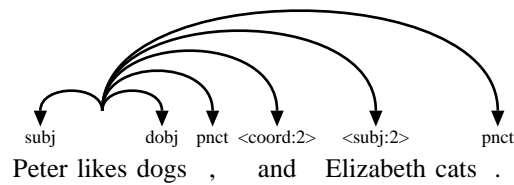
Apposition.
Subtypes: appa appr.
　　Related types: appa appr.

appa
isa app
[110]

Parenthetic apposition (comma).
Subtypes: xpl.
　　Related types: appr xpl.

| pnct | appa | nobj | | subj | preds | pnct | appa | attr | nobj | pnct |

Einstein , the genius　　He was angry , a bad habit .

---

xpl
isa appa
[123]
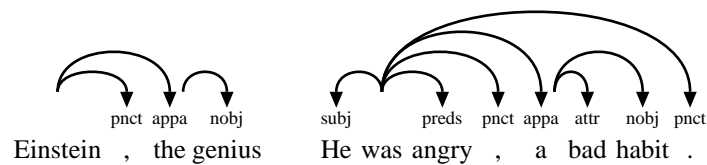
Explication. Explication of an NP or VP.
　　Related types: qobj.

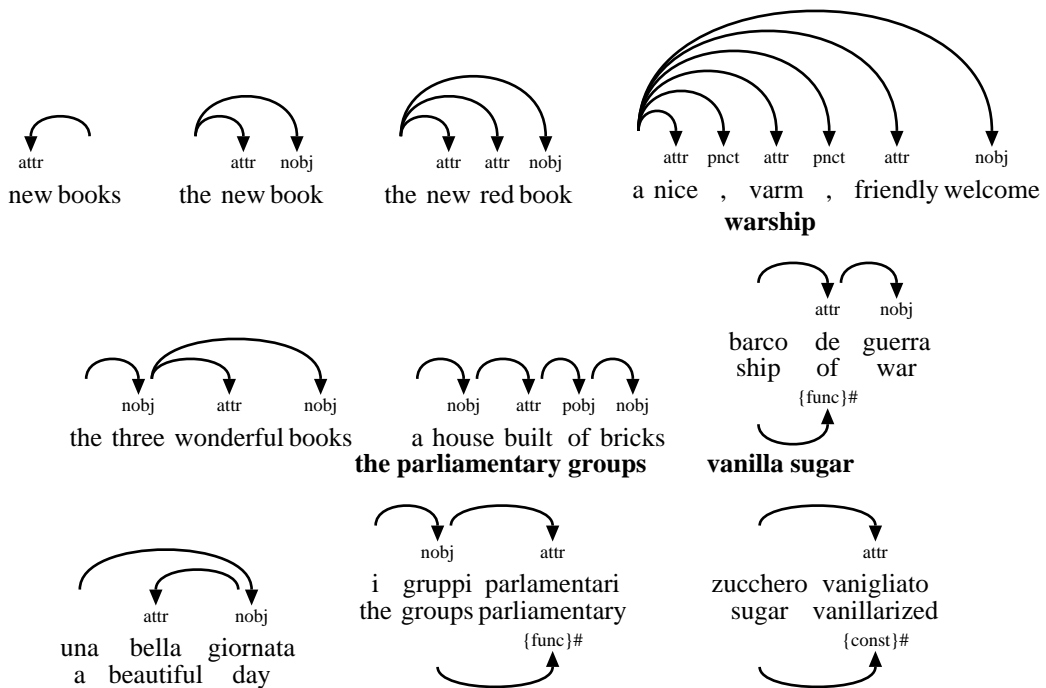The title of the plan : " The Virtuous Circle " .

nobj pobj nobj nobj pnct   xpl   attr   nobj pnct pnct

pnct
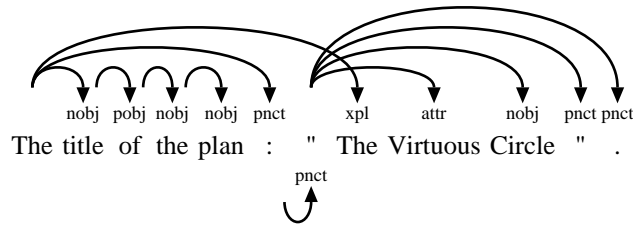
appr *Restrictive apposition (no comma).*
isa app   Related types: appa.
[111]

the genius Einstein

nobj appr

the happy couple Ian and Martha

attr nobj appr coord conj

Goethe's novel Faust is brilliant .

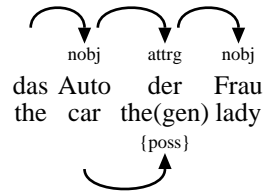subj possd appr preds pnct

{agent}
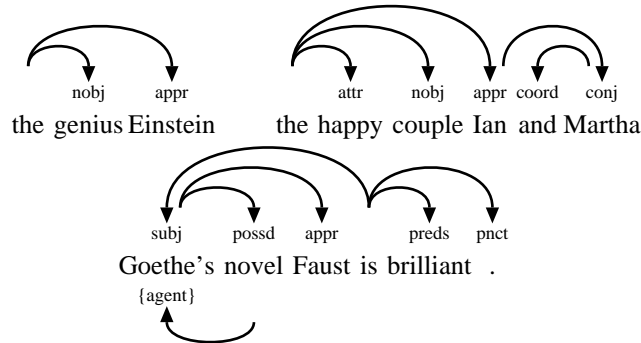
attr *Attributive* (deprecated `attrd` `attrr`). In Germanic languages, adjectives modify the de-
isa SYNADJ terminer; in Romance languages, adjectives modify the noun even if there is a de-
[107] terminer
        Related types: SEMROLE attrg pobj.

new books

attr

the new book

attr nobj

the new red book

attr attr nobj

a nice , warm , friendly welcome
warship

attr pnct attr pnct attr nobj

barco de guerra
ship of war
{func}#

attr nobj

the three wonderful books

nobj attr nobj

a house built of bricks
the parliamentary groups

nobj attr pobj nobj

vanilla sugar

una bella giornata
a beautiful day

attr nobj

i gruppi parlamentari
the groups parliamentary
{func}#

nobj attr

zucchero vanigliato
sugar vanillarized
{const}#

attr

attrg *Genitive attributive.*
isa SYNADJ Related types: SEMROLE gobj.
[108]

the lady's car　　　**Peter's car**

das Auto der Frau　　das Auto Peters
the car the(gen) lady　the car Peter's
　　　　nobj attrg nobj　　　nobj attrg
　　　　　{poss}　　　　　　{poss}
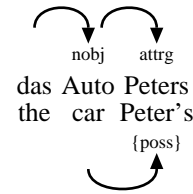
conj　*Conjunct relation.*
isa SYNADJ　　Related types: coord correl.
[99]

We met John and Mary .
subj dobj coord conj pnct

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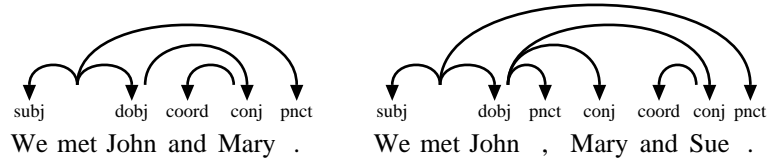
coord　*Coordinator relation.* A dependency relation between a coordinating conjunction
isa SYNADJ　and a secondary conjunct. The coordinator is analyzed as a dependent of the sec-
[100]　　ondary conjunct. Secondary conjuncts are in turn analyzed as "conj"-dependents of
　　　　the first conjunct.
　　　　　Related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

We met John and Mary .
subj dobj coord conj pnct

We met John , Mary and Sue .
subj dobj pnct conj coord conj pnct
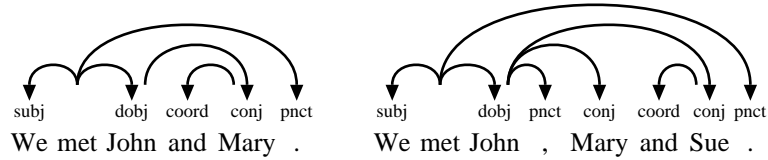
correl　*Correlative coordinator relation.*
isa SYNADJ　　Related types: conj coord.
[101]

We met neither John , nor Mary .
subj correl dobj pnct coord conj pnct

We neither met John , nor Mary .
subj correl dobj pnct coord conj pnct
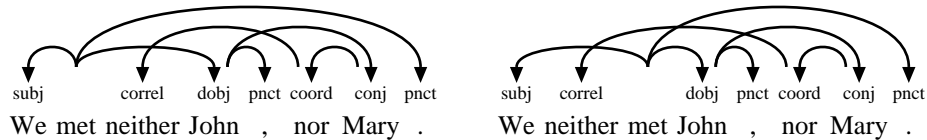
fpred　*Free predicative.*
isa SYNADJ　Subtypes: fpredo fpreds.
[104]　　　Related types: fpredo fpreds.

V−>free predicative

fpredo　*Free direct-object predicative.*
isa fpred　　Related types: fpreds man.
[106]

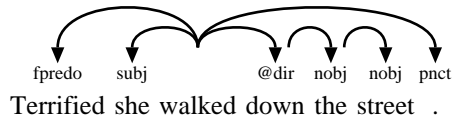Terrified she walked down the street .

fpreds *Free subject predicative.*
isa fpred   Related types: fpredo.
[105]

He drank the coffee too hot .
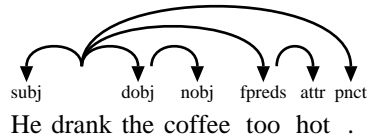
mod *Modifier/adverbial.* Deprecated name for adverbials
isa SYNADJ Subtypes: modp.
[129]

modp *Parenthetic modifier.* Deprecated name for parenthetic modifiers
isa mod
[131]

name *Part of name.* Part of a name.
isa SYNADJ Subtypes: namef namel title.
[117]

a Garrett engine   a Citroen X2
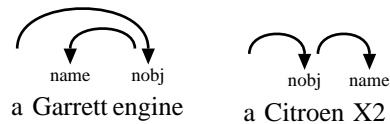
namef *First name.* A first name.
isa name   Related types: namel title.
[118]

John Travolta
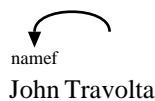
namel *Last name.* A second last name
isa name   Related types: namef title.
[119]

Matthias Trautner Kromann
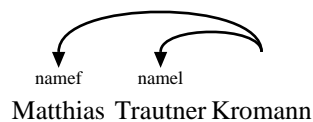
title *Person title.* A title in a name. If the is the title is determinated by an article, eg.
isa name the director Smith, the title must be annotated as "nobj" and the name as "appr".
[120]   Related types: namef namel.

Dr. Zhivago
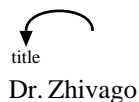
pnct *Punctuation.*
isa SYNADJ
[102]

We met John , Mary and Sue .
(subj dobj pnct conj coord conj pnct)
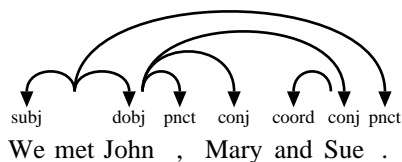
rel *Relative clause.*
isa SYNADJ Subtypes: relelab relpa relr.
[112] Related types: relelab relpa relr.

N–>V, V–>V

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

V–>V

relpa *Parenthetic relative clause.*
isa rel Related types: relelab relr.
[114]
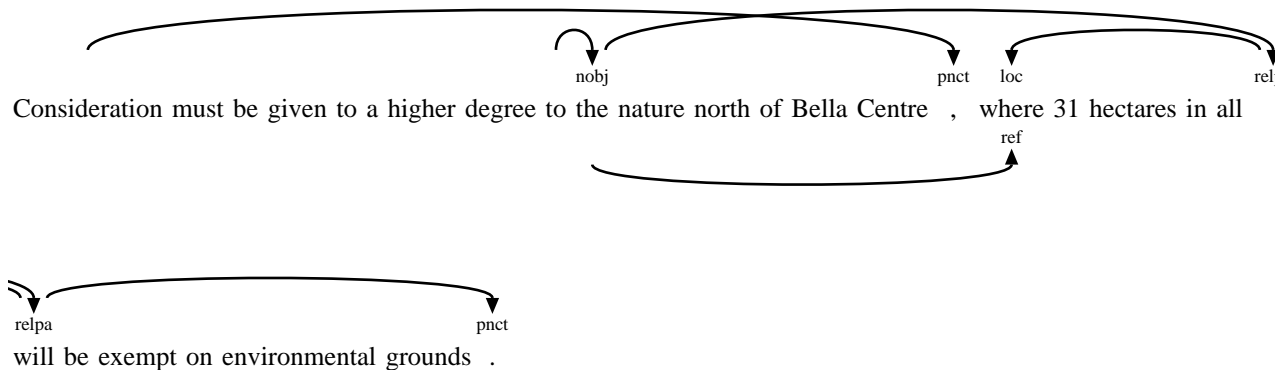
Consideration must be given to a higher degree to the nature north of Bella Centre , where 31 hectares in all
(nobj pnct loc rel ref)

will be exempt on environmental grounds .
(relpa pnct)

relr *Restrictive relative clause.*
isa rel Related types: relelab relpa.
[113]

The part of the Amager Commons , which has not become a part of Ørestaden is to be preserved .
(subj pnct subj relr ref pnct)
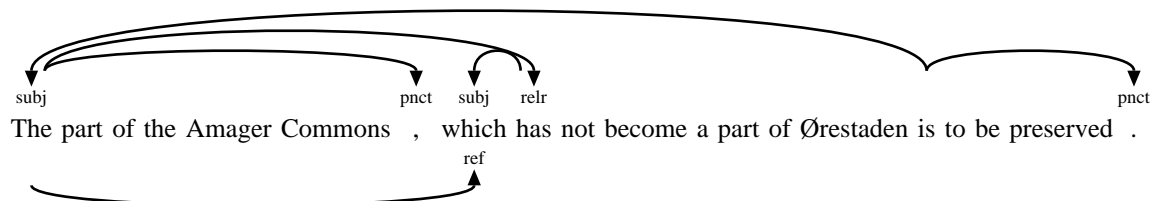
voc *Vocative.* Vocative specification. The person to whom the statement is directed.
isa SYNADJ
[122]
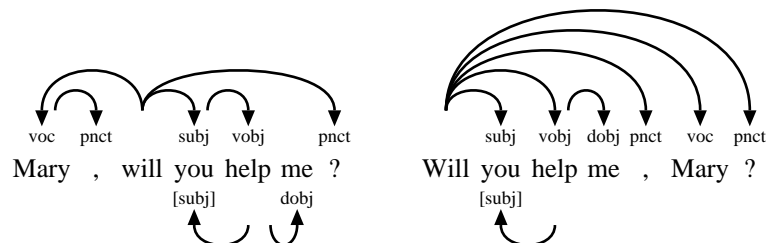
xtop *External topic with resuming pronoun.* An external topic is a sentence-initial NP
isa SYNADJ whose only function is to provide the antecedent for a pronoun later in the sentence.
[116] Eg in "John, he is a nice person". Here "John" is the "xtop" of "is", and "he" is the
subject of "is".

Related types: cons ref.

If you are having any problems, call me.
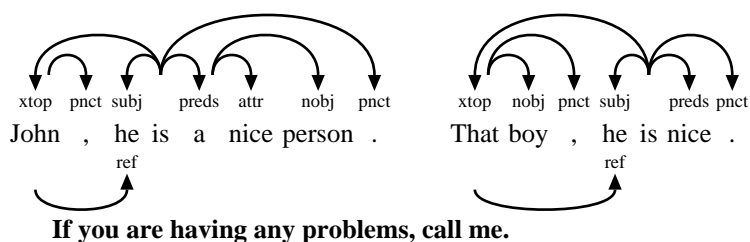
Chapter 4

Morphological relations: MORPHOLOGY

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

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

MORPH
isa DIM:LEVEL
[15]

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

Subtypes: "§" PRIM MORPHCOMP MORPHDERIV.

"§" PRIM
isa MORPH RULE
[360]

Morphology specification.

4.1 Compositional relations: MORPHCOMP

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

Figure 4.2: The relations matching MORPHCOMP.

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

Subtypes: ABOUT AGENT CONST EVAL FUNC ORIGIN OTHER POS POSS RESEM TIME:MC.

ABOUT	*Noun-noun compound (about).* Non-head has an aboutness meaning wrt. head.
isa MORPHCOMP	
[347]	(theme: skattelov 'tax law' = lov –[skat]te/ABOUT)

AGENT	*Noun-noun compound (agentive).* Non-head has an agentive meaning wrt. head.
isa MORPHCOMP	
[339]	(agent: politikontrol 'police control' = kontrol –politi/AGENT)

CONST	*Noun-noun compound (constitutive).* Non-head has a constitutive meaning wrt.
isa MORPHCOMP	head.
[338]	
	(constitutive: træbord 'wooden table' = bord –træ/CONST)

EVAL	*Noun-noun compound (evaluative).* Non-head has an evaluative meaning wrt. head.
isa MORPHCOMP	
[345]	
	coche de lujo 'luksusbil'

FUNC	*Noun-noun compound (function).* Non-head has a functional meaning wrt. head.
isa MORPHCOMP	
[341]	(function: krigsskib 'war ship' = skib –[krig]s/FUNC)

ORIGIN	*Noun-noun compound (origin).* Non-head has a meaning of origin wrt. head.
isa MORPHCOMP	
[340]	(origin: rørsukker 'cane sugar' = sukker –rør/ORIGIN)

OTHER	*Noun-noun compound (other).* If in doubt about the meaning relation between head
isa MORPHCOMP	and non-head.
[348]	
POS	*Noun-noun compound (position).* Non-head has a locative meaning wrt. head.
isa MORPHCOMP	
[343]	(position: loftlampe 'ceiling lamp' = lampe –loft/POS)

POSS	*Noun-noun compound (possession).* Non-head has a possessive meaning wrt. head.
isa MORPHCOMP	
[342]	
	(possession: politibil = bil –politi/POSS

RESEM	*Noun-noun compound (resemblance).* Denotations of head and non-head resemble
isa MORPHCOMP	each other.
[346]	
	silla de tijeras 'saksestol' [klapstol], válvula de mariposa 'sommerfugleventil'

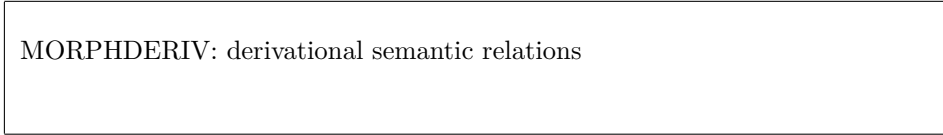| **TIME:MC** | *Noun-noun compound (time).* Non-head has a temporal meaning wrt. head. |
| isa MORPHCOMP | |
| [344] | (time: oktoberregn 'October rain' = regn –oktober/TIME) |

4.2 Derivational relations: MORPHDERIV

```
MORPHDERIV: derivational semantic relations
```

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

MORPHDERIV
isa MORPH
[254]

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

Subtypes: PREFIX SUFFIX.

