'Byvalo' and 'Used to' as Verbal Quantifiers

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Abstract

The paper presents a contrastive study of habitual constructions in Slavic and Germanic, with particular focus on the verbal quantifiers *byvalo* in Russian and *used to* in English. The basic idea is to analyze the temporal make-up of these constructions in the light of the sequence of tense parameter. Of particular interest in this respect is the use of present tense morphology (in combination with the perfective or imperfective aspect) under *byvalo*. It is argued that this construction is reminiscent of the use of the present tense in Russian subordinate clauses under attitude verbs. In both cases the embedded verb is semantically tenseless and dependent on (bound by) a matrix verbal quantifier.

If this explanation is on the right track, it should probably not only cover habituals proper since the same temporal patterns are also observed with implicative verbs ("it happened"). Russian displays an interesting contrast between *byvalo* (habitual) *byvalo, čto* (implicative) – and in both cases present tense forms can be used in the embedded verbs.

The empirical basis for the study was provided by the multilingual RuN-Euro parallel corpus. The corpus data allow us to contrast different temporal, aspectual and morpho-syntactic aspects of the constructions in question in various languages.

1. The plot[1]

The central idea of this paper is to argue that the present tense morphology in the habitual construction in (1) should be analysed in the light of the fact that Russian is a non-sequence of tense language.[2]

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[1] I thank the participants in the circle for theoretical linguistics at the University of Oslo and the workshop "Structures of Meaning" in honor of Arnim von Stechow (Konstanz, November 2011) for valuable feedback. The notion of "verbal quantifier", which is essential to this work, is due to von Stechow/Heim. I also thank the reviewers of *Slovo*, whose comments made me substantially change the focus of the paper. The result is hopefully a more interesting paper, although the plot may be more difficult to follow for readers who are not familiar with the recent developments of sequence of tense theory (SOT) in formal semantics. To enhance readability I have skipped many (but not all) formal details.

[2] In all the examples presented in this study, the first item listed is the original text, and then follow translations from the parallel corpus made independently by professional translators.

(1) Всё, **бывало**, с ней через забор **разговариваю** и под конец, чтобы недалеко было ходить, сделал я в заборе калиточку. (Anton Čechov, "Baby")

(2) I **used** always **to be talking** to her across the fence, and in the end I made a little gate in the fence so as not to have to go so far round.

(3) Jeg **pleide å snakke** med henne over gjerdet, og til slutt – for at det ikke skulle være så langt å gå – laget jeg en liten port i gjerdet. *(Norwegian)*

More specifically, the present tense in the embedded verbs follows from a licensing condition which allows present tense morphology in Russian when the verb is semantically *tenseless*. A verb is semantically tenseless if its time argument (reference time) is abstracted away. This implies that the verb must get its temporal interpretation from some other operator which controls the reference time of the embedded verb. In the Russian construction above, this operator is the habitual verbal quantifier *byvalo*, which corresponds to *used to / pleide å* in English and Norwegian.

The present study is based on authentic data from parallel corpora, notably the multilingual RuN-Euro parallel corpus that has been compiled at the University of Oslo. The authentic data with parallel translations (mostly of Russian originals) will allow us to contrast the Russian constructions with the use of verbal quantifiers in Germanic languages and to keep track of relevant aspectual and temporal phenomena in the Slavic and Germanic data.

2. Verbal quantifiers and the SOT parameter

In Slavic languages aspect obviously plays the role of the defining verbal category. In Germanic languages, on the other hand, the tense system contains a rich inventory of auxiliaries and composite past and future tenses. Auxiliaries are temporal quantifiers, but they also come with their own verbal morphology. We thus define a broader category of *verbal quantifiers*:

A verb *v* is a **verbal quantifier** if and only if

(i) *v* can be inflected with uninterpretable tense morphology (*v* has its own **verbal** morphology)

(ii) *v* controls the reference time of the embedded verb (*v* is a temporal **quantifier**).

Here are some verbal quantifiers in English and Russian:[3]

says [un], said [up], will [un], would [up], has [un], had [up]
govorit [un], govoril [up], budet [un]

These verbs are quantifiers over times, i.e. they control (shift) the reference time of their complement. For instance, "budet", "will" or "would" change the reference time of the embedded verb to a future time, while "has" and "had" shift the reference time to a past time. Attitude verbs like "says", "said", "govorit", "govoril" are more complicated. The important point here is that the semantics of these verbs involves quantification over the reference time of the complement, that is, metaphorically speaking, the "subjective now" of the attitude holder.

What about habitual quantifiers such as "used to", "byvaet/byvalo"? Apparently, these verbal quantifiers change the reference time of the embedded verb to times which occur repeatedly (in accordance with certain contextual restrictions) within a *habitus*.

In this paper I propose to relate "new" data involving habitual verbal quantifiers and similar constructions to the sequence of tense parameter (adapted from Grønn & von Stechow 2010, 2011):
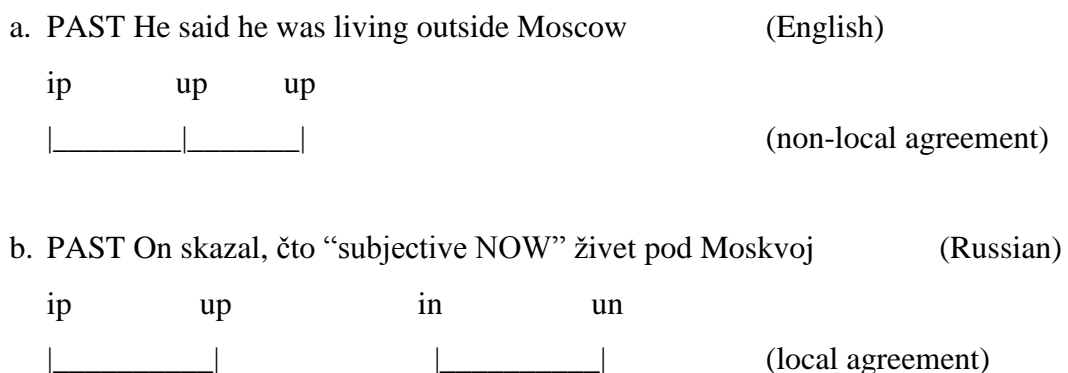
A language L is an SOT language if and only if:

(i) verbal quantifiers of L transmit temporal features;
(ii) semantically tenseless propositions (or verb phrases (VP)) do not license present tense morphