The semantics of mood in Bulgarian

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1. The subjunctive and the indicative mood in Bulgarian

This paper analyzes the distribution of the subjunctive and the indicative mood in complements of propositional attitude verbs in Bulgarian, and presents a formal analysis of mood in the framework of Kratzer (1981).

Descriptively, there are three patterns of mood distribution in Bulgarian. First, there are verbs that require the subjunctive mood in their complement clauses. For example, only the subjunctive form *da pee* ‘sing’, where *da* is the subjunctive marker, can appear in the complement of *iskam* ‘want’ in (1a). The indicative form *pee* ‘sing’, characterized by the absence of *da*, is incompatible with the meaning of *iskam* ‘want’, as the example in (1b) shows.¹²

(1) a. *iskam [SUBJ Maria da pee].
   want.IMPERF.1SGPRES Maria SUBJ sing.IMPERF.3SGPRES
   ‘I want Maria to sing.’

b. *iskam, [IND če Maria pee].
   want.IMPERF.1SGPRES that Maria sing.IMPERF.3SGPRES
   Intended: ‘I want Maria to sing.’

Second, there are verbs such *znam* ‘know’ that require the indicative mood in their complement clauses, as shown in (2).

(2) a. *znam [SUBJ Maria da pee].
   know.IMPERF.1SGPRES Maria SUBJ sing.IMPERF.3SGPRES
   Intended: ‘I know that Maria sings.’

b. Znam, [IND če Maria pee].
   know.IMPERF.1SGPRES that Maria sing.IMPERF.3SGPRES
   ‘I know that Maria sings.’

¹ Subjunctive forms differ from indicative ones on a number of morpho-syntactic features: they obligatorily bear present tense morphology and are incompatible with the complementizer *če* ‘that’ (see Smirnova 2011).
The third group is verbs that show double mood selection, i.e. they allow either the subjunctive or the indicative mood in their complement clauses, as the examples with spomnjam si ‘remember’ in (3) show.3

(3) a. Spomnjam si [SUBJ Maria da pee].
   remember.IMPERF.1SG.PRES REFL  Maria  SUBJ sing.IMPERF.3SG.PRES
   ‘I remember Maria singing.’

   b. Spomnjam si, [IND če Maria pee].
   remember.IMPERF.1SG.PRES REFL  that Maria  sing.IMPERF.3SG.PRES
   ‘I remember that Maria sings.’

A common assumption in the literature is that mood distribution is dependent on a semantic property of the matrix clause predicate (cf. Farkas 1992, Giannakidou 1998, 2009, Villalta 2008). For example, in her influential analysis, Giannakidou proposes that the semantic feature responsible for mood selection in Greek is veridicality, defined in (4).

(4) Definition of (non)-veridicality, from Giannakidou (2009: 1889), ex. (18)
   a. A propositional operator $F$ is veridical iff $Fp$ entails or presupposes that $p$ is true in some individual’s epistemic model $M_E(x)$; otherwise $F$ is nonveridical.
   b. A nonveridical operator $F$ is antiveridical iff $Fp$ entails that not $p$ in some individual’s epistemic model: $Fp \rightarrow \neg p$ in some $M_E(x)$.

This analysis is well-suited to account for the data in (1) and (2). Under this analysis, non-veridical verbs such as iskam ‘want’ select the subjunctive only, while veridical verbs such znam ‘know’ can only select the indicative in their complement clauses. However, in order to account for the pattern of double mood selection observed in (3), one would have to postulate two different lexical entries for the verb spomnjam si ‘remember’: a veridical ‘remember’ – it would allow the indicative mood only, – and a non-veridical subjunctive-selecting ‘remember’.

In this paper I propose a uniform analysis of mood in Bulgarian that accounts for the cases of unambiguous mood selection, as in (1) and (2), as well as for the cases of double mood selection, as in (3), without assuming two different lexical entries for the same verb. The paper is structured as follows. In section 2, I show that the choice of indicative vs. subjunctive mood depends on how strongly the attitude holder is committed to the truth or falsity of the proposition $p$ denoted by

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3 Negated epistemic and factive verbs, such as ne vjarvam ‘not believe’, a group that I don’t discuss here but see Smirnova (2011), are also compatible with both subjunctive and indicative complementation.
the embedded clause. In section 3, I formalize this empirical observation within the framework of modal semantics (Kratzer 1981, 1991). Specifically, I propose that the principle responsible for mood selection is homogeneity: the verb selects the indicative iff the domain with respect to which the embedded proposition $p$ is evaluated is homogeneous, i.e. $p$ is true in all worlds or $p$ is false in all worlds. The subjunctive is selected iff the domain of interpretation is non-homogeneous, i.e. $p$ is true/false in some but not all worlds. In section 4 I discuss the previous literature. Section 5 concludes the paper with the summary of the proposal.