4.2.1 Prefix relations: PREFIX

```
PREFIX: semantic relations appearing with prefixes
    ASPEC: aspectual dimension
        ASPEC:cause: causation
        ASPEC:iter: iteration
        ASPEC:reflex: reflexivity
        ASPEC:resul: result
        ASPEC:rev: reversion
        ASPEC:term: termination
    GRAD: graduation
        GRAD:qual: quality
        GRAD:size: size
    LOC: location
        LOC:dir: direction
        LOC:pos: position
        LOC:proce: origin
    MOD: modification
        MOD:cuant: quantification
        MOD:man: manner
        MOD:qual: qualification
    NEG: negation
        NEG:oppo: opposition
        NEG:priv: privation
    PRE:other: other prefix relation
    TIME§: time
    TRANS: transitivity
```

Figure 4.4: The relations matching PREFIX.

PREFIX
isa MORPHDERIV
[257]

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

Subtypes: ASPEC GRAD LOC MOD NEG PRE:other TIME§ TRANS.

ASPEC
isa PREFIX
[274]

Aspectual dimension. Prefix conveys an asepctual dimension in a broad sense.

Subtypes: ASPEC:cause ASPEC:iter ASPEC:reflex ASPEC:resul ASPEC:rev ASPEC:term.

ASPEC:cause   *Causation.* Prefix conveys causation.
     isa ASPEC
       [277]
<div align="center">(causative: acallar 'silence' = callar –a/ASPEC:cause)</div>

ASPEC:iter   *Iteration.* Prefix conveys iteration.
     isa ASPEC
       [276]
<div align="center">(iterative: redefine = define –re/ASPEC:iter)</div>

ASPEC:reflex   *Reflexivity.* Prefix conveys reflexivity.
     isa ASPEC
       [278]
<div align="center">(reflexive: autopilot = pilot –auto/ASPEC:reflex)</div>

ASPEC:resul   *Result.* Prefix conveys result.
     isa ASPEC
       [280]
<div align="center">(resultative: fastnagle 'rivet' = nagle –fast/ASPEC:resul)</div>

ASPEC:rev   *Reversion.* Prefix conveys reversion.
     isa ASPEC
       [275]
<div align="center">(reversion: deactivate = activate –de/ASPEC:rev)</div>

ASPEC:term   *Termination.* Prefix conveys termination.
     isa ASPEC
       [279]
<div align="center">(terminative: oplåse 'open' = låse –op/ASPEC:term)</div>

GRAD   *Graduation.* Prefix conveys graduation in a broad sense.
   isa PREFIX   Subtypes: GRAD:qual GRAD:size.
       [271]
GRAD:qual   *Quality.* Prefix conveys quality.
     isa GRAD
       [273]
<div align="center">(quality: supercomputer = computer –super/GRAD:qual)</div>

GRAD:size   *Size.* Prefix conveys size.
     isa GRAD
       [272]
<div align="center">(size/quantity: minibar = bar –mini/GRAD:size)</div>

LOC   *Location.* Prefix expresses location in a broad sense.
   isa PREFIX   Subtypes: LOC:dir LOC:pos LOC:proce.
       [260]
LOC:dir   *Direction.* Prefix expresses direction.
     isa LOC
       [262]
<div align="center">(direction/origin: deverbal = verbal –de/LOC:dir)</div>

LOC:pos   *Position.* Prefix expresses position.
isa LOC
[261]

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

LOC:proce   *Origin.* Prefix conveys origin.
isa LOC
[263]

                                (origin: extraer: = traer –ex/LOC:proce)

MOD   *Modification.* Prefix conveys modification in a broad sense.
isa PREFIX   Subtypes: MOD:cuant MOD:man MOD:qual.
[282]

MOD:cuant   *Quantification.* Prefix conveys quantification.
isa MOD
[283]

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

MOD:man   *Manner.* Prefix conveys manner.
isa MOD
[284]

                             (manner: maleducado = educado –mal/MOD:man)

MOD:qual   *Qualification.* Prefix conveys qualification.
isa MOD
[285]

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

NEG   *Negation.* Prefix conveys negation in a broad sense.
isa PREFIX   Subtypes: NEG:oppo NEG:priv.
[268]

NEG:oppo   *Opposition.* Prefix conveys opposition.
isa NEG
[269]

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

NEG:priv   *Privation.* Prefix conveys privation.
isa NEG
[270]

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

PRE:other   *Other prefix relation.* If in doubt about the meaning conveyed by the prefix
isa PREFIX
[286]

TIMES   *Time.* Prefix conveys time in a broad sense.
isa PREFIX

TRANS   *Transitivity.* Prefix conveys transitivity.
isa PREFIX
[281]

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

4.2.2 Suffix relations: SUFFIX

SUFFIX
isa MORPHDERIV
[258]

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

Subtypes: AUG DENOM DENUM DER DEV DEVN DIMIN NOPRED PEJ QUAL.

AUG
isa SUFFIX
[287]

Augmentation. Suffix conveys augmentation.

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

DENOM
isa SUFFIX
[323]

Noun-adjective derivation. Suffix creates denominal adjectives in a broad sense.

Subtypes: DENOM:disp DENOM:eff DENOM:other DENOM:poss DENOM:rel DENOM:resem.

DENOM:disp
isa DENOM
[331]

Noun-adjective derivation (disposition). Suffix creates denominal adjectives that express disposition.

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

DENOM:eff
isa DENOM
[332]

Noun-adjective derivation (effect). Suffix creates denominal adjectives that express an effect.

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

DENOM:other
isa DENOM
[333]

Noun-adjective derivation (other). If in doubt about the meaning conveyed by the suffix

DENOM:poss
isa DENOM
[330]

Noun-adjective derivation (possession). Suffix creates denominal adjectives that express possession.

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

DENOM:rel
isa DENOM
[324]

Noun-adjective derivation (relational). Suffix creates denominal adjectives with a relational meaning.

Subtypes: DENOM:rel.deono DENOM:rel.norm.

ENOM:rel.deono
isa DENOM:rel
[326]

Noun-adjective derivation (naming). Suffix creates relational adjectives with the meaning of "naming".

Subtypes: DENOM:rel.deono.pers DENOM:rel.deono.place.

NOM:rel.deono.pers
isa DENOM:rel.deono
[327]

Noun-adjective derivation (naming persons). Suffix creates relational adjectives with the meaning of "naming" persons.

Cervantino 'som har at gøre med Cervantes'

DENOM:rel.deono.place *Noun-adjective derivation (naming places).* Suffix creates relational adjectives with
isa DENOM:rel.deono the meaning of "naming" of places.
[328]

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

DENOM:rel.norm *Noun-adjective derivation (normal).* Suffix creates relational adjectives with a "nor-
isa DENOM:rel mal" meaning aspect.
[325]

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

DENOM:resem *Noun-adjective derivation (resemblance).* Suffix creates denominal adjectives that
isa DENOM express resemblance.
[329]

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

DENUM *Adjective-numeral derivation.* Suffix creates denumeral adjectives in a broad sense.
isa SUFFIX Subtypes: DENUM:mult DENUM:ord DENUM:part.
[334]
DENUM:mult *Adjective-multiplicative derivation.* Suffix creates multiplicative numerals.
isa DENUM
[337]   "kardinal=cinco – multiplikativ=quíntuplo" 'fem/femdobbelte'

DENUM:ord *Adjective-ordinal derivation.* Suffix creates ordinals.
isa DENUM
[335]   "kardinal=dos – ordinal=segundo" 'to/anden'

DENUM:part *Adjective-partitive derivation.* Suffix creates partitive numerals.
isa DENUM
[336]   "kardinal=doce – partitiv=doceavo" 'tolv/tolvtedel'

DER *Verb derivation.* Suffix triggers a derivation
isa SUFFIX Subtypes: DER:av DER:nv DER:vv.
[290]
DER:av *Adjective-verb derivation.* Suffix triggers a derivation from an adjective to a verb.
isa DER
[292]

(adjective–>verb derivation: darken = dark +en/DER:av)

DER:nv *Noun-verb derivation.* Suffix triggers a derivation from a noun to a verb.
isa DER
[291]   (noun–>verb derivation: salar 'to salt' = sal +ar/DER:nv)

33

DER:vv *Verb-verb derivation.* Suffix triggers a derivation from a verb to another verb.
isa DER
[293]
        (verb–>verb derivation: adormecer 'lull to sleep' = dormir –+[a][ecer]/DER:vv)

DEV (long: DEVERB).
isa SUFFIX Subtypes: DEVA.
[314]

DEVA *Verb-adjective derivation* (long: DEVERBA). Suffix creates deverbal adjectives in a
isa DEV broad sense.
[315] Subtypes: DEVA:act DEVA:pas.part.

DEVA:act *Verb-adjective derivation (active)* (long: DEVERB:act.pure). Suffix creates active adjec-
isa DEVA tives.
[316] Subtypes: DEVA:act.disp DEVA:act.poten DEVA:pas.

DEVA:act.disp *Verb-adjective derivation (pure)* (long: DEVERB:act.disp). Suffix creates active adjec-
isa DEVA:act tives with the meaning aspect "pure".
[317]

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

DEVA:act.poten *Verb-adjective derivation (disposition)* (long: DEVERB:act.poten). Suffix creates active
isa DEVA:act adjectives with the meaning aspect "disposition".
[318]

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

        tendens til at være krybende

DEVA:pas *Verb-adjective derivation (potentiality)* (long: DEVERB:pas). Suffix creates active ad-
isa DEVA:act jectives with the meaning aspect "potentiality".
[319] Subtypes: DEVA:pas.deon DEVA:pas.poten.

        (deverbal adjective: transportable = transport +able/DEVERB:pas.poten)

DEVA:pas.deon *Verb-adjective derivation (passive potentiality)* (long: DEVERB:pas.deon). Suffix creates
isa DEVA:pas passive adjectives with the meaning aspect "potentiality".
[322]

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

        'transportabel/maskine som kan blive transporteret/transporteres

DEVA:pas.poten
isa DEVA:pas
[321]

Verb-adjective derivation (passive participles) (long: 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"

DEVA:pas.part
isa DEVA
[320]

Verb-adjective derivation (passive) (long: DEVERB:pas.part). Suffix creates passive adjectives.

DEVN
isa SUFFIX
[294]

Verb-noun derivation (long: DEVERBN, deprecated PRED). Suffix creates deverbal nouns in a broad sense.

Subtypes: DEVN:agent DEVN:core DEVN:exper DEVN:inst DEVN:loc DEVN:other DEVN:recip DEVN:result.

DEVN:agent
isa DEVN
[295]

Verb-noun derivation (agent). Suffix creates deverbal nouns absorbing the agent role.

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

DEVN:core
isa DEVN
[297]

Verb-noun derivation (core). Suffix creates deverbal nouns expressing a nominalized version of the situation denoted by the original verb.

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

DEVN:exper
isa DEVN
[296]

Verb-noun derivation (experiencer). Suffix creates deverbal nouns absorbing the experiencer role.

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

DEVN:inst
isa DEVN
[301]

Verb-noun derivation (instrument). Suffix creates deverbal nouns expressing the instrument related to the meaning of the original noun.

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

DEVN:loc
isa DEVN
[300]

Verb-noun derivation (location). Suffix creates deverbal nouns expressing the location related to the meaning of the original noun.

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

DEVN:other *Verb-noun derivation (other).* If in doubt about the meaning conveyed by the suffix
isa DEVN
[302]

DEVN:recip *Verb-noun derivation (recipient).* Suffix creates deverbal nouns absorbing the recip-
isa DEVN ient role
[299]

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

DEVN:result *Verb-noun derivation (patient).* Suffix creates deverbal nouns absorbing the patient
isa DEVN role.
[298]

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

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

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

NOPRED *Noun-noun derivation.* Suffix creates non-predicative nouns (from other nouns) in
isa SUFFIX a broad sense.
[304] Subtypes: NOPRED:agent NOPRED:capac NOPRED:cont NOPRED:loc NOPRED:other NO-
PRED:result NOPRED:script NOPRED:set NOPRED:temp.

NOPRED:agent *Noun-noun derivation (agent).* Suffix creates non-predicative nouns expressing an
isa NOPRED agent role.
[305]

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

NOPRED:capac *Noun-noun derivation (capacity).* Suffix creates non-predicative nouns expressing a
isa NOPRED capacity.
[310]

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

NOPRED:cont *Noun-noun derivation (container).* Suffix creates non-predicative nouns expressing
isa NOPRED a container.
[307]

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

NOPRED:loc *Noun-noun derivation (location).* Suffix creates non-predicative nouns expressing a
isa NOPRED location.
[311]

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

NOPRED:other *Noun-noun derivation (other).* If in doubt about the meaning conveyed by the suffix
isa NOPRED
[313]

NOPRED:result *Noun-noun derivation (result).* Suffix creates non-predicative nouns expressing a
isa NOPRED result.
[306]

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

NOPRED:script *Noun-noun derivation (script).* Suffix creates non-predicative nouns expressing a
isa NOPRED script/notion related to the original noun.
[312]

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

NOPRED:set *Noun-noun derivation (set).* Suffix creates non-predicative nouns expressing a set.
isa NOPRED
[309]

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

NOPRED:temp *Noun-noun derivation (temporal).* Suffix creates non-predicative nouns expressing a
isa NOPRED temporal aspect.
[308]

(temporal derivation: temporada 'tidsrum/sæson' = tiempo +ada/NOPRED:temp)

PEJ *Pejoration.* Suffix conveys a pejorative sense.
isa SUFFIX
[289]
(pejorative: vinacho 'bad vine' = vino +acho/PEJ)

QUAL *Adjective derivation.* Suffix creates deadjectival nouns.
isa SUFFIX
[303]
(deadjectival noun: bitterness = bitter +ness/QUAL)

SUFFIX: semantic relations appearing with suffixes
    AUG: augmentation
    DENOM: noun-adjective derivation
        DENOM:disp: noun-adjective derivation (disposition)
        DENOM:eff: noun-adjective derivation (effect)
        DENOM:other: noun-adjective derivation (other)
        DENOM:poss: noun-adjective derivation (possession)
        DENOM:rel: noun-adjective derivation (relational)
           DENOM:rel.deono: noun-adjective derivation (naming)
               DENOM:rel.deono.pers: noun-adjective derivation (naming persons)
               DENOM:rel.deono.place: noun-adjective derivation (naming places)
           DENOM:rel.norm: noun-adjective derivation (normal)
        DENOM:resem: noun-adjective derivation (resemblance)
    DENUM: adjective-numeral derivation
        DENUM:mult: adjective-multiplicative derivation
        DENUM:ord: adjective-ordinal derivation
        DENUM:part: adjective-partitive derivation
    DER: verb derivation
        DER:av: adjective-verb derivation
        DER:nv: noun-verb derivation
        DER:vv: verb-verb derivation
    DEV:
    DEVA: verb-adjective derivation
        DEVA:act: verb-adjective derivation (active)
           DEVA:act.disp: verb-adjective derivation (pure)
           DEVA:act.poten: verb-adjective derivation (disposition)
           DEVA:pas: verb-adjective derivation (potentiality)
               DEVA:pas.deon: verb-adjective derivation (passive potentiality)
               DEVA:pas.poten: verb-adjective derivation (passive participles)
           DEVA:pas.part: verb-adjective derivation (passive)
    DEVN: verb-noun derivation
        DEVN:agent: verb-noun derivation (agent)
        DEVN:core: verb-noun derivation (core)
        DEVN:exper: verb-noun derivation (experiencer)
        DEVN:inst: verb-noun derivation (instrument)
        DEVN:loc: verb-noun derivation (location)
        DEVN:other: verb-noun derivation (other)
        DEVN:recip: verb-noun derivation (recipient)
        DEVN:result: verb-noun derivation (patient)
    DIMIN: diminution
    NOPRED: noun-noun derivation
        NOPRED:agent: noun-noun derivation (agent)
        NOPRED:capac: noun-noun derivation (capacity)
        NOPRED:cont: noun-noun derivation (container)
        NOPRED:loc: noun-noun derivation (location)
        NOPRED:other: noun-noun derivation (other)
        NOPRED:result: noun-noun derivation (result)
        NOPRED:script: noun-noun derivation (script)
        NOPRED:set: noun-noun derivation (set)
        NOPRED:temp: noun-noun derivation (temporal)
    PEJ: pejoration
    QUAL: adjective derivation

Figure 4.5: The relations matching SUFFIX.

Chapter 5

Discourse relations: DISCOURSE

```
DISC: discourse level
    "¤" PRIM: discourse specification
```

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

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 DISCFUNC DISCSEM.

