

# NPEGL – Annotation Manual

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# 1 Introduction: NPEGL and its components

This manual provides guidelines for annotating noun phrases stored in the NPEGL<sup>1</sup> database; it enumerates tests and criteria to identify the individual (sub-)categories and (formal / semantic) properties to be annotated. In most cases, we will provide characteristics and examples illustrating the range of applicability for a given label.<sup>2</sup> Notice that, for the most part, we will use (Modern) English examples to illustrate/characterize a category, property or other phenomenon, and to a lesser extent, Modern German and Modern Icelandic, even though these languages are not represented in the database.

Since all inhabitants of the database (DB) are noun phrases and only noun phrases will be annotated, and since every individual noun phrase in the DB will be given an *index*, i.e. a unique ID number,<sup>3</sup> we will specifically be referring to the DB inhabitants as IXPs (mnemonic for *Index Phrase*; this nomenclature also allows us to remain agnostic/non-committal with respect to a potential distinction NP vs. DP / N' / nP ... ).

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<sup>1</sup>  $\Rightarrow$  acronym for *Noun Phrases in Early Germanic Languages*

<sup>2</sup>NB: This manual addresses the practical linguistic aspects of the annotation process so the criteria given will largely be linguistic; it does not address technical issues concerning the database itself, nor does it discuss the (linguistic) motivation behind the categories and properties to be annotated or the philosophy of the annotation scheme. A practical introduction into the annotation tool is given in the DB annotation tool guide (G. Bouma), and a more thorough and detailed discussion of the annotation categories can be found in the long annotation manual (A. Pfaff).

<sup>3</sup>In the DB, this unique index is indicated by the label *DB item id*, cf. figure 1.

## 1.1 Annotation interface

A fully annotated IXP (as displayed in the annotation interface) is illustrated in figure 1 below:

The screenshot displays the Annotation Interface for an IXP. At the top, there are four fields: **Language** (Old Icelandic), **DB item id** (Olce.478.232), **Context** (flestum löndum setja menn á bækur annað tveggja þann fróðleik er þar innan lands hefir gjörst – eða þann annan er minnisamlegastur þykir þó að annars staðar hafi heldur gjörst – | eða lög sín setja menn á bækur hver þjóð á sína tungu.), and **Corpus unit id** (1150.FIRSTGRAMMAR.SCI-LIN,.1). Below these are five fields for grammatical information: **Gender** (Neu), **Number** (Pl), **Case** (Dat), **Grammatical function** (Arg.ofP), and **Referential status** (Uniq). A **Segmentation** field shows the text [flestum][margur][löndum]lend. Below this is a **Create Markable** button and an **Annotation** section with two rows: the first row has 'flestum' with a dropdown menu showing 'Md.Nu/WQ.WQ' and 'Undec, Sup', and the second row has 'löndum' with a dropdown menu showing 'N.C' and 'Tang.Obj'. Below the annotation section are four fields: **Degree of interest** (Green), **Verified** (No), and **Comments**. At the bottom, there are two fields: **Annotator** (a.p.pfaff@ilos.uio.no) and **Annotation time** (December 13th 2018, 15:12:40).

Figure 1: *Annotation Interface (annotated IXP)*

### 1.1.1 What we will NOT annotate !!!

As we can see, we find various pieces of information encoded; in the top field we have information on the *language*, the *database ID* which uniquely identifies the (quasi-eponymous) “IXP” in question, the actual linguistic *context* in which the noun phrase occurs, and the *corpus ID* indicating the location in the source corpus. These specifications are already determined prior to annotation and hence not up for grabs. On the other hand, information about the annotation process (annotator and time) in the bottom field will be updated automatically every time the “save” button to the left of the annotation field (not displayed) is pushed. As for the two items above the bottom field: The options for the specification “**Verified**” (“No”, “Partially” “Completely” ) indicate the degree to which an IXP is *completely* (i.e. wrt. all potential specifications)

and *properly* (i.e. beyond reasonable doubt correctly) annotated. The “**Comments**” field provides an opportunity for the annotator to add information about a specific noun phrase, a specific construction, a specific problem ... which may be of general interest, but it can also be used as a “note-to-onself” or a message for other annotators in case the IXP in question proves “recalcitrant”, i.e. cannot be completely annotated at the moment and needs to be returned to later.

### 1.1.2 What we will annotate!

What remains within the purview of annotation proper and will be discussed here can be found in the annotation interface display in the following four rectangular fields:

The screenshot displays the annotation interface with the following components:

- Context:** flestum löndum setja menn á bækur annað tveggja þann fróðleik er þar innan lands hefir gjörst – eða þann annan er minnisamlegastur þykir þó að annars staðar hafi heldur gjörst – | eða lög sín setja menn á bækur hver þjóð á sína tungu.
- Corpus unit id:** 1150.FIRSTGRAMMAR.SCI-LIN..1
- (I) Global Properties:** A dashed box containing five items: Gender, Number, Case, Grammatical function, and Referential status. Each item has a red 'x' icon and a pencil icon.
- (II) Segmentation Field:** A dashed box containing a red 'x' icon, a pencil icon, and the text "Segmentation [flestum]margur [löndum]land". Below this is a "Create Markable" button.
- (III) Categorial Specification:** A dashed box containing an "Annotation" dropdown menu, a red 'x' icon, a pencil icon, and the text "flestum" and "löndum".
- (IV) Degree of Interest:** A dashed box containing a red 'x' icon, a pencil icon, and the text "Degree of interest".

Figure 2: What to annotate? Where (in the interface) to find it?

⇒ These four fields can be characterized as follows:

- (I) *Global Properties*: pertain to the IXP as a whole; to be discussed in Sect. 3.
- (II) *Segmentation Field*: determines the inner make-up of the IXP and the lemma of word-based categories; commented upon in Sect. 1.3; see also instruction manual.
- (III) *Categorial Specification*: specifies the (sub-)category label and the properties of the individual items (= Cat properties) resulting from segmentation (II); to be discussed from Sect. 4 onwards.
- (IV) *Degree of Interest*: specifies the relevance of an IXP relative to the questions the project asks; to be discussed in Sect. 2.

## 1.2 Labels and notations

Every property to be annotated has three labels:<sup>4</sup> (i) a long and elaborate form that is (more or less) self explanatory, (ii) an abbreviated form, and (iii) a path notation. To give an example: lexical and functional adjectives are sub-categories of adjectives, which in turn are a sub-category of modifiers (see Sect. 6). Consider now the three corresponding labels for each category:

	(i)	(ii)	(iii)
(1)	Modifier	Mod	Md
	Adjective	Adj	Md.Aj
	Lexical Adjective	Lex	Md.Aj.Lx
	Functional Adjective	Func	Md.Aj.Fn

While labels (i) and (ii) name an object directly, path notation (iii) encodes the information that the object is a subtype of a more general type. *During* the annotation process, labels (ii) will show up in the interface for the annotator to choose from (see the coloured arrows in figure 3), but *after* a specific item has been selected (“clicked upon”), the interface will display the corresponding (iii) labels (see the gray arrows in figures 3 and 4):

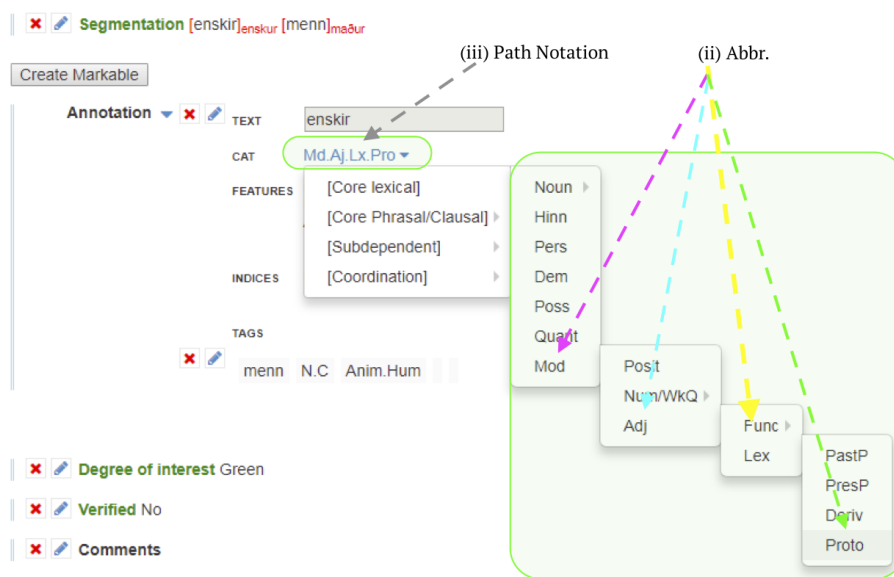


Figure 3: Labels during Annotation

<sup>4</sup>An overview of all (three versions of all) labels is given in Sect. 1.4.



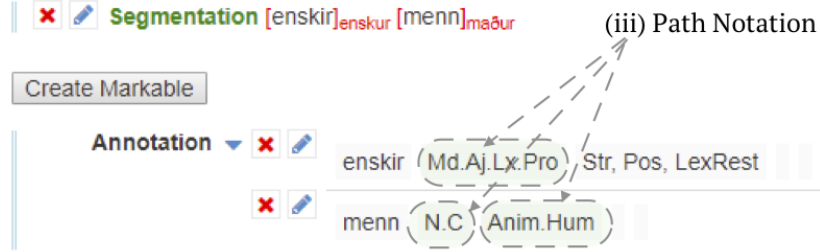


Figure 4: *Labels after Annotation: Path Notation*

In this manual, we will normally use labels (ii). When occurring in the running text any property to be annotated, will be rendered in boldprint enclosed by angle brackets: **<Property>**. Occasionally, we will employ diagrammatic representations, especially in order to express dependencies, in which case the properties will be rendered as boxed elements:

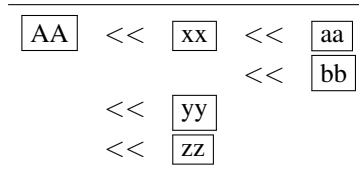


Table 1: *Dependencies – Types / Subtypes*

Properties xx, yy and zz are more specific than / subspecies of AA. “<<” indicates a (transitive) entailment relationship: any element that has property bb necessarily also has property zz etc.. Therefore, this relation corresponds to an unambiguous path notation (e.g. AA.xx.bb). As a visual aid, we will distinguish three colourings of labels (in the manual):



Table 2: *Label Colourings*

Gray boxes indicate global properties applying to the IXP as a whole; purple, blue, yellow and green boxes are (sub-)category labels for the individual components of an IXP;<sup>5</sup> white (“colourless”) boxes indicate formal or semantic properties of the individual (sub-)categories. Note that the annotation interface formally distinguishes two kinds of features for the Cat properties: FEATURES, for which a specific value must be chosen, and TAGS, which are privative features: they are either there (→ tick off!) or not:

Figure 5: *Features and Tags*

### 1.3 Segmentation ⇒ annotation

Usually, the segmentation of an IXP, see field (II) on p. 7, is already given, but in individual cases, a re-segmentation will be required (see the instruction manual for details). The new IXP segmentation is then updated by pushing “Create Markable”. Either way, (Re-)Segmentation in field (II) produces the (sequence of) items, i.e. the individual categories, that can be annotated, see field (III) on p. 7.

Except in the case of re-segmentation, each category will already have a category label, but even here, some changes (“re-categorization”) may be necessary. Only after a category label has been assigned will the option to annotate (formal / semantic) properties be activated such that the appropriate FEATURES and TAGS can be assigned. In other words, the selection of Cat properties is contingent upon (or a consequence of) the selection of a specific (sub-)category: for instance only items of the category <Mod> can be specified for adjectival inflection (e.g. strong), only common nouns (<Com>) can carry a suffixed article etc.

<b>Mod</b>	<<	<b>strong inflection</b>
<b>Com</b>	<<	<b>suffixed article</b>

<sup>5</sup>See also the (ii)-arrows in figure 3.

## 1.4 Overview: Property / category / feature labels

The attentive reader will notice that some labels such as <Undec> or <Other> occur several times in different contexts, and hence appear to be multiply ambiguous. However, for the process of annotation, this will not create uncertainty / confusion insofar as they occur as an option only relative to a specific context, which makes it clear e.g. whether <Other> stands for an “other” grammatical function (3), an “other” type of coordination (6), an “other” type of abstract denotation (10), etc.

### (2) IXP Property Labels 1 – Inflection

(i)	(ii)	(iii)
Nominative	<b>Nom</b>	Nom
Accusative	<b>Acc</b>	Acc
Dative	<b>Dat</b>	Dat
Genitive	<b>Gen</b>	Gen
Instrumental	<b>Instr</b>	Instr
Vocative	<b>Voc</b>	Voc
Case cannot be decided from form or context	<b>Obl</b>	Obl
Singular	<b>Sing</b>	Sg
Dual	<b>Dual</b>	Du
Plural	<b>Plur</b>	Pl
Number Cannot be decided	<b>Undec</b>	Undec
Masculine	<b>Mas</b>	Mas
Feminine	<b>Fem</b>	Fem
Neuter	<b>Neu</b>	Neu
Gender cannot be decided	<b>Undec</b>	Undec

(3) *IXP Property Labels 2 – Grammatical (Syntactic) Function*

(i)	(ii)	(iii)
Argument	<b>Arg</b>	Arg
Predicate	<b>Pred</b>	Pred
Apposition	<b>App</b>	App
Vocative	<b>Voc</b>	Voc
Adverbial	<b>Adv</b>	Adv
Other grammatical function	<b>Other</b>	Other
Argument of verb	<b>OfV</b>	Arg.ofV
Complement of preposition	<b>OfP</b>	Arg.ofP
Argument of noun	<b>OfN</b>	Arg.ofN
Complement of adjective	<b>OfA</b>	Arg.ofA
Complement of degree element	<b>OfDeg</b>	Arg.ofDeg
Predicate with copular verb	<b>Cop</b>	Pred.Cop
Predicate in other contexts	<b>Other</b>	Pred.Oth
Subject of verb	<b>Sub</b>	Arg.ofV.Sb
Object of verb	<b>Obj</b>	Arg.ofV.Ob
Other argument of verb	<b>Other</b>	Arg.ofV.Oth

(4) *IXP Property Labels 3 – Referential Status*

(i)	(ii)	(iii)
Anaphor	<b>Ana</b>	Ana
Contextual	<b>Cont</b>	Cont
Universal	<b>Univ</b>	Univ
Unique	<b>Uniq</b>	Uniq
Existential	<b>Exist</b>	Exist
Other	<b>Other</b>	Other
Non-Applicable	<b>NA</b>	NA

(5) *Category Labels (cat<sup>0</sup>)*

(i)	(ii)	(iii)
Noun	<b>Noun</b>	N
Modifier	<b>Mod</b>	Md
Demonstrative	<b>Dem</b>	Dem
Norse adjectival article “(h)inn”	<b>Hinn</b>	H
Possessive	<b>Poss</b>	Poss
Personal pronouns	<b>Pers</b>	Per
Strong quantifier	<b>Quant</b>	Q
IXP	<b>IXP</b>	IXP
Genitival phrase	<b>GenP</b>	GenP
Prepositional phrase	<b>PP</b>	PP
Apposition	<b>App</b>	App
Adjectival associate	<b>Assoc</b>	Assoc
Relative clause	<b>RelC</b>	RC
Complement clause	<b>ComC</b>	CC
Adverbial	<b>Adv</b>	Adv
Coordinator	<b>&amp;</b>	&
Modifier of adjective	<b>ModMod</b>	Mdmd
Complement of adjective	<b>ModCom</b>	Mdcm
Complement of degree element	<b>DegCom</b>	Dgcm

(6) *Subcategory Labels (cat<sup>1</sup>)*

(i)	(ii)	(iii)
Common noun	Com	N.C
Proper noun (= name)	Prop	N.P
Positional predicate	Posit	Md.Pos
Numeral or weak quantifier	Num/WkQ	Md.Nu/WQ
Adjective	Adj	Md.Aj
Finite complement clause	Finite	CC.Fi
Non-finite complement clause	Non-finite	CC.Nf
Coordinator of IXPs	IXP&IXP	&.IXP
Coordinator of nouns	Noun&Noun	&.N
Coordinator of possessives	Poss&Poss	&.Pos
Coordinator of adjectives	Adj&Adj	&.Aj
Coordinator of numerals	Num&Num	&.Nu
Uncertain type of coordination	Other	&.Other
Initial part of a discontinuous coordinator (= double coordination structure)	Initial	&.Init
Unmarked nominal complement of degree	Bare	Dgcm.Br
Marked/clausal complement of degree	Marked	Dgcm.Mk

(7) *Subsubcategory Labels (cat<sup>2</sup>)*

(i)	(ii)	(iii)
Numeral	<b>Num</b>	Md.Nu/WQ.Nu
Weak quantifier	<b>WkQ</b>	Md.Nu/WQ.WQ
Lexical adjective	<b>Lex</b>	Md.Aj.Lx
Functional adjective	<b>Func</b>	Md.Aj.Fn

(8) *Subsubsubcategory Labels (cat<sup>3</sup>)*

(i)	(ii)	(iii)
Ordinal numeral	<b>Ord</b>	Md.Aj.Fn.Ord
Defective adjective	<b>Defect</b>	Md.Aj.Fn.Df
Determiner-like adjective	<b>Deter</b>	Md.Aj.Fn.Dt
Past participle	<b>PastP</b>	Md.Aj.Lex.Pst
Present participle	<b>PresP</b>	Md..Aj.Lex.Pre
Other derived adjective	<b>Deriv</b>	Md.Aj.Lex.Der
Prototypical adjective	<b>Proto</b>	Md.Aj.Lex.Pro



(9) *Formal / Morphological / Syntactic Property Labels*

(i)	(ii)	(iii)
Complex	<b>Complex</b>	Complex
Suffixed article	<b>Suff</b>	Sf
Relational noun	<b>Rel</b>	Rel
Unspecified (undecidable) declension	<b>Undec</b>	Undec
Weak declension	<b>Weak</b>	Wk
Strong declension	<b>Strong</b>	Str
Zero declension	<b>Zero</b>	Zero
Positive (or unspecified) degree	<b>Pos</b>	Pos
Comparative degree	<b>Comp</b>	Cmp
Superlative degree	<b>Super</b>	Sup
Definite	<b>Def</b>	Def
Apposition does not contain a head noun	<b>NoN</b>	NoN

(10) *Semantic Property Labels*

(i)	(ii)	(iii)
Animate	<b>Anim</b>	Anim
Tangible	<b>Tang</b>	Tang
Abstract	<b>Abstr</b>	Abs
Human individual	<b>Indiv</b>	Anim.HInd
Human collective term	<b>Collect</b>	Anim.HColl
Other animate denotation	<b>Other</b>	Anim.Oth
Tangible object denotation	<b>Obj</b>	Tang.Obj
Tangible substance denotation	<b>Subs</b>	Tang.Subs
Dynamic denotation	<b>Dyn</b>	Abst.Dyn
Other abstract denotation	<b>Other</b>	Abst.Oth
Denoting ethnicity, origin, affiliation etc.	<b>Ethnic</b>	Ethnic
Denoting colour	<b>Colour</b>	Colour
Denoting physical property or dimension	<b>Phys/Dim</b>	Phys/Dim
Evaluative adjective	<b>Eval</b>	Eval
Relational/denominal adjective	<b>RelDen</b>	RelDen
Denoting degree or event quantification	<b>Deg/Q</b>	Deg/Q
Other classes of lexical adjectives	<b>LexRest</b>	LexRest
Possessor	<b>Poss</b>	Pos
Kinship	<b>Kinship</b>	Kin
Partitive	<b>Part</b>	Part
Other kind of argument	<b>OArg</b>	OArg
Other genitive relation	<b>Other</b>	Oth
GenP has animate referent	<b>Anim</b>	Anim

## 2 Markable noun phrases

“Not every markable is re-markable!” (Gerlof)

Not all noun phrases are equally “interesting” for the questions this project asks. Thus as a practical guideline, we define a priority scale indicating the potential “degree of interest” we have in a given noun phrase:

1. Noun phrases containing head noun plus at least one **adjective** (i.e. A + N)  
(including noun phrases without N provided there is a definite:  
DEM + ADJ / ART + ADJ / POSS + A)
2. Noun phrases involving **pronominal possessors** (i.e. Poss + N)  
(both inflecting possessives and genitival forms of personal pronouns)
3. Noun phrases involving **definite determiners** – demonstratives / definite articles (i.e. DET + N)
4. Noun phrases involving **indefinite determiners**  
– quantifiers, numerals, and indefinite articles  
(including noun phrases without noun provided there is an adjective: Q + Adj)
5. NPs involving **non-pronominal nominal components** (i.e. N + NP)  
(most typically, this means N + NP-GENITIVE; also N + Apposition)
6. Noun phrases involving modifiers of a non-nominal type ( i.e. N + PP / RC / CP / VP)
7. Modified pronominals (i.e. PRON / DET / Q + PP / RC / CP / VP)
8. Bare lexical nouns
9. Bare names / pronouns / adjectives / determiners / quantifiers

The elements in 1-5 are of immediate interest, and hence, our primary focus is annotating those. The elements in 9 are of no interest for the purpose of our project, and will therefore not be annotated here. The elements in 6-8 are of secondary relevance, but interesting nonetheless.

Having stated these degrees of interest, we we also consider various types of coordination structures:

- A. ....
- B. NP coordinations if at least one conjunct NP is of interest (1-8).
- C. NP coordinations if all conjunct NPs are red (9).

## 3 Global IXP properties

### 3.1 Inflectional features

Every IXP is annotated for case, number and gender – precisely once; we will not mark those values on the individual IXP components (even though several of those are specified for those values).

#### 3.1.1 Case

An IXP can be specified for the following *case* values:

<b>IXP</b> <sub>Σ</sub>	<<	<b>Nom</b>
	<<	<b>Acc</b>
	<<	<b>Dat</b>
	<<	<b>Gen</b>
	<<	<b>Instr</b>
	<<	<b>Voc</b>
	<<	<b>Obl</b>

Table 3: *Inflectional Features: Case*

*Case* labels will be assigned based on morphology or by syntactic clues. In case of non-transparent *case* syncretism and/or in cases where the *case* cannot unambiguously be determined, we will use the label <**Obl**>.

Note that not all *cases* are attested in all languages; notably, it seems, for instance, that <**Voc**> is reserved for a handful of cases in Gothic.