2. Mood choice depends on the strength of epistemic commitment
This section shows that the choice of mood in Bulgarian depends on how strongly the attitude holder is committed to the truth or falsity of the proposition $p$ in the scope of the attitude predicate. This analysis is based on the assumption that attitude verbs specify the status of the proposition $p$ with respect to what the attitude holder believes (e.g. von Fintel 1999, Giannakidou 1998, 2009, Heim 1992, Karttunen 1971, Portner 1997).

Consider factive predicates such as otkrivam ‘discover’. According to Karttunen (1971: 3), “a sentence with a factive predicate indicates a belief on the part of the speaker in the truth of the complement sentence.” Under this analysis, the attitude holder is committed to the truth of the proposition $p$ denoted by the clause embedded under a factive predicate. Therefore, it is infelicitous to attribute to the attitude holder a belief that $p$ is possibly false, as (5) shows.

(5) Otkrih če ima teč v rezervoara]…. discover.PERF:1SGPAST that have.3SGPRES leak in oil.tank
‘I discovered that there is a leak in the oil tank’
# no e vâzmožno da njiama teč v rezervoara.
but be.3SGPRES possible SUBJ not.have.3SGPRES leak in oil.tank
‘but it is possible that there is no leak in the oil tank.’

Unlike factive verbs, the volitional verb iskam ‘want’ encodes a weaker epistemic commitment. This is due to the fact that iskam ‘want’ is a future-oriented verb, and since the future is unsettled (cf. Thomason 1970), it is not possible for an epistemic agent to know whether the proposition embedded under iskam ‘want’ is true or false at some future time. As von Fintel observed, “you can only want something of whose fact you are not (yet) convinced” (Fintel 1999: 117). The example in (6) conveys that the attitude holder prefers those worlds in which the

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4 In all examples used in this paper the attitude holder and the speaker are the same person. In Smirnova (2011) I have shown that when the speaker and the attitude holder are not identical as in e.g. Ivan knows that there is a leak in the oil tank, it is the epistemic commitment of the attitude holder and not that of the speaker that affects mood selection.
proposition $p$ ‘Maria sings’ is true. However, since she does not know the value of $p$ at some future time, she does not rule out the possibility that $p$ ‘Maria sings’ is false in the future.

(6) a. Iskam \( [\text{SUBJ} \text{Maria da pee}] \ldots \)
\begin{itemize}
\item want.IMPERF.1SG.PRES \text{Maria} \text{SUBJ} sing.IMPERF.3SG.PRES
\item ‘I want Maria to sing’…
\item no e \text{vázmožno} tja da ne pee.
\item but be.3SG.PRES possible she \text{SUBJ} NEG sing.IMPERF.3SG.PRES
\item ‘but it is possible that she will not sing.’
\end{itemize}

Consider now the examples with \( lǎža \) ‘lie’ and \( sǎmnjavam \) se ‘doubt’ below.

(7) Lǎža, \( [\text{IND} \text{če ima teč v rezervoara}] \ldots \)
\begin{itemize}
\item lie.IMPERF.1SG.PRES that have.3SG.PRES leak in oil.tank
\item ‘I lie that there is a leak in the oil tank’…
\item # no e \text{vázmožno} da ima teč v rezervoara.
\item but be.3SG.PRES possible she \text{SUBJ} have.3SG.PRES leak in oil.tank
\item ‘but it is possible that there is no leak in the oil tank.’
\end{itemize}

(8) Sǎmnjavam se \( [\text{SUBJ} da ima teč v rezervoara}] \ldots \)
\begin{itemize}
\item doubt.IMPERF.1SG.PRES REFLEX \text{SUBJ} have.3SG.PRES leak in oil.tank
\item ‘I doubt that there is a leak in the oil tank’…
\item no e \text{vázmožno} da ima.
\item but be.3SG.PRES possible she \text{SUBJ} have.3SG.PRES
\item ‘but it is possible that there is.’
\end{itemize}

\( Lǎža \) ‘lie’ is similar to \( otkrivam \) ‘discover’ in that it commits the attitude holder to a specific epistemic position. Thus, by uttering the sentence in (7), the attitude holder signals that she believes that $p$ is false. This epistemic position is incompatible with a weaker commitment, i.e. the attitude holder cannot continue the sentence in (7) by asserting that $p$ is possibly true. \( Sǎmnjavam \) se ‘doubt’ is similar to \( lǎža \) ‘lie’ in that the attitude holder is committed to the falsity of the embedded proposition. However, it is unlike \( lǎža \) ‘lie’ in that the commitment to the falsity of $p$ is weaker: by uttering (8) the attitude holder does not rule out the possibility that $p$ is true.