"¤" PRIM
isa DISC RULE
[359]

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

5.1 Functional relations: DISCFUNC

```
DISCFUNC: functional discourse relation
    ANSW: answer
    CONSOL: consolidation
        CONSOL:enabl: enablement
        CONSOL:just: justification
        CONSOL:motiv: motivation
    DIREC: directive act
    EXPR: expressive act
    INTACT: interactional signals
        INTACT:attn: attention
        INTACT:inter: interruption
    QUEST: question
```

Figure 5.2: The relations matching DISCFUNC.

DISCFUNC
isa ADJ DISC
[206]

Functional discourse relation. The relation between governing and depending text segments is defined functionally: the depending text segment has illocutionary, structuring or enhancing function

Subtypes: ANSW CONSOL DIREC EXPR INTACT QUEST.

ANSW isa DISCFUNC [242]	*Answer.* Governing text segment contains question or problem, dependent text segment answer or solution
CONSOL isa DISCFUNC [248]	*Consolidation* (deprecated SUPPORT?). Subtypes: CONSOL:enabl CONSOL:just CONSOL:motiv.
CONSOL:enabl isa CONSOL [250]	*Enablement.* S enables reader or recipient to carry out the action mentioned in N; frequent in directive texts
CONSOL:just isa CONSOL [249]	*Justification* (deprecated JUST). S justifies N wrt its content (reason for mentioning it or sim.) thereby strengthening it argumentatively

[da] Fordi, Eftersom

CONSOL:motiv isa CONSOL [251]	*Motivation.* S motivates reader or recipient to carry out the action mentioned in N
DIREC isa DISCFUNC [243]	*Directive act.* Dependent text segment contains an order, command or request

e.g. imperatives

EXPR isa DISCFUNC [244]	*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 isa DISCFUNC [245]	*Interactional signals.* Subtypes: INTACT:attn INTACT:inter.
INTACT:attn isa INTACT [246]	*Attention.* S contains an attention signal

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

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

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

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

```
DISCSEM: semantic discourse relation
    CAUSE: cause relation (discourse)
        CAUSE:expl: explanation relation (discourse)
        CAUSE:goal: goal relation (discourse)
        CAUSE:reas: reason relation (discourse)
    CONC: concession
    COND: condition
    CONJ: conjunction
        CONJ:seq: sequence
    CONS: consequence/result/conclusion relation (discourse)
        CONS:dir: direct, physical consequence, result
        CONS:prg: pragmatic/personal conclusion, deduction
    CONTR: contrast
        CONTR:dir: direct contrast
        CONTR:prg: pragmatic contrast
    DESCR: description/evaluation
        DESCR:eval: positive/negative evaluation
        DESCR:qual: neutral description
    DISJ: disjunction
        DISJ:dir: direct disjunction
        DISJ:prg: pragmatic disjunction
    ELAB: elaboration
        ELAB:exem: exemplification
        ELAB:exp: expansion
        ELAB:part: part of relation
        ELAB:rest: restatement
    JOINT: no clear relation
    STRUCT: structural relation
        STRUCT:prep: preparation
        STRUCT:rep: repaired
    TIME: temporal relation
        TIME:cont: contemporaneity
        TIME:prec: temporal precedence
        TIME:prec§: temporal precedence
        TIME:succ: temporal succession
        TIME:succ§: temporal succession
```

Figure 5.3: The relations matching DISCSEM.

5.2 Semantic relations: DISCSEM

DISCSEM
isa ADJ DISC
[205]

Semantic discourse relation. The relation between governing and depending text segments is defined semantically

Subtypes: CAUSE CONC COND CONJ CONS CONTR DESCR DISJ ELAB JOINT STRUCT TIME.

CAUSE
isa DISCSEM
[208]

Cause relation (discourse). S expresses cause in a broad sense

Subtypes: CAUSE:expl CAUSE:goal CAUSE:reas.

CAUSE:expl
isa CAUSE
[209]

Explanation relation (discourse). S expresses explanation; a more general and elaborating explanation than "reason"

41

[da] Nemlig; [it] Infatti

CAUSE:goal *Goal relation (discourse).* S expresses goal, purpose, aim
isa CAUSE
[210]
[da] For (at)

CAUSE:reas *Reason relation (discourse).* S expresses a specific and concrete reason
isa CAUSE
[211]
[da] Fordi, Eftersom

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

[da] Dog, Skønt

COND *Condition.*
isa DISCSEM   Related types: cond.
[228]

[da] På betingelse af, Hvis

CONJ *Conjunction.* Dependent text segment adds a new subject somehow related to gov-
isa DISCSEM erning text segment; may be difficult to distinguish from ELAB:exp
[229] Subtypes: CONJ:seq.
     Related types: conj.

CONJ:seq *Sequence.* Dependent text segment is part of list or sequence linked to governing
isa CONJ text segment as e.g. in recipes, sport results etc.
[230]

CONS *Consequence/result/conclusion relation (discourse).* S expresses consequence, result
isa DISCSEM or conclusion wrt N
[212] Subtypes: CONS:dir CONS:prg.

CONS:dir *Direct, physical consequence, result.* Physical, objectivally observed consequence or
isa CONS result
[213]

[da] Derfor, Af den grund

CONS:prg *Pragmatic/personal conclusion, deduction.* Personal, subjective conclusion or de-
isa CONS duction
[214]

[da] Derfor, Af den grund

CONTR
isa DISCSEM
[234]

Contrast.

Subtypes: CONTR:dir CONTR:prg.

CONTR:dir
isa CONTR
[235]

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

[da] Men, Derimod

CONTR:prg
isa CONTR
[236]

Pragmatic contrast. The contrast lies between the dependent and an inferred text segment

[da] Men

DESCR
isa DISCSEM
[215]

Description/evaluation. S expresses description or evaluation of N

Subtypes: DESCR:eval DESCR:qual.

DESCR:eval
isa DESCR
[216]

Positive/negative evaluation. S expresses a personal and/or subjective positive or negative description of N

DESCR:qual
isa DESCR
[217]

Neutral description. S expresses an objective and/or neutral description of N

[da] Sådan

DISJ
isa DISCSEM
[237]

Disjunction.

Subtypes: DISJ:dir DISJ:prg.

[da] Eller

DISJ:dir
isa DISJ
[238]

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

DISJ:prg
isa DISJ
[239]

Pragmatic disjunction. The disjunction lies between the dependent and an inferred text segment

ELAB
isa DISCSEM
[218]

Elaboration. S adds more information or detail on N

Subtypes: ELAB:exem ELAB:exp ELAB:part ELAB:rest.

ELAB:exem
isa ELAB
[219]

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

[en] For example

ELAB:exp
isa ELAB
[220]

Expansion (deprecated ELAB:spec). S develops and expans knowledge of N; may be difficult to distinguish from CONJ

[it] Cioè

ELAB:part *Part of relation.* S is a concrete part of N
isa ELAB
[221]

[da] Herunder, Heri

ELAB:rest *Restatement.* S states N again in a different way
isa ELAB
[222]

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

JOINT *No clear relation.* The dependent text segment adds a completely new content
isa DISCSEM without any clear discourse relation to the governing segment
[240]

STRUCT *Structural relation.*
isa DISCSEM Subtypes: STRUCT:prep STRUCT:rep.
[231]

STRUCT:prep *Preparation.* Dependent text segment "prepares" for the following and governing
isa STRUCT text, e.g. headings, titles
[232]

STRUCT:rep *Repaired.* Dependent text segment is interrupted and unfinished and "repaired" by
isa STRUCT the following and governing text segments, which completes it
[233]

TIME *Temporal relation* (deprecated CIRCUM). There is a clear temporal relation between N
isa DISCSEM and S
[223] Subtypes: TIME:cont TIME:prec TIME:prec§ TIME:succ TIME:succ§.

TIME:cont *Contemporaneity.* S is contemporary with N (now includes abolished TIME:dur)
isa TIME
[224]

[da] Samtidig, Mens, Så længe, Da

TIME:prec *Temporal precedence.* S precedes N
isa TIME
[225]

[en] Earlier, Some days before

TIME:prec§ *Temporal precedence.* Prefix conveys precedence.
isa TIME
[266]

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

TIME:succ *Temporal succession.* S succeeds N
isa TIME
[226]

[en] Later, Some time afterwards

TIME:succ§ *Temporal succession.* Prefix conveys succession.
isa TIME
[267]

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

Chapter 6

Anaphor relations: ANAPHORA

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

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

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

anaphor .
isa ANA
[186] Subtypes: assoc coref.