#### 3.1.2 Number

An IXP can be specified for the following *number* values:

<b>IXP</b> <sub>Σ</sub>	<<	<b>Sing</b>
	<<	<b>Dual</b>
	<<	<b>Plur</b>
	<<	<b>Undec</b>

Table 4: *Inflectional Features: Number*

In cases where the *number* cannot unambiguously be established based on morphological criteria, the IXP will be labeled <**Undec**> (= undecidable). Among other things, this will systematically be the case with certain coordination structures (IXP<sub>1</sub>

and IXP<sub>2</sub>) because one or both conjuncts may be morphologically singular (even though the coordination will always be semantically plural).

Note that <Dual> is strictly speaking only relevant for pronouns. But, especially in Old Norse, we may encounter examples of the type pronoun + name:

- (11) [ vit            Arnviðr ]<sub>IXP</sub> munum fara  
          we.DUAL Arnviðr            will    go  
          ‘we – the two of us, i.e. Arnviðr and myself – will go’  
          ‘Arnviðr and I will go’

### 3.1.3 Gender

An IXP can be specified for the following *gender* values:

IXP <sub>Σ</sub>	<<	Mas
	<<	Fem
	<<	Neu
	<<	Undec

Table 5: *Inflectional Features: Gender*

Again, if the *gender* cannot unambiguously be identified by morphological criteria, we will use the label <Undec>.

## 3.2 Grammatical function of the IXP

An IXP can be annotated for various grammatical / syntactic functions (corresponding to the role the noun phrase plays within the sentence/clause), see (3). In table 6 below, the labels used here are given diagrammatically, displaying specifications and subspecifications (cf. table 1).

In this section, we will provide some criteria and brief characterizations and/or suitable noun phrases (IXP) that illustrate the applicability of each label.

---

<b>IXP</b> <sub>Σ</sub>	<<	Arg	<<	OfV	<<	Sub
					<<	Obj
					<<	Other
			<<	OfP		
			<<	OfA		
			<<	OfN		
			<<	OfD		
	<<	Pred	<<	Cop		
			<<	Other		
	<<	App				
	<<	Voc				
	<<	Adv				
	<<	Other				

---

Table 6: *Syntactic Function of IXP*

### 3.2.1 Arguments: <Arg>

Noun phrases can be arguments (~ can be selected for / governed by / can be complements) of various elements. For our annotation scheme, the following are relevant.

#### 3.2.1.1 Verbal arguments: <OfV>

- <Sub>:<sup>6</sup> subject of a verb
- <Obj>: (direct/indirect) object of a verb<sup>7</sup>
- <Other>: label for cases where it is unclear e.g. whether a noun phrase is an object or an oblique/quirky subject, or whether it is the object of an embedding verb or the subject of an embedded infinitival clause.

<sup>6</sup>Recall that we are using the (ii) labels here for discussion and to illustrate subdependencies; as the corresponding label (iii) version makes clear, a subject actually denotes a path: <Sub> ~ Arg.ofV.Sb.

<sup>7</sup>We will include here instances of what is known as *figura etymologica* or the “inner object”. This applies to noun phrases that appear to occur as a complement to an otherwise intransitive verb, and where noun and verb are conceptually or etymologically related:

- (1) a. Hann fór [ **langa ferð** ]<sub>IXP</sub>  
       he went long journey  
       ‘He travelled a long way/journey’  
       b. to sleep [ **a well deserved/deep sleep** ]<sub>IXP</sub>  
       c. to win [ **an important victory** ]<sub>IXP</sub>

### 3.2.1.2 Complement of preposition: <OfP>

The IXP in question is a complement of a preposition / a component of a PP, which includes cases of complex prepositional expressions:

- (12) a. *on* [ **the big horse** ]<sub>IXP</sub>                      c. *to* [ **the beautiful city** ]<sub>IXP</sub>  
       b. *with* [ **the good king** ]<sub>IXP</sub>                      d. *from under* [ **the big bed** ]<sub>IXP</sub>

A few (pluractional) prepositions take a conjunction of two noun phrases as complements (“between X and Y”). In this case, we will annotate both the individual conjunct IXPs and the complex IXP coordination<sup>8</sup> as complement of a preposition:

- (13) a. *between* [ **the big house** ]<sub>IXP<sub>1</sub></sub> and [ **the beautiful river** ]<sub>IXP<sub>2</sub></sub>  
       b. *between* [ **the big house and the beautiful river** ]<sub>IXP<sub>3</sub></sub>

### 3.2.1.3 Argument of noun: <OfN>

The IXP in question is a nominal dependent of the head noun in a bigger IXP. We will not specify the nature of this dependency here (see Sect. 9.1); the respective IXP is not necessarily an “object” of N. Below, some (Old-) Icelandic examples are given:

- (14) a. [ Hestur [ **hins mikla konungs** ]<sub>IXP<sub>2</sub></sub> ]<sub>IXP<sub>1</sub></sub>  
       *horse* [ *the great king* ]-GEN  
       ‘the great king’s horse’  
       b. [ Reiði [ **hins mikla konungs** ]<sub>IXP<sub>2</sub></sub> ]<sub>IXP<sub>1</sub></sub>  
       *anger* [ *the great king* ]-GEN  
       ‘the anger of the great king’  
       c. [ Skoðun [ **margra góðra manna** ]<sub>IXP<sub>2</sub></sub> ]<sub>IXP<sub>1</sub></sub>  
       *opinion* [ *many good men* ]-GEN  
       ‘the opinion of many good men’  
       d. [ [ **Ríkra manna** ]<sub>IXP<sub>2</sub></sub> traust ]<sub>IXP<sub>1</sub></sub>  
       [ *mighty men* ]-GEN                      *trust*  
       ‘the trust/confidence of powerful men’

The index indicates that IXP<sub>2</sub> constitutes a separate entry into the database and will have an IXP description of its own; among other things, it will be marked as <OfN>. It is important to notice that the same sequence (IXP<sub>2</sub>) will show up as a mere component/category with respect to IXP<sub>1</sub> (namely, as <GenP>, see section 9).

An IXP with the label <OfN> will usually be a genitival phrase; but in addition, we have to consider a (small?) number of datives as well, as illustrated by the following example from Gothic (Matt 5:21):

- (15) *ip saei maurþreip skula wairþip* [ **stauai** ]<sub>IXP</sub>  
       CONJ *who kills*                      *debtor becomes* [ *court* ]-DAT  
       ‘he who kills shall be responsible/answerable to the court’

<sup>8</sup>See also chapter 12 on coordination.

Here the dative noun phrase *stauai* is dependent on *skula*, and hence will also be annotated as <OfN>. Differently from the above examples, it will, however, not be given a specific category label like <GenP>, but merely the general label <IXP>.

#### 3.2.1.4 Argument of adjective: <OfA>

The IXP in question is a proper complement of a lexical adjective; the decisive criterion is that it is the adjective that determines the case on the respective noun phrase. For instance, adjectives expressing relations such as *related-to*, *similar-to*, *identical-to* etc. typically govern the dative case on their noun phrase complement:

- (16) þú ert líkur [ **Hallkatli föðurföður þínum** ]<sub>IXP</sub>  
*you are alike* [Hallkell fatherfather your]-DAT  
 ‘you resemble your Grandfather Hallkell’

⇒ Notice the past participles of transitive verbs:

- (17) hún var gift [ **ríkum manni** ]<sub>IXP</sub>  
*she was married* [mighty man]-DAT  
 ‘she was married to a powerful man’

As a rule of thumb, if the (finite forms of the) corresponding verb exist(s) in the language, and if there is a discernable eventive passive reading (~ *she became married*), we will mark the IXP as verbal argument (<OfV>); alternatively, if we discern a stative/resultative reading (~ *she was in the state of being married*), we will construe the participle as an adjective and mark the IXP as <OfA>.

#### 3.2.1.5 Argument of degree element: <OfD>

The IXP in question is a complement of a degree element or comparative particle, which, in turn, may well be a component of an adjectival phrase. It is therefore essential to keep the labels <OfA> and <OfD> apart. As was said above, the former is used if the IXP is a complement of the adjective itself, and it is the adjective that determines its case. On the other hand, the label <OfD> is used if the respective IXP is the complement of certain functional morphemes or particles:

- (18) a. (so/as) adjective/adverb as [ IXP ]  
 b. adjective-er than [ IXP ] (= comparative)  
 c. like / as / such as [ IXP ]

Below, two examples from Old Norse are given for illustration:

- (19) a. Hann var svo siðugur og góðháttaður sem [ **hinn siðugasti spekingur** ]<sub>IXP</sub>  
*he was so virtuous and well-behaved as the most-virtuous sage*



- b. Finnst varla sá maður er þokkasæl-**li** hafi verið af sínum vinum **en**  
*is-found hardly that man who beloved-COMP has been by his friends than*  
 [ **þessi hinn blessaði biskup** ]<sub>IXP</sub>  
*this the blessed bishop*  
 ‘there is hardly a man who has been more beloved by his friends than this blessed bishop’

### 3.2.2 Predicates: <Pred>

Besides argumental functions, noun phrases may play another essential role within the clause/sentence, viz. that of a predicate. We will distinguish between primary and secondary predication as follows:

#### 3.2.2.1 Predicate with copular verbs: <Cop>

The IXP in question is a complement of a copula verb (*to be, to become, to remain, to seem, to appear, to “be-called” ...*):

- (20) a. She is [ **a woman with many talents** ]<sub>IXP</sub>  
 b. He became [ **a rich man** ]<sub>IXP</sub>  
 c. He remained [ **a good friend** ]<sub>IXP</sub>  
 d. She seemed [ **a capable and steadfast leader** ]<sub>IXP</sub>

Occasionally, in a structure: *X copula Y*, it may not be immediately obvious which is the subject, which is the predicate. For the following two special cases, will use the following conventions (boldprint → subject; italics → predicate):

a.) In **Questions** like *Who is XY*, the construal depends on the possible answer:

- (21) a. *Who* is **this man** ? → **This man** is *so-and-so*  
 b. **Who** is *so bold* ? → **This man / John** is *so bold*  
 c. *Who* is **John**? [= what can you tell me about him?] → **John / he** is *a nice chap*  
 d. **Who** is *John*? [= which (one) of you is John?] → **I** am *John* / **that tall guy** is *John*

b.) With **Name attributions** as in (22),

- ⇒ the name is always the predicate;  
 ⇒ the lexical noun (phrase) is always the subject!

- (22) *Name* heitir / er nefndr / er kallaðr (**einn**) **maðr** or  
 (**einn**) **maðr** heitir / er nefndr / er kallaðr *Name*  
 (= ‘Name is-called a man’ / ‘A man is-called Name’)

### 3.2.2.2 Predicate in other contexts: <Other>

The IXP in question is a predicate over an argument (subject or object) without there being a (visible) copula verb ( $\rightarrow$  secondary predicate; often  $\rightarrow$  resultative constructions). In Latin grammars, this is referred to as double nominative/accusative. This is very common with verbs like *to consider*, *to make*, *to elect* ... (among others):

- (23) a. We made *him* [ **a rich man** ]<sub>IXP</sub>  
 b. *She* was considered [ **a great and just ruler** ]<sub>IXP</sub>  
 c. *He* was elected [ **the last emperor** ]<sub>IXP</sub>

Beyond that, ( $\rightarrow$  depictive) secondary predicates may occur in the context of certain verbs of motion, e.g.:

- (24) a. *He* left home [ **a young and unexperienced man** ]<sub>IXP</sub>  
 b. *She* returned [ **an undefeated hero** ]<sub>IXP</sub>

Note that in Modern English, it is more common to add a particle like *as*. As a convention and for the sake of consistency, we will only treat those noun phrases as secondary predicates that occur “bare”, i.e. without a particle/preposition. Apparently predicative noun phrases that are introduced by a particle corresponding to English *as* will be treated as a complement to a degree element, see Sect. 3.2.1.5, ex. (19).

- (25) a. *She* returned [ **an undefeated hero** ]<sub>IXP</sub>  $\Rightarrow$  <Other> (<Pred>)  
 b. *She* returned as [ **an undefeated hero** ]<sub>IXP</sub>  $\Rightarrow$  <OfD> (<Arg>)

### 3.2.3 What's <App>? – Appositions-1

Appositions (appositive noun phrases) are noun phrases that are not an essential ingredient of the clause/sentence they occur in and do not provide essential, but rather additional information (= they function as comment or afterthought). Such noun phrases are always dependent on another element in the sentence, the anchor, and often (not always) the two form one adjacent string.

We will adopt a broad notion of apposition, but we will nonetheless acknowledge two levels of/two perspectives on apposition, which are encoded by two partly related features <App>, one of which indicates a syntactic function as a global IXP property (and is the main protagonist in this section), while the other is a category label for a component of a larger IXP (the latter will be discussed in its own right in Sect. 10.2). In order to minimize confusion, we will use the subscripts *fun* for the former (= syntactic function) and *cat* for the latter (= category). In the following their relationship will be disentangled.

The global IXP feature <App><sub>fun</sub> indicates that the respective IXP in the database as a whole is an apposition; it is in competition with the features (syntactic functions) <Pred>, <Arg> etc.

On the other hand, the categorial feature <App><sub>cat</sub> indicates that a certain category/component inside an IXP is an apposition; in fact, one IXP may contain several

items  $\langle \mathbf{App} \rangle_{cat}$ .  $\langle \mathbf{App} \rangle_{cat}$  is the label reserved for the broad class of titles, epithets/bynames/nicknames, descriptions that occur as attribute to the head noun within one noun phrase.

In other words, one IXP can only be either  $\langle \mathbf{Arg} \rangle$  or  $\langle \mathbf{App} \rangle_{fun}$  or  $\langle \mathbf{Pred} \rangle$  ... However, one IXP may be an  $\langle \mathbf{App} \rangle_{fun}$  and contain an  $\langle \mathbf{App} \rangle_{cat}$ , or be an  $\langle \mathbf{Arg} \rangle$  and contain an  $\langle \mathbf{App} \rangle_{cat}$  etc.

One and the same noun phrase may (and most likely, will) show up twice, once labeled as  $\langle \mathbf{App} \rangle_{fun}$  and once as  $\langle \mathbf{App} \rangle_{cat}$ . In the former case, it is itself the entry in the database, in the latter case, it is a component of another noun phrase which is the actual entry in the database. In other words, a constituent with the label  $\langle \mathbf{App} \rangle_{cat}$  occurring as a component of IXP-A can receive an entry in the database as IXP-B. In that case, IXP-B will have the global property  $\langle \mathbf{App} \rangle_{fun}$ . In the following, we will provide some guidelines and criteria, and establish certain conventions on how to properly use the label  $\langle \mathbf{App} \rangle_{fun}$  (and distinguish it from  $\langle \mathbf{App} \rangle_{cat}$ ).

The IXP in question is **(a): part of a larger IXP** or **(b): dependent on another nominal anchor somewhere in the sentence**, and agrees in case with the larger IXP or the anchor.

Scenario (a) entails that the larger IXP is a noun phrase comprising more than one noun (phrase). Usually, one of the nouns will be a proper name. One convention that we establish is that the name is categorically the head noun (see Sect. 10.2), whereas the other noun(s)/noun phrase(s) – titles, epithets/bynames, descriptions ... – is (are) categorically an  $\langle \mathbf{App} \rangle_{cat}$  with respect to the same IXP. As was stated above, those elements can in turn receive their own entry in the database, in which case they have themselves the categorial status of IXP and are assigned the feature  $\langle \mathbf{App} \rangle_{fun}$ . This is illustrated below with some relevant constellations:

- |   |          |   |
|---|----------|---|
| <p>(26) Apposition is part of an IXP<br/>= <math>\langle \mathbf{App} \rangle_{cat}</math></p> <p>a. [ <b>[king]</b> Richard ]<math>_{IXP_{01}}</math></p> <p>b. [ Richard <b>[the king]</b> ]<math>_{IXP_{02}}</math></p> <p>c. [ Richard <b>[the Lionheart]</b> ]<math>_{IXP_{03}}</math></p> <p>d. [ <b>[king]</b> Alfred <b>[the Great]</b> ]<math>_{IXP_{04}}</math></p> <p>e. [ <b>[the bastard]</b> John ]<math>_{IXP_{05}}</math></p> <p>f. [ John , <b>[the bastard]</b> ]<math>_{IXP_{06}}</math></p> <p>g. [ John <b>[the Bastard]</b> ]<math>_{IXP_{07}}</math></p> <p>h. [ <b>[the good king]</b> Richard ]<math>_{IXP_{08}}</math></p> <p>i. [ <b>[my dear brother]</b> John ]<math>_{IXP_{09}}</math></p> <p>j. [ John, <b>[my dear brother]</b> ]<math>_{IXP_{10}}</math></p> | <p>⇒</p> | <p>(27) IXP is itself an apposition<br/>= <math>\langle \mathbf{App} \rangle_{fun}</math></p> <p>a. [ <b>king</b> ]<math>_{IXP_{21}}</math></p> <p>b. [ <b>the king</b> ]<math>_{IXP_{22}}</math></p> <p>c. [ <b>the Lionheart</b> ]<math>_{IXP_{23}}</math></p> <p>d. [ <b>king</b> ]<math>_{IXP_{24}}</math> &amp;<br/>[ <b>the Great</b> ]<math>_{IXP_{34}}</math></p> <p>e. [ <b>the bastard</b> ]<math>_{IXP_{25}}</math></p> <p>f. [ <b>the bastard</b> ]<math>_{IXP_{26}}</math></p> <p>g. [ <b>the Bastard</b> ]<math>_{IXP_{27}}</math></p> <p>h. [ <b>the good king</b> ]<math>_{IXP_{28}}</math></p> <p>i. [ <b>my dear brother</b> ]<math>_{IXP_{29}}</math></p> <p>j. [ <b>my dear brother</b> ]<math>_{IXP_{30}}</math></p> |
|---|----------|---|

In cases without a name (typically, an accumulation of titles and kinship terms), **the first nominal will be the head noun**, and the subsequent nominal(s) the apposition(s):

- (28) Apposition is part of an IXP  $\Rightarrow$  (29) IXP is itself an apposition  
 = <App><sub>cat</sub> = <App><sub>fun</sub>  
 a. [ my lord [**the king**] ]<sub>IXP<sub>11</sub></sub> a. [ **the king** ]<sub>IXP<sub>31</sub></sub>  
 b. [ my father [**the king**] ]<sub>IXP<sub>12</sub></sub> b. [ **the king** ]<sub>IXP<sub>32</sub></sub>  
 c. [ the king , [**my father**] ]<sub>IXP<sub>13</sub></sub> c. [ **my father** ]<sub>IXP<sub>33</sub></sub>

As for scenario (b): It may be the case that other material intervenes between the anchor and the appositive, thus they form a discontinuous constituent:

- (30) a. John<sub>1</sub> came to see me yesterday, [the old fool]<sub>1</sub>.  
 b. Then Jesus<sub>2</sub> went, [the son of God]<sub>2</sub>, to Galilee, [eternal lord]<sub>2</sub>, [child of men]<sub>2</sub>.

Here, the individual appositive noun phrases are each analyzed as IXPs and assigned the label <App><sub>fun</sub>:

- (31) a. [ **the old fool** ]<sub>IXP<sub>55</sub></sub>  
 b. [ **the son of God** ]<sub>IXP<sub>66</sub></sub> , [ **eternal lord** ]<sub>IXP<sub>77</sub></sub> , [ **child of men** ]<sub>IXP<sub>88</sub></sub>

At a more abstract level, we will also have the following representations where the appositive noun phrases occur as components of a larger IXP and are consequently analyzed as <App><sub>cat</sub>:

- (32) a. [John ...[ **the old fool** ]<sub>IXP<sub>55</sub></sub>]<sub>IXP<sub>555</sub></sub>  
 b. [Jesus ...[ **the son of God** ]<sub>IXP<sub>66</sub></sub> [ **eternal lord** ]<sub>IXP<sub>77</sub></sub> [ **child of men** ]<sub>IXP<sub>88</sub></sub>]<sub>IXP<sub>666</sub></sub>

### 3.2.4 Vocatives: <Voc>

Noun phrases may be used in a vocative function, i.e. they are used to address someone (or something). In this case, the respective IXP is annotated as <Voc>. Sometimes, there are formal clues (2<sup>nd</sup> person pronoun; possessive; weak inflection, vocative case!), in other cases the context makes it clear:

- (33) a. **thou** incestuous, murderous, damned Dane  
 b. kær-i vinur  
     *dear-WK friend*  
 c. **my** lord / **my** liege / **your** grace ...  
 d. Great king, what sayest thou?

It is crucial not to confuse the syntactic function *vocative* with the morphological case *vocative* (which is limited to a handful of nouns in Gothic?), see Sect. 3.1.

### 3.2.5 Adverbials: <Adv>

Noun phrases may be used in an adverbial (often temporal) function, in which case the IXP is assigned the label <Adv>. Usually, these cases are easily identified:

- (34) a. [ **Penna vetur hinn sama** ]<sub>IXP</sub> tók Guðmundur biskup sótt  
*that winter the same took Guðmundur bishop disease*  
 ‘That same winter, bishop Guðmundur fell sick.’  
 b. Hann fór til Noregs og var þar [ **þjá vetur** ]<sub>IXP</sub>  
*he went to Norway and was there three winters*  
 ‘He went to Norway and spent there three winters.’

In addition, there are bare instrumental noun phrases; bare in the sense that they occur without preposition (like *with*); in (Old) Icelandic, these occur in the dative. These noun phrases will likewise be labeled <Adv>. Two examples are given below:

- (35) a. Hann þreif í taumana og hélt [ **báðum höndum** ]<sub>IXP</sub>  
*he grasped in bridles.the and held [both hands]-DAT*  
 ‘He seized the bridles and held them with both hands.’  
 b. Greip þá hamarinn Mjöllni [ **tveim höndum** ]<sub>IXP</sub>  
*grabbed then hammer.the Mjöllnir [two hands]-DAT*  
 ‘Then he (= Thor) grabbed the hammer Mjöllnir with two hands.’

### 3.2.6 Noun phrases with another grammatical function: <Other>

We may encounter noun phrases that cannot clearly be assigned any of the grammatical (syntactic) functions discussed above. This will be the case, in particular, with noun phrases that are not obviously syntactically integrated in a larger structure or constitute an utterance by themselves. Conceivable instances of this kind are exclamations: “Hilfe!”, “Fire!”, “Stupid thing!”, “Bloody hell!” ..., booktitles, chapter names, headlines ... but it likewise applies for instance if the preserved text / manuscript is corrupted or fragmentary so that the noun phrase cannot be unambiguously contextualized.

For all these cases (and possibly others), we will simply use the rest label <Other>.