The examples in (5) – (8) allow me to make the following generalizations about the distribution of mood in Bulgarian. First, the data suggest that mood selection in Bulgarian is not sensitive to the notion of veridicality: both \( otkrivam \) ‘discover’ and \( lǎža \) ‘lie’ select the indicative, yet only ‘discover’ is veridical, i.e. it commits the attitude holder to the truth of $p$. Second, the data in (5) – (8) suggest
that there is a correlation between the strength of epistemic commitment and the choice of mood: _otkrivam_ ‘discover’ and _lāža_ ‘lie’ commit the attitude holder to a strong epistemic position and select the indicative mood. _Iskam_ ‘want’ and _sāmnjavam se_ ‘doubt’, on the other hand, encode a weaker epistemic commitment and selects the subjunctive. This observation is further confirmed by the data from verbs that allow either the subjunctive or the indicative mood in their complement clauses. In the subsequent examples such contextual factors as e.g. memory vividness, quality of perceptual experience and amount of available evidence affect the epistemic agent’s assessment of _p_. The latter affects the choice of mood.

In (9), the attitude holder has a vivid memory of the event denoted by the embedded clause. The indicative is the only choice in such a context. In (10), on the other hand, the attitude holder’s recollection of the event is amorphous. She is not entirely sure whether the person who sang at her birthday party was Maria. The subjunctive is the only choice in this context.

(9) Context: Your childhood friend Maria is now a famous singer. You clearly remember that Maria sang at your 10th birthday party. When your mom asks you if you remember the event, you say:
   a. Spomnjam _si_ [IND _če_ _Maria_ peeše].
      remember.IMPERF.1SG.PRES REFL that Maria sing.IMPERF.3SG.PAST
      ‘I remember that Maria was singing.’

   b. # Spomnjam _si_ [SUBJ _Maria_ da pee].
      remember.IMPERF.1SG.PRES REFL Maria SUBJ sing.IMPERF.3SG.PRES
      ‘I remember Maria singing.’

(10) Context: You remember that at your 10th birthday party there was a girl who sang a beautiful song. It is likely that this girl was Maria, your childhood friend, but you are not completely sure. When your mom asks you if you remember the event, you say:
   a. # Spomnjam _si_ [IND _če_ _Maria_ peeše].
      remember.IMPERF.1SG.PRES REFL that Maria sing.IMPERF.3SG.PAST
      ‘I remember that Maria was singing.’

   b. Spomnjam _si_ [SUBJ _Maria_ da pee].
      remember.IMPERF.1SG.PRES REFL Maria SUBJ sing.IMPERF.3SG.PRES
      ‘I remember Maria singing.’

Consider now the examples with the verb _viždam_ ‘see’. It selects the indicative complement when the subject of perceptual experience is absolutely certain that the proposition _p_ denoted by the embedded clause is true, as in (11). If we change
the context so that the attitude holder’s commitment is weaker due to the quality of perceptual experience, as in (12), the subjunctive becomes the only choice.

(11) Context: You have a meeting with Maria and are waiting for her outside. You have good eyesight and can clearly see that the woman approaching is Maria. You tell your sister:

a. Viždam [IND če Maria idva].
   see.IMPERF.1SG.PRES that Maria come.IMPERF.3SG.PRES
   ‘I see that Maria is coming.’

b. # Viždam [SUBJ Maria da idva].
   see.IMPERF.1SG.PRES Maria SUBJ come.IMPERF.3SG.PRES
   ‘I see Maria coming.’

(12) Context: You have a meeting with Maria and are waiting for her outside. It is foggy and you cannot see well. You see a woman approaching, who is likely to be Maria, but you are not entirely sure. You tell your sister:

a. # Viždam [IND če Maria idva].
   see.IMPERF.1SG.PRES that Maria come.IMPERF.3SG.PRES
   ‘I see that Maria is coming.’

b. Viždam [SUBJ Maria da idva].
   see.IMPERF.1SG.PRES Maria SUBJ come.IMPERF.3SG.PRES
   ‘I see Maria coming.’