6.1 Coreference relations: coref

```
coref: coreference
    coref-id: lexical identity coreference
    coref-part: partial coreference
    coref-prg: pragmatic coreference
    coref-res: resumptive anaphor
    coref-var: lexical variation coreference
    ref: syntactically determined coreference
```

Figure 6.2: The relations matching coref.

coref *Coreference.* Anaphor denotes same entity as antecedent
isa anaphor Subtypes: coref-id coref-part coref-prg coref-res coref-var ref.
[187]

coref-id *Lexical identity coreference.* A car -> the car // a yellow car -> the yellow car
isa coref
[189]

coref-part isa coref [193]	*Partial coreference.* Coreferential with a part of the antecedent
coref-prg isa coref [191]	*Pragmatic coreference.* Takes up a statement and evaluates it with respect to speech act; I will be there tomorrow -> the threat / promise / warning / statement
coref-res isa coref [192]	*Resumptive anaphor.*
coref-var isa coref [190]	*Lexical variation coreference.* A car -> the vehicle // a yellow car -> the car
	Syntactically determined coreference. Syntactically determined coreference (eg, relative pronouns, external topics)
isa coref [188]	

antecedent–>anaphor

6.2 Associative anaphor relations: assoc

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

Figure 6.3: The relations matching assoc.

assoc isa anaphor [194]	*Associative anaphor.* Anaphor denotes entity which is associated with antecedent Subtypes: "assoc-" QUALIA assoc-agentive assoc-const assoc-formal assoc-telic.
assoc-" QUALIA isa RULE assoc [195]	*Associative anaphor wrt. qualia.* Anaphor denotes entity which is associated with antecedent
assoc-agentive isa assoc [197]	*Associative anaphor (agentive)* (deprecated assoc-agent?).
assoc-const isa assoc [196]	*Associative anaphor (constitutive)* (deprecated assoc-loc?).
assoc-formal isa assoc [198]	*Associative anaphor (formal)* (deprecated assoc-form?).
assoc-telic isa assoc [199]	*Associative anaphor (telic)* (deprecated assoc-scope?).

Chapter 7

Semantic relations: SEMANTICS

SEM: semantic level

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

SEM *Semantic level* (long: SEMANTICS). A relation at the semantic level. Ie, a relation
isa DIM:LEVEL between functors, arguments, and modifiers.
[18] Subtypes: QUALIA SEMROLE.

7.1 Qualia relations: QUALIA

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

Figure 7.2: The relations matching QUALIA.

QUALIA *Qualia roles.*
isa SEM Subtypes: const formal resem telic.
[32]

const *Constitutive qualia.* Relates to material or part-whole qualia
isa QUALIA
[39]

$$N \text{--} {>} P.\text{material/part}$$

formal
isa QUALIA
[36]

Formal qualia. Relates to hyperonym (super type) wrt. form, dimension, quality, shape, size.

Subtypes: agentive location.

agentive
isa formal
[37]

Agentive qualia. Relates to agentive qualia

<div align="center">N–>P.agent</div>

location
isa formal
[38]

Location qualia.

resem
isa QUALIA
[42]

Resemblance wrt. qualia role. Resemblance wrt. some qualia role

Subtypes: "⁛ QUALIA.

<div align="center">N–>P.resem</div>

"⁛ QUALIA
isa RULE resem
[12]

Resemblance wrt. $qualia relation.

telic
isa QUALIA
[40]

Telic qualia. Relates to purpose qualia

Subtypes: about.

about
isa telic
[41]

About qualia. Relates to hyponym (subtype)

7.2   Thematic role relations: SEMROLE

SEMROLE
isa SEM
[46]

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

Subtypes: {about} {agent} {apart} {arg} {class} {const} {elab} {eval} {experient} {form} {func} {iden} {location} {origin} {patient} {poss} {pos} {quant} {recipient} {resem} {time}.

{about}
isa SEMROLE
[57]

.

<div align="center">
attr
abortion law
{about}#
</div>
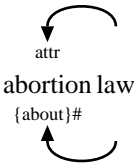
{agent}
isa SEMROLE
[64]

An object or a person that performs an action. Often generated by subject relation

<div align="center">
attr
police violence
{agent}#
</div>

```
SEMROLE:
    {about}:
    {agent}: An object or a person that performs an action
    {apart}:
    {arg}:
    {class}:
    {const}:
    {elab}:
    {eval}:
    {experient}: The receiver of an emotion or a psysical impact
    {form}:
    {func}:
    {iden}:
    {location}: The location where something is situated or happens
    {origin}:
    {patient}: An object or a person that is the subject of the action or the
one who is located somewhere
    {poss}:
    {pos}:
    {quant}:
    {recipient}: The receiver of something
    {resem}:
    {time}:
```

Figure 7.3: The relations matching SEMROLE.

{apart} (long: arbitrary part). Please note that the semantic relation goes from the satellite to
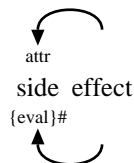isa SEMROLE the nucleus in opposition to the main part of the other semantic roles.
[58]

Northern Zealand

{arg} (long: argument).
isa SEMROLE
[63]
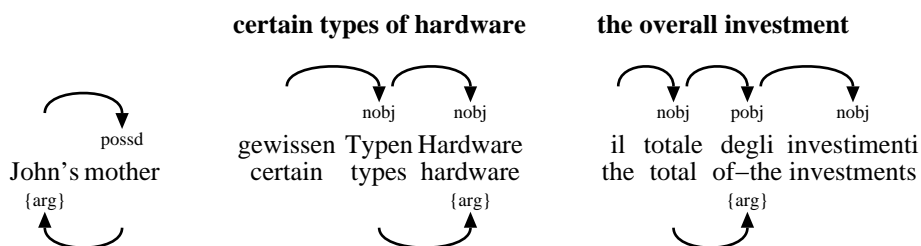
certain types of hardware   **the overall investment**

Denmark's attitude

nobj · gobj

die Haltung Dänemarks
the attitude Denmark's
{arg}

pobj · nobj

north of Copenhagen
{arg}
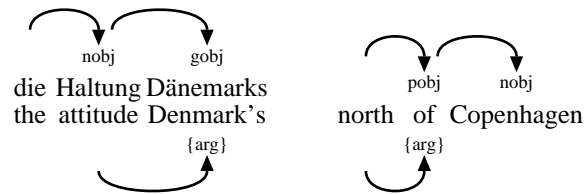
{class}
isa SEMROLE
[59]

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

nobj · attr · nobj

the city of London
{class}

nobj · attr · nobj

la zona di Kalvebodkilerne
the zone of Kalvebodkilerne
{class}

{const}
isa SEMROLE
[48]

(long: constituent).

plastic lighter

attr · nobj

mechero de plástico
lighter of plastic
{const}#

attr

church tower
{const}#
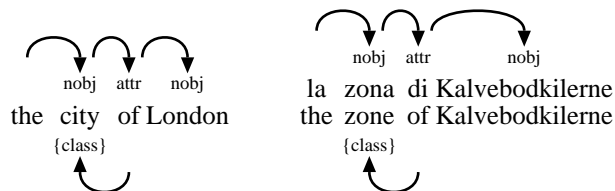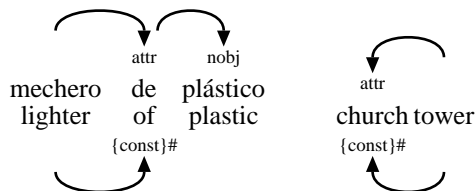
{elab}
isa SEMROLE
[47]

(long: elaboration). Often used together with parenthetic modifiers
Related types: modp.

{eval}
isa SEMROLE
[55]

(long: evaluation).

attr

side effect
{eval}#

{experient}
isa SEMROLE
[66]

The receiver of an emotion or a psysical impact. Often generated by direct object

film critics

attr.dobj

critici cinematografici
critics cinematic
{experient}#

50

{form} .
isa SEMROLE
[61]

baking powder

$$\overset{\text{attr} \quad \text{nobj}}{\text{levadura} \quad \text{en} \quad \text{polvo}}$$
$$\text{yeast} \quad \text{in} \quad \text{powder}$$
$$\{\text{form}\}\#$$

{func}   (long: function).
isa SEMROLE
[51]

nobj.dobj   attr   attr
birth   control pills   police station
{patient}# {func}#   {func}#
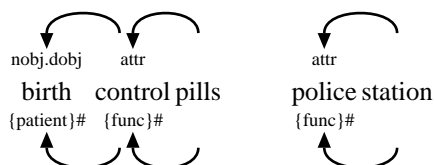
{iden}   (long: identity).
isa SEMROLE
[62]

attr
rock music
{iden}#
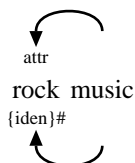
{location} *The location where something is situated or happens.* Often generated by preposi-
isa SEMROLE tional object
[68]
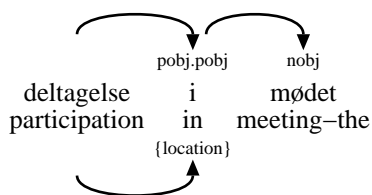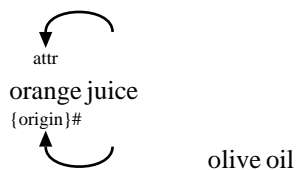
pobj.pobj   nobj
deltagelse   i   mødet
participation   in   meeting–the
{location}