## 3.3 Referential status of the IXP

Noun phrases differ with respect to their referential properties, see (4). As a practical restriction, we suggest that this parameter be limited to IXPs with the syntactic function <Arg> (and optionally <Adv>). The down-arrows indicate that the relevant labels will be determined in a top-down procedure of elimination:

<b>IXP</b> <sub>Σ</sub>	<<	Ana	↓						
	<<		Cont	↓					
	<<			Univ	↓				
	<<				Uniq	↓			
	<<					Exist	↓		
	<<						Other	↓	
	<<							NA	
	<<								

Table 7: *Referential Status of IXP*

⇒ NB: We will NOT currently annotate this property! ⇐

## Part I

# CAT(egories): [Core lexical]

As has already been mentioned, the assignment of a category label to an item is the most essential part of the annotation process because every further individual property assignment is contingent upon the presence of a (sub-)category label. We will follow the layout in the annotation interface and divide the category labels into four blocks. So in the following (first block), we will discuss the *Core lexical* categories, in the order displayed in the menu:

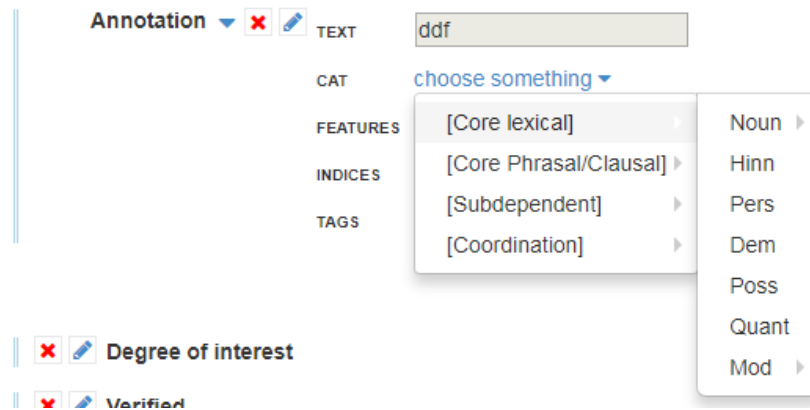


Figure 6: *Core Categories*

## 4 The head noun: <Noun>

### 4.1 Categorial information



The top level category of the head noun expression is <Noun>; a major distinction is made depending on whether the head noun is a common (= lexical) noun, in which case it is labeled <Com>, or a proper noun (= name), in which case it is labeled <Prop>:

Noun	<<	Com
	<<	Prop

Table 8: *Nominal Categories*

(36) a. [ **The White House** ]  
 b. [ **Ormurinn langi** ]  
*serpent.the long* (= name of a famous Viking vessel)

Upon selecting the category **<Com>**,<sup>10</sup> the following options (features and tags) indicated in figure 7 get activated and become accessible for annotation. These will be discussed in the remainder of this section.

**Annotation** ▼   TEXT

CAT [N.C](#) ▼

FEATURES NounSem: [choose something](#) ▼

INDICES

TAGS ☐ Definite ☐ Complex noun ☐ Suffixed article ☐ Relational noun

## 4.2 Features – Semantic properties: “NounSem”

<sup>9</sup>NB: In the case of “god”, it is not always clear whether it is to be treated as a proper name or a lexical noun; as a rule of thumb: when it would be spelled with a capital <G> (in Modern English) thus normally referring to the god of monotheism, we will treat it as a proper name, and as a lexical noun otherwise. Conversely, “devil”, we will normally treat as a lexical noun. On the other hand, “Jehovah”, “Satan”, “Lucifer”, “Óðinn” ... will categorically be treated as proper names; note that this is not a theological statement!

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Noun	<<	Anim	<<	Human-Indiv
			<<	Human-Collect
			<<	Other
	<<	Tang	<<	Obj
			<<	Subs
	<<	Abstr	<<	Dyn
			<<	Other

Table 9: *Nominal Semantic Properties*

In the following, we will provide some characterizations and diagnostics for these labels, and give a (non-exhaustive) list of examples for illustration:

#### 4.2.1 Animate entities: <Anim>

##### 4.2.1.1 Human individuals: <Human-Indiv>

- **nouns denoting people directly – with or without gender specification:**  
*human, woman, man, sister, sibling, person, child, parent, mother, father, husband, wife, daughter, husband, son, girl, brother, friend, enemy, ancestor ...*
- **nouns denoting professions, human do-ers and be-ers — in the broadest sense, i.e. including nomina agentis, evaluative labels and titles:**  
*miller, soldier, fisherman, monk, nun, murderer, bishop, seductress, destroyer, builder, thief, king, idiot, crook, benefactor, pirate, carpenter, saint, messiah, duke, disciple, student ...*
- **nouns denoting certain mythological creatures provided they are assumed to have humanlike (or even superior) cognitive abilities, human anatomy/physiognomy and/or display humanlike behavior:**  
*god, giant, dwarf, elf, valkyrie, demon, devil, vampire, troll ...*
- **abstract nouns used allegorically, conceived of as having human shape and display humanlike behavior (*walking around, giving advise, scolding ...*):**  
*Wisdom, Fortuna, Iustitia, Poverty, Luxury, Virtue, Greed ...*  
*Lady Philosophy, Lady Nature, Lady Fortune ...*

Note that this label is reserved for nouns denoting “humans” as such (= human beings/individuals); for collective terms and nouns denoting groups of humans, we will use a separate label:

#### 4.2.1.2 Collections of humans: <Human-Collect>

- **groups of humans and collective terms of human individuals; institutions:**  
*group, family, troop, flock, mob, team, congregation, crowd, people, tribe, proletariat, clergy, bourgeoisie, nobility ...; army, military, police, inquisition, leadership, administration, guard, government, church, special forces ...*

#### 4.2.1.3 Non-human animals: <Other>

- **nouns denoting non-human (actual or mythological) animals**  
*horse, pig, owl, swan, unicorn, dragon, sphinx, nazgul ...*

#### 4.2.2 Things you can (but maybe shouldn't) touch: <Tang>

##### 4.2.2.1 Tangible objects: <Obj>

- **nouns denoting material, tangible, countable, non-animate<sup>11</sup> entities in a rather generous sense:**  
*expressions for instruments, implements, utensils, tools, clothes, weapons, (pieces of) furniture, toys, buildings, vehicles, books,<sup>12</sup> body parts ...*
- **geographical / topological objects (incl. realistically non-tangible locations)**  
*road, river, mountain, place, city, forrest, field, pond ... sun, moon, star, Venus ...*

##### 4.2.2.2 Tangible “stuff”: <Subs>

- **nouns denoting material and tangible non-countable entities, substances, “stuff” – also in a rather generous sense (incl. collective terms / “artifact” nouns):**  
*water, gold, sand, wine, blood, poison, flesh, meat, sauce, entrails, concrete, dirt, clay; fire, gas, air; food, stuff, substance, material ...; furniture, mail, jewelry, cutlery, laundry, weaponry ...*
- **larger / generic locations; (on the relevant reading) non-countable geographical objects:**  
*earth, ground, ocean / sea, sky ...*

---

<sup>11</sup>We will, however, include plants, trees etc. in this group as well; sorry biologists!

<sup>12</sup>Notice the following contrast between certain nouns (reminiscent of a type-token distinction):  
a specific copy of a book (→ Tang.Obj) vs. the content of a book (→ Abstr.Oth)

#### 4.2.3 Abstract entities: <Abstr>

##### 4.2.3.1 Dynamic entities: <Dyn>

- **nouns denoting abstract entities that are localizable in (<sup>?</sup>space-) time — events, happenings, processes, actions, and states:**

*beginning, destruction, murder, attack, invasion, howling, construction, decay, procedure, assassination, end, bang ...*

*intoxication, rage, bliss, insanity, ecstasy ...*

*war, battle, mass, event, party, concert, ritual, accident ...*

- **meteorological events:**

*wind, storm, rain(fall), snow(fall), lightning, thunder, hailstorm ....*

- **in addition, nouns denoting certain relationships between individuals:**

*friendship, feud, marriage, relationship, collaboration, affair ....*

The decisive criterion here is that the noun denotes an abstract entity that has at least a temporal coordinate, and can replace the pronoun in questions such as:

- |   |   |
|---|---|
| ⇒ <b>When</b> <i>did</i> <span style="border: 1px solid black; padding: 0 2px;">it</span> occur/take place? | (it = the invasion, the battle)               |
| ⇒ <b>Where</b> <i>did</i> <span style="border: 1px solid black; padding: 0 2px;">it</span> occur?           | (it = the murder of Gonzago)                  |
| ⇒ <b>When</b> <i>did</i> <span style="border: 1px solid black; padding: 0 2px;">it</span> end?              | (it = the feud, the war, their collaboration) |
| ⇒ <b>How long</b> <i>did</i> <span style="border: 1px solid black; padding: 0 2px;">it</span> last?         | (it = the friendship, his rage, the storm)    |

In addition, we will include the following class of nouns:

- **nouns denoting cognitive or emotional states / processes;**

**habitual mental states & dispositions; nouns of propositional attitude:**

*love, hate, sadness, happiness, curiosity, excitement, boredom, arousal, feeling, emotion, sorrow, intuition ...*

*knowledge/insight, thought/thinking, idea, fear, hope, belief, concern ...*

Another potential diagnostic: Possessives/genitives occurring with these nouns, usually have an argument interpretation (agent, experiencer, patient/theme ...):

- |      |   |   |
|------|---|---|
| (37) | a. [ <b>His</b> <u>destruction</u> of the city ]    | (= he destroyed)                          |
|      | b. [ <b>Her</b> <u>rage</u> ]                       | (= she is angry)                          |
|      | c. [ <b>Cesar's</b> <u>murder</u> ]                 | (= Cesar was murdered)                    |
|      | d. [ <b>Tom's</b> <u>friendship</u> with Jerry ]    | (= Tom is a friend of Jerry's)            |
|      | e. [ <b>Her</b> <u>knowledge</u> of the Force ]     | (= she knows)                             |
|      | f. [ <b>His</b> <u>love</u> for X ]                 | (= he loves X)                            |
|      | g. [ <b>His</b> <u>hope/concern/belief</u> that p ] | (= he hopes/is concerned/believes that p) |

#### 4.2.3.2 Other abstract entities, “Rest” category: <Other>

- “meta”-expressions, spatio-temporal expressions / measurements and units, currency terms, taxonomic terms, abstractions, classifications . . . :  
*area, time, space, summer, year, day, minute, mile, meter, disease, infection, temperature, weather, novel/saga (as genre), book/letter/novel (the content), ...*
- metaphysical / mathematical / logical / linguistic expressions, platonic ideas and scholarly terms; evaluative terms:  
*hypothese, number, seven, variable, syllogism, standard, method, problem, syllable, vowel, analysis, theory, letter, word, syntax, sentence, morpheme ...; justice, honour, beauty, virtue, straightforwardness ...*
- abstract locations:  
*heaven, hell, paradise, purgatory, limbo . . . . .*
- any other abstract stuff that has not been mentioned as such . . . . .

If the entity denoted by the head noun is *neither animate nor tangible*, and if it is *not obviously a dynamic entity* in the above sense, the head noun will be annotated as <Other> abstract object. A distinction from the former two classes should be relatively straightforward, but remember the *object* vs. *content* distinction mentioned in fn. 12. A distinction from the <Dyn> class, on the other hand, may not always prove as easy. To a certain extent, we can apply the *content* criterion even here:

- (38) a. A **play** can  
i. be by Shakespeare (*content* → <Abstr.Other>) or  
ii. last five hours (*event* → <Abstr.Dyn>)
- b. A **movie** can  
i. be boring (*content* → <Abstr.Other>) or  
ii. be cancelled (= “not take place”: *event* → <Abstr.Dyn>)
- c. A **speech** can  
i. be analyzed (*content* → <Abstr.Other>) or  
ii. be delivered (*event* → <Abstr.Dyn>)

**NB:** When in doubt, when none of the criteria or characteristics mentioned above seem to apply (say if it cannot be clearly recognized as such within 10 seconds), we will assign the label <Other> (rather than <Dyn>).

### 4.3 Tags

Nouns can receive the following tags (note that, for practical reasons, the ordering deviates slightly from the one seen in the screenshot in figure 7):

Com	<<	Suff
Com / Prop	<<	Def
Com	<<	Complex
Com	<<	Rel

Table 10: *Nominal Tags*

#### 4.3.1 Suffixed article: <Suff> (Old Norse!)

This label is **only relevant for the Old Norse** (= *Scandinavian / North Germanic*) languages which have a clitic / suffixal article:

(39) [ hests-**ins** ]  
horse-the

(40) [ Ormur-**inn** langi ]  
serpent-the long

We will mark the suffixed article as a morphological property of the (lexical) head noun with this tag.

#### 4.3.2 Formal definiteness: <Def>

This label will be used to mark **formally definite** categories; it is also found with various determiners and pronouns (see Sect. 5). In the present context, the criterion “formally definite” applies if the head noun either (i) is a *proper name* or (ii) carries a **suffixed article** (in the Nordic languages).

Since (i) is already encoded via the (sub-)category label <Prop>, and (ii) via the tag label <Suff>, the annotation interface will infer this property automatically. In other words, (normally) **this tag will not have to be assigned manually!**

#### 4.3.3 Morphological complexity of the head noun: <Complex>

For a few selected cases, we will have this tag at our disposal to indicate internal/invisible complexity of the noun in case of (assumed) compounds where the head noun component is missing. For instance, in Old Norse, we find compounds such as the following:

⇒ mála -fylgju -maðr  
case.GEN -follow.GEN -man  
~ *prosecut-or*; “*taker-up of suits*”

Here, *maður* is the head of the compound. However, occasionally – typically in structures where two compounds with an identical head are coordinated – it may be missing in the second conjunct:

- (41) hann var svo mikill laga-maður og málafylgju- að ...  
*he was so great law-man.NOM and prosecute.GEN that*  
 “he was so great a lawyer and prosecutor that ...”

Even though at the surface, it seems as though *lagamaður* (nominative) and *málafylgju* (genitive) are coordinated, we will treat the second conjunct as though it were a full-blown compound with an invisible head. The tag <Complex> indicates the presence of such an invisible head:

- (42) lagamaður og málafylgju-maður  
 [lawyer.NOUN &.N prosecutor.NOUN.COMPLEX]-NOMINATIVE

As a result, the whole structure can be treated as a nominative IXP, see Sect. 3.1.1, internally coordinating two nouns of equal status (on nominal coordination, see Sect. 12.2).

#### 4.3.4 Relational nouns: <Rel>

A relational (or transitive) noun determines a **relationship between two individuals** (entities), and **requires a complement**, which is a *genitival noun phrase, a possessive, certain PPs, or a thematic adjective*, see e.g. (43e).

The relational head noun not only denotes a relation, but also one participant in that relation. Often the referent then is a human being, cf. i-iv. In addition, there are nouns that denote some kind of containment/inclusion relation, cf. v-vii. In other words, the following classes of nouns will be considered (potential!) relational nouns for our purposes:

- i. **kinship terms:**  
*father, mother, sister, daughter, brother, son, uncle, grandmother, child ...*
- ii. **other social relations:**  
*friend, enemy, husband, fiancé, colleague, doctor, lawyer, dentist ...*
- iii. **agent nouns:**  
*murderer, slayer, painter, producer, author ...*
- iv. **certain titles, offices and professional relations:**  
*king, queen, duke, earl, bishop, president, boss ...*
- v. **unalienable possession:**  
*e.g. body parts, diseases ...*
- vi. **inherent properties:**  
*color, size, value, weight, smell, taste, height ...*
- vii. **part-whole relations:**  
*part, top, corner, bottom, page, border ...*

Some examples for illustration are given below:

- (43) a. [ John's father / sister / second-cousin / son / aunt ... ] (i)  
 b. [ my wife / lawyer / friend / doctor / mother-in-law / enemy / colleague ... ] (ii)  
 c. [ the Duke of Northumberland ] (iv)  
 d. [ the baby-eating bishop of Bath and Wells ] (iv)  
 e. 1. [ Our king ] (possessive) (iv)  
 2. [ Denmarks's king ] (genitive) (iv)  
 3. [ the king of Danmark ] (PP) (iv)  
 4. [ the king of the Danes ] (PP) (iv)  
 5. [ the Danish king ] (thematic adjective) (iv)  
 f. [ a slayer of Dragons and liberator of the realm ] (iii)  
 g. [ the author of the first grammatical treatise ] (iii)  
 h. [ the painter of the Mona Liza ] (iii)  
 i. [ John's / your left arm / ear / knee / eye ... ] (v)  
 j. [ his fever / asthma / cancer / disease ... ] (... is incurable) (v)  
 k. [ the value / colour / taste ... of gold ] (vi)  
 l. [ the height / weight / price ... of the ship ] (vi)  
 m. [ the top / bottom / middle part ... of the pyramide ] (vii)  
 n. [ a chapter / page / section ... of the book ] (vii)  
 o. [ a corner of the room ] (vii)  
 p. [ the roof of the building ] (vii)  
 q. [ a tower of the castle ] (vii)

Being a tag, relationality is a binary option: a noun is relational (→ tick off the <Rel> box!), or not (→ don't!). However, many nouns listed above as relational are often used non-relationally (i.e. as sortal nouns):

- (44) a. [Five fathers] and [two mothers] showed up at the parents' conference NOT (I)  
 b. John is [a good doctor/lawyer] NOT (II)  
 c. Once upon a time, there was [a king] ... NOT (IV)  
 d. Yellow is [a beautiful color] NOT (VI)  
 e. There were [many severed arms and legs] on the battlefield NOT (V)

⇒ As a working rule, **we define relationality contextually:**

- A head noun is marked as <Rel> iff
  - a. the head noun (the assumed relation denoted by the head noun) plausibly falls under **one of the classes characterized by i-vii** above, AND
  - b. its **argument/complement is realized**, i.e. some *genitive, possessive or PP* is **visibly present** in the noun phrase (IXP)!

Moreover, head nouns already marked as **<Dyn>** (= dynamic entity, see Sect. 4.2.3) will not be annotated as Relational in order to avoid unnecessary overlap. In other words, **a lexical noun is *either marked as <Dyn> or as <Rel>*, but not both**.<sup>13</sup>

- (45) a. (Tom is) [ a friend of Jerry ]<sub>IXP</sub>                   ⇒ **<Rel>**  
       b. [ *Tom's* friendship with Jerry ]<sub>IXP</sub>               ⇒ **<Dyn>**

⇒ for both **<Dyn>** and **<Rel>** nouns: the corresponding genitival may have a (partially) complementary semantic feature, see Sect. 9.1.

---

<sup>13</sup>Of course, a relational noun will still belong to some semantic class, cf. Sect. 4.2, and it can for instance be both **<Human>** and **<Rel>** (*friend, sister*), or both **<Obj>** and **<Rel>** (*arm, roof*), or both **<Other>**<sub>abstr</sub> and **<Rel>** (*value, colour, chapter, middle*).



## 5 Pronominal and determinative elements

In this section, we will discuss the remaining word-based categories, which all, broadly speaking, fall into the class of pronominal and determiner(-like) elements:

<b>Dem</b>	<i>demonstrative</i>
<b>Hinn</b>	<i>Norse “hinn”</i>
<b>Pers</b>	<i>personal pronoun</i>
<b>Quant</b>	<i>(strong) quantifier</i>
<b>Poss</b>	<i>pronominal possessive</i>

Table 11: *Determiner(-like) and pronominal elements*

Note that, with the exception of quantifiers (<**Quant**>), all these elements will be assigned a formal definiteness feature – by default. In other words, the tag <**Def**> will be activated (and usually automatically be ticked off); see also Sect. 4.3.2.

### 5.1 Norse “free article”: <Hinn> (Old Norse!)

This label is only relevant for Old Norse (~ Scandinavian / North Germanic), and applies to two elements: (i) the so-called free or adjectival article (*h*)*inn*, and (ii) an emphatic demonstrative *hinn* often meaning “the other” (out of two). We will not distinguish between these two meanings/uses, and we will not distinguish orthographic variants; some examples:

#### (46) *Adjectival Article*

- |  |  |
|--|--|
| a. Haraldur (h)inn hárfagri<br><i>Haraldur HINN hairfair</i> | c. inn mesti lögmaður<br><i>HINN greatest lawyer</i> |
| b. hinn mesti lögmaður<br><i>HINN greatest lawyer</i>        | d. enn mesti lögmaður<br><i>HINN greatest lawyer</i> |

#### (47) *Demonstrative*

- |   |
|---|
| a. hina skilning      að engi      sé þeirra maki<br><i>HINN understanding that no-one is their equal</i> |
| b. í hinni hendi(-nni)<br><i>in HINN hand(-the)</i><br>‘in the other hand’                                |

## 5.2 Demonstratives: <Dem>

This label captures definite (distal/proximal, simplex/complex) Germanic demonstratives (~ ‘this’, ‘that’) and incipient definite articles (~ ‘the’). Notably, we will use this label to annotate the following demonstrative series across Germanic:

	DEM-A	DEM-B
Got	<i>sa – sō – þata</i>	<i>sah – sōh – þatuh</i>
ON	<i>sá – sú – þat</i>	<i>sjá / þessi – þetta</i>
OHG	<i>dēr – diu – das</i>	<i>dēse(r) – dēsiu/disiu – diz</i>
OE	<i>se – sēo – þæt</i>	<i>þes – þeos – þis</i>

Table 12: *Germanic Demonstratives*

In addition, this label captures demonstratives like Gothic *jains* and OHG *jener* (but their Old Norse etymological cognate (*h*)*inn* receives the label <Hinn>; see Sect. 5.1).

## 5.3 (Personal) Pronouns: <Pers>

Bare pronominals are not of current interest for our project. However, pronouns may occur in a determiner-like or anchoring function, or with certain modifiers. For instance, in (Old) Scandinavian, pronouns may be used as so-called proprial articles, i.e. as definite articles occurring with proper names and kinship terms; some examples:

- (48) a. **ich** / **du** Idiot  
*I / you idiot*  
b. poor / lucky **me** / **him** / **her** ...  
c. **we** linguists / **you** philologists  
d. **he** who must not be named
- (49) a. **hann** Jón  
*he Jón*  
b. **hún** mamma mín  
*she mum my*
- (50) a. **hann** Skallagrímur  
*he Skallagrímur*  
b. **þeir** bræður  
*they brothers*  
c. **þú** hin góða guðs kæra María Magdalena  
*you the good god's dear Mary Magdalene*
- (51) a. þairh [ midjans **ins** ]  
*through middle them*  
b. undar [ **eu** mittem ]  
*among you middle*

Pronouns occurring in more complex noun phrases such as these above will be assigned the label <Pers>.

