Searching in Medieval Nordic texts

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IMPORTANT NOTICE: This is a brief introduction in three search facilities for Medieval Nordic texts. Please note that the interface for all facilities may change without announcement, so these instructions may turn out to be outdated, at least in parts, in the not too distant future. Hopefully, it will retain some use, and if you would like to update the instructions or supplement them do not hesitate to contact me at <odd.haugen@uib.no>.

1. Reading texts & making morphological queries in the Menota archive

The Medieval Nordic Text Archive can be accessed without password or registration on the CLARINO website (which contains a number of other corpora):
http://clarino.uib.no/menota

The catalogue of the archive lists all available texts. They have been encoded at up to three levels, i.e. the facsimile, the diplomatic and the normalised level (indicated by **Facs / Dipl / Norm** in the table head), but the majority only on the diplomatic level, **Dipl**. The facsimile level means that the text is displayed very close to the source, the diplomatic level that it is slightly normalised (and thus easier to read), and the normalised level means that the orthography has been fully regularised. For the time being, this only applies to Old Icelandic and Old Norwegian texts.

Twelve of the almost 40 texts in the archive have been lemmatised, indicated by **Lemma** in the table head, and eleven of these have also been annotated for grammatical forms, **Analysis**. Of these, five are major Old Norwegian texts (AM 243 bα fol, DG 4–7, DG 8 II, Holm perg 6 fol and Holm perg 17 4to). The remaining morphologically annotated texts are either Old Icelandic or Old Swedish.

By clicking any file name in the second column of the catalogue you will be able to read it on screen. If it has been encoded on more than one level, you can watch all levels side-by-side simply by selecting the boxes for **Facs**, **Dipl** and **Norm** below the title line. Some texts are also available in photographic facsimiles.

Note that you do not need to have any specific font installed in order to read the texts in the archive, even on the facsimile level. The archive uses a **Web Open Font**

Format (WOFF), meaning that and underlying font, Andron Mega Corpus, is being used to display all necessary characters on screen.

Credit: Most of the work on developing the display and search facilities in Menota has been done by Paul Meurer, Uni Research, Bergen.

1.1 Searching for words in all files ("free text search")

Click on **Query** in the right column, stay in **Basic** search, and select **Show query expression**.

In the query field, write **konongr** within the square brackets: ["konongr"]
Then hit **Run query** – and you will get a list of all the 4519 occurences of exactly this word (in this specific orthography) in the archive.

NB! Do not use "smart quotes"; it should be ["konongr"], not ["konongr"]

Now, in the query field, write ["en"] ["konongr"], hit **Run query**, and you will get the 50 examples of exactly this two words combination.

So, continue with the query ["en"] ["konongr"] ["take"], hit **Run query**, and you will see the 8 examples of exactly this three words combination.

So there are only 8 examples of this phrase in the archive? Unfortunately not. There are 8 examples of the exact orthographic combination **en konongr take**. If the manuscript has **en konungr take** or **en konongr taki** or **en konungr taki**, they will not come up. In other words, you need to be familiar with the orthography of the sources in order to make good queries.

The result will be displayed in a **Key Word In Context** (KWIC) format, and by clicking on any word here, a dialogue box will pop up, and by clikcing on **Show context** in the top line of this, you will be taken to the exact page where the word is located. [For the time being, this only works in certain texts.]

1.2 Searching for words in annotated files

If you want to see all examples of the lemma **konungr** you have to restrict your query to the annotated files. For the time being, the majority of these are Old Norwegian, but Old Iceandic texts are being added, and there are a few Old Swedish files, too.

So, in the query field write: [lemma="konungr"] and hit **Run query**. The result is no less than 3240 hits. This list will include all forms of the word.

Since the annotated files have information about the grammatical forms, you may specify this, if you like, to narrow down your query.

So by typing [lemma="konungr" & msa=("cN" "nP")] you get all 39 examples of the lemma konungr in case Nominative and number Plural.

Fine! But you are not happy with the definite forms, so you narrow down your search to [lemma="konungr" & msa=("cN" "nP" "sI")], adding species Indefinite to the list, and suddenly you are down to 30 examples.