Izgležda ‘seems’ shows a similar pattern. In (13) and (14) the attitude holder makes an inference about the possibility of oil leakage based on the available evidence. In (13), the results of the mechanical test lead the attitude holder to believe that p is true. The verb selects the indicative in such a context. In (14), the results are less conclusive, and the subjunctive is the preferred choice.

(13) Context: There is a mechanical problem with your boat. You just conducted a mechanical test, the results of which present strong evidence that there is a leak in the oil tank. You say:

a. Izgležda [IND če ima teč v rezervoara].
   seem.IMPERF.3SG.PRES that have.3SG.PRES leak in oil.tank
   ‘It seems that there is a leak in the oil tank.’

b. ? Izgležda [SUBJ da ima teč v rezervoara].
   seem.IMPERF.3SG.PRES SUBJ have.3SG.PRES leak in oil.tank
   ‘There seem to be a leak in the oil tank.’
(14) Context: There is a mechanical problem with your boat. The results of the mechanical test suggest that the oil tank might be leaking, but you are not entirely sure. You say:

a. Izgležda [IND če ima teč v rezervoara].
    seem.IMPERF.3SGPRES that have.3SGPRES leak in oil.tank
    ‘It seems that there is no leak in the oil tank.’

b. Izgležda [SUBJ da ima teč v rezervoara].
    seem.IMPERF.3SGPRES SUBJ have.3SGPRES leak in oil.tank
    ‘There seem to be a leak in the oil tank.’

The examples in (9) – (14) confirm the pattern established earlier. The empirical observations presented in this section can be summarized as follows:

(15) The indicative mood is selected iff the attitude holder is strongly committed to the truth of $p$ or to the falsity of $p$. The subjunctive is selected iff the attitude holder is weakly committed to the truth of $p$, or to the falsity of $p$.

In section 3, I formalize the notion of the strength of commitment within the framework of Kratzer (1981, 1991).

3. The analysis of mood distribution in Bulgarian

3.1 Theoretical assumptions
I propose that the distribution of mood is determined by the interaction between the two factors: (i) the semantics of the attitude predicate in the matrix clause, and (ii) the semantics of mood, the indicative and the subjunctive.

In order to account for the dependency of mood distribution on context, observed in section 2, I adopt an analysis of attitude verbs that is sensitive to contextual factors. Specifically, I assume that propositional attitude verbs specify the set of propositions, i.e. modal base, with respect to which the embedded proposition $p$ is interpreted (cf. von Fintel 1999, Heim 1992). What propositions are included in the modal base depends on the lexical meaning of the verb and on the context. For example, the modal base of *spomnjam si* ‘remember’ ($f_{\text{REMEMBER}}(\alpha)(w)$) contains propositions compatible with the attitude holder’s memories; the modal base of *viždam* ‘see’ $f_{\text{SEE}}(\alpha)(w)$ contains propositions compatible with the attitude holder’s perceptual experience, etc.

Following von Fintel (1999), I assume that the worlds in $\cap f(\alpha)(w)$, a set derived from intersecting the propositions in $f(\alpha)(w)$, are ranked on a scale induced by the ordering source $g(\alpha)(w)$ (cf. (16a)). Thus, in the case of *iskam*
‘want’, the worlds in $\cap f_{\text{WANT}}(\alpha)(w)$ are ranked depending on how desirable they are for the attitude holder (cf. von Fintel 1999). The best worlds are the worlds in $\text{max}_g(\alpha)(w)$, defined in (16b), in which the attitude holder’s desires are fulfilled.

(16) Based on von Fintel & Heim (2011: 61), ex. (107) and (108)

a. Definition of strict partial order $\prec_{g(\alpha)(w)}$, where $X$ is a set of worlds and $P$ is a set of propositions:
$$\forall w', w'' \in X: w' \prec_{g(\alpha)(w)} w'' \text{ iff } \{p \in P: p(w'' = 1)\} \subset \{p \in P: p(w' = 1)\}.$$