## 5.4 (Strong) Quantifiers: <Quant>

Formally, by the quantifiers in question, we mean **quantificational determiners**, that is adnominally used quantifiers:<sup>14</sup> *every N, some N, no N* etc. Semantically, we mean **strong**<sup>15</sup> quantifiers – universal and existential quantifiers, including Wh-determiners, negation determiners and NPI elements (= negative polarity items):

- (52) a.  $\forall$ : *each, every, any, all, both* N(s)  
 b.  $\exists$ : *some* N(s); germ.: *irgendein, irgendwelche* N(s)  
 c. Wh: *which, what, whose* N(s)  
 d. Neg: *no, neither* N  
 e. NPI: (not ...) *any, either* N

## 5.5 Pronominal possessives: <Poss>

Pronominal possessives, as the term is used here, constitute a small class of **adnominal**, often **determiner-like** elements that may occur in pre- or postnominal position:

- (53) a. **my / her / our** horse  
 b. **mein / ihr / unser** Pferd  
 c. **min / hennes / vår** häst  
 d. hesturinn **minn / hennar / okkar**
- (54) a. **sinn** hinn besta vin  
 POSS.REFL *the best friend*  
 ‘his best friend’  
 b. vinur **pinn** fullkominn  
 friend *your perfect*  
 ‘your perfect friend’  
 c. spjót **hans** hið góða  
 spear *his the good*  
 ‘his good spear’  
 d. þeirra grátlegan þyt  
 their *pitiable wailing*  
 ‘their pitiable wailing’

Some pronominal possessives are inflected and agree with the head noun in case, number and gender (e.g. *minn, pinn, sinn*), whereas the others are invariant genitive forms of the personal pronoun (e.g. *hans, hennar*):

- (55) a. syni **mínum**  
 [son my]-DAT.SG.MASC  
 ‘my son’  
 b. dóttir **þín**  
 [daughter your]-NOM.SG.FEM  
 ‘your daughter’  
 c. barn **sitt**  
 [child POSS]-NOM/ACC.SG.NEU  
 ‘his/her/their child’ (reflexive)  
 → cf. lat. *suus, -a, -um*
- (56) a. syni **hans/hennar**  
 son he.GEN/she.GEN  
 ‘his/her son’  
 b. dóttir **hans/hennar**  
 daughter he.GEN/she.GEN  
 ‘his/her daughter’  
 c. barn **hans/hennar**  
 child he.GEN/she.GEN  
 ‘his/her child’ (non-reflexive)  
 → cf. lat.: *eius*

<sup>14</sup>As opposed to quantificational / indefinite pronominals like *everybody, anything, someone, nothing* ...

<sup>15</sup>As opposed to weak (= cardinal) quantifiers such as *many, few* and numerals, which will be classified as <Mod>ifiers; see previous chapter.

Note that genitival personal pronoun possessives (like *hans* “his” or *hennar* “her”) will have the lemma “hann” (*he*) – just like the personal pronoun itself (when used as a personal pronoun, see Sect. 5.3). Possessive (genitive) pronominals are distinguished at the categorial level from non-possessive pronominals: <Poss> vs. <Pers>.

#### 5.5.1 Features – Semantics of possessive relation: “GenPRole”

Pronominal possessives can be annotated for a semantic feature which specifies the semantics of the relationship between the possessive and the head noun. Since the feature values and the criteria are the same as with non-pronominal genitive phrases (<GenP>), the specifics will be discussed in that section (Sect. 9.1).

## 6 Adjectival modifiers: <Mod>

This category label captures adjectival modifiers in the broadest sense, including certain quantificational and other idiosyncratic adjectival elements, and comprises several (levels of) sub categories. The two top levels are illustrated in the screenshot below:

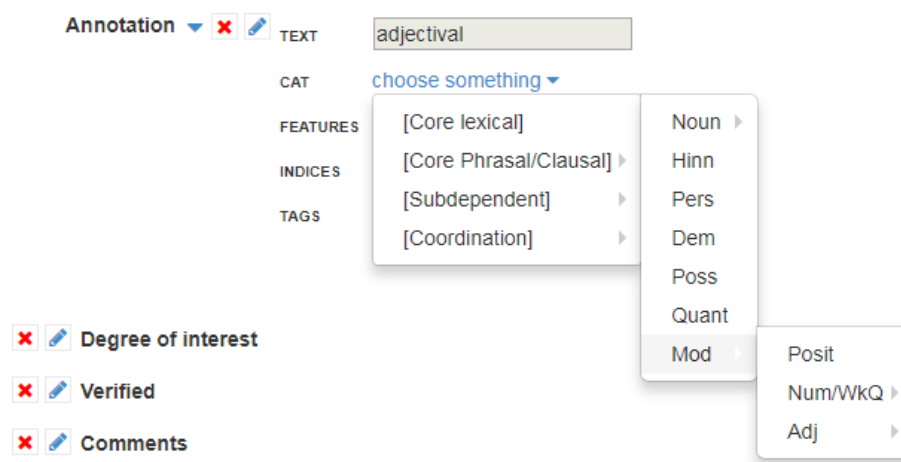


Figure 8: *Modifier Categories*

The full spectrum of categories will be addressed in Sect. 6.1. If <Mod> or any sub-category is selected, the following options are activated:



Figure 9: *Modifiers: Features and Index*

These options – adjectival inflection and gradation – are characteristic for the modifier class as a whole, and apply apply to all subcategories. These and the option labeled INDICES will be discussed in Sects. 6.2 and 6.3.

## 6.1 Categorical information

We will assume the following (sub-)classification of adjectival modifiers:

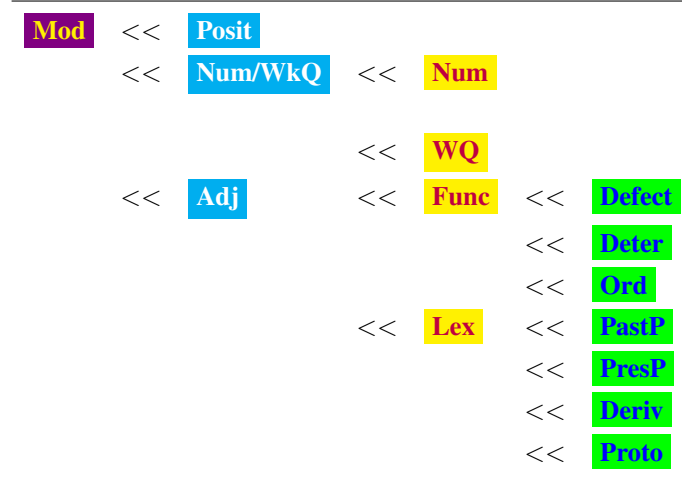


Table 13: *Adjectival Categories*

In the following, we will dedicate a separate subsection to each of the three major subcategories starting with the one that is presumably the most unfamiliar one at the outset.

### 6.1.1 Positional predicates: <Posit>

<Posit> is the class of Positional Predicates (cf. Pfaff 2015, 2017; Romero 1996); this is not an established category and most (traditional) grammars, dictionaries, and corpora simply label/treat them as (regular) adjectives – which they are not. The most prominent element in this group is the adjective “middle” among some others. In (Old) Icelandic and Old English, there are certain compound adjectives consisting of a locational expression (e.g. *east-*, *north-*, *front-*, *back*, *in-* ...) plus an adjectival stem (–*verð-*; –*weard-*) acting as positional predicates. Below, the Old Norse (~ Modern Icelandic) inventory is given:

- |   |   |   |
|---|---|---|
| <p>(57) a. <b>miður</b><br/><i>middle</i></p> <p>b. <b>þver</b><br/><i>across</i></p> <p>c. <b>endilangur</b><br/><i>along</i></p> <p>d. <b>öndverður</b><br/><i>former part</i></p> <p>e. <b>ofanverður</b><br/><i>latter part</i></p> | <p>f. <b>vestanverður</b><br/><i>western part</i></p> <p>g. <b>austanverður</b><br/><i>eastern part</i></p> <p>h. <b>norðanverður</b><br/><i>northern part</i></p> <p>i. <b>sunnanverður</b><br/><i>southern part</i></p> | <p>j. <b>utanverður</b><br/><i>outward</i></p> <p>k. <b>neðanverður</b><br/><i>lower part</i></p> <p>l. <b>framanverður</b><br/><i>front part</i></p> <p>m. <b>innanverður</b><br/><i>interior part</i></p> |
|---|---|---|

In the following, we will provide a thorough characterization of and some diagnostics for positional predicates and show in which way(s) they deviate from “regular” adjectives and other elements in order to facilitate their identification:<sup>16</sup>

⇒ **Partitivity**: Their semantic function is to express a spatial/temporal part-whole relationship (paraphrases/glosses/translations often involve ... *part of*):

- (58) a. í [ **mið.ri** **borg-inni** ] (Modern  
in middle.STR city-the  
Icelandic)  
‘in the middle part of the city / in the city center’  
b. á [ **öndverð.ri** **öld-inni** ]  
on beginning.STR century-the  
‘in the early/former part of the century’

⇒ **Definite expressions**: Typically, they occur with definite expressions<sup>17</sup> including proper names and pronouns, and they precede definite determiners (demonstratives, articles, possessives ...):

- (59) a. frá [ **miðj.um** **þessum mánuði** ] (Modern Icelandic)  
from middle.STR this month  
‘from the middle (part) of this month (on)’  
b. þairh [ **miðj.a** **Samarian** ] (Gothic)  
through middle.STR Samaria  
‘through the midst of Samaria’  
c. þairh [ **miðj.ans** **ins** ]  
through middle.STR them  
‘through their midst’  
d. in [ **mitt.an** **thén uueizi** ] (Old High German)  
in middle.STR the wheat  
‘in the middle of / amidst the wheat’

<sup>16</sup>For those familiar with Classical Greek, notice that the syntax and semantics of positional predicates in Germanic essentially coincide with that of certain adjectives in the so-called predicative position in Classical Greek:

- (1) eschatē hē nēsos                      hē nēsos eschatē                      predicative position  
outmost the island                      the island outmost  
‘the outmost part of the island’

<sup>17</sup>By this, we refer to definiteness marking (in the following indicated by red font). Often they occur with bare nouns not marked for definiteness. The interpretation is definite, nonetheless:

- (1) á [ **vestanverð.u landi** ]  
on western.STR land  
‘in the western part of the land’                      (#‘in the western part of a land’; #‘in a western part ...’)

→ Note, however, that, in spite of their occurring in definite contexts, they are *usually strongly inflected*.<sup>18</sup>

⇒ **Pre-/Postposition:** In Gothic, they seem to always precede pronouns, whereas in Icelandic and OHG, they usually follow pronouns; more generally, positional predicates often occur postnominally:

- (60) a. þairh [ **midj.ans** **ins** ] (Gothic)  
*through middle.STR them*  
 ‘through their midst’
- b. á og brú í [ **henni** **mið.ri** ] (Modern Icelandic)  
*river and bridge in her middle.STR*  
 ‘a river and a bridge in the middle of it’
- c. undar [ **eu** **mitt.em** ] (Old High German)  
*among you middle.STR*  
 ‘amongst your midst’
- d. á [ **dögum** **Hákonar hins ríka** **öndverð.um** ] (Old Norse)  
*on days [Hákon the mighty]-GEN beginning.STR*  
 ‘in the early (part of the) days of Hákon the mighty’
- e. on [ **þam lande** **norþweard.um** ] (Old English)  
*on that land northern.STR*  
 ‘in the northern part of that land’

⇒ **Concord/Agreement:** Like regular adjectives, positional predicates *agree with the head noun (pronoun) in case, number and gender*:

- (61) a. um [ **þver.an** **heim-inn** ] (Icelandic)  
*about across.STR.ACC.SG.MASC world-the (MASC.ACC)*  
 ‘across the world’
- b. á [ **öndverð.ri** **öld-inni** ]  
*on beginning.STR.DAT.SG.FEM century-the (FEM.DAT)*  
 ‘in the early/former part of the century’
- c. in [ **dhir** **mitt.eru** ] (Old High German)  
*in you.DAT.SG middle.STR.DAT.SG.FEM*  
 ‘in the middle of you / within you’
- d. á [ **ofanverð.um** **dögum** **Haralds Sigurðssonar** ] (Old Norse)  
*on upper.STR.DAT.PL days (DAT) [Haraldr Sigurðsson]-GEN*  
 ‘in the latter (part of the) days of Haraldr Sigurðsson’
- e. eftir [ **endilöng.um** **setaskála-num** ]  
*after along.STR.MASC.DAT.SG building-the (MASC.DAT)*  
 ‘from one end of the building to the other’

<sup>18</sup>However, in Old High German, we do find a handful of weakly inflected examples (note the position relative to the definite determiner):

- (1) [ **der mitt.e** **tac** ]  
*the middle.WK day*



This last point is important because in a sense, positional predicates “feel” a bit like complex prepositional or adverbial expressions, and often, they will have to be glossed as nouns or adverbs (or PPs); thus inflection and agreement indicate that positional predicates really are adjectival elements! Therefore, it is crucial to examine whether the element in question displays adjectival inflection and agreement with the noun in order to diagnose an element as positional predicate – especially, if there is an etymologically related adverb or noun.

Some criteria to distinguish positional predicates from nouns: (i) adjectival and nominal inflection are distinct in certain cases; (ii) adjectives agree with the noun whereas nouns take genitival (or PP) dependents, cf. (61)/(62a); (iii) a noun may take its own article, cf. (62b). On the other hand, adverbs have no inflection at all and occur yet further away from the noun (outside PP), e.g. in Modern German, cf. (62c). Compare:

- (62) a. “ [ middle.AGR the city ] ” positional predicate  
           “ [ the city middle.AGR ] ”  
       b. “[ the middle of the city ] ” noun  
           “[ the middle [the city]-GEN ] ”  
       c. “mitten [<sub>PP</sub> in [ der Stadt ] ] ” adverb  
           *middle in the city*

Note also the positional flexibility of positional predicates, and the fact that they may be part of a discontinuous noun phrase (pay attention to the *case-number-gender* agreement):

- (63) a. [ ofanverð.a þessa nótt ]  
           *upper.STR.ACC.SG.FEM this night (FEM.ACC)*  
           ‘in the later part of that night / later that night’  
       b. [ þessa nótt ofanverð.a ]  
           *this night (FEM.ACC) upper.STR.ACC.SG.FEM*  
           ‘in the later part of that night / later that night’  
       c. þessa nótt hina sömu kom Mörður ofanverð.a  
           *this night the same (FEM.ACC) came Mörður upper.STR.ACC.SG.FEM*  
           ‘Later that very same night, Mörður showed up’

Except for Old Norse, we do not currently have a list of all positional predicates (except “middle”) for the other Germanic languages; the above characterizations and diagnostics may serve to identify and diagnose them.

### 6.1.2 Cardinal quantifiers: <Num/WkQ>

With this label, we mark the class of cardinal (or weak) quantifiers comprising certain quantifiers and numerals:

Num/WkQ	<<	WQ
	<<	Num

Table 14: *Cardinal Quantifiers, Categories*

#### 6.1.2.1 Weak quantifiers: <WQ>

This label captures the (sub-)category of weak quantifiers proper and essentially includes the elements *many/much, few, several, half* .... Differently from other (= strong) quantifiers (*all, every, no* ...), these elements have, in addition to an actual quantificational reading, a → *cardinal interpretation* (also referred to as *adjectival reading*). Likewise, and again in contrast to other quantifiers, they can occur → *weakly inflected*. Sometimes these two aspects go hand in hand (often with a positional difference):

- (64) a. **marg-ar** þessar bækur (strong inflection)  
*many-STR these books*  
 ‘many of these books’  
 → PARTITIVE/PROPORTIONAL reading (= quantificational)
- b. þessar **mörg-u** bækur (weak inflection)  
*these many-WK books*  
 ‘these many books’  
 → CARDINAL reading (= adjectival)

#### 6.1.2.2 Numerals: <Num>

This subcategory comprises the class of cardinal numerals occurring as noun phrase modifiers/determinatives (*one horse, five / twenty horses, two hundred soldiers* ...).

Notice, though, that complex numerals (e.g. “twenty five”) will be labeled as <Num>, even though they consist of more than one word. Especially in Old Norse, multiples of 10 typically involve a noun meaning ‘ten’, which, in turn, typically takes a genitival dependent. In that case, the numeral component ‘ten’ (with which the numeral modifier agrees) will be construed as part of the numeral (even though it is in a sense the “syntactic” head noun), while the “semantic” head noun (denoting the object(s) to be counted) will be marked as a genitival phrase:

- (65) fjórir tugir bænda (Old Icelandic)  
*four.MASC.PL.NOM tens.PL.NOM (MASC) farmers*  
 ~ ‘forty farmers’

This complex expression meaning ‘40’ will be treated as one category, viz. <Num> (remember that the annotation interface displays path notation):

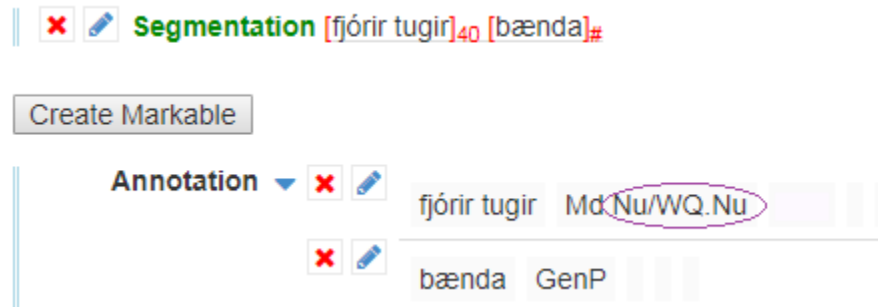


Figure 10: Annotation: *forty farmers*

One complication arises when a complex numeral forms a discontinuous sequence for instance due to coordination:

- (66) [ [ tvær ]<sub>Num</sub> borgir [ og ]<sub>&Num</sub> [ sjö tugu ]<sub>Num</sub> ]<sub>IXP</sub>  
           two      cities and      seven tens  
           ‘seventy two cities’

In this case, both numeral fragments (here: ‘2’ and ‘70’) will be locally given a <Num> label each; more broadly, such constellations will be treated as numeral coordination which will be discussed in Sect. 12.5;

### 6.1.3 Adjectives: <Adj>

<Adj> is the class of “adjectives in the broad traditional sense” (excluding the two above classes). Since this class is still rather diverse, we will divide it further into functional adjectives, and lexical adjectives; those, in turn, are subdivided as follows:

Adj	<<	Func	<<	Defect
			<<	Deter
			<<	Ord
	<<	Lex	<<	PastP
			<<	PresP
			<<	Deriv
			<<	Proto

Table 15: Adjectives, Categories

### 6.1.3.1 “Functional” adjectives: <Func>

By functional adjectives, we mean modifiers with some higher-order, relational or determinative interpretation lacking clear descriptive content. We will distinguish the following sub-classes:

#### 6.1.3.1.1 Defective adjectives: <Defect>

Adjectives belonging to this class **only have comparative and/or superlative, but no positive forms**, or they simply are – formally – comparatives (without actually entailing comparison). Usually, these comparative/superlative forms are based on adverbs or prepositions, and the respective adjectives denote spatial relations or locations (cf. Lat.: *posterior*; *prior*; *anterior* ...; Engl.: *upper*; *outer*; *hinder*; *outmost*, *hindmost*, *utmost*, *next*, *last* ...; Some more examples from Icelandic and German:

- |      |                                     |   |             |
|------|-------------------------------------|---|-------------|
| (67) | • <i>fyrri</i> ‘earlier, former’    | • <i>fyrstur</i> ‘first’                | (Icelandic) |
|      | • <i>ytri</i> ‘outer’               | • <i>ystur</i> ‘outmost’                |             |
|      | • <i>innri</i> ‘inner’              | • <i>innstur</i> ‘innermost’            |             |
|      | • <i>efri</i> ‘upper’               | • <i>efstur</i> ‘upmost’                |             |
|      | • <i>hægri/vinstri</i> ‘right/left’ | • <i>nyrstur</i> ‘northernmost’ . . . . |             |
|      | • <i>hinterer</i>                   | • <i>hinterster</i>                     | (German)    |
|      | • <i>vorderer</i>                   | • <i>oberster</i> . . . . .             |             |
|      | • <i>mittlerer</i>                  | • <i>letzter</i> . . . . .              |             |

This class is thus defined solely by a formal criterion: *comparative and/or superlative, but no positive form*! We will, however, make two stipulations:

- 1.) This does not apply to suppletive forms like *better/best*, *worse/worst* if they can be clearly related to a positive form of some lexical adjective (*good*, *bad*).
- 2.) The adjectives for *left*, *right* (*left eye*, *right hand* ...) will by convention be included here even though, in languages other than Old Norse (*hægri*, *vinstri*), they appear to occur in a positive form.

#### 6.1.3.1.2 Determiner-like adjectives: <Deter>

Adjectives belonging to this group have no descriptive content at all, but rather something akin to a grammatical (determiner) function (like so-called “indefinite demonstratives”), and they tend to occur further away from the noun than descriptive adjectives. Some prototypical examples:

- |      |                |                           |                              |
|------|----------------|---------------------------|------------------------------|
| (68) | • <i>same</i>  | • <i>sami</i>             | • <i>(der)selbe/gleiche</i>  |
|      | • <i>other</i> | • <i>annarr</i>           | • <i>anderer</i>             |
|      | • <i>such</i>  | • <i>slíkur, þvílíkur</i> | • <i>solcher, derartiger</i> |
|      | • <i>only</i>  | • <i>eini</i>             | • <i>einzig</i>              |

(69) • *kinna*, *sorta* ...  
 • *þesskonar*, *einskonar*, *allskonar*, *þessháttar*, *allrahanda* ...

This is the label for ordinal numerals (*first, third, seventh, twenty-second* ...). Notice that, for syntactic and semantic reasons, these are classified here as functional adjectives rather than as a subspecies of numerals (as is often case in traditional descriptive grammars).

By lexical adjectives, we mean adjectives that do have descriptive content. This class will be further subdivided as follows:

(70)

● <i>frozen (river)</i>	● <i>dancing (student)</i>
● <i>fallen (hero)</i>	● <i>rising (taxes)</i>
● <i>destroyed (city)</i>	● <i>falling (leave)</i>
● <i>broken (heart)</i>	● <i>surprising (observation)</i>
● <i>(fully) armed (knight)</i>	● <i>winning (team)</i>
● <i>deleted (file)</i>	● <i>travelling (artist)</i>

- **-ful**: aw-ful, care-ful, power-ful, beauty-ful, deceit-ful ...
- **-ly**: friend-ly, month-ly, dai-ly ...
- **-ish**: devil-ish, prud-ish, Finn-ish, Ir-ish, self-ish ...
- **-able/-ible**: admir-able, deni-able, foresee-able, pot-able, honor-able, sustain-able ...  
aud-ible, incred-ible, ed-ible, percept-ible, invinc-ible ...

- **-some**: *awe-some, bother-some, hand-some, whole-some...*
- **-less**: *home-less, hope-less, need-less, use-less ...*
- etc. ...