{origin} .
isa SEMROLE
[50]

attr
orange juice
{origin}#
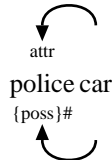   olive oil

{patient} *An object or a person that is the subject of the action or the one who is located*
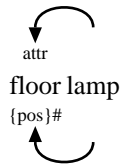isa SEMROLE *somewhere.* Often generated by direct object
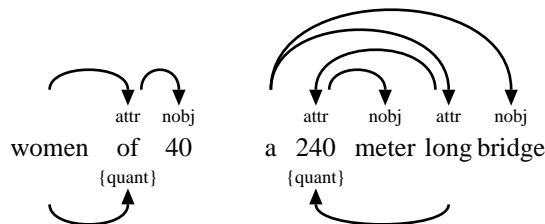[65]

bread producer

pobj.dobj   nobj

produttore   di   pane
producer   of bread

{patient}

{poss} (long: possession).
isa SEMROLE
[52]

attr

police car

{poss}#

{pos} (long: position).
isa SEMROLE
[53]

attr

floor lamp

{pos}#

{quant} (long: quantity).
isa SEMROLE
[60]

attr nobj   attr nobj attr nobj

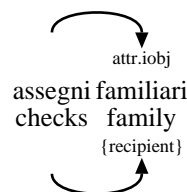women of 40   a 240 meter long bridge

{quant}   {quant}

{recipient} *The receiver of something.* Often generated by indirect object
isa SEMROLE
[67]

child benefits   **child maintenance**
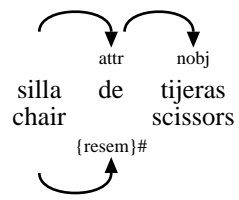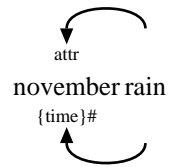
pobj.iobj nobj nobj   attr.iobj

contribuiti per   i figli   assegni familiari
benefits   for the children   checks family

{recipient}#   {recipient}
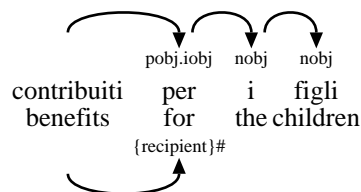
{resem} (long: resemblance).
isa SEMROLE
[56]

52

folding chair

silla   de   tijeras
chair   scissors

attr   nobj

{resem}#

{time} .
isa SEMROLE
[54]

november rain

attr

{time}#

Chapter 8

Word alignment relations: ALIGN

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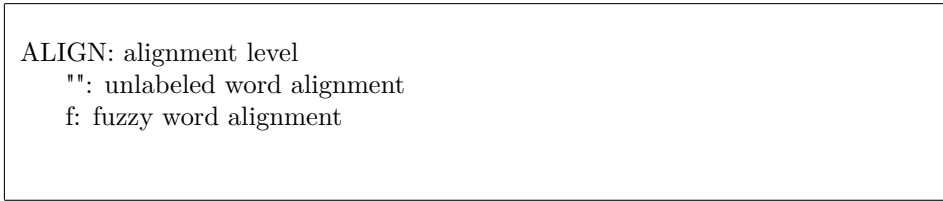   "": unlabeled word alignment
    f: fuzzy word alignment

Figure 8.1: The relations matching ALIGN.

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 associated phrases), either in terms of form or meaning.
Subtypes: "" f.

""
isa ALIGN
[373]

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
[374]
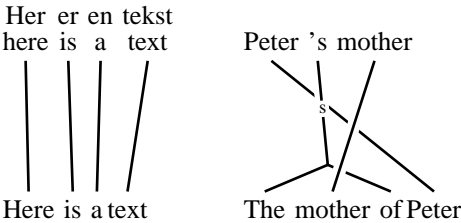
Fuzzy word alignment (long: fuzzy). A semantically fuzzy word alignment.
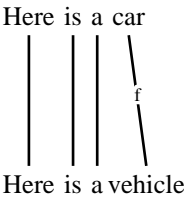
Chapter 9

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

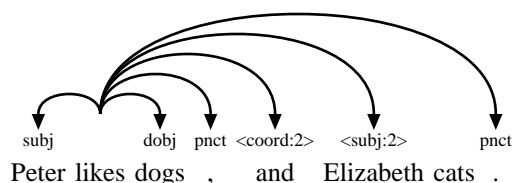Figure 9.1: The relations matching RULE.

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 "*"
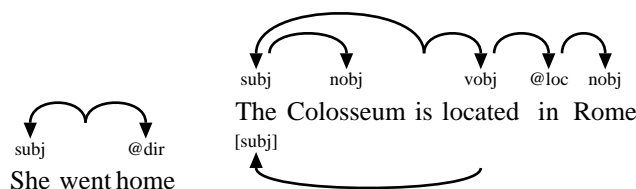PRIM "#" PRIM "/" CONNECTOR PRIM "/(" CONNECTOR ")" PRIM "/ATTR" INTEGER
PRIM "{" THEM "}".

"(" ANY ")"
isa RULE
[368]

Disambiguation.

"*" DISC
isa RULE
[369]

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

55

"<" PRIM ... ":" INTEGER ">"
isa GAP RULE
[357]

Gapping dependent. First conjunct->gapping dependent

Peter likes dogs , and Elizabeth cats .
(subj, dobj, pnct, <coord:2>, <subj:2>, pnct)

"@" adverb
isa COMP RULE
[371]

Valency-bound adverbial. A complement relation which can be interpreted as an obligatory, valency-bound adverbial relation.

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

The Colosseum is located in Rome
(subj, nobj, vobj, @loc, nobj) [subj]

She went home
(subj, @dir)

"[" PRIM "]"
isa RULE SEC
[355]
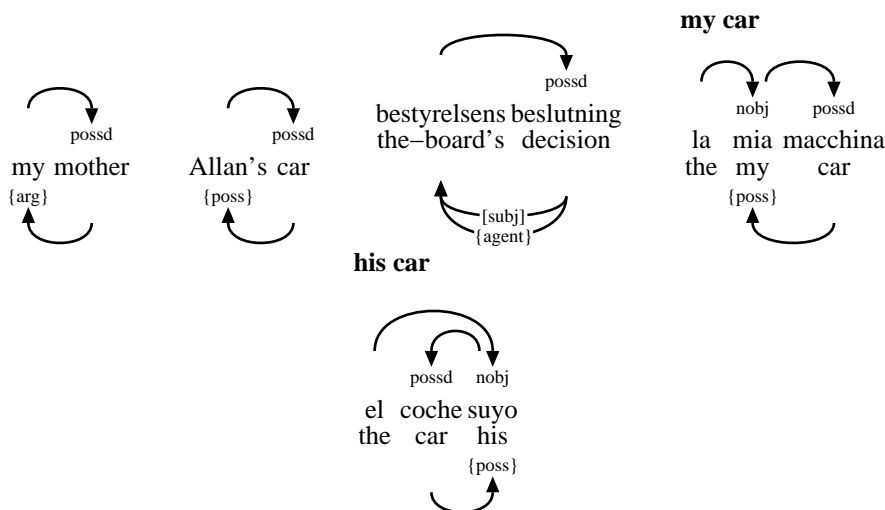
Pattern for secondary syntactic dependency relation formed from primary syntactic dependency relation. Governor->secondary syntactic dependent; $PRIM must be non-secondary
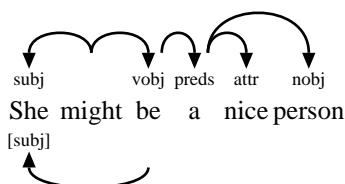
Related types: "{" "}" $PRIM.

She might be a nice person
(subj, vobj, preds, attr, nobj) [subj]

assoc-" QUALIA
isa RULE assoc
[195]

Associative anaphor wrt. qualia. Anaphor denotes entity which is associated with antecedent

"{" SEM "}"
isa RULE SEC
[356]

Pattern for secondary semantic dependency realtion formed from primary semantic dependency relation. Governor->secondary semantic dependent; $PRIM must be non-secondary

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

my mother
(possd) {arg}

Allan's car
(possd) {poss}

my car
la mia macchina
the my car
(nobj, possd) {poss}

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

his car
el coche suyo
the car his
(possd, nobj) {poss}

56

|	
"≈" QUALIA isa RULE resem	*Resemblance wrt. $qualia relation.*
"¤" PRIM isa DISC RULE [359]	*Discourse specification.* A primary syntactic relation that has been used as a discourse relation for stilistic purposes.
"§" PRIM isa MORPH RULE	*Morphology specification.*
ANY "&" ANY isa RULE	*Both-and relation.* Both relations hold
ANY "|" ANY isa RULE	*Either-or relation.* One of the relations holds
DISC isa RULE [370]	*Down-dependent in attribution.* The dependent in the relation is one step further down in the attribution chain
PRIM "#" isa IDIOM RULE [353]	*Pattern for idiomatic primary dependency.* Head->dependent within idiom
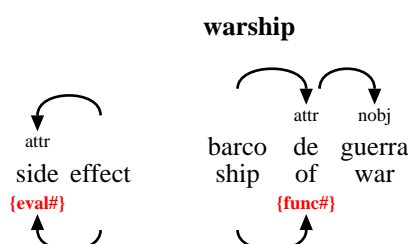
PRIM "/" **CONNECTOR**	*Explicit connector.* The discourse relation has explicit connector $CONNECTOR
PRIM **CONNECTOR** [367]	*Implicit connector.* The discourse relation has implicit connector $CONNECTOR
PRIM "/" ATTR **INTEGER** isa RULE	*Attribution.* Specifies the person to whom the utterance is attributed (ATTR or ATTR1, ATTR2, ... when there is more than one person)
PRIM "{" THEM **"}"** isa RULE [354]	*Pattern for primary dependency relation with thematic role.* $PRIM must be non-thematic; the thematic roles can be agent, patient, recipient, experient, location.