So what about any combinations of **sá hinn** in the texts, in whatever forms? Just type the query [lemma="sá"] [lemma="hinn"], and you get the 248 examples of these two lemmata (in this sequence) in all their variant forms.

Too much? Only interested in the feminine singular nominative? So type [lemma="sá" & msa=("cN" "nS" "gF")] [lemma="hinn" & msa=("cN" "nS" "gF")] and you get the 48 examples of **su hin** (with minor orthographic variations).

Now, are there any forms in preterite subjunctive of *fara*? If you type the query [lemma="fara" & msa=("tPT" "mSU" "nP")] you will get the 6 examples of preterite subjunctive of this verb, irrespective of person – since you did not specify this. You might have added "p1" for the 1st person, however. The order of the categories does not matter – ("tPT" "mSU" "nP" "p1") is as good as ("p1" "nP" "tPT" "mSU").

From this point, you can make your own searches. Two things are useful to know, however, the orthography of the lemmata, and the grammatical abbreviations.

1.3 Lemma orthography

In the annotation of the Old Norwegian texts, the orthography of lemmas follow the rules of the Old Norwegian Dictionary (Gammelnorsk Ordboksverk). These differ from standard Old Norse orthography in four major aspects:

1. Consonantal *i* is spelled *i*, e.g. *siá*, *kveðia* (not *sjá*, *kveðja*)

2. No distinction is made between *o* and *ǫ*, e.g. *diofull* and *koma* (not *djǫfull* vs. *koma*)

3. The diphthong *ey* is spelled *øy*, e.g. *høyra* (not *heyra*)

4. The *h* is not written before *l*, *n* or *r*, e.g. *lutr*, *nakki* and *ringr* (not *hlutr*, *hnakki*, *hringr*)

More than 5 % of the lemmas are affected by these rules, so if you do not get expected hits on a query, please remember to check these rules once more.

1.4 List of abbreviations

The abbreviations are for the time being identical with those used in the XML annotation of texts in Menota.

Category	Features				
Person	p1	p2	p3	pU	
Number	nS	nP	nU		
Tense tPS	tPT	tU			
Mood	mIN	mSU	mIP	mU	
Finiteness	fF	fI	fP	fU	
Voice	vA	vR	vU		
Gender	gM	gF	gN	gU	
Case	cN	cG	cD	cA	cU
Degree	rP	rC	rS	rU	
Definiteness	sI	sD	sU		

Individual abbreviations

A	=	accusative	I	=	infinitive	PS	=	present
A	=	active	IN	=	indicative	PT	=	preterite
c	=	case	IP	=	imperative	r	=	degree
C	=	comparative	M	=	masculine	R	=	reflexive
D	=	dative	m	=	mood	s	=	definiteness
D	=	definite	N	=	neutral	S	=	singular
F	=	feminine	N	=	nominative	S	=	superlative
F	=	finite	n	=	number	SU	=	subjunctive
f	=	finiteness	P	=	participle	t	=	tense
g	=	gender	p	=	person	U	=	undecided
G	=	genitive	P	=	plural	v	=	voice
I	=	indefinite	P	=	positive			

Note that identical abbreviations are never used in the same context; for example **A** means **active** in the abbreviation **vA**, but **accusative** in the abbreviation **cA**.

2. Morphological and syntactic queries in the PROIEL interface

Menotec was an infrastructure project funded by the Norwegian Research Council 2010–2012. Today, it is part of the Menota network. For more information on the project, see
https://en.wikipedia.org/wiki/Menotec

The four texts which were annotated morphologically and syntactically as part of the Menotec project are now available on the PROIEL web site (and also through INESS, as explained below):
http://foni.uio.no:3000

The PROIEL project was initiated by Dag T.T. Haug at the University of Oslo, see
http://www.hf.uio.no/ifikk/english/research/projects/proiel

PROIEL requires registration and password, but this is a very simple and quick process. Do not let this process put you off!

On the PROIEL website, you will be offered no less than 11 languages (from the classical and medieval period), but you will rush down to Old Norse, of course. In addition to the four Old Norwegian texts from the Menotec project, there will be two Old Norwegian texts added after the Menotec project, and an Old Icelandic one, the Eddic poems, from another, Icelandic project. They are grouped together under the heading of Old Norse (called **non** in ISO) in the usual meaning of this term, i.e. Old Norwegian (up to ca. 1350) and Old Icelandic (up to ca. 1500).