As a measure of “productivity” and transparency, we suggest that the respective language should have at least 3-5(?) different and unambiguous attested examples of adjectives derived via the suffix in question in the lexicon/in the extant corpus.

Note furthermore that adjectives involving a prefix will not be included here (instead they will be considered “prototypical”; see next subsubsubsection).

#### 6.1.3.2.6 “Prototypical” adjectives: <Proto>

Finally, this group comprises “normal” or “basic”, i.e. non-derived adjectives like *red, dark, big, nice, loud, fair, cold, hot, real, good, light, super, round, great, fast, poor, fat, slim, high ...* including adjectives with prefixes like *un-(natural), proto-(typical), pre-(nominal) ...* or compounded adjectives *dunkelblau ....* Moreover, we will include all adjectives that are not already captured by one of the above adjectival classes.

#### 6.1.3.2.7 Features – Semantic classes: “AdjSem”

In addition to the features available for all modifiers, if the category label <Lex> or some subspecification is selected, an additional feature becomes activated to annotate semantic properties that only apply to adjectives discussed in Sect. 6.1.3.2:

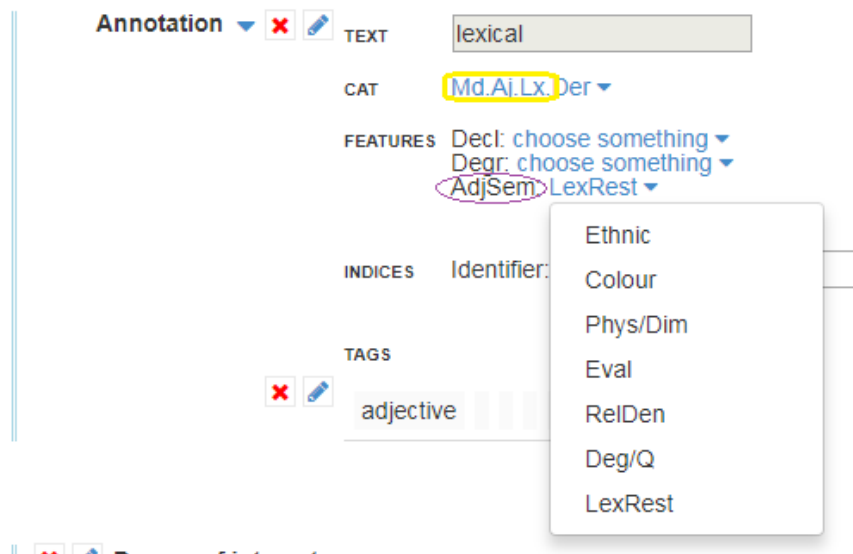


Figure 11: *Semantic features for lexical adjectives*

These will be discussed in Sect. 6.2.3.

## 6.2 Features

It has already been pointed out that some features are available for the modifier class as a whole (see figure 9), while others only apply to a subcategory (figure 11). These features and their values will be addressed in the following.

### 6.2.1 Adjectival “Decl”ension: <Strong> and <Weak>

The feature for adjectival inflection can have the following specifications:

<b>Mod</b>	<<	Strong
	<<	Weak
	<<	Undec
	<<	Zero

Table 16: *Germanic Adjectival Inflection* (“Decl”)

The alternation between the so-called strong and weak inflection of adjectival modifiers is a hallmark of (early) Germanic languages, and application of the values <Strong> and <Weak> as such should be straightforward. There are, however, some special (non-obvious?) considerations that are reflected in the two remaining features <Undec> and <Zero>.

#### 6.2.1.1 Undecidable whether strong or weak: <Undec>

In certain situations, it cannot be established by morpho-syntactic criteria whether a given modifier is strongly or weakly inflected. This undecidability may have different causes:

##### ⇒ Syncretism

For certain case/number/gender values, the inflectional endings for weak and strong forms are identical; examples are dative plural in Old Norse, or ACC.SG.MASC in Modern German:

(71) (Old Norse)

- a. góð.**um**      hestum  
*good.UNDEC horses*  
 → not strong
- b. þessum góð.**um**      hestum  
*these good.UNDEC horses*  
 → not weak

(72) (Modern German)

- a. gut.**en**      Wein  
*good.UNDEC wine*  
 → not strong
- b. den gut.**en**      Wein  
*the good.UNDEC wine*  
 → not weak

We do not speculate what the value **should be** by analogy (<Strong> in the a-examples and <Weak> in the b-examples), but remain agnostic and chose the label <Undec>.

The same goes if strong and weak forms appear identical for phonological reasons; compare Old Norse and Modern Icelandic:

- (73) (Old Norse): <á> = [a:]
- a. **grá** húfa  
grey.UNDEC cap  
/gra:/ + Ø → /gra:/
- b. þessi **grá** húfa  
this grey.UNDEC cap  
/gra:/ + /a/ → /gra:/
- (74) (Modern Icelandic): <á> = [au]
- a. **grá** húfa  
grey.STR cap  
/grau/ + Ø → /grau/
- b. þessi **grá.a** húfa  
this grey.WK cap  
/grau/ + /a/ → /graua/

#### ⇒ Impoverished Inflection

In Old Norse (and Modern Icelandic), comparative forms (but also present participles) display a rather impoverished inflectional paradigm with only two different endings: *-a* for NEUT.SG, *-i* for all other forms. Crucially, it does **not alternate between strong and weak forms**. Compare the positive (75) and comparative (76) forms:

- (75) a. stór.**ar** plöntur  
big.STR plants
- b. þessar stór.**u** plöntur  
these big.WK plants
- (76) a. stær.r.**i** plöntur  
big.COMP.INDEC plants
- b. þessar stær.r.**i** plöntur  
these big.COMP.INDEC plants

Since Old Norse comparatives are identical neither to the strong nor the weak paradigm, and since we do not discern any alternations, this kind of inflection is likewise <Undec>idable.<sup>19</sup>

#### 6.2.1.2 No endings: <Zero>

(OHG / OS!)

In Old High German and Old Saxon, certain cells in the strong paradigm have a double specification: a. an actual strong ending, and b. a zero ending:

	Masc	Fem	Neut
a.) <b>Strong</b>	<i>blint-er</i>	<i>blint-iu</i>	<i>blint-az</i>
b.) <b>Zero</b>	<i>blint-</i>	<i>blint-</i>	<i>blint-</i>

Table 17: Strong and Zero inflection in OHG

We will capture this distinction by assigning the label <Zero> to the non-inflected forms.

<sup>19</sup>In this context, it should be mentioned that some modifiers, while not displaying any alternation, can still be identified as either strong or weak: in Old Norse, all ordinals based on numbers  $\geq 3$  only occur in the weak inflection, while *annarr* ('another; second') only occurs strongly inflected. These will be marked as <Weak> and <Strong> respectively.



## 6.2.2 “Degr”ees of comparison: <Pos>, <Comp>, <Super>

Adjectives have three (morphological) forms to indicate degrees of comparison: positive, comparative and superlative. For these, we will use the following labels:

---

<b>Mod</b>	<<	Pos
	<<	Comp
	<<	Super

---

Table 18: *Forms of Comparison (“Degr”)*

<Pos> is the default (pre-set) value for all modifiers (subcategories of <Mod>), including for modifiers that *never* have any comparative forms like numerals. Note that the labels <Comp> and <Super> have to be assigned also to elements that *only* have comparative and/or superlative forms, i.e. defective adjectives see Sect. 6.1.3.1.1.

## 6.2.3 Adjectival semantics: “AdjSem”

Lexical adjectives, see Sect. 6.1.3.2, can be annotated for semantic properties or for their belonging to a certain lexical class. We will distinguish the following:

---

<b>Lex</b>	<<	Ethnic	↓							
	<<		Color	↓						
	<<			PhysDim	↓					
	<<				Eval	↓				
	<<					RelDen	↓			
	<<						DegQ	↓		
	<<								LexRest	

---

Table 19: *Adjectival Semantic Classes*

The arrangement of the labels and the “down” arrows are meant to indicate a top-down elimination procedure. Given the criteria to be discussed in the following, in many cases, the labels can be straightforwardly assigned; but in some cases, a given modifier may fulfill the criteria of more than one label. In that case the label higher up in table 19 takes priority: . . . . do the criteria for <PhysDim> apply? Then if yes, assign it; if not, do the criteria for <Eval> apply? Then if yes, assign it; if not, do the criteria for <RelDen> apply? Then if yes, assign it; if not . . . .

### 6.2.3.1 “Nationality” adjectives: <Ethnic>

This label is used for adjectives denoting **ethnicity** / “**nationality**”, “**affiliation**”, or **origin**; in other words, adjectives indicating the **belonging to a group or a location**.

This class includes (i) nationality adjectives in a narrow sense, but also adjectives denoting belonging to a city, island or larger cultural sphere, as well as (ii) certain relative terms, and (iii) membership in a religious group:

- (i) *Icelandic, English, French, Nordic/Norse, Scottish, British, Germanic, Teutonic, Manx, Parisian, Oriental, Western, Asian ...*
- (ii) *indigenous, native, local, foreign, alien ...*
- (iii) *christian, pagan, heathen ...*

### 6.2.3.2 Visual properties: <Colour>

This label captures obvious candidates of (i) adjectives denoting **colour and degrees of colouring and brightness**, but also (ii) adjectives expressing **visual surface patterns**. For practical reasons, we will furthermore include (iii) adjectives that are only in a broad or derivative sense colour expressions, but still denote a visual and visible surface property, such as certain weird Old Norse terms specially used for horses. Finally, we will include (iv) adjectives that are more indirectly related to colour like certain participles and adjectives denoting the colour of bodyparts:

- (i) *yellow, black, red, dun, dark, light, pale, blond colourful* (germ.: *bunt*) ...
- (ii) *chequered, speckled, spotted, striped ...*
- (iii) *föxóttur* ‘having a mane differing in colour from the body’; *blésóttur* ‘having a blaze (white spot) on the forehead’; *bleikálóttur* ‘dun with a dark stripe down the back’ etc.
- (iv) *painted, coloured, dyed, unpainted, gray-clad, gilded, red-haired, blue-eyed ...*

### 6.2.3.3 Physical properties and dimensions: <PhysDim>

With this compound label, we annotate (i) adjectives that denote **physical properties** such as shape, material, consistency, smell, taste, touch, temperature, physical / physiological / material states ..., and (ii) adjectives that denote (largely spatio-temporal) **dimensions**, i.e. gradable and measurable properties such as size, height, age, duration, length, width, depth, speed ...:

- (i) *round, triangular, golden, wooden, bloody, hard, soft, rough, sweet, sour, smelly, wet, dry, cold, warm, frozen, closed / open, full / empty, injured, alive / dead, sick / healthy, rotten ...*
- (ii) *big, small, tall, young, new, short, huge, wide, vast, large, narrow, long, brief, deep, low, high, old, slow ...*

### 6.2.3.4 Evaluative adjectives: <Eval>

Adjectives that express an **evaluation**, an (aesthetic, moral, personal, professional ...) assessment, a (more or less) subjective description or characterization, but also adjectives expressing a disposition / attitude / experience, a psychological condition or a mental state will be annotated with this label:

- (i) *beautiful, good, evil, great, famous, dangerous, mean, wise, stupid, angry, lazy, brave, rich, poor, happy, sad, powerful, useful, thrifty, vengeful, strong, weak, cheeky, bold, learned, skillful, well-educated, experienced, insane ...*

### 6.2.3.5 Relational / denominal adjectives: <RelDen>

This label is used for the class of **relational adjectives**, most of which are **denominal** (sometimes even derived from a proper name); they do not denote simple properties, but have a **classificatory / taxonomic function** (i.e. describe a kind of N) or denote an **argument or instrument** in the nominal argument structure (hence sometimes referred to as thematic adjectives). In modern languages, this class includes many Latin loanwords in *-ar/-al*, or Greek ones in *-ic(al)*:

- |      |                                |                             |
|------|--------------------------------|-----------------------------|
| (77) | a. <u>molecular</u> structure  | g. <u>scientific</u> method |
|      | b. <u>religious</u> genocide   | h. <u>economic</u> collapse |
|      | c. <u>solar/nuclear</u> energy | i. <u>fatherly</u> advice   |
|      | d. <u>syntactic</u> analysis   | j. <u>female</u> anatomy    |
|      | e. <u>royal</u> wedding        | k. <u>technical</u> problem |
|      | f. <u>Shakespearian</u> play   | l. <u>tidal</u> wave        |

They can often be paraphrased by a genitival / prepositional phrase ('structure of a molecule' / 'a molecule's structure', 'the method of science', 'a collapse of the economy', 'play by Shakespeare' ...).

They are much more widespread and extensively used in Romance (incl. Latin) than in Germanic;  $A_{relational} + N$  in Romance often corresponds to a compound in Germanic (illustrated here with Modern German):

- |  |  |
|--|--|
| (78) (Spanish)   | (79) (Latin)   |
| a. zapatos deportiv.os<br><i>shoes sporty.MASC.PL</i><br>'sports shoes'<br>'Sportschuhe'   | a. tribus urbana<br><i>district urban</i><br>'urban district'<br>'Stadtbezirk'                                   |
| b. bolsa deportiv.a<br><i>bag sporty.FEM.PL</i><br>'sports bag'<br>'Sporttasche'           | b. domus regia<br><i>house royal</i><br>'royal palace'<br>'Königspalast'   |
| c. pesca ballenera<br><i>fishing whaly</i><br>'whale hunting'<br>'Waljagd/Walfang'         | c. res publica<br><i>thing public</i><br>'republic, state'   |
| d. producción sedera<br><i>production silky</i><br>'silk production'<br>'Seidenproduktion' | d. causa finalis / formalis<br><i>cause final/formal</i><br>'final/formal cause'<br>'Zweckursache / Formursache' |

But they can be found in Germanic; below, some examples from Old Norse and Old High German are given:

- (80) a. löglegur umboðsmaður  
*legal representative*  
 ~ ‘representative before the law’
- b. konunglegt verk  
*royal deed*  
 ~ ‘deed (worthy) of a king’
- c. kvennlegur líkami  
*female body*  
 ~ ‘body of a woman’
- d. kvennlegar listir  
*female arts*  
 ~ ‘arts of/for/by women’
- e. sær dagur  
*sweary day*  
 ~ ‘day when an oath can be taken’  
 (germ.: ‘Schwörtag / Schwurtag’)
- f. sekur skógarmaður  
 ‘guilty forestman (= outlaw)’  
 ~ ‘convicted outlaw’
- (81) a. then hímilisgon drúhtin  
*the heavenly lord*  
 ~ ‘the lord/master of (in) heaven’
- b. chuninglihi giwalt  
*royal force/power*  
 ~ ‘power of a king’

These examples may serve as a guideline. Through our process of elimination, we have already sorted out a large number of potentially problematic cases by the time we reach this label.<sup>20</sup> Thus if a given adjective does not satisfy the criteria for any of the above classes (from <Ethnic> to <Eval>), and at least two of the following questions 1 – 4 can be answered with “YES”, it will be labeled <RelDen>:

1. Is the adjective denominal, i.e. derived from a noun?  
 (in some cases, this may not be obvious because the adjective can be a loanword while the corresponding noun is not used in the respective language: Engl.: *divine* Lat.: *divinus* ⇐ *deus*)
2. Can the adjective in some sense be said to express a possessive, part-whole, or argumental relation with the noun?  
 (*royal castle* ~ ‘castle of (= belonging to) a/the king’; *urban district* ~ ‘district of a city’; *fatherly advice* ~ ‘advice (given) by the father’)
3. Does paraphrasing the adjective require a noun?  
 (can it be paraphrased by a genitive or prepositional phrase? see above)
4. Can A + N, in principle, be rendered as a compound?  
 (see examples (78)/(79) above)

#### 6.2.3.6 Degree / counting / event quantification: <Deg/Q>

This compound label marks adjectives that express **degree or quantification of sorts**: (i) it covers adjectives expressing degree (or extent) along a more or less abstract scale denoted by the noun. With this label, we will also mark adjectives that have some kind of quantificational or numerical function: (ii) multiplicatives and “counting” adjectives, and (iii) adjectives that quantify over events or times (frequency or duration):

<sup>20</sup>In particular, we have already sorted out nationality adjectives, some of which might otherwise be construed as relational (notably, thematic): *the Italian invasion of Albania* ~ ‘the invasion by Italy/the Italians’, and material adjectives, which are usually denominal: *wood-en, stone* (germ.: *stein-ern*) etc.

- (i) *total, complete, absolute, whole, considerable, entire, enough, sufficient, full ...*
- (ii) *multiple, manifold, double, triple ...; numerous, countless, copious ...*
- (iii) *frequent, occasional, rare, sporadic, constant ...; continuous, long-lasting, ongoing, enduring, progressive ...*

Some examples of degree modification:<sup>21</sup>

- |      |  |   |
|------|--|---|
| (82) | a. complete disaster<br>b. total destruction<br>c. absolute power<br>d. great damage | e. full speed<br>f. entire month<br>g. fiskur nógur (ON)<br><i>fish enough/sufficient</i> |
|------|--|---|

Note that for adjectives like *full*, we will make a distinction between a **container** reading vs. a **degree** reading depending on the meaning of the head noun: if the noun denotation entails some scale or extent, the adjective will receive the label “**Deg/Q**”, but if the noun denotes some kind of container (*bottle, cup, jar, box, room ...*), the adjective (*full*) will actually be annotated as “**PhysDim**”; compare:

- |   |  |
|---|--|
| (83) “ <b>Deg/Q</b> ”   | (84) “ <b>PhysDim</b> ”  |
| a. full <b>force</b> / <b>earnest</b> ...<br>b. til fullrar <b>sektar</b><br><i>to full fine/penalty</i><br>‘to the full extent of the law’<br>(= outlawry) | a. full <b>glass</b> / <b>jar</b> / <b>bowl</b> ...<br>b. stórir <b>askir</b> fullir af skyri<br><i>big vessels full of skyr</i> |

Some examples for multiplicatives and counting adjectives:

- |      |   |  |
|------|---|--|
| (85) | a. double whiskey<br>b. numerous soldiers<br>c. a copious / voluminous army | d. countless adventures<br>e. the multiple winner of the award |
|------|---|--|

Some examples for event quantification / temporal modification:

- |      |   |  |
|------|---|--|
| (86) | a. a frequent / sporadic visitor<br>b. constant complaints<br>c. a rare sight | d. long-lasting effect<br>e. his continuous efforts<br>f. an ongoing operation |
|------|---|--|

#### 6.2.3.7 Lexical adjectives that cannot be classified: <LexRest>

Lexical adjectives that do not fall into any of the above classes will be given this default label. We will expect, for instance, to find here participles that may have lexical semantic properties like event / aspectual structure, but cannot easily be characterized in terms of the above classes (e.g. *defeated, fighting ...*), but also adjectives expressing (non-)identity (*similar, different ...*).

<sup>21</sup>Note that we are really talking about adjectives themselves that modify nouns, not about degree adverbials that modify adjectives (*very strong, incredibly stupid ...*) on which see Sect. 11.1.

### 6.3 Index: “INDICES”

Figure 9 above illustrates the field “INDICES”, which is a potential option for all elements of the modifier category. This is relevant only if the IXP contains another element that acts as a complement or an (adverbial) modifier to the (adjectival) modifier as in the following examples:

- (87)    a. a very strong man                                  c. a beautiful woman *in appearance*  
       b. an *incredibly* stupid idea                      d. a tricky problem *to solve*

In these cases, the adjectival modifier will be co-indexed with the adverb/complement; this will be illustrated better in Sect. 11.1.1 where the latter will be discussed.

#### 6.4 Underspecified modifiers: LEMMA + <Mod>

For a handful of modifiers it is not entirely clear to which subcategory they should belong, for instance the pronominal adjective SELF or the numeral “one” in the meaning “alone”:

- (88) a. [ (sjálfr) konungr-inn (sjálfr) ]  
 SELF.STR *king-the* SELF.STR  
 “the king himself, the king personally ...”; “even the king ...”  
 b. [ konungr-inn einn ]  
*king-the one.STR*  
 “the king alone ...; only the king ...”

These modifiers will simply be given the general category label **<Mod>** without subspecification. The only additional property to be annotated in such cases is the inflection (Sect. 6.2.1).

Apart from the two modifiers mentioned above (or rather, their manifestations in the individual languages), by convention, we stipulate that the modifier *mikill* (ON) and *micel* (OE) be treated in this way, and only assigned **<Mod>**.

## Part II

# CAT(egories): [Core Phrasal / Clausal]

In this second block, we will address the *core phrasal* categories, in the order displayed below:

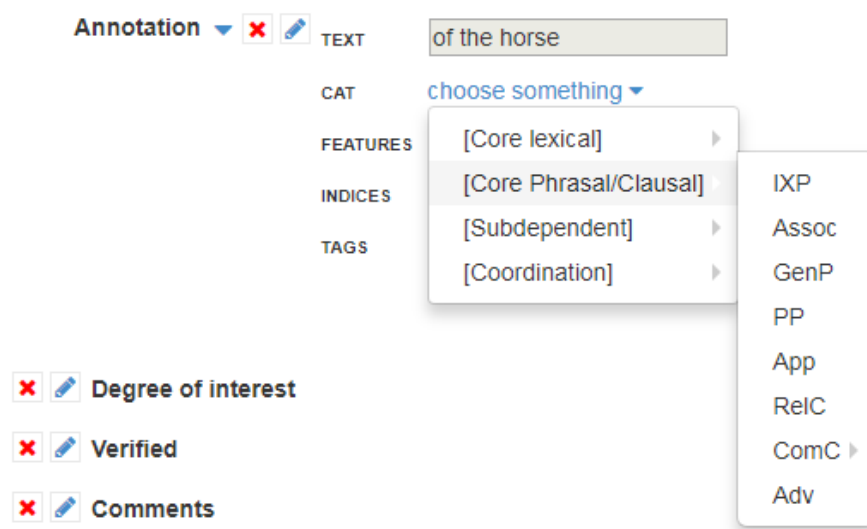


Figure 12: Core Phrasal Categories

## 7 Noun phrase in noun phrase: <IXP>

By definition, every entry in the database is an IXP, but just like noun phrases may contain other noun phrases, an IXP may contain another IXP as a component. In some cases, these will have their own specific labels, notably <GenP> and <App> (to a lesser extent <Adv>), see Sects. 9, 10.2, 10.5. In a few other cases, we do not have a specific label for those noun phrases and just use the general category label <IXP>. One of these cases was already mentioned in Sect. 3.2.1.3: in Gothic, we find dative noun phrases that act as a complement to the head noun, in which case that noun phrase will be given the category label <IXP>. Example (89) produces the macro IXP (90):

- (89) ip saei maurþreip̃ skula wairþip̃ stauai  
 CONJ who kills debtor becomes [court]-DAT

- (90) [ [skula]<sub>Com</sub> . . . [stauai]<sub>IXP</sub> ]<sub>IXP</sub>  
 ~ ‘a debtor to the court’

A more important application for this label, however, is found in noun phrase coordination where the macro IXP structure is essentially [ <IXP> <&> <IXP> ]. This will be discussed in more detail in the section on coordination, Sect. 12.1.