b. Definition of $\text{max}_{g(\alpha)(w)}$:
For a given strict partial order $\prec_{g(\alpha)(w)}$ on worlds, define the selection function $\text{max}_{g(\alpha)(w)}$ that selects the set of $\prec_{g(\alpha)(w)}$-best worlds from any set $X$ of worlds: $\forall X \subseteq W: \text{max}_{g(\alpha)(w)}(X) = \{w \in X: \neg \exists w' \in X: w' \prec_{g(\alpha)(w)} w\}$. I further assume that the verb lexically specifies the relation between the proposition $p$ denoted by its complement and the set of worlds with respect to which $p$ is evaluated, i.e. the worlds in $\cap f(\alpha)(w)$. Thus, verbs that select the indicative mood in their complement clauses lexically specify that $p$ is true (otkrivam ‘discover’) or false (lăža ‘lie’) in all worlds in $\cap f(\alpha)(w)$, i.e. $\cap f(\alpha)(w)$ is homogenous. Verbs that select the subjunctive mood in their complement clauses lexically specify that $p$ is true (iskam ‘want’) or false (sămnjavam se ‘doubt’) in some but not all worlds in $\cap f(\alpha)(w)$, i.e. the domain of evaluation is non-homogeneous. This assumption is based on the observation that the subjunctive mood commits the attitude holder to a weaker epistemic position. Finally, verbs that can select either the indicative or the subjunctive complement specify that $p$ is true (or false) in at least some worlds in $\cap f(\alpha)(w)$. As I show below, spomnjam si ‘remember’ specifies that at least some worlds in $\cap f(\alpha)(w)$ are $p$ worlds. This requirement is compatible with two scenarios: (i) all worlds in $\cap f_{\text{REMEMBER}}(\alpha)(w)$ are $p$ worlds (in this case the indicative is selected but the subjunctive is impossible); and (ii) only some worlds in $\cap f_{\text{REMEMBER}}(\alpha)(w)$ are $p$ worlds (in this case the subjunctive is selected but the indicative is impossible). In each case, context determines what domain of evaluation, homogenous or non-homogenous, one needs to consider.

I further assume that the verb lexically specifies the relation between the proposition $p$ denoted by its complement and the set of worlds with respect to which $p$ is evaluated, i.e. the worlds in $\cap f_{\text{WANT}}(\alpha)(w)$ are ranked depending on how desirable they are for the attitude holder (cf. von Fintel 1999). The best worlds are the worlds in $\text{max}_g(\alpha)(w)$, defined in (16b), in which the attitude holder’s desires are fulfilled.

With respect to the semantics of mood, I follow Portner (1997) and Matthewson (2010) and assume that mood encodes a restriction on the domain with respect to which the embedded proposition $p$ is evaluated, as shown in (17):
(17) Function of mood in Bulgarian:
   a. The subjunctive presupposes that the domain with respect to which the
      embedded proposition $p$ is evaluated, i.e. $\cap f(\alpha)(w)$ is non-homogenous:
      some worlds in $\cap f(\alpha)(w)$ are $p$ worlds and some worlds are not-$p$ worlds.
      
   b. The indicative presupposes that $\cap f(\alpha)(w)$ is homogenous: all worlds are
      $p$ worlds or all worlds are not-$p$ worlds.

3.2 Formal analysis
I propose the following definitions of the subjunctive (SUBJ) and the indicative
(IND) operators in Bulgarian:

(18) For any context $c$, worlds $w, w'$, proposition $p$, modal base function $f$, and
attitude holder $\alpha$:

$$[[\text{SUBJ } p]]^{c, f, g} = \begin{cases} 1, & \exists w' \in \cap f(\alpha)(w) \mid w' \notin [[p]]^{c, f, g} \end{cases}$$

When defined, $[[\text{SUBJ } p]]^{c, f, g} = [[p]]^{c, f, g}$

(19) For any context $c$, worlds $w, w'$, proposition $p$, modal base function $f$, and
attitude holder $\alpha$:

$$[[\text{IND } p]]^{c, f, g} = \begin{cases} 1, & \forall w' \in \cap f(\alpha)(w) \mid w' \in [[p]]^{c, f, g} \end{cases}$$

$\forall w' \in \cap f(\alpha)(w) \mid w' \notin [[p]]^{c, f, g}$

When defined, $[[\text{IND } p]]^{c, f, g} = [[p]]^{c, f, g}$

Consider now how the proposed analysis explains the pattern of mood distribution
discussed in section 1.

According to the truth conditions in (20), the sentence of the form $\alpha$ believe $p$
is true, iff in all worlds $w'$ compatible with what the attitude holder $\alpha$ believes in
the world $w$, the proposition $p$ is true. In this analysis vjarvam ‘believe’ lexically
specifies that all worlds in $\cap f_{\text{DOX}}(\alpha)(w)$ are $p$ worlds, i.e. $\cap f_{\text{DOX}}(\alpha)(w)$ is
homogeneous. The analysis correctly predicts that vjarvam ‘believe’ is incompatible
with the meaning of the subjunctive.