One of the texts, Upps DG 8 I, has not yet been fully annotated, but it is expected that it will have a full morphological and syntactic annotation before the summer of 2016.

Begin by choosing a manuscript, e.g. **Strengleikar**, and among the chapters of this manuscript, select *Laustik*. After having selected a part of a manuscript, it will be displayed on screen, usually over more than one page. *Laustik* is a short text, so the whole text will fit on one screen.

In the text, each sentence is indicated by a small digit in blue. Click one of them to get access to the full morphological and syntactical annotation of the sentence.

The morphological annotation is displayed first. Below each word from the text (in bold), you will find (a) the word class, (b) the grammatical form, and (c) the lemma of each word. Scroll down to see the syntactic analysis of the text (see ill. 1 below).

While the morphological annotation and display is more or less self-explanatory, the syntactic analysis is less so. Menotec is using dependency analysis, which was implemented for a number of other texts as part of the PROIEL project.

Explained in very few words, dependency analysis assigns a syntactic function to each word in the sentence. From a configurational point of view, dependency analysis is simpler than phrase structure analysis, but unlike phrase structure analysis, each word is described with regards to its function in the sentence. Furthermore, dependency analysis does not have to deal with word order (although this is indexed), so it works well with languages of a comparatively free word order – including one of the most extreme cases in Old Norse, the skaldic poems.

Morphology (Edit)

Laustiks	lioð	er	her
common noun	common noun	verb	adv.
gen., sg., m., strong	nom., sg., n., strong	ind., pres., act., 3rd p., sg.	pos.
laustik	*lióð*	*vera*	*hér*

Syntax (Edit)
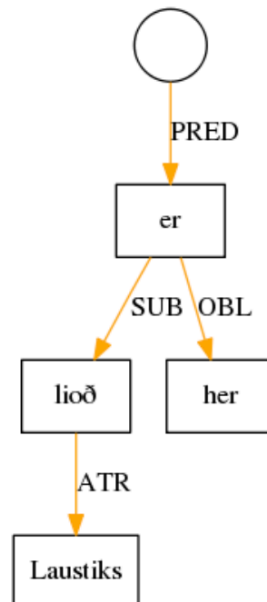
Ill. 1. This is what the morphological and syntactical analysis of a sentence looks like in the PROIEL interface. Fear not – there are more complex sentences than this one!

What the analysis in ill. 1 says is that the verb 'er' is the PRED(ICATE) of the sentence, and that is has two dependents, the SUB(JECT) 'lioð' and the OBL(IQUE) 'her' (stating the locale), and that the word 'Laustiks' is an ATR(IBUTE) of 'lioð'. See the appendix on pp. 15–17 below for a full list of functions in the PROIEL scheme.

There is a search page in the PROIEL web application which is not very different from the one in the Menota archive. It can be accessed from **Search** in the top menu line.

Guidelines for the morphological and syntactic annotation of Old Norwegian (including a large number of practical examples) have been written by Odd Einar Haugen and Fartein Th. Øverland and can be downloaded here, in parallel versions in Norwegian (nynorsk) and English:

https://bells.uib.no/bells/issue/view/157 (Norwegian text)

https://bells.uib.no/bells/issue/view/158 (English text)

In the screenshot below, we have searched for the **lemma** "lióð" (which in an Old Norse dictionary would be "ljóð") in the **text** Strengleikar, and having sub(ject) as its **function**. In other words, this is an example of a combined morphological and syntactic search, but the possibilities for the latter is rather limited. For the time being, this interface is best suited for morphological queries, as is the Menota interface explained above.

Location		Matched form	
Strl. 3 ✓	…var af þessare þat	**lioð**	gort er brættar kalla æskilioð. …
Strl. 5 ✓	Bisclaretz	**lioð**	er her
Strl. 6 ✓	Laustiks	**lioð**	er her

Ill. 2. The search interface in the PROIEL web application

Do you think it is too much of an investment to learn the basics of dependency analysis? Maybe not. On the PROIEL site, in addition to wonderful Old Norwegian texts, the whole corpus of the **Eddic poems** – one of the most important Old Norse texts – is available in a high-quality annotation. What about **Gothic**? It is all there.