## 8 Adjectival “associates”: <Assoc>

Most adjectives will belong to the <Mod> category, but we will, in addition, introduce a label for a small (sub-)set of postnominal adjectival constituents, which will simply be referred to “adjectival associates” and given the categorial label <Assoc>. Adjectival associates can otherwise be (or have been) characterized as

- peripheral modifiers,
- prosodically non-integrated adjectival phrases,
- adjectival appositives,
- reduced relative clauses

They are

- distinct prosodic units and clearly phrasal  
(comma intonation; comma sometimes indicated in print)  
(they have adverbial modifiers or complements or other material accompanying them, or are A & A coordinations)
- necessarily predicative  
(can always occur, with the same meaning, with a copula verb)  
(notably, they can be paraphrased as predicate in an appositive relative clause)

Some relevant examples are given below:

- (91) a. Skarphéðinn átti [ hest brúnan, **fjögurra vetra gamlan**,  
Skarphéðinn had horse brown four years old  
**bæði mikinn og sjálegan** ]  
both big and handsome  
‘Skarphéðinn had a brown horse, which was four years old, and which was both big and handsome’
- b. Hver er [ sá hinn mikli og hinn feiknlegi er fjórir menn ganga fyrri,  
Who is that the big and the ugly whom four men go before  
**fölleitur og skarpleitur**, **ógæfusamlegur og illmannlegur** ] ?  
pale-faced and sharp-featured unlucky and wicked (-looking)  
‘Who is that big and ugly guy, before whom four men go, (who is) pale-faced and sharp-featured, (and who appears) unlucky and wicked?’

The underlined adjectives in these examples are part of the core noun phrase and will hence be labeled <Adj>. On the other hand, the adjectival constituents in bold-print are more peripheral to the noun phrase, more loosely “associated” with the noun phrase, and will hence be labeled <Assoc> here. Differently from <Mod/Adj> elements, the internal complexity of an adjectival associate will not be annotated.



To a certain extent, the distinction between regular modifiers and “peripheral modifiers” will be intuitively clear. Nonetheless, we will provide some explicit guidelines as to when an adjectival constituent will be annotated as <Adj> and when as <Assoc>:

### 8.1 Prenominal adjectival sequences: $A_n \dots A_3 A_2 A_1 N$

$A_n \rightarrow \langle \text{Adj} \rangle$

$A_3 \rightarrow \langle \text{Adj} \rangle$

$A_2 \rightarrow \langle \text{Adj} \rangle$

$A_1 \rightarrow \langle \text{Adj} \rangle$

(92) beautiful<sub>A<sub>n</sub></sub> . . . . big<sub>A<sub>3</sub></sub> red<sub>A<sub>2</sub></sub> Icelandic<sub>A<sub>1</sub></sub> horse

⇒ We will rarely find more than two prenominal adjectives, though.

### 8.2 Flanked adjectives: $A_1 N A_2$

a. Normally:

$A_2 \rightarrow \langle \text{Adj} \rangle$

$A_1 \rightarrow \langle \text{Adj} \rangle$

(93) gráklæddur<sub>A<sub>1</sub></sub> maður mikill<sub>A<sub>2</sub></sub>  
*grey-clad man tall*

⇒ This includes cases where  $A_2$  is accompanied by an adverbial (<ModMod>, see Sect. 11.1) or a complement (<ModCom>, see Sect. 11.2:

(94) stórir<sub>A<sub>1</sub></sub> askar fullir af skyri<sub>A<sub>2</sub></sub>  
*big vessels full of skyr*

b. But not if  $A_2$  is an adjectival coordination:

$A_1 \rightarrow \langle \text{Adj} \rangle$

$A_2 \rightarrow \langle \text{Assoc} \rangle$

(95) vænn<sub>A<sub>1</sub></sub> maður, mikill og sterkur<sub>A<sub>2</sub></sub>  
*handsome man tall and strong*

### 8.3 (One) Postnominal adjective: $N A_1$

$A_1 \rightarrow \langle \text{Adj} \rangle$

(96) maður mikill<sub>A<sub>1</sub></sub>  
*man tall*

This includes cases where  $A_1$  is accompanied by an adverbial (<ModMod>, see Sect. 11.1) or a complement (<ModCom>, see Sect. 11.2:

(97) maður mikill vexti<sub>A<sub>1</sub></sub>  
*man tall growth.DAT*

## 8.4 Postnominal adjectival sequences: N A<sub>1</sub> A<sub>2</sub> ...

⇒ IF A<sub>1</sub>, A<sub>2</sub> ... are “simple” (without adverbial or complement)

A<sub>1</sub> → <Adj>

A<sub>2</sub> → <Adj>

- (98) systir samfæðra<sub>A1</sub> skilgeten<sub>A2</sub> (Old Norwegian)  
*sister same-father trueborn*  
‘sister, trueborn of the same father’

⇒ IF A<sub>2</sub> is complex (with adverbial or complement, or adjectival coordination)

A<sub>1</sub> → <Adj>

A<sub>2</sub> → <Assoc>

- (99) hest brúnan<sub>A1</sub> fjögurra ára gamlan<sub>A2</sub> (Old Icelandic)  
*horse brown four years old*  
‘brown horse, which is four years old’

⇒ Any adjectival constituent following an associate is also associate.

## 8.5 Prenominal adjectival coordination: A<sub>1</sub> & A<sub>2</sub> N

A<sub>1</sub> → <Adj>

A<sub>2</sub> → <Adj>

- (100) góð<sub>A1</sub> og stór<sub>A2</sub> útibúr  
*good and big out-door-storehouses*

## 8.6 Cross-nominal adjectival coordination: A<sub>1</sub> N & A<sub>2</sub>

A<sub>1</sub> → <Adj>

A<sub>2</sub> → <Adj>

- (101) dýrlegur<sub>A1</sub> maður og trúfastur<sub>A2</sub>  
*glorious man and truthful*

This includes cases where A<sub>1</sub> or A<sub>2</sub> is complex, notably, when A<sub>1</sub> is accompanied by an adverbial or complement across the noun:

- (102) a. mikill<sub>A1</sub> maður vexti og styrkur<sub>A2</sub>  
*big man growth.DAT and strong*  
‘a tall and strong man’  
b. ættstór<sub>A1</sub> maður og mikill<sub>A2</sub> fyrir sér  
*highborn man and great before self*  
‘a highborn and powerful man’

## 8.7 Postnominal adjectival coordination: N A<sub>1</sub> & A<sub>2</sub>

A<sub>1</sub> → <Adj>

A<sub>2</sub> → <Adj>

- (103) maður málsnjallur<sub>A<sub>1</sub></sub> og máldjarfur<sub>A<sub>2</sub></sub>  
*man eloquent and outspoken*

## 8.8 Adjectival coordination + additional adjectival material

⇒ a.: N A<sub>1</sub> & A<sub>2</sub> “AP”<sup>22</sup>

⇒ b.: A<sub>1</sub> N & A<sub>2</sub> “AP”

⇒ c.: A<sub>1</sub> & A<sub>2</sub> N “AP”

A<sub>1</sub> → <Adj>

A<sub>2</sub> → <Adj>

“AP” → <Assoc>

- (104) a. maður illgjarn<sub>A<sub>1</sub></sub> og lyginn<sub>A<sub>2</sub></sub>, **ódæll og illur viðureignar**<sub>AP</sub>  
*man malicious and mendacious unpleasant and ill to-deal-with*  
 b. mikill<sub>A<sub>1</sub></sub> maður vexti og styrkur<sub>A<sub>2</sub></sub>, **syndur sem selur**<sub>AP</sub>  
*big man growth.DAT and strong swim-able like seal*  
 ‘a tall and strong man, who could swim like a seal’  
 c. the successful<sub>A<sub>1</sub></sub> and popular<sub>A<sub>2</sub></sub> actor, **best known for his performance as X**<sub>AP</sub>

⇒ There can only be one adjectival coordination structure per IXP<sup>23</sup>

⇒ Left-to-right precedence: the leftmost coordination structure – regardless of pre-nominal, postnominal, or across-nominal – will be construed as genuine adjectival coordination (<Adj> & <Adj>), whereas any following coordination structure will be labeled <Assoc>, see for instance (104a).

<sup>22</sup>Here “AP” stands for a complex adjectival expression:

{A<sub>3</sub> + adverbial};

{A<sub>3</sub> + complement};

{A<sub>3</sub> & A<sub>4</sub>}

{A<sub>3</sub> . . . . }.

<sup>23</sup>Notice that, of course, *one* adjectival coordination structure can involve *more than two* adjectives:

‘a tall<sub>A<sub>1</sub></sub> **and** strong<sub>A<sub>2</sub></sub> **and** brave<sub>A<sub>3</sub></sub> **and** noble<sub>A<sub>4</sub></sub> man’.

## 9 Genitive phrases: <GenP>

By genitive phrase, we mean a non-pronominal noun phrase in the (morphological) genitive case that forms a dependent nominal constituent within a larger IXP. It may occur in prenominal or postnominal position, and it may denote a possessor or an argument or possibly have yet another function:

- (105) a. [ bíll [ **Jóns** ]<sub>GenP</sub> ]<sub>IXP</sub>  
*car Jón.GEN*  
 b. [ [ **Jóns** ]<sub>GenP</sub> bíll ]<sub>IXP</sub>  
*Jón.GEN car*  
 ⇒ both: ‘Jón’s car’ = possessor
- (106) [ eyðilegging [ **Sesars** ]<sub>GenP</sub> á borginni ]<sub>IXP</sub>  
*destruction Cesar.GEN on city.the*  
 ⇒ ‘Cesar’s destruction of the city’
- (107) [ eyðilegging [ **borgarinnar** ]<sub>GenP</sub> ]<sub>IXP</sub>  
*destruction city.the.GEN*  
 ⇒ ‘the destruction of the city / the city’s destruction’
- (108) [ stærsti hluti [ **arfsins** ]<sub>GenP</sub> ]<sub>IXP</sub>  
*biggest part heritage.the.GEN*  
 ⇒ ‘the biggest part of the heritage’
- (109) [ starfsmaður [ **mánaðarins** ]<sub>GenP</sub> ]<sub>IXP</sub>  
*employee month.the.GEN*  
 ⇒ ‘(the) employee of the month’

Being a noun phrase, a genitive phrase is potentially itself an IXP receiving an entry into the database of its own with its own index (see also Sect. 3.2.1.3 on “OfN”) – provided it is “interesting” enough (see Sect. 2) as in the following cases:

- (110) a. [ Reiði [ **hins mikla konungs** ]<sub>GenP(=IXP<sub>2</sub>)</sub> ]<sub>IXP<sub>1</sub></sub>  
*anger [the great king]-GEN*  
 ‘the anger of the great king’  
 b. [ Skoðun [ **margra góðra manna** ]<sub>GenP(=IXP<sub>2</sub>)</sub> ]<sub>IXP<sub>1</sub></sub>  
*opinion [many good men]-GEN*  
 ‘the opinion of many good men’  
 c. að [ sögn [ **fróðra manna** ]<sub>GenP(=IXP<sub>2</sub>)</sub> ]<sub>IXP<sub>1</sub></sub>  
*at report [learned men]-GEN*  
 ‘according to the report of learned men’

Certain complex phrases comprising several genitives involving various kinds of hidden or overt coordination will be considered one genitive phrase (and hence one IXP) relative to the macro IXP<sup>24</sup> (see also chapter 12 on IXP coordination):

<sup>24</sup>Of course the genitive phrase can itself be complex in such a way as to comprise yet another IXP:

- (1) [ viðskipti [ Þórðar og [ hins ríka jarls ]<sub>IXP<sub>3</sub></sub> ]<sub>GenP(=IXP<sub>2</sub>)</sub> ]<sub>IXP<sub>1</sub></sub>  
*dealings Þórður.GEN and [the mighty jarl]-GEN*

- (111) a. [ bíllinn [ **þeirra Jóns** ]<sub>GenP(=IXP<sub>2</sub>)</sub> ]<sub>IXP<sub>1</sub></sub>  
*car.the [they Jón]-GEN*  
 ‘the car of Jón and someone else’
- b. [ húskarl [ **Njál** **og Bergþóru** ]<sub>GenP(=IXP<sub>2</sub>)</sub> ]<sub>IXP<sub>1</sub></sub>  
*manservant Njáll.GEN and Bergþóra.GEN*  
 ‘Njáll and Bergþóra’s manservant’
- c. [ viðskipti [ **Þórðar** **og Bjarna** ]<sub>GenP(=IXP<sub>2</sub>)</sub> ]<sub>IXP<sub>1</sub></sub>  
*dealings Þórður.GEN and Bjarni.GEN*  
 ‘the dealings of (= “between”) Þórður and Bjarni’

## 9.1 Features – Semantics of genitival relation: “GenPRole”

Genitivals<sup>25</sup> can have different functions and denote various semantic roles. We will mark the following:

<b>GenP</b> / <b>Poss</b>	<<	Poss
	<<	Kinship
	<<	Part
	<<	OArg
	<<	Other

Table 20: *Genitival semantic features*

### 9.1.1 Actual possession / ownership: <Poss>

This label is given to a genitival if its relation with the head noun can be characterized as **material possession / ownership**, and the referent of the genitival as **possessor / owner**. Notice that e.g. the Saga literature presupposes some kind of slavery: servants can be sold, bought and owned such that a human being is a potential possession.<sup>26</sup> Two examples of an owner in this sense are given below:

- (112) a. hestur / sverð **konungsins**                      b. þræll **Hallgerðar**  
*horse sword king.GEN*                                      *slave Hallgerður.GEN*  
 ‘the king’s horse / sword’                                      ‘slave owned by Hallgerður’

Anything that can be characterized as abstract possession (*my idea*), does not belong here (but will be treated as <Other>, see below).

<sup>25</sup>In this subsection 9.1, we will use the label *genitival* as a cover term for both pronominal possessives and non-pronominal genitive phrases, i.e. the categories <Poss> and <GenP> since both can be annotated for the same semantic properties, see Sect. (5.5.1, with the same criteria.

<sup>26</sup>Thus the head noun denoting the possessee is labeled either <Anim> or <Tang>; see Sect. 4.2.

### 9.1.2 Kinship relations: <Kinship>

A kinship relation obtains iff (i) the *head noun* (<Com>) is a kinship term like *father*, *sister*, *son*, *grandmother* ... and (ii) the *genitival* denotes an animate (human) being. Criterion (i) applies narrowly in the case of blood relation, but we will include here cases of “acquired” kinship as well, which includes pre-/postmarital companions (*fiancé(e)*, *husband*, *wife*) plus baggage (*father* / *sister* / *son* ...-in-law), and adopted family (*foster father* / *mother* / *brother* / *daughter* ...):

- |  |   |
|--|---|
| <p>(113) a. sonur <b>konungsins</b><br/>                   <i>son king.GEN</i><br/>                   ‘the king’s son’</p> <p>b. minn fóstbróðir<br/>                   <i>my foster brother</i></p> | <p>c. húsbóndi <b>Hallgerðar</b><br/>                   <i>husband Hallgerður.GEN</i><br/>                   ‘Hallgerður’s husband’</p> <p>d. húsbóndi <b>hennar</b><br/>                   <i>husband she.GEN</i><br/>                   ‘her husband’</p> |
|--|---|

NB: IXPs comprising a genitival with the feature label <Kinship> will be a proper subset of those IXPs where the head noun is tagged with the label <Rel> because kinship terms are a subset of relational nouns; see Sect. 4.3.4. In other words, <Kinship> on the genitival entails <Rel> on the head noun (<Com>).

### 9.1.3 Partitivity: <Part>

We will use this label for genitivals denoting a **partitive** relation. We will define partitivity narrowly such that the label only applies to genitivals that

- (i) are dependent on a **quantificational or numeral expression**, or
- (ii) express a **domain restriction with superlatives**:

- (114) a. [ fjórir tugir [ **bænda** ]<sub>GenP</sub> ]<sub>IXP</sub>  
           *four tens farmers.GEN*  
           ‘fourty farmers’ (cf. Sect. 6.1.2.2)
- b. [ margt [ **röskra manna** ]<sub>GenP</sub> ]<sub>IXP</sub>  
           *much [vigorous men]-GEN*  
           ‘many vigorous men’
- (115) [ vitr.astur maður á Íslandi [ **þeirra er eigi voru forspáir** ]<sub>GenP</sub> ]<sub>IXP</sub>  
           *wisest man on Iceland they.GEN who not were clairvoyant*  
           ‘the wisest man on Iceland amongst those who were not clairvoyant’

We will explicitly exclude genitivals that are dependent on a noun such that the construction denotes a part-whole relationship like *chapter of the book*, *part of the problem* ...; for those cases, see Sect. 9.1.5 below.

### 9.1.4 Argumental relations: <OArg>

We will use this label for genitivals that denote participants in the nominal argument structure (traditionally called *genetivus subjectivus* and *genetivus objectivus*), and can be said to receive thematic roles:

- (116) a. [ eyðilegging [ **konungsins** ]<sub>GenP</sub> á borginni ]<sub>IXP</sub>  
           destruction king.the.GEN on city.the  
           ⇒ the king destroys (→ agent)
- b. [ eyðilegging [ **borgarinnar** ]<sub>GenP</sub> ]<sub>IXP</sub>  
           destruction city.the.GEN  
           ⇒ the city is destroyed / (somebody) destroys the city (→ patient/theme)
- c. [ Reiði [ **konungsins** ]<sub>GenP</sub> ]<sub>IXP</sub>  
           anger [king.the]-GEN  
           ⇒ the king is angry / the king experiences anger (→ experiencer)

While the genitival in (116) receives the semantic feature <OArg>, the corresponding head noun will (normally) be classified as a dynamic noun and receive the semantic feature <Dyn>, see Sect. 4.2.3. But the head noun may just as well be a *nomen agentis* denoting both the event and the agent by itself while the genitival has a patient / theme role:

- (117) a. [ the destroyer [ **of the city** ]<sub>GenP</sub> ]<sub>IXP</sub>  
           ⇒ the city is destroyed / (s/he) destroys the city (→ patient/theme)
- b. [ the author [ **of the declaration** ]<sub>GenP</sub> ]<sub>IXP</sub>  
           ⇒ the declaration is authored / (s/he) authors the declaration (→ patient/theme)

Given our criteria, in this case, the genitival in (117) will still receive the label <OArg>, but the head noun will be considered a relational noun and tagged as <Rel>, see Sect. 4.3.4.

⇒ Clearly, the status of the head noun (does it have argument structure?) is decisive in determining whether a dependent genitival will be considered an argument or not. We will hinge this upon an affirmative answer to the following question:

**Does the IXP allow a verbalized paraphrase such that the genitival corresponds to the subject or object, and the head noun corresponds to the verbal expression (the predicate) ?** (cf. examples (116)/(117))

Of course, this is most obviously the case with transparently de-verbal and de-adjectival head nouns. However, we will consider a handful of head nouns here that are not derivationally related to a verb or adjective, but have a clear argument structure in the above sense:

- (118) a. [ [ **his** ]<sub>Poss</sub> crime ]<sub>IXP</sub>  
           ⇒ he comits a crime (→ agent)
- b. [ the theft [ **of the jewelry** ]<sub>GenP</sub> ]<sub>IXP</sub>  
           ⇒ the jewelry is stolen / (somebody) steals the jewelry (→ patient/theme)

### 9.1.5 Rest category: <Other>

This is the label for **genitivals that are not captured by any of the above classes**, often ones denoting abstract relations that are not easy to characterize, for instance:

- (119) a. [ starfsmaður [ **mánaðarins** ]<sub>GenP</sub> ]<sub>IXP</sub>  
           employee    month.the.GEN  
       b. [ Lied [ **der Lieder** ]<sub>GenP</sub> ]<sub>IXP</sub>  
           song    [the songs]-GEN

Besides, we will also find genitivals here that are dependent on relational nouns other than kinship terms (Sect. 9.1.2) and nomina agentis (Sect. 9.1.4) for instance office terms and titles, but also those that express part-whole relationships, inalienable possession and inherent properties:

- (120) a. the archbishop of Canterbury  
       b. **Denmark's** king / the king of Denmark  
       (121) a. a part / component / aspect ... of X  
               b. a chapter of the book / an episode of the show  
               c. roof of the house  
               d. **the captain's** nose  
       e. með [ öllum vexti [ **es** ]<sub>GenP</sub> ]<sub>IXP</sub>  
           with all    growth    e.GEN  
           “with the full shape of (the letter) ‘e’ ”

Here the head noun will be tagged as <**Rel**>ational (see Sect. 4.3.4), while the genitive will receive the (GenPRole) feature <**Other**>.

## 9.2 Tags

Genitive phrases can be tagged with the following two labels:

<b>GenP</b>	<<	Def
<b>GenP</b>	<<	Animate

Table 21: *Genitive Tags*

### 9.2.1 Optional definiteness marking: <Def>

Differently from the proper names and determiners (Sects. 4.3.2 and 5), GenPs are not inherently/categorically definite. A GenP will be tagged as <**Def**> *iff it contains at least a **proper name** or a **definite determiner** (including a head noun carrying a **suffixed article** in the Scandinavian languages) or a **weakly inflected modifier**!*



### 9.2.2 Animate referent: <Animate>

A GenP will be tagged as <Animate> if it denotes a **living being**; thus it can comprise either a common noun denoting a person or an animal or a proper name:

- (122) a. hestur **konungsins** / **stelpunnar**                      c. beinagrind **hestsins**  
           horse king.GEN    girl.GEN                                      skeleton horse.the.GEN  
       b. **trúhtenes** kechôse                                      d. Treue **eines Hundes**  
           Lord.GEN speech    loyalty [a dog]-GEN

⇒ One restriction: We will only use this tag for GenPs based on individual terms for persons or animals; we will not use it for collective terms like *family*, *group*, *army*, *congregation* . . .; *cattle*, *flock*, *herd* . . . (see also Sect. 4.2.1.1).

