Testing functional theories of temporal frames of reference
A case study in corpus-driven cognitive grammar

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Future constructions (verbal expressions of futurity)$^1$

Many languages have several different future constructions, is this difference conceptually motivated?

We will first look at linguistic theory and talk about different ways of representing future within a temporal frame of reference.

Then we will look at a quantitative case study of Norwegian future constructions in which we test descriptive theories.

Finally, we will ask how the results of a descriptive study enlighten linguistic theory.

$^1$ These expressions typically also have other, non-temporal meanings, this talk will focus on temporal uses.
The term has been used for a long time in linguistics, but it typically consists of a three-point system that ultimately relates back to Reichenbach’s tense system.

Reichenbach (1947) proposed a logical model for representing tense in English Point of speech (S), Point of event (E), Point of reference (R)
R is a sort of mediating element or narrative frame
In this system, the future can be represented either S,R-E or S-R,E:

How can we best understand this difference?
A difference in perspective

Talmy characterises mental projection over time with a temporal perspective point (PP) from where one can have a retrospective or prospective viewing in a temporal frame. Such viewings can be characterised in visual terms as pertaining to where one places one’s ‘mental eyes’ to ‘look out upon a referent structure’ (2000).

According to Evans (2013), the same temporal scene can be encoded from two distinct perspective points: the first type involves a PP fixed at the event being located in time (TE), in the second, the PP is fixed at the reference point (RP).
If we apply what we have just said to future constructions, we will get something like this:

Two different future constructions: one in which we regard the future situation from the present, another in which we project ourselves into the future.
Two future perspectives

In other words, one temporal frame of reference focusing on the path leading up to the future situation, and the other on the resulting future situation itself:

It has been proposed (Rebotier 2015) that these two future construals constitute different “poles of futurity”, and that different future constructions are situated relative to these across a continuum.

Let’s have a look at Norwegian, in which there are three different future constructions.
Norwegian future constructions

Just like in English, three periphrastic constructions represent futurity in Norwegian:

- *skal* + INFINITIVE  \(\sim shall + \text{INFINITIVE}\)
- *vil* + INFINITIVE  \(\sim will + \text{INFINITIVE}\)
- *kommer til å* + INFINITIVE  \(\sim be\ going\ to + \text{INFINITIVE}\)

Which factors determine the choice of construction?
<table>
<thead>
<tr>
<th>Study</th>
<th>Operationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention-based vs. Prediction-based</td>
<td>Prediction: 2/3. Person/No-agent</td>
</tr>
<tr>
<td>Engaged vs. Non-engaged</td>
<td>Non-engaged: Open</td>
</tr>
<tr>
<td>Controllability</td>
<td>Acceptable with ”As planned”</td>
</tr>
<tr>
<td>Speaker certainty</td>
<td>Two secondary coders</td>
</tr>
</tbody>
</table>
NorGramBank (*Bokmål*: 46.6M words) contains mainly newspapers and literary texts (fiction and non-fiction).

Three independent Behavioural-Profile Based studies (Dirven *et al.* 1982, Geeraerts *et al.* 1994, Gries 2003) 600 manually annotated occurrences (200 each of *skal*, *vil* and *kommer til å*)

\footnote{Only future readings selected through manual disambiguation from non-future readings.}
### Behaviour-profile analysis

#### Fixed Effects Multiple Binary Logistic Regression

<table>
<thead>
<tr>
<th>Predicting $skal$</th>
<th>Predicting $vil$</th>
<th>Coefficient</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaged</td>
<td>Non-engaged</td>
<td>1.2060</td>
<td>***</td>
</tr>
<tr>
<td>Agent</td>
<td>Non-agent</td>
<td>1.0660</td>
<td>**</td>
</tr>
<tr>
<td>Controllable</td>
<td>Non-controllable</td>
<td>0.9478</td>
<td>**</td>
</tr>
<tr>
<td>1$^{st}$ person</td>
<td>3$^{rd}$ person</td>
<td>0.9401/0.8580</td>
<td>*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Predicting $skal$</th>
<th>Predicting $kommer til å$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controllable</td>
<td>Non-controllable</td>
</tr>
<tr>
<td>Engaged</td>
<td>Non-engaged</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Predicting $vil$</th>
<th>Predicting $kommer til å$</th>
</tr>
</thead>
<tbody>
<tr>
<td>3$^{rd}$ person</td>
<td>–</td>
</tr>
<tr>
<td>No-agent</td>
<td>Agent</td>
</tr>
<tr>
<td>Controllable</td>
<td>Non-controllable</td>
</tr>
</tbody>
</table>
Results

Hypothesis #1: Intentionality

Hypothesis #2: Engagement

Hypothesis #3: Controllability

Hypothesis #4: Certainty

Attribute Value Matrices

SKAL
+ engagement
+ intention
+ controllability
(+ certainty)

KOMMER TIL Å
– engagement
± intention
– controllability
(+ certainty)

VIL
– engagement
– intention
± controllability
(– certainty)
Discussion

Can we explain these variables (engagement, intention, controllability, certainty) in terms of the two models of temporal frames of reference we have seen?

Is corpus data by itself enough?
Two problems related to corpus data
   1) Lack of negative evidence
   2) We are comparing differences in the context

What about examples where the context is identical? One example:
   \{skal\}
   \{vil\}
Det  \{kommer til å\}  bli  godt  med  ferie
It  FUT  become  good  with  vacation
‘Vacations are going to be great’

Hypothesis: skal has a present PP, vil has a future PP and kommer til å is between the two

How could we test if there are any differences between these?
Future research

Acceptability judgements / Response time modifying the temporal context

{skal}
{vil}

Nå {kommer til å} det bli godt med ferie
Now FUT it become good with vacation

Det {kommer til å} bli godt med ferie neste sommer
It FUT become good with vacation next summer
Future research

Eye-tracking using illustrations:

{skaI}
{vil}
Det {kommer til å} bli godt med ferie
It FUT become good with vacation
‘Vacations are going to be great’

A: Present viewpoint

B: Future viewpoint
Thank you!

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References