3. Morphological and syntactic queries via the INESS portal

The INESS project is another infrastructure project funded by the Norwegian Research Council (2010–2016). It is headed by Victoria Rosén at the University of Bergen. Much of the work on developing the portal has been done by Paul Meurer, Uni Research, Bergen. INESS offers access to a large (and increasing) number of treebanks, including the Old Norse texts on the PROIEL web site.

INESS can be accessed without registration or password through this link:
http://clarino.uib.no/iness

After having read the opening page, click on **Treebank selection** in the left column. This will take you to a list of available treebanks. Select **Old Norse** from the category of **Languages**.

This will take you to an overview of the contents, which is more or less identical to the one in the PROIEL web application.

Now, look for the same sentence in *Strengleikar* as suggested above! Select this text by clicking on **non-strleik-dep** (currently at the bottom of the screen) and in the next window, you will be offered a lot of metadata. Lo and behold! Click "Accept" in the dialogue box. By the way, the three first letters in **non-strleik-dep** is the above-mentioned ISO abbreviation for "Old Norse".

Now, click on **Sentence overview** in the left column. You will now see the whole text displayed on the screen, from sentence 1 to sentence 2491.

You can in fact read the whole text here, although it would not be a particularly convenient way of reading it, unless you are a computer scientist. Other people prefer to go to the University Library in Uppsala and read it directly from the parchment. Or, *faute de mieux*, from the Menota site.

Now, go to sentence 957 by typing this number in the **Go to row** box.

Fine! You have come to the first sentence of *Laustiks ljóð*, which you might guess from the words *Laustiks lioð er her* 'The *lais* of Laustik is [i.e. begins] here'.

How do you know that *Laustiks ljóð*, the fifth *lais* in *Strengleikar*, begins exactly here? Well, you do not know. However, assuming that you can access this text in another source, such as in the Menota archive, in PROIEL or in a printed edition of the text, you may find a characteristic word – like "Laustiks" – and search for this in INESS. Simply type a suitable word into the **Query** box:

[word="Laustiks"]

You will get one hit, with the ID number 957. Fine – this is it!

Matches in: **non-strleik-dep** (1)

Previous page	Next page	Go to row:		Go		Rows per page:	50

| Id	Uid	Words	Sentence
957	2175157	5	Laustiks lioð er her

Click **Reset** in the **Query** box to delete the query, then type 957 in the **Go to row** box (as above). You will be back at the beginning of *Laustiks ljóð*.

Click on the sentence. The result will be as displayed in ill. 3 below.
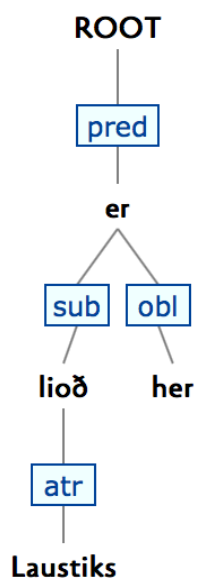
Ill. 3. The INESS display of sentence 957 in Strengleikar – syntax only.

Now, move the cursor over the word, and it changes into a hand. Click on it, and a box crops up, as shown in ill. 4. This gives you exactly the same type of morphological information as in the PROIEL interface, ill. 1.
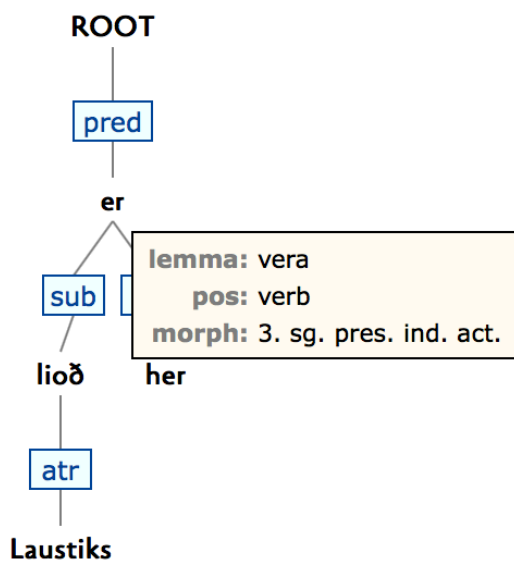
Ill. 4. The INESS display of sentence 957 in Strengleikar – with morphology, too.