## 10 Other modifiers, phrasal and clausal elements

In addition to the items discussed so far, noun phrases may also be inhabited by a host of other creatures with largely modificational function. We will distinguish the following:

<b>PP</b>		(IXP-internal) Prepositional phrase
<b>App</b>		(IXP-internal) Apposition
<b>RelC</b>		Relative clause
<b>ComC</b>	<<	<b>Finite</b> Finite complement clause
	<<	<b>Non-finite</b> Non-finite complement clause
<b>Adv</b>		(IXP-internal) Adverbial

Table 22: Other phrasal and clausal IXP-internal modifiers, Categories

## 10.1 Prepositional phrases: <PP>

<PP> is the label for any noun phrase internal prepositional phrase that is **dependent on the head noun** and thus an **immediate constituent of the IXP**; it may be an actual modifier or an argument of the noun:

- (123) a. [ the cat [ **in the hat** ]<sub>PP</sub> ]<sub>IXP</sub>  
 b. [ the trouble [ **with Tribbles** ]<sub>PP</sub> ]<sub>IXP</sub>  
 c. [ a talk [ **about this topic** ]<sub>PP</sub> ]<sub>IXP</sub>  
 d. [ a talk [ **with his psychiatrist** ]<sub>PP</sub> ]<sub>IXP</sub>
- (124) [ eyðilegging [ Sesars ]<sub>GenP</sub> [ **á borginni** ]<sub>PP</sub> ]<sub>IXP</sub>  
*destruction Cesar.GEN on city.the*  
 ‘Cesar’s destruction of the city’
- (125) a. [ spengur [ **af gulli** ]<sub>PP</sub> ]<sub>IXP</sub>  
*spangles of gold*  
 b. [ hólmganga [ hans ]<sub>Poss</sub> [ **við Björn** ]<sub>PP</sub> ]<sub>IXP</sub>  
*duel his with Björn*  
 ‘his duel with Björn’

⇒ Note that the criterion “dependent on the noun” is crucial, for there are also noun phrase internal PPs that are **dependent on an adjectival modifier**, see Sect. 11.2.1. Those will also receive the label <PP> (there is a formal difference: PP as a complement of the adjective is a subdependent category: <ModCom.PP>). It is therefore important to examine the status of the PP before assigning a label.

## 10.2 What’s <App>? – Appositions-2

In Sect. 3.2.3, we already discussed appositionity as a global IXP property, and illustrated how to keep it separate from IXP-internal appositions. Here we will reiterate some points and crucially focus on the latter. <App> is the label given to noun phrase internal appositions, by which we mean all sorts of **titles, epithets, bynames, nicknames and descriptions ...** that occur as attribute to the head noun within one noun phrase. In the relevant cases, the noun phrase (IXP) contains more than one nominal, all of which agree at least in case, and one of which is usually a proper name. We established the convention that here **the proper name is categorically the head noun** (<Noun>) while the other nominal(s) will be labeled <App>. In this context, it should be emphasized that, while there can only be one head noun, there may be several appositions, both pre- and postnominally:

- (126) a. [ [ Alfred ]<sub>Noun</sub> , [ **my beloved brother** ]<sub>App</sub> ]<sub>IXP</sub>  
 b. [ [ **my dear brother** ]<sub>App</sub> [ Alfred ]<sub>Noun</sub> ]<sub>IXP</sub>  
 c. [ [ Richard ]<sub>Noun</sub> , [ **the good king** ]<sub>App</sub> ]<sub>IXP</sub>  
 d. [ [ **the good king** ]<sub>App</sub> [ Richard ]<sub>Noun</sub> ]<sub>IXP</sub>  
 e. [ [ **king** ]<sub>App</sub> [ Richard ]<sub>Noun</sub> [ **the Lionheart** ]<sub>App</sub> ]<sub>IXP</sub>  
 f. [ [ **good king** ]<sub>App</sub> [ Richard ]<sub>Noun</sub> [ **the Lionheart** ]<sub>App</sub> ]<sub>IXP</sub>

- (127) a. [ [ **virðuglegur faðir** ]<sub>App</sub> [ **herra** ]<sub>App</sub> [ **Árni** ]<sub>Noun</sub> [ **biskup** ]<sub>App</sub> ]<sub>IXP</sub>  
*respectable father lord Árni bishop*
- b. [ [ Haraldur ]<sub>Noun</sub> [ **konungur** ]<sub>App</sub> [ **hinn hárfagri** ]<sub>App</sub> ]<sub>IXP</sub>  
*Haraldur king the hairfair*

For those instances where the relevant IXP fulfills the criteria (several nominals that agree in case) except that it does **not contain a proper name** – this will typically be an accumulation of titles and kinship terms – by convention, the **first nominal will be the head noun, and the subsequent nominal(s) the apposition(s)**:

- (128) a. [ my [ lord ]<sub>Noun</sub> , [ **the king** ]<sub>App</sub> ]<sub>IXP</sub>  
b. [ the [ king ]<sub>Noun</sub> , [ **my lord** ]<sub>App</sub> ]<sub>IXP</sub>  
c. [ the [ king ]<sub>Noun</sub> , [ **my lord and master** ]<sub>App</sub> ]<sub>IXP</sub>  
d. [ my [ father ]<sub>Noun</sub> , [ **the king** ]<sub>App</sub> ]<sub>IXP</sub>  
e. [ the [ king ]<sub>Noun</sub> , [ **my father** ]<sub>App</sub> ]<sub>IXP</sub>  
f. [ my [ sister ]<sub>Noun</sub> , [ **the duchess of Northumberland** ]<sub>App</sub> ]<sub>IXP</sub>

Recall that the Apposition may itself constitute a noun phrase of interest, and hence be a prospective IXP (see Sect. 3.2.3). In this case – as an IXP – it will have the *syntactic function* <App> and the category label <IXP>, not the *category label* <App>.

### 10.2.1 Tag – No overt noun: <NoN>

Usually, the apposition contains (or consists exclusively of) an overt noun, but there is also a rather common pattern of epithets consisting of article + adjective, and we even find instances of epithets merely consisting of an adjective, both strongly and weakly inflected:

- (129) a. [ [ Alexander ]<sub>Noun</sub> , [ **the Great** ]<sub>App</sub> ]<sub>IXP</sub>  
b. [ [ Philip ]<sub>Noun</sub> , [ **the Fair** ]<sub>App</sub> ]<sub>IXP</sub>
- (130) a. [ [ Haraldur ]<sub>Noun</sub> [ **hinn hárfagri** ]<sub>App</sub> ]<sub>IXP</sub>  
*Haraldur the hairfair*
- b. [ [ Eiríkur ]<sub>Noun</sub> [ **hinn rauði** ]<sub>App</sub> ]<sub>IXP</sub>  
*Eiríkur the red*
- c. [ [ Hákon ]<sub>Noun</sub> [ **herðibreiðr** ]<sub>App</sub> ]<sub>IXP</sub>  
*Hákon shoulder-broad.STR*
- d. [ [ Erik ]<sub>Noun</sub> [ **láspe och halte** ]<sub>App</sub> ]<sub>IXP</sub>  
*Erik lisp.WK and lame.WK*

In order to indicate the absence of a(n overt) noun the apposition will be tagged with the feature <NoN>:

App	<<	NoN
-----	----	-----

Table 23: Tag: Apposition does not contain (overt) noun

### 10.3 Relative clauses: <RelC>

<RelC> is the label for **finite relative clauses** usually introduced by a relative pronoun / particle. It covers both **restrictive and appositive relative clauses**. Moreover, it includes adverbial, notably, **temporal, spatial, causal ... clauses** – provided they express a specification of the head noun (rather than act as sentential adverbial):

- (131) a. [ that hominid [ **who discovered how to start a fire** ]<sub>RelC</sub> ]<sub>IXP</sub> was a genius  
 b. [ my sister, [ **who is a skilled artist** ]<sub>RelC</sub> ]<sub>IXP</sub>, has painted many marvelous pieces  
 c. [ the place [ **where I lived** ]<sub>RelC</sub> ]<sub>IXP</sub>  
 d. [ the reason [ **why I left** ]<sub>RelC</sub> ]<sub>IXP</sub>  
 e. [ the day [ **when I returned** ]<sub>RelC</sub> ]<sub>IXP</sub>  
 f. [ the way [ **how I want it to be** ]<sub>RelC</sub> ]<sub>IXP</sub>

We will also include examples that lack an overt head noun:

- (132) a. [ he [ **who must not be named** ]<sub>RelC</sub> ]<sub>IXP</sub>  
 b. [ *sá* [ **er/sem gerði það** ]<sub>RelC</sub> ]<sub>IXP</sub>  
     *that REL.PRT did that*  
     ‘the one / he who did that’

### 10.4 Complement clauses: <ComC>

The label <ComC> is used for clauses that form a **complement of the head noun**. We will distinguish between finite and non-finite clauses.

#### 10.4.1 Finite complement clauses: <Finite>

Like relative clauses, complement clauses are dependent on the head noun. However, differently from those, complement clauses are clauses that form a **complement to some propositional noun** (*allegation, claim, proposition, idea, belief, thought, opinion, decision, choice, hope ...*) introduced by complementizers like “that” / “dass” / “að” ... In many cases there exists a corresponding verbal construction (*assert that, claim that, believe that ...*). For finite complement clauses, we will use the cat<sup>1</sup> label <Finite>:

- (133) a. [ the philosopher’s assertion [ **that being is and non-being is not** ]<sub>Finite</sub> ]<sub>IXP</sub>  
 b. [ the misguided belief [ **that IXPs cannot be annotated properly** ]<sub>Finite</sub> ]<sub>IXP</sub>  
 c. [ the decision [ **that the country should be invaded** ]<sub>Finite</sub> ]<sub>IXP</sub>  
 d. [ the hope [ **that rescue will come soon** ]<sub>Finite</sub> ]<sub>IXP</sub>

⇒ Sect. 11.3.1 discusses clauses that act as a complement to a degree complement; in many cases (and many languages), the complementizer used is the same as the one occurring in finite complement clauses (*such a way that something will be the case*). It is therefore important to take a close look at the clauses before labelling them.

#### 10.4.2 Non-finite complement clauses: <Non-finite>

The label <Non-finite> will be applied to noun phrase internal **non-finite clausal constituents**. Apart from the different setting for the finiteness parameter, the relevant criteria are largely the same as the ones that also apply to finite complement clauses (→ complement to propositional noun):

- (134) a. [ the desire [ **to make noun phrases great again** ]<sub>Non-finite</sub> ]<sub>IXP</sub>  
 b. [ their expectation [ **to return very soon** ]<sub>Non-finite</sub> ]<sub>IXP</sub>  
 c. [ the decision [ **to invade the country** ]<sub>Non-finite</sub> ]<sub>IXP</sub>  
 d. [ the prospect [ **for him to survive the battle** ]<sub>Non-finite</sub> ]<sub>IXP</sub>
- (135) a. [ viljinn [ **at halda vini þína** ]<sub>Non-finite</sub> ]<sub>IXP</sub>  
*will.the to keep friends your*  
 ‘the will to keep your friends’  
 b. [ þeir órskurðir [ **at taka Magnús frá ríki** ]<sub>Non-finite</sub> ]<sub>IXP</sub>  
*those decisions to take Magnus from power*  
 ‘the decision to remove Magnus from power’

#### 10.5 Adverbials: <Adv>

In a sense, <Adv> is a rest category for noun phrase internal modifiers that are not already captured by any of the categories discussed so far. It captures first and foremost actual adverbials that make a contribution at the noun phrase level,<sup>27</sup> except for full prepositional phrases (see above). This category includes, among others, intransitive prepositions, certain (focus) particles, and certain noun phrases in an oblique case:

- (136) a. [ the horse [ **over there** ]<sub>Adv</sub> ]<sub>IXP</sub>      c. [ the year [ **after** ]<sub>Adv</sub> ]<sub>IXP</sub>  
 b. [ das Pferd [ **da drüben** ]<sub>Adv</sub> ]<sub>IXP</sub>      d. [ das Jahr [ **danach** ]<sub>Adv</sub> ]<sub>IXP</sub>
- (137) a. [ [ **only / even / also** ]<sub>Adv</sub> the tall king ]<sub>IXP</sub>
- (138) a. [ the meeting [ **the next morning** ]<sub>Adv</sub> ]<sub>IXP</sub>  
 b. [ einn dag [ **öndverðan vetur** ]<sub>Adv</sub> ]<sub>IXP</sub>  
*one day beginning winter*  
 ‘one day early in the winter’

Given cases like (138), we will have to assume that the adverbial may be a noun phrase of interest, that is, an IXP with its own entry in the database.

<sup>27</sup>Thus *adverbials that modify an adjective* (→ <ModMod>), do not fall under this category, and will be treated separately; see Sect. 11.1.

## Part III

# CAT(egories): [Subdependent]

This unit is dedicated to a small class of elements that are components of an adjectival constituent (i.e. a “ModP”), which will be referred to here as subdependent categories:

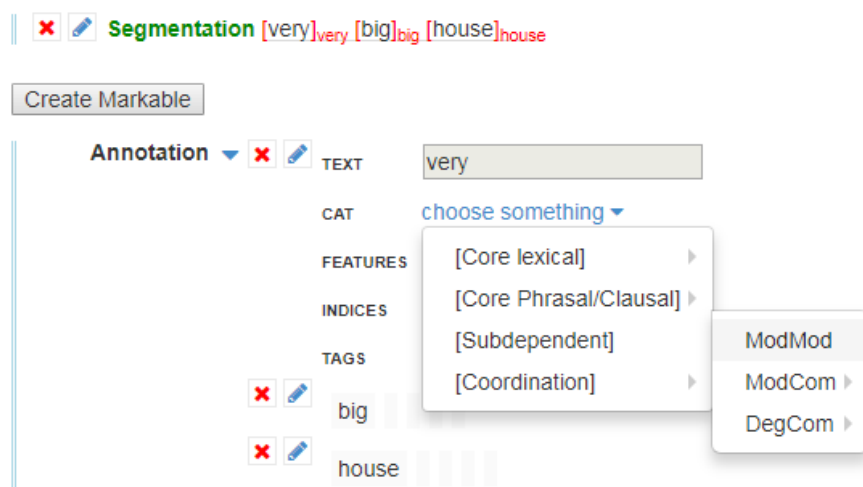


Figure 13: *Subdependent Categories*

These will be subdivided as follows:

<b>ModMod</b>		
<b>ModCom</b>	<<	<b>PP</b>
	<<	<b>Nom</b>
<b>DegCom</b>	<<	<b>Bare</b>
	<<	<b>Marked</b>

Table 24: *Subdependent Categories: Subdivision*

## 11 Subdependent categories

Even though we will annotate attributive adjectives simply as word-based units (namely as <Adj>, or <Mod> ..., see Sect. 6) rather than as adjectival phrases, we will annotate potential AP components namely (adverbial) **modifiers and complements of adjectives**; in addition, we will annotate constituents that occur typically, but not necessarily, inside an AP, viz. **complements of a degree element**.

### 11.1 Adverbial modifiers: <ModMod>

Adverbials modifying <Mod>ifiers are mostly actual adverbs (i.e. one-word units), but they may be more complex and comprise more than one word:

- (139)
- a. **incredibly** strong man
  - b. **very** stupid king
  - c. an **actually** stupid decision
  - d. an **unusually** keen eye
  - e. **very** few horses
  - f. **almost** twenty boats
  - g. **at least/at most** twenty ships
  - h. **no more than** sixteen times
  - i. **tuttugu ára** gamall nemandi (Icel)  
*twenty years old student*
  - j. **fimm hæða** hár turn  
*five storeys high tower*
  - k. ein **auf dem Tisch** tanzender Student (Germ)  
*an on the table dancing student*

Regardless of their complexity, such adverbials (i.e. one-word units, several-words units, and phrasal units) will receive the categorial label <ModMod>.

#### 11.1.1 Modificational index: “INDICES” – 1

Recall that — with the exception of adjectival associates (see Sect. 8) — we do not annotate APs (modifier phrases). However, the annotation interface allows us to mimic phrasality via indexation (see also Sect. 6.3). With both the (adjectival) modifier and the subdependent element (adverbial modifier and complement of modifier, see Sect. 11.2), a field “INDICES” is activated allowing us to insert a(n identical) **numerical index**. In other words, this is a two-step procedure:





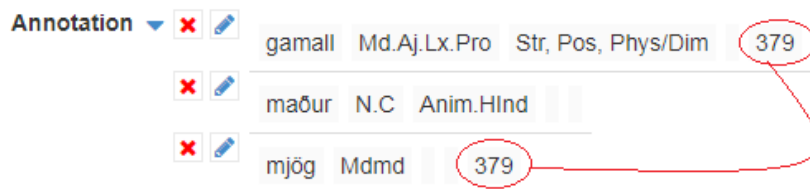


Figure 16: *Indexation mimicks AP*

The same principle of indexation applies to complements of (adjectival) modifiers that will be addressed in the next subsection (11.2.3).

## 11.2 Complements of adjectival modifiers: <ModCom>

Here by *complements*, we mean certain constituents that are dependent on the adjective and express some semantic role (*theme, topic, content, ...*)<sup>28</sup> that, in some sense, “complements” the meaning of the adjective (with one exception to be discussed in the next subsection). We will distinguish two kinds:

### 11.2.1 Prepositional complements of modifier: <PP>

Quite often, modifiers have prepositional complements:

(141) (German)

- a. ein **dem** Professor anvertrautes Dokument  
*a the.DAT professor entrusted document*  
 ‘a document that has been entrusted to the professor’
- b. der **des Lesens** unkundige Besucher  
*the of.the reading ignorant visitor*  
 ~ ‘the illiterate visitor’
- c. die **mit sich selbst** zufriedene Königin  
*the with her-self content queen*  
 ~ ‘the complacent queen’
- d. die **auf ihre tausendjährige Geschichte** stolze Republik  
*the of her thousand.year.old history proud republic*  
 ‘the republic which is proud of its thousand year old history’

(142) (Old Norse)

- a. askir fullir **af skyri**  
*vessels full of skyr*
- b. hinn ágætasti maður **að öllu**  
*the best man at everything*

In these cases, we will assign the categorial label <PP>.

<sup>28</sup>There may be some more, especially when we consider adjectival participles that inherit the verbal argument structure, for instance agent: *die von Cäsar zerstörte Stadt* ‘the [by Cesar] destroyed city’.

⇒ Notice that it is crucial here to identify the PP as a complement of the adjective rather than a complement/modifier at the IXP level (see Sect. 10.1).

### 11.2.2 Nominal complements of modifier: <Nom>

In some cases, the complement of the adjective can be a nominal expression:

- (143) a. mikill maður **vexti**  
*big man growth.DAT*  
 ‘man big in growth’  
 b. vænn maður **yfirlits**  
*nice man appearance.GEN*  
 ‘man nice in appearance’

For these complements, we will use the category label <Nom>.

### 11.2.3 Modificational index: “INDICES” – 2

Apart from the category label assignment, the annotation – in particular, the assignment of an index – proceeds in a parallel fashion to the way adverbial modification is annotated, see Sect. 11.1.1.

## 11.3 Degree complements: <DegCom>

In addition to the complements discussed in the previous subsection, there is another kind of complements that needs to be distinguished. The ones discussed in Sect. 11.2 are directly dependent on the (meaning of the) adjective itself; but here we will look at constituents that are complements to a **degree element**. There are (at least) three kinds of relevant degree elements: (i) **degree adverbials/particles** like *so* and *as*, (ii) certain **functional adjectives** like *such* / *same*, and (iii) **comparative morphology**. Likewise, the degree complement itself can occur in (at least) three different guises; we will make a two-way distinction:

### 11.3.1 Degree complement is introduced: <Marked>

In the following examples, we see that the degree complement is often introduced by a **comparative particle** (*than*, *as*). With the degree elements *so* and *such*, the degree complement is usually a (*that*-) clause:

- (144) a. He was [ so clever a boy **that** he passed all the exams easily ]  
 b. Canned juices can be [ as big a source of salt in the diet **as** bacon ]  
 c. ... arrange it in [ such a way **that** nobody will notice the difference ]  
 d. a *tall-er* person **than** me / **than** John  
 e. a car *fast-er* **than** the speed of light  
 f. a *bett-er* man **than** before  
 g. the *same* procedure **as** every year
- (145) a. hann var [ svo mikill lögmáður **að** engir þóttu löglegir dómar dæmdir  
*he was so great a law-man that no judgement was considered lawful*  
**nema hann væri við** ]  
*unless he was with*

- b. engi þóttist hafa séð [ dökk-ra skinn **en** á þessum sveinum var ]  
*no-one believed to have seen dark-er skin than on these boys was*
- c. eru hér á landi [ rík-ari menn **en** ég ]  
*are here on land mighty-er men than I*  
 ‘here in this country, there are men that are more powerful than I (am)’

Degree complements introduced by a “degree complementizer” (the elements marked red) will be given the label <Marked>.

⇒ Notice that it is important to take a close look at “that” clauses and examine whether they really are dependent on a degree element (underlined in the above examples), or not; in many cases, a “that” clause may actually be a complement to the head noun itself, see Sect. 10.4.1.

### 11.3.2 Bare degree complements: <Bare>

In addition, the degree complement to a comparative can be a **dative noun phrase** (often just a bare dative pronoun):

- (146) a. engi er [ **þér** mei-ri maður ] á þinginu  
*no-one is you.DAT great-er man at Thing.the*  
 “no-one is a than-you greater man at the Thing”  
 ‘at the Thing, there is no greater man than you’
- b. ... ef hann á við [ **sér** rík-ara menn ]  
*... if he deals with self.DAT mighty-er men*  
 “if he deals with than-himself more powerful men”  
 ‘if he deals with men that are more powerful than he himself (is)’

These degree complements will be given the label <Bare>.

### 11.3.3 No index for degree complements!

For degree complements, we will not mark dependency via index (see Sects. 11.1, 11.2).<sup>29</sup> This facilitates annotating cases such as the following:

- (147) hann var [ [ maður svo vitur ] og [ svo mikill lagamaður og málafylgju ]  
*he was man so wise and so great lawyer and taker-up of suits*  
**að** aldrei varð á um hans höfðingskap ]  
*that nothing seriously challenged his chieftainship*

In this example, one degree complement is dependent on two degree elements; in addition, according to the criteria discussed in Sect. 12.1, this example qualifies as an instance of IXP coordination with the effect that each degree element is buried inside its respective IXP, and the dependency of the degree complement cannot be annotated. In such cases, we will treat the degree complement as a category at the level of the coordination structure, i.e. on a par with the two IXPs:

<sup>29</sup>What would be the degree element they are dependent upon? We have discussed at least three different such elements: (i) *degree adverbials/particles*, (ii) *functional adjectives*, and (iii) *comparative morphology*,

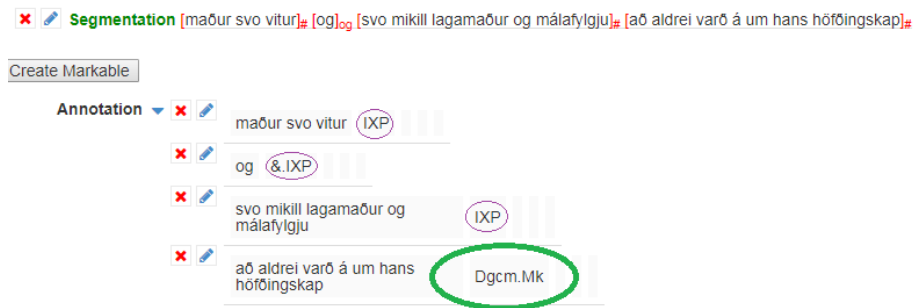


Figure 17: *DegCom and IXP Coordination*

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and in some cases, the degree complement (e.g. comparative phrase) is not in any obvious way dependent on a visible degree element (e.g.: 'a man *like his dad*'). If we were to co-index degree element and degree complement, we would face a considerable amount of problems!