(20) $[[\text{believe}]]^{c, f} (p) (\alpha) = 1, \text{ iff } \forall w' \in \cap f_{\text{DOX}}(\alpha)(w) \mid w' \in p$

According to the truth conditions of iskam ‘want’ in (21), a sentence of the form $\alpha$ want $p$
is true iff in all the best worlds $w'$ in $\cap f_{\text{WANT}}(\alpha)(w)$, as ranked by
the ordering source $g(\alpha)(w)$, $p$ is true in $w'$. The definedness condition in (21a)
guarantees that the propositions in the modal base $f_{\text{WANT}}(\alpha)(w)$ are compatible
with the attitude holder’s knowledge $h_{\text{DOX}}(\alpha)(w)$ (cf. Heim 1992, von Fintel
1999). (21b) and (21c) specify that some worlds in $\cap f_{\text{WANT}}(\alpha)(w)$ are $p$ worlds and
some worlds are not-\(p\) worlds. Thus, the domain with respect to which \(p\) is evaluated is non-homogenous. Consequently, iskam ‘want’ is compatible with the subjunctive but not with the indicative mood.

\[
\llbracket \text{want} \rrbracket \text{c.f.} \, \text{g} \ (p) \ (a) \ (w) \text{ is defined iff}
\]
\[
a. \ h_{\text{DOX}} (a)(w) = f_{\text{WANT}} (a)(w)
\]
\[
b. \ \cap f_{\text{WANT}} (a)(w) \cap p \neq \emptyset
\]
\[
c. \ \cap f_{\text{WANT}} (a)(w) - p \neq \emptyset
\]
If defined, \(\llbracket \text{want} \rrbracket \text{c.f.} \, \text{g} \ (p)(a)(w) = 1\) iff
\[
\forall w' \in \text{max}_{g (a)(w)} (\cap f_{\text{WANT}} (a)(w)): w' \in p
\]

The analysis along these lines straightforwardly applies to the class of verbs that select either the indicative or the subjunctive mood, represented here by spomnjam si ‘remember’. I propose the following truth and definedness conditions for spomnjam si ‘remember’:

(22) \(\llbracket \text{remember} \rrbracket \text{c.f.} \, \text{g} \ (p)(a)(w) \text{ is defined iff} \cap f_{\text{REMEMBER}} (a)(w) \cap p \neq \emptyset\)
If defined, \(\llbracket \text{remember} \rrbracket \text{c.f.} \, \text{g} \ (p)(a)(w) = 1\), iff
\[
\forall w' \in \text{max}_{g (a)(w)} (\cap f_{\text{REMEMBER}} (a)(w)): w' \in p
\]

According to the truth conditions in (22), the sentence of the form \(a \text{ remember } p\) is true iff in all the best worlds \(w'\) in \(\cap f_{\text{REMEMBER}} (a)(w)\), as ranked by the ordering source \(g(a)(w)\), \(p\) is true. The definedness condition for ‘remember’ specifies that at least some worlds in \(\cap f_{\text{REMEMBER}} (a)(w)\) are \(p\) worlds. This condition can be satisfied in two ways: if all worlds in \(\cap f_{\text{REMEMBER}} (a)(w)\) are \(p\) worlds but also if only some of the worlds in \(\cap f_{\text{REMEMBER}} (a)(w)\) are \(p\) worlds. To see how this analysis works, consider first the data in (23).

(23) Context: You remember that at your 10th birthday party there was a girl who sang a beautiful song. It is likely that this girl was Maria, your childhood friend, but you are not completely sure. When your mom asks you if you remember the event, you say:

a. Spomnjam [\text{SUBJ} Maria da pee].
    remember.IMPERF.1SG.PRES REFL Maria SUBJ sing.IMPERF.3SG.PRES
    ‘I remember Maria singing.’

b. # Spomnjam [\text{IND} ĉe Maria peeše].
    remember.IMPERF.1SG.PRES REFL that Maria sing.IMPERF.3SG.PAST
    ‘I remember that Maria was singing.’
The modal base and the ordering source of spomnjam si ‘remember’ in (23) are spelled out in (24) and (25), respectively.

(24) Modal base \( f_{REMEMBER}(\alpha)(w) \) in (23): {I had a 10\(^{th}\) birthday party. There was a gigantic chocolate cake. There was a girl with a beautiful voice who sang at the party}.

(25) Ordering source in (23): {Maria was at my 10\(^{th}\) birthday party, because there is a photograph of me and her dancing. Maria liked to sing at the parties}.