3.1 Morphological queries

For a start, one can easily search for members of any word class by using the following abbreviations:

noun, common	=	noun-com
noun, proper	=	noun-prop
adjective	=	adj
pronoun, personal	=	pron-pers
pronoun, reflexive	=	pron-refl
pronoun, interrogative	=	pron-intrg
pronoun, indefinite	=	pron-indef
determiner, demonstrative	=	det-dem
determiner, quantifier	=	det-quant
determiner, possessive	=	det-poss
verb	=	verb
adverb, general	=	adv-gen
adverb, interrogative	=	adv-intrg
preposition	=	prep
conjunction	=	conjnct
subjunction	=	subjnct
infinitive marker	=	inf-mark
interjection	=	intject
unassigned	=	unassgn
foreign word	=	foreign-word

The query should be typed in the search field. For example, the query

[pos="subjnct"]

will yield all subjunctions in the text, while

[pos="subjnct"] & [pos="conjnct"]

will yield all subjunctions and conjunctions in the text.

NB! In all INESS queries, use the ordinary quotation marks, "...", not the curly quotes "..." (the quotation marks are some times converted to curly ones behind your back).

If you want to search for one or more specific morphological categories, they have to be specified with a suitable set of abbreviations. For example

[morph=("3" "sg" "pret" "ind" "act")]

is a query for words in **3. person**, **singular**, **preterite**, **indicative**, **active**

and

[morph=("3" "sg" "pret" "ind" "refl")]

is a query for words in **3. person**, **singular**, **preterite**, **indicative**, **reflexive**.

So, what you should do is to insert the morphological categories you are looking for using the abbreviations in the list below. Note that **mood** and **finiteness** have been merged, since a verb is either finite and has a specific mood, or it is infinite and does not have any mood, but is either an infinitive or a participle. Also note that not all features in this list are actually used in the corpus.

(1) Person
first	=	1
second	=	2
third	=	3
unspecified person	=	unsp-pers

(2) Number
singular	=	sg
plural	=	pl
unspecified number	=	unsp-numb

(3) Tense
present	=	pres
preterite	=	pret
unspecified tense	=	unsp-tns

(4) Mood & Finiteness

indicative	=	ind
subjunctive	=	subjv
imperative	=	imp
indicative or subjunctive	=	ind/subjv
indicative or imperative	=	ind/imp
subjunctive or imperative	=	subjv/imp
unspecified for mood	=	unsp-mood
infinitive	=	inf
participle	=	part
unspecified for finiteness	=	unsp-finit

(5) Voice

active	=	act
reflexive	=	refl
unspecified voice	=	unsp-vc

(6) Gender

masculine	=	masc
feminine	=	fem
neuter	=	neut
masculine or feminine	=	masc/fem
masculine or neuter	=	masc/neut
feminine or neuter	=	fem/neut
masculine or feminine or neuter	=	masc/fem/neut
unspecified gender	=	unsp-gen

(7) Case

nominative	=	nom
genitive	=	gen
dative	=	dat
accusative	=	acc
accusative or dative	=	acc/dat
genitive or dative	=	gen/dat
accusative or nominative	=	acc/nom
oblique (i.e. non-nominative)	=	obl
unspecified case	=	unsp-case

(8) Degree

positive	=	pos
comparative	=	comp
superlative	=	supl
unspecified degree	=	unsp-deg

(9) Definiteness
indefinite	=	indef
definite	=	def
unspecified definiteness	=	unsp-def

(10) Inflection
inflecting	=	infl
non-inflecting	=	non-infl

More examples! The following query

[morph=("sg" "masc" "nom")]

yields all words having the features **singular**, **masculine**, **nominative**.

However, these categories are found in several word classes, such as nouns, adjectives and determiners. So if you want to search for categories within a specific word class, you should begin by specifying the word class:

[pos="noun-com" & morph=("sg" "masc" "nom")]

[pos="adj" & morph=("sg" "masc" "nom")]

[pos="det-dem" & morph=("sg" "masc" "nom")]

Since all Menotec texts have a full morphological annotation, you can easily search for all instances of a certain lemma (head word). So,

[lemma="konungr"]

is a query for words of the lemma "konungr", while

[lemma="hvat"] & [lemma="er"]

is a query for all instances of the two lemmas "hvat" and "er" (although not necessarily in the same part of the sentence).