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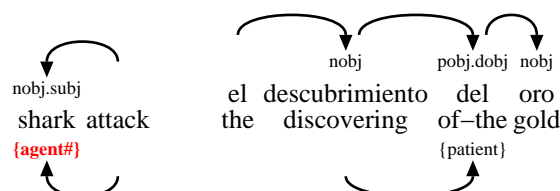
Chapter 10

Relations misplaced outside the ANY hierarchy

MISPLACED: misplaced relation

Figure 10.1: The relations matching -ANY.

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

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
```

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

```
SYN: syntax level
```

The relations matching SYNTAX-SYNCOMP-SYNADJ.

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
    ben: benefactive adverbial
    cause: causation adverbial
        goal: goal adverbial
        reas: reason adverbial
    comp: comparison adverbial
    conc: concession adverbial
    concom:
    cond: condition adverbial
    cons: consequence adverbial
    degr: degree adverbial
    exem: example adverbial
    man: manner adverbial
        accom: companionship adverbial
        inst: instrument adverbial
    neg: negation adverbial
    other: other adverbial
    prg: pragmatic adverbial
        att: attitude adverbial
        discmark: sentence-initial discourse marker
        epi: epistemic adverbial
        eval: evaluation adverbial
        focal: focalizer adverbial
        pcond: pragmatic condition adverbial
    source: source attribution adverbial
    space: space adverbial
        dir: direction adverbial
        loc: location adverbial
    struct: text-structuring or connective adverbial
        add: additive adverbial
        bg: background adverbial
        contr: contrast adverbial
        elab: elaboration advebial
    time: time adverbial
        cont: contemporaneity adverbial
        dur: duration adverbial
        ext: extent/frequency adverbial
        hab: habituality adverb
        prec: precedence adverbial
        succ: succession adverbial
```

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.

MORPHCOMP: compositional semantic relations
    ABOUT: noun-noun compound (about)
    AGENT: noun-noun compound (agentive)
    CONST: noun-noun compound (constitutive)
    EVAL: noun-noun compound (evaluative)
    FUNC: noun-noun compound (function)
    ORIGIN: noun-noun compound (origin)
    OTHER: noun-noun compound (other)
    POS: noun-noun compound (position)
    POSS: noun-noun compound (possession)
    RESEM: noun-noun compound (resemblance)
    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
    ASPEC: aspectual dimension
        ASPEC:cause: causation
        ASPEC:iter: iteration
        ASPEC:reflex: reflexivity
        ASPEC:resul: result
        ASPEC:rev: reversion
        ASPEC:term: termination
    GRAD: graduation
        GRAD:qual: quality
        GRAD:size: size
    LOC: location
        LOC:dir: direction
        LOC:pos: position
        LOC:proce: origin
    MOD: modification
        MOD:cuant: quantification
        MOD:man: manner
        MOD:qual: qualification
    NEG: negation
        NEG:oppo: opposition
        NEG:priv: privation
    PRE:other: other prefix relation
    TIME§: time
    TRANS: transitivity

The relations matching PREFIX.

SUFFIX: semantic relations appearing with suffixes
    AUG: augmentation
    DENOM: noun-adjective derivation
        DENOM:disp: noun-adjective derivation (disposition)
        DENOM:eff: noun-adjective derivation (effect)
        DENOM:other: noun-adjective derivation (other)
        DENOM:poss: noun-adjective derivation (possession)
        DENOM:rel: noun-adjective derivation (relational)
           DENOM:rel.deono: noun-adjective derivation (naming)
               DENOM:rel.deono.pers: noun-adjective derivation (naming persons)
               DENOM:rel.deono.place: noun-adjective derivation (naming places)
           DENOM:rel.norm: noun-adjective derivation (normal)
        DENOM:resem: noun-adjective derivation (resemblance)
    DENUM: adjective-numeral derivation
        DENUM:mult: adjective-multiplicative derivation
        DENUM:ord: adjective-ordinal derivation
        DENUM:part: adjective-partitive derivation
    DER: verb derivation
        DER:av: adjective-verb derivation
        DER:nv: noun-verb derivation
        DER:vv: verb-verb derivation
    DEV:
    DEVA: verb-adjective derivation
        DEVA:act: verb-adjective derivation (active)
           DEVA:act.disp: verb-adjective derivation (pure)
           DEVA:act.poten: verb-adjective derivation (disposition)
           DEVA:pas: verb-adjective derivation (potentiality)
               DEVA:pas.deon: verb-adjective derivation (passive potentiality)
               DEVA:pas.poten: verb-adjective derivation (passive participles)
           DEVA:pas.part: verb-adjective derivation (passive)
    DEVN: verb-noun derivation
        DEVN:agent: verb-noun derivation (agent)
        DEVN:core: verb-noun derivation (core)
        DEVN:exper: verb-noun derivation (experiencer)
        DEVN:inst: verb-noun derivation (instrument)
        DEVN:loc: verb-noun derivation (location)
        DEVN:other: verb-noun derivation (other)
        DEVN:recip: verb-noun derivation (recipient)
        DEVN:result: verb-noun derivation (patient)
    DIMIN: diminution
    NOPRED: noun-noun derivation
        NOPRED:agent: noun-noun derivation (agent)
        NOPRED:capac: noun-noun derivation (capacity)
        NOPRED:cont: noun-noun derivation (container)
        NOPRED:loc: noun-noun derivation (location)
        NOPRED:other: noun-noun derivation (other)
        NOPRED:result: noun-noun derivation (result)
        NOPRED:script: noun-noun derivation (script)
        NOPRED:set: noun-noun derivation (set)
        NOPRED:temp: noun-noun derivation (temporal)
    PEJ: pejoration
    QUAL: adjective derivation

The relations matching SUFFIX.

```
DISC: discourse level
    "¤" PRIM: discourse specification
```

The relations matching DISCOURSE-DISCFUNC-DISCSEM.

```
DISCFUNC: functional discourse relation
    ANSW: answer
    CONSOL: consolidation
        CONSOL:enabl: enablement
        CONSOL:just: justification
        CONSOL:motiv: motivation
    DIREC: directive act
    EXPR: expressive act
    INTACT: interactional signals
        INTACT:attn: attention
        INTACT:inter: interruption
    QUEST: question
```

The relations matching DISCFUNC.

```
DISCSEM: semantic discourse relation
    CAUSE: cause relation (discourse)
        CAUSE:expl: explanation relation (discourse)
        CAUSE:goal: goal relation (discourse)
        CAUSE:reas: reason relation (discourse)
    CONC: concession
    COND: condition
    CONJ: conjunction
        CONJ:seq: sequence
    CONS: consequence/result/conclusion relation (discourse)
        CONS:dir: direct, physical consequence, result
        CONS:prg: pragmatic/personal conclusion, deduction
    CONTR: contrast
        CONTR:dir: direct contrast
        CONTR:prg: pragmatic contrast
    DESCR: description/evaluation
        DESCR:eval: positive/negative evaluation
        DESCR:qual: neutral description
    DISJ: disjunction
        DISJ:dir: direct disjunction
        DISJ:prg: pragmatic disjunction
    ELAB: elaboration
        ELAB:exem: exemplification
        ELAB:exp: expansion
        ELAB:part: part of relation
        ELAB:rest: restatement
    JOINT: no clear relation
    STRUCT: structural relation
        STRUCT:prep: preparation
        STRUCT:rep: repaired
    TIME: temporal relation
        TIME:cont: contemporaneity
        TIME:prec: temporal precedence
        TIME:prec§: temporal precedence
        TIME:succ: temporal succession
        TIME:succ§: temporal succession
```

The relations matching `DISCSEM`.

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

The relations matching `ANAPHORA-coref-assoc`.

```
coref: coreference
    coref-id: lexical identity coreference
    coref-part: partial coreference
    coref-prg: pragmatic coreference
    coref-res: resumptive anaphor
    coref-var: lexical variation coreference
    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-telic: associative anaphor (telic)
```

The relations matching assoc.

```
SEM: semantic level
```

The relations matching SEMANTICS-QUALIA-SEMROLE.

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

The relations matching QUALIA.

SEMROLE:
    {about}:
    {agent}: An object or a person that performs an action
    {apart}:
    {arg}:
    {class}:
    {const}:
    {elab}:
    {eval}:
    {experient}: The receiver of an emotion or a psysical impact
    {form}:
    {func}:
    {iden}:
    {location}: The location where something is situated or happens
    {origin}:
    {patient}: An object or a person that is the subject of the action or the one who is located somewhere
    {poss}:
    {pos}:
    {quant}:
    {recipient}: The receiver of something
    {resem}:
    {time}:

The relations matching SEMROLE.

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

The relations matching ALIGN.

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.

MISPLACED: misplaced relation

The relations matching -ANY.

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Appendix B

Index