Semantically, the sentence in (23a) is derived as follows. The worlds in \( \cap f_{REMEMBER}(\alpha)(w) \) are ranked based on what the attitude holder knows about the party, i.e. the ordering source \( g(\alpha)(w) \) is doxastic. All the best worlds in \( max_{g(\alpha)(w)} \) are such that Maria sang at the attitude holder’s birthday party, i.e. all the best worlds are \( p \) worlds. The verb ‘remember’ selects the subjunctive in (23a) because the set \( \cap f_{REMEMBER}(\alpha)(w) \), derived from (24), is non-homogenous, i.e. it contains worlds in which \( p \) is true (Maria sang at the party) and worlds in which \( p \) is false (Maria did not sing at the party). Thus, ‘remember’ in (23) cannot satisfy the presupposition of the indicative. Moreover, since not all worlds in \( \cap f_{REMEMBER}(\alpha)(w) \) are the worlds in which \( p \) is true, (23a) makes a weaker modal claim compared to the sentence with the indicative complement in (26a).

(26) Context: Your childhood friend Maria is now a famous singer. You clearly remember that Maria sang at your 10\(^{th}\) birthday party. When your mom asks you if you remember the event, you say:

a. Spomnjam si [IND če Maria peeše].
   remember.IMPERF.1SG.PRES REFL that Maria sing.IMPERF.3SG.PAST
   ‘I remember that Maria was singing.’

b. # Spomnjam si [SUBJ Maria da pee].
   remember.IMPERF.1SG.PRES REFL Maria SUBJ sing.IMPERF.3SG.PRES
   ‘I remember Maria singing.’

The context in (26) differs from that in (23) in that the attitude holder has a clear memory that Maria sang at her birthday party. Thus, the modal base of spomnjam si ‘remember’ in (26) has a different content than the one in (23):

(27) Modal base \( f_{REMEMBER}(\alpha)(w) \) in (26): {I had a 10\(^{th}\) birthday party. There was a gigantic chocolate cake. Maria sang my favorite song at the party}. 
Importantly, all worlds in ∩f \text{REMEMBER}(α)(w) in (26a) are p worlds. Since ∩f \text{REMEMBER}(α)(w) is homogenous, spomnjam si ‘remember’ is only compatible with the indicative mood in the context in (26). The rest of the semantic derivation proceeds as in (23). The ordering source in (25) applies and ranks the worlds in ∩f \text{REMEMBER}(α)(w). Since all worlds in ∩f \text{REMEMBER}(α)(w) are the worlds in which p is true, the ordering source does not affect the domain of quantification: all worlds in ∩f \text{REMEMBER}(α)(w) are the best worlds. Therefore, the sentence with the indicative complement (26a) makes a stronger modal claim compared to its subjunctive counterpart in (23a).

4. Comparison with other analyses

4.1 Giannakidou (1998), (2009)

Similar to Giannakidou’s analysis, my proposal views mood as an epistemic phenomenon, and relies heavily on the notion of epistemic commitment introduced in Giannakidou’s work. However, there are two reasons for choosing a different analysis for Bulgarian. First, under the veridicality analysis, propositional attitude verbs that entail or presuppose the falsity of the embedded proposition are viewed as a special class of non-veridical operators (anti-veridical operators), and as such are predicted to select the subjunctive. In Bulgarian, however, predicates that entail the falsity of the embedded proposition select the indicative (cf. lāža ‘lie’ in (7)). More generally, the data presented in section 2 show that mood choice in Bulgarian depends on the strength of epistemic commitment rather than on the commitment to the truth. Second, under the veridicality analysis, one would have to assume two different lexical entries for verbs that select either the subjunctive or the indicative mood in Bulgarian. The current analysis avoids this assumption by making the semantics of attitude predicates sensitive to context.

4.2 Villalta (2008)

Villalta (2008) proposes that the crucial semantic feature responsible for mood distribution in Spanish is comparison.

(28) Subjunctive mood in Spanish, from Villalta (2008: 481), ex. (41)

A proposition p that is the complement of the matrix predicate requires the subjunctive mood iff the matrix predicate introduces an ordering relation between propositions and compares p to its contextually available alternatives.

This analysis is based on the intuition that the Spanish equivalent of Victoria wants [SUBJ Sofia to bring a CHOCOLATE CAKE] conveys that the worlds in
which Sofia brings a chocolate cake are better than its alternatives, e.g., the
worlds in which she brings ice cream or an apple pie. In Villalta’s analysis
the subjunctive operator presupposes that the proposition \( p \) expressed by the
embedded sentence (‘Sofia brings a chocolate cake’) is a subset of contextually
available alternatives. The verb ‘want’ truth conditionally requires the presence
of contextual alternatives and ranks them on a scale (2008: 479). Thus, ‘want’
selects the subjunctive because the subjunctive supplies the set of contextual
alternatives required by the truth conditions of ‘want’. The indicative mood is
infelicitous in the complement of ‘want’ because the latter “blocks evaluation of
contextual alternatives at the level of embedded clause” (Villalta 2008: 507).