NB! Please note that if you move from one query to another, the tree from the previous query may still be on the screen. Just click on **Next match** (or **Previous match**) and a result will be displayed – with the word highlighted in red.

Then, you might like to combine a query for a certain lemma with specific morphological categories, for example

[lemma="konungr" & morph=("sg" "gen" "def")]

which will yield all instances of the lemma *konungr* in **singular**, **genitive**, **definite**, typically forms like *konungsins*.

Important (again)!

Remember that the lemmas in the Old Norwegian texts follow the orthography used by Gammelnorsk Ordboksverk. This differs from the standard Old Norse orthography in four main ways, as specified on p. 2 above.

So this is how you (for the time being) search for instances of genitive singular of the lemma *jǫrð* in the Old Norwegian corpus, remembering to use the spelling *iorð*:

[lemma="iorð" & morph=("sg" "gen")]

So why are there no hits for the following query?

[lemma="iorð" & morph=("sg" "gen" "def")]

Well, there can be an error in the way the query has been typed (an extra space somewhere, for example), a technical fault (horribile dictu!) – or, most likely, that there simply are no instances of this particular form in the corpus. Which in itsef is a valuable result.

Finally – **good news**! The sequence of morphological features is not fixed. Test it yourself, mixing features as you like:

[morph=("3" "sg" "pret" "ind" "act")]

[morph=("act" "sg" "pret" "ind" "3")]

Both queries give the same result. How practical!

3.2 Syntactic queries

Each query should be opened with the '>' sign and then one or more of the functional categories in the vocabulary of dependency analysis. See the appendix on pp. 15–17 below for an overview of the functions in use.

The query

>aux

yields all **auxiliaries** (**aux**) (which, by the way, is a heterogeneous function). Note that this is a query which will give a high number of matches – so do not forget to marvel over how fast the search is!

And the next query,

>pred #x >comp #y >pred

yields all **predicates** (**pred**) which dominate a **complement** (**comp**) which dominates a new **predicate** (**pred**)

Now a list of more complex queries:

>pred #x >obl & #x >sub

yields all **predicates** (**pred**) which dominate two sisters, an **oblique** (**obl**) and a **subject** (**sub**)

>pred #x >sub & #x >aux & #x >obj

yields all **predicates** (**pred**) which dominate a **subject** (**sub**), an **auxiliary** (**aux**) and an **oblique** (**obl**)

>obj #x >atr #a & #x >atr #b !=#a

yields all **objects** (**obj**) which dominate two **attributes** (**atr)**

And, finally, a few more abstract (as it were) queries:

#x >~ #y

is the general query for a secondary dependency, such as between an **external object** (**xobj**) and a **subject** (**sub**), or between coordinated words

#x >~xsub #y

is a specific query for the secondary dependency **external subject** (**xsub**)

!(>sub)

yields all sentences without a **subject** (**sub**).

These are only some examples. Try to make your own combinations, and in case you are missing something, have a look at the full documentation in INESS:

http://clarino.uib.no/iness/page?page-id=INESS_Search

3.3 Combined morphological and syntactical queries

Each search should be opened with the '>' sign and then one or more of the functional categories. These can be specified with lemma or morphological features, as they were explained in 3.1 above.

So, the query

>sub [lemma="dagr"]

yields all **subjects** (**sub**) with the lemma "dagr".