## Part IV

# CAT(egories): [Coordination]

This final unit is dedicated to coordination structures, and in particular, the coordinators responsible:

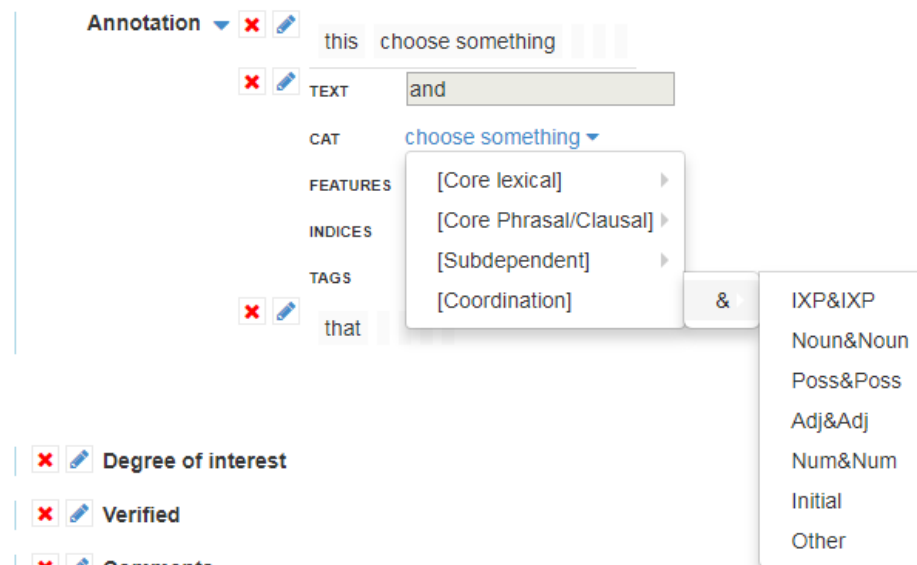


Figure 18: *Coordination: Categories*

## 12 Coordination: <&>

(Coordinating) Conjunctions are particles such as *and*, *or*, *but* ... that connect two constituents ( $\rightarrow$  conjuncts) usually of the same syntactic category thus forming a coordination (structure). Even though this is a very small class of words, they can induce some serious syntactic and semantic fallout. In order to capture some interesting aspects of this, IXPs comprising coordination structures will turn out to not always be noun phrases in the strict sense. We will distinguish the following types of coordination via (sub-)category label:


	<<	IXP&IXP	Full IXP coordination
	<<	Noun&Noun	Noun coordination
	<<	Poss&Poss	Possessive coordination
	<<	Adj&Adj	Adjectival coordination
	<<	Num&Num	Numeral coordination
	<<	&Initial	Initial Conjunct
	<<	&Other	(problematic cases)

Table 25: *Coordination, Categories*

Thus we will not annotate the information *that a certain constituent is a conjunct* on that constituent, but rather the **conjunction/coordinator will itself be classified according to the kind of categories it conjoins / coordinates**. With the guiding principle of our annotation scheme being linear surface order rather than syntactic deep structure (where phenomena such as ellipsis are encoded), those labels do not necessarily reflect the structure an actual syntactic analysis would suggest. For instance, what we annotate as IXP coordination, may be an NP or DP conjunction, but it may just as well be some (covert) VP / IP conjunction (or possibly yet something else).

### 12.1 IXP coordination: : <IXP&IXP>

Recall that IXP is the unit to be stored in the database (corresponding to NP or DP or yet some other nominal constituent). A coordination of two IXPs produces another IXP that will have its own entry in the database. In the following example, we have two minimal IXPs (IXP<sub>1</sub> and IXP<sub>2</sub>) that are coordinated thus producing a macro IXP (IXP<sub>3</sub>):

- (148) hann var [ [ sagnamaður mikill ]<sub>IXP<sub>1</sub></sub> [ og ]<sub>&IXP</sub> [ sannfróður maður ]<sub>IXP<sub>2</sub></sub> ]<sub>IXP<sub>3</sub></sub>  
           he was       historian great                   and               well-informed man

As stated in Sect. 2, even if all conjunct IXPs are of interest, an IXP coordination (like IXP<sub>3</sub> above) is always at best of secondary interest. It may also be the case that, in an IXP coordination structure, not every conjunct IXP or none is of interest (such as a bare name like “John” or “Peter”):

- (149) a. [ [ John ]<sub>IXP<sub>11</sub></sub> [ and ]<sub>&IXP</sub> [ the fantastic noun phrase of interest ]<sub>IXP<sub>01</sub></sub> ]<sub>IXP<sub>02</sub></sub>  
           b. [ [ John ]<sub>IXP<sub>11</sub></sub> [ and ]<sub>&IXP</sub> [ Peter ]<sub>IXP<sub>22</sub></sub> ]<sub>IXP<sub>55</sub></sub>

In example (149a), IXP<sub>01</sub> is of (great) interest (green), and thus the entire IXP<sub>02</sub> is of (secondary) interest (orange) even though one conjunct (IXP<sub>11</sub>) is not of interest (red). But IXP<sub>55</sub> in (149a) is not of any interest at all (red) because neither conjunct (IXP<sub>11</sub> and IXP<sub>22</sub>) is of interest; see Sect. 2.

The minimal formal requirement is that the IXP conjuncts have the same case (see Sect. 12.7). Regardless of the semantics, we will annotate all of them as IXP coordination. In Old Norse, we find some especially extravagant constellations that will be included here, even though a more sophisticated syntactic analysis might be called for:

- (150) a. hann fór huldu höfði  
*he went with hidden head* ( $\sim$  ‘in disguise, incognito’)  
 $[ [ \text{þá tvo vetur} ]_{IXP_1} \quad [ \text{og} ]_{\&IXP}$   
*those two winters and*  
 $[ \text{þann hinn þriðja sem hann var í Þórisdal} ]_{IXP_2} \quad ]_{IXP_3}$   
*that the third when he was in Þórisdalur*  
 $\Rightarrow 2 \text{ winters} + 1 \text{ winter} = 3 \text{ winters altogether}$   
 ‘(during) those two winters and yet another one, namely when he was in Þórisdalur, he traveled in disguise’
- b. Þjuggust þeir þá  
*prepared they then*  
 $[ [ \text{fjórir Njálssynir} ]_{IXP_1} \quad [ \text{og} ]_{\&IXP} \quad [ \text{Kári hinn fimmti} ]_{IXP_2} \quad ]_{IXP_3}$   
*four Njál’s-sons and Kári the fifth*  
 $\Rightarrow 4 + 1 = 5$   
 ‘then they got ready, namely the four sons of Njáll plus Kári making it a total of five’
- c. Á fundinum létust  
*in encounter.the died*  
 $[ [ \text{fjórtán menn} ]_{IXP_1} \quad [ \text{en} ]_{\&IXP} \quad [ \text{Hjörtur hinn fimmtándi} ]_{IXP_2} \quad ]_{IXP_3}$   
*fourteen men but Hjörtur the fifteenth*  
 $\Rightarrow 14 + 1 = 15$   
 ‘in the encounter, fourteen men died, and Hjörtur was the fifteenth (to die)’

$\Rightarrow$  NB: A series of conjoined genitive phrases will first and foremost form a macro <GenP> (see Sect. 9) that in turn is an immediate component of the macro IXP. In other words, when conjunction is involved, there can only be one <GenP> per IXP. This is illustrated in the example below that actually contains four genitive noun phrases dependent on the same head noun:

- (151) [ bréf [ [ Þóris erkibiskups ]<sub>IXP<sub>1</sub></sub> [ eða ]<sub>&IXP</sub> [ Guttorms erkibiskups ]<sub>IXP<sub>2</sub></sub>  
*letters of Þórir archbishop or of Guttormur archbishop*  
 $[ \text{eða} ]_{\&IXP} [ \text{hins ágæta konungs Hákonar} ]_{IXP_3} [ \text{og} ]_{\&IXP}$   
*or of the excellent king Hákon and*  
 $[ \text{margra annarra dýrðlegra manna í Noregi} ]_{IXP_4} ]_{GenP=IXP_{10}} ]_{IXP_{20}}$   
*of many other glorious men in Norway*
- $\Rightarrow$  actually:
- |  |     |
|--|-----|
| letters of archbishop Þórir                  | OR  |
| letters of archbishop Guttormur              | OR  |
| letters of the excellent king Hákon          | AND |
| letters of many other glorious men in Norway |     |

Here we will construe the macro IXP as in (152) comprising a head noun and one GenP; the GenP in turn, being itself an IXP (= IXP<sub>10</sub>), is construed as internal IXP coordination, (153):

(152) [ *letters* GenP= $IXP_{10}$  ]  $IXP_{20}$

(153) [  $IXP_1$  [ *or* ]  $IXP$   $IXP_2$  [ *or* ]  $IXP$   $IXP_3$  [ *and* ]  $IXP$   $IXP_4$  ]  $IXP_{10}$

For another issue concerning IXP coordination, see Sect. 11.3.3.

## 12.2 Nominal coordination: <Noun&Noun>

There is yet another type of coordination that we will keep apart from IXP coordination, viz. the coordination of two nouns. The criterion here is that one of the nouns is (seemingly) “bare”, i.e. has no companions; instead, **one modifier and/or determiner applies to two nouns**:

- (154) a. [ hin mesti [ kappi ]  $Noun$  [ og ]  $\&Noun$  [ hermaður ]  $Noun$  ]  $IXP$   
           the greatest fighter and soldier  
       b. þá varð [ [ óp ]  $Noun$  mikið [ og ]  $\&Noun$  [ kall ]  $Noun$  ]  $IXP$   
           then arose shouting great and calling  
       c. að hafna [ fornum [ sið ]  $Noun$  [ og ]  $\&Noun$  [ átrúnaði ]  $Noun$  ]  $IXP$   
           to reject ancient custom and belief  
       d. [ góða [ sæmd ]  $Noun$  [ og ]  $\&Noun$  [ virðing ]  $Noun$  ]  $IXP$   
           good honor and reputation  
       e. að hefna [ [ hirðmanns ]  $Noun$  þíns [ og ]  $\&Noun$  [ vinar ]  $Noun$  ]  $IXP$   
           to avenge liegeman your and friend

Normally, the two nouns will be of the same gender and agree in case and number. Moreover, in many cases, they will be near synonyms and/or coincide in reference. This is exceptional insofar as we have two head nouns per IXP. For an additional application of this category, see Sect. 13.

## 12.3 Possessive coordination: <Poss&Poss>

This label captures the coordination of a genitive phrase and a pronominal possessive (or possibly two possessives). Differently from IXP coordination with genitives, see (151-153), here we will remain at the macro IXP level; i.e. head noun (<Noun>), conjunction (<&>), possessive (<Poss>) and genitive (<GenP>) are neighboring categories. Consider the following examples:

- (155) a. [ Fundur [ vor ]  $Poss$  [ og ]  $\&Poss$  [ þeirra bræðra ]  $GenP$  ]  $IXP$   
           meeting our and [they brothers]-GEN  
           ‘the meeting between ourselves and the(m) brothers’  
       b. þeir sögðu [ nöfn [ sín ]  $Poss$  [ og ]  $\&Poss$  [ föður síns ]  $GenP$  ]  $IXP$   
           they said name POSS and [father POSS]-GEN  
           ‘they said their (own) names and the names of their fathers’  
       c. að saman fer [ [ guðs ]  $GenP$  vilji [ og ]  $\&Poss$  [ þinn ]  $Poss$  ]  $IXP$   
           that together goes god’s will and your  
           ‘... God’s will and yours’  
       d. fyrir [ orð [ þín ]  $Poss$  [ og ]  $\&Poss$  [ annarra vina vora ]  $GenP$  ]  $IXP$   
           for word your and [other friends our]-GEN  
           ‘for thy words’ sake and the sake of the words of others of our friends’



## 12.4 Adjectival coordination: <Adj&Adj>

Obviously, adjectival coordination may occur noun phrase internally; we will be generous and also consider weak quantifiers adjectives in this context.<sup>30</sup> We will recognize three basic adjectival coordination patterns: 1.) A & A N; 2.) A N & A; 3.) N A & A:

- (156) a. [ [ góð ]<sub>Mod</sub> [ **og** ]&Adj [ stór ]<sub>Mod</sub> útibúr ]<sub>IXP</sub>  
           *good and big out-door-storehouses*  
       b. [ [ mörg ]<sub>Mod</sub> [ **og** ]&Adj [ sönn ]<sub>Mod</sub> stórmerki ]<sub>IXP</sub>  
           *many and true wonders*
- (157) a. [ [ miklir ]<sub>Mod</sub> men [ **og** ]&Adj [ kappsamir ]<sub>Mod</sub> ]<sub>IXP</sub>  
           *tall men and eager*  
       b. [ [ dýrlegur ]<sub>Mod</sub> maður [ **og** ]&Adj [ trúfastur ]<sub>Mod</sub> ]<sub>IXP</sub>  
           *glorious man and truthful*
- (158) a. [ maður [ ungur ]<sub>Mod</sub> [ **og** ]&Adj [ fátækur ]<sub>Mod</sub> ]<sub>IXP</sub>  
           *man young and poor*  
       b. [ maður [ illgjarn ]<sub>Mod</sub> [ **og** ]&Adj [ lyginn ]<sub>Mod</sub> ]<sub>IXP</sub>  
           *man wicked and mendacious*  
       c. [ mörgum orðum [ fögrum ]<sub>Mod</sub> [ **og** ]&Adj [ góðgjarnlegum ]<sub>Mod</sub> ]<sub>IXP</sub>  
           *many words beautiful and kind*  
       d. [ menn vorir hinir [ vöskustu ]<sub>Mod</sub> [ **og** ]&Adj [ skilbestu ]<sub>Mod</sub> ]<sub>IXP</sub>  
           *men our the most-valiant and most-trustworthy*

HOWEVER, due to the conception of IXP and our annotation scheme, what we annotate as adjectival coordination may actually involve rather different underlying structures (or LFs). Superficial A & A N structures may actually have to be parsed in one of the following ways:

(159)	(i)	[ [ A & A ] N ]	→	[ <sub>NP</sub> [ <sub>AP</sub> A & A ] N ]
	(ii)	[ A N ] & [ A N ]	→	<b>NP &amp; NP</b>
		or	→	<b>DP &amp; DP</b>
	(iii)	[ A ] & [ A N ]	→	<b>AP &amp; NP</b>
		or	→	[ <sub>VP</sub> . . . AP ] & [ <sub>VP</sub> . . . NP ]

(159-i) represents a straightforward case of noun phrases (IXP) internal adjective coordination, which applies – if we disregard the actual adjectival ordering – to examples like (156)-(158). But we may also encounter interesting mismatches:

- (160) a. [ [ kristnir ]<sub>Mod</sub> men [ **og** ]&Adj [ heiðnir ]<sub>Mod</sub> ]<sub>IXP</sub>  
           *christian men and pagan*  
       b. [ [ bæði ]&Init [ ríka ]<sub>Mod</sub> menn [ **og** ]&Adj [ óríka ]<sub>Mod</sub> ]<sub>IXP</sub>  
           *both rich men and un-rich (=poor)*

<sup>30</sup>As is illustrated in (156b). Actually, the fact that weak quantifiers such as *many* can be coordinated with normal adjectives is a further motivation for treating them differently from other quantifiers but classifying them alongside adjectives as Modifiers.

Here we clearly have a **referential mismatch**: *Christian men*  $\neq$  *pagan men*; *rich men*  $\neq$  *poor men*. Thus here we have some covert DP-coordination, and these examples fall into category (159-ii).

Also consider this example, which is an instance of (159-iii):

- (161) Sigurður var [ [ vinsæll ]<sub>Mod</sub> [ **og** ]<sub>&Adj</sub> [ lítill ]<sub>Mod</sub> hávaðamaður ]<sub>IXP</sub>  
 Sigurður was popular and little troublemaker  
 ‘Sigurður was popular and not much of a trouble-maker (= he made little trouble)’  
 NOT: ‘he was a popular and little troublemaker’

This example does not entail that Sigurður was a popular troublemaker, nor that he was little. We have, as it were, a **modification mismatch**. Strictly speaking, it is not adjectives that are coordinated, but an adjectival and a nominal phrase, which is rather often the case in predicative contexts (possibly this could also be construed as coordination of two predicational phrases  $\sim$  VPs). Nonetheless, we will treat these cases as adjectival coordination on a par with the other examples above, and construe the entire sequences as IXPs.

In addition to the above cases, we will consider one more constellation:

- (162) a. [ hinn verst.i maður [ **og** ]<sub>&Adj</sub> svikráðafull.ur ]<sub>IXP</sub>  
           the worst.WK man and treacherous.STR  
       b. [ ung.ur maður [ **og** ]<sub>&Adj</sub> hinn frágast.i ]<sub>IXP</sub>  
           young.STR man and the most.treacherous.WK

What is special about these cases is that one adjective occurs on its own and strongly inflected, while the other is accompanied by the free article and weakly inflected. Nonetheless, since coordination is category-oriented, this will be construed and annotated as adjectival coordination; information about inflection is encoded elsewhere (see Sect. 6.2.1).

$\Rightarrow$  See also Sect. 8 on additional issues for categorial distinctions (adjectival **modifiers** vs. **associates**).

## 12.5 Numeral coordination: <Num&Num>

This label will be applied in some few cases where a complex numeral forms a discontinuous sequence (see also Sect. 6.1.2.2):

- (163) [ [ tvær ]<sub>Num</sub> borgir [ **og** ]<sub>&Num</sub> [ sjö tigu ]<sub>Num</sub> ]<sub>IXP</sub>  
           two cities and seven tens  
           ‘seventy two cities’

## 12.6 Double coordination: <&Initial>

Some coordination structures involve two conjunctions: *both X and Y, either A or B*:

- (164) [ [ **both** ]<sub>&Initial</sub> Strong [ **and** ]<sub>&Adj</sub> healthy babies ]<sub>IXP</sub>

In this case, the initial conjunction (*both, either ...*) will be given the cat<sup>1</sup> label <&Init>, while the central conjunction (*and, or ...*) will be given one of the other labels discussed in this section.

## 12.7 Uncertainty: <&Other>

Coordination is an unruly and intractable phenomenon that poses difficulties at several levels of analysis (see above). Moreover, there are cases where not only the linguistic construal is tricky, but where our annotation system appears to be not specific enough. In case the uncertainty cannot be resolved, we will give the coordinator the uncertainty label <&Other>.

In addition to actual uncertainty, there are also cases where it is not necessarily uncertain what is being coordinated, but rather where the conjuncts do not match categorially. Old Norse provides us with two interesting examples: (i) case mismatch (nominative & genitive), and (ii) category mismatch (NP & PP):

- (165) a. hann var [ [ákafamaður í lundi ]<sub>IXP<sub>1</sub></sub> [og]<sub>&Other</sub> [ góðrar ættar ]<sub>IXP<sub>2</sub></sub> ]<sub>IXP<sub>3</sub></sub>  
           he was    hothead.NOM in temper       and       [good family]-GEN  
           ‘he was a hothead and of good family’  
       b. hún er [ [hinn mesti svarri ]<sub>IXP<sub>1</sub></sub> [og]<sub>&Other</sub> [af góðum ættum ]<sub>PP</sub> ]<sub>IXP<sub>2</sub></sub>  
           she is    the greatest haughty-woman       and       of good family  
           ‘she is a very haughty woman and of good family’

Due to this mismatch, labels like <&IXP> do not apply here, and we will likewise use <&Other>.

## 13 A note on the proprial article in Old Norse

Old Norse and Modern Icelandic (and some Mainland Scandinavian varieties) have a so-called proprial article, which is formally a personal pronoun <Pers> (see Sect. 5.3) that occurs with a proper name or a kinship term. It has an article-like function, but is mostly omitted in the translation (especially in the singular):

- |   |   |
|---|---|
| (166) a. hann Björn<br>he    Björn<br>“the Björn” = ‘Björn’ | c. þeir bræður<br>they brothers<br>‘the brothers’               |
| b. hún Helga<br>she Helga<br>“the Helga” = ‘Helga’          | d. þeir Njálssynir<br>they sons-of-Njáll<br>‘the sons of Njáll’ |

There is, however, a special constellation where a plural pronoun occurs with a singular noun, which comprises hidden coordination:

- (167) þeir Björn  
          they Björn  
          “he & Björn” or “they & Björn”

Nonetheless, these cases will be treated alike, at least categorially. The difference is that, in spite of the apparent number mismatch, the latter IXP will be globally marked as <**Plural**> (or potentially as <**Dual**>; see Sect. 3.1.2).

Finally, there are cases where a pronoun combines with an overt coordination of two nouns:

- (168) þau Kári og Helga  
*they Kári and Helga*  
 = “they, namely Kári and Helga”  
 = ‘Kári and Helga’

Now the question is: what is being coordinated? and what is the structure of the corresponding IXP in an example like the following (from *Njál’s saga*):

- (169) Þessi voru börn þeirra Kára Sölmundarsonar og Helgu Njálsdóttur  
*these were children [they Kári S. and Helga N. ]-GEN*  
 = ‘These were the children of Kári S. and Helga N.’

For the sake of consistency with the above examples (<**Pers**> + <**Noun**>), and given the criterion for nominal coordination (<**Noun&Noun**>) – one modifier / determiner applies to two nouns, see Sect. 12.2 – we will treat them as nominal coordination, exceptional in that two proper names (see Sect. 4.1) are being coordinated:

- (170) a. [ börn [ **þeirra Kára Sölmundarsonar og Helgu Njálsdóttur** ]<sub>GenP=IXP<sub>7</sub></sub> ]<sub>IXP<sub>13</sub></sub>  
 b. [ [ **þeirra** ]<sub>Pers</sub> [ **Kára S.** ]<sub>Noun.Prop</sub> [ **og** ]<sub>&Noun</sub> [ **Helgu N.** ]<sub>Noun.Prop</sub> ]<sub>IXP<sub>7</sub></sub>

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