Note that this analysis automatically predicts that verbs that select the
subjunctive cannot select the indicative. This is one of the reasons why Villalta’s
proposal is not applicable to Bulgarian: it cannot account for the cases of double
mood selection. Another reason pertains to the fact that Villalta’s analysis, as
summarized above, does not in principle rule out the subjunctive in complements of
verbs that select the indicative, such as ‘know’. This is due to the fact that similarly
to ‘want’, ‘know’ can induce a comparison of contextual alternatives (cf. Victoria
knows that Sofia brought a CHOCOLATE CAKE). In order to rule out the licensing
of the subjunctive mood in the complement of ‘know’, Villalta has to stipulate that
the subjunctive in Spanish can only be licensed in the scope of a focus sensitive
operator (Villalta 2008: 207). In Bulgarian, however, the licensing of the
subjunctive does not depend on the presence of a focus operator (cf. (3)).

I conclude that while Villalta’s analysis is similar to my proposal in that it views
ordering as an important component of the mood phenomenon (this idea was first
discussed in Giorgi and Pianesi 1997), the distribution of mood in Bulgarian
cannot be analyzed in terms of comparison of contextual alternatives. As I
showed in section 2, the relevant principle in Bulgarian is the strength of
epistemic commitment.

4.3 Portner and Rubinstein (2012)

Portner and Rubinstein (2012, henceforth P & R) propose an analysis of mood in
French based on the notion of contextual commitment, defined in (29).

(29) Portner and Rubinstein (2012), ex. (40)

An individual \( a \) is COMMITTED TO a modal background \( h \) in event \( e \) if \( a \)
is disposed/prepared in \( e \) to argue for \( h(e) \) in a conversationally
appropriate way (e.g., by arguing that it is rational/proper/sensible/wise) in
any relevant conversation \( c \).

The indicative mood presupposes that “all individuals related by thematic roles to
the event argument of that predicate are committed to all of the modal
backgrounds associated with the predicate” (P & R 2012: 17). The subjunctive lacks the commitment presupposition and is semantically an identity function (cf. Quer 1998, Siegel 2004). The analysis explains mood distribution in French as follows. Verbs such as ‘believe’ and ‘say’ select the indicative because the semantics of these verbs satisfies the presupposition of the indicative. Since the subjunctive does not have presuppositional content, in principle it could appear in the complements of ‘say’ or ‘believe’. In P & R’s analysis such structures are blocked by Maximize Presupposition (Heim 1991). The fact that ‘want’ selects the subjunctive is accounted for with the assumption that there is an association between the subjunctive and ‘want’ in the lexicon. The selectional restriction of ‘want’ does not directly follow from any semantic principle in P & R’s framework, since ‘want’ can in principle occur in contexts that require a contextual commitment and thus would satisfy the presupposition of the indicative (cf. I want every kid in Africa to have access to clean water). While P & R’s analysis solves several important puzzles that are faced by the previous proposals, there are several reasons why it cannot be straightforwardly applied to Bulgarian. First, in order to explain double mood selection in complements of e.g. ‘remember’ we would have to assume two lexical entries for the same verb: (i) ‘remember’ that selects the indicative when the presupposition of the latter is satisfied and (ii) ‘remember’ that selects the subjunctive. The latter would have to be associated with the subjunctive feature in the lexicon. Second, sentences with subjunctive mood in Bulgarian are not non-committal. Thus, constructions with ‘want’, ‘doubt’, or ‘forbid’ express a specific epistemic position that is defendable in the sense of P & R (cf. I forbid you to go out late at night because it is dangerous). In P & R’s framework we would have to assume that these verbs are lexically associated with the subjunctive but this would miss the generalization that the subjunctive is consistently associated with a weaker epistemic commitment.

5. Conclusions

In this paper I have presented an analysis of mood in complements of propositional attitude verbs in Bulgarian. The core of the analysis is the idea that mood distribution depends on how strongly the attitude holder is committed to the truth or to the falsity of the proposition \( p \) denoted by the embedded clause. The advantage of this analysis is that it straightforwardly applies to the cases of double mood selection, a pattern that cannot be easily explained by other analyses.

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References