And this query

>sub [morph=("pl" "masc" "nom" "indef") & lemma="sunr"]

yields all **subjects** (**sub**) with the morphology **plural**, **masculine**, **nominative**, **indefinite** (strong), and having the lemma "sunr"

>pred #x >obl & #x >sub [morph=("sg" "masc" "nom")]

yields all **predicates** (**pred**) which dominate two sisters, an **oblique** (**obl**) and a **subject** (**sub**) (with the morphology **singular**, **masculine**, **nominative**)

>pred #x >obl & #x >sub [morph=("sg" "masc" "nom") & lemma="hverr"]

yields all **predicates** (**pred**) which dominate two sisters, an **oblique** (**obl**) and a **subject** (**sub**) (with the morphology **singular**, **masculine**, **nominative** and having the lemma "hverr")

And, finally, the query

>pred #x >obl [morph=("sg" "masc" "dat")] & #x >sub [morph=("sg" "masc" "nom")]

yields all **predicates** (**pred**) which dominate two sisters, an **oblique** (**obl**) (with the morphology **singular**, **masculine**, **dative**) and a **subject** (**sub**) (with the morphology **singular**, **masculine**, **nominative**).

Confused?

Getting a little confused when receiving the results of a query? INESS will list all hits in the Menotec corpus, but grouped according to the four manuscripts. This will be the line of matches for the above query:

```
152 matching sentence(s), running time: 0.07 sec

Matches in: non-homiliebok-dep (34), non-mll-dep (76), non-olavssaga-dep (26), non-strleik-dep (16)
```

As you can see, the number of matches vary between the four manuscripts, even if they are roughly of the same length.

Also note that if you want to check matches in some of the other manuscripts, you may have to go through the license routine before getting access to the manuscript in question. You may be asked to accept the license even if you already have done that; just click "Accept" and then "Sentence overview" to get back to where you were.

Appendix: Syntactic functions in the PROIEL (and INESS) databases

This list of functions has been taken from the BeLLS annotation guidelines, pp. 199–201 (see link on p. 7 above).

In the Menotec project, the functions AG, PART, ARG, PER and ADNOM are not being used, but they have included here for the sake of completeness.

Abbreviation	Name	Explanation
PRED	predicate	- main verb in independent clauses - conjunction coordinating main verbs - main verb in dependent clauses (excluding indirect questions, see COMP) - empty verb when verb is missing
PARPRED	parenthetic predicate	- interpolated sentence fragment, typically the main verb in direct speech
VOC	vocative	- word of address - interjections
AUX	auxiliary word	- the auxiliary verbs *hafa*, *geta*, *fá* - the auxiliary verbs *munu*, *skulu*, *mega*, *vilja* - infinitive marker - negation of main verb - introductory conjunction - the expletive particles *of* and *um* - the interrogative particle *hvárt*
SUB	subject	- the subject of a verb (excluding oblique subjects, see ch. 7.3.3) - the accusative in accusative with infinitive constructions
OBJ	object	- the object of a verb (excluding oblique subjects and noun phrases, see ch. 7.3.2)
OBL	oblique	- oblique words under PRED (dative and genitive objects) - oblique subjects, in dative and accusative - indirect objects (always dative) - objects of prepositions

		- objects of adjectives that govern genitive or dative - expressions of source or goal with verbs of motion
XOBJ	external object	- infinitives that have external subjects - predicatives, both to subjects and objects
COMP	complement	- the subjunction in nominal clauses - the finite verb in indirect questions - the infinitive in accusative with infinitive constructions - infinitives as subjects or predicatives - the subjunction *en* 'than' in comparison
NARG	adnominal argument	- noun arguments, objective genitive in particular
AG	agent	- the logical subject in passive (and reflexive) constructions, typically a preposition phrase introduced by *af*
ADV	adverbial	ADV is a function which can can modify: - finite verbs - prepositions - adjectives - other adverbs ADV can be: - adverbs - preposition phrases - nouns in oblique cases - subordinate clauses
XADV	external adverbial	- an adverbial that has an external subject
ATR	attribute	- adjectives under nouns - possessives under nouns - determiners under nouns - restrictive relative clauses
APOS	apposition	- words subordinated to nouns, but which have the same scope - non-restrictive relative clauses
PART	partitive	- words or phrases that tell us to which group or whole a noun belongs

ARG	argument	- OBL / OBJ
PER	peripheral	- argument / adjunct
NONSUB	non-subject	- OBJ / OBL / ADV - anomalies
ADNOM	adnominal	- ATR / APOS / PART / NARG
REL	relative	- restrictive relative clause (ATR) / non-restictive relative clause (APOS)

XSUB	external subject	- the external subject of XOBJ
PID	predicate identity	- the secondary dependency between implicit and explicit verbs - a verb that shares arguments with another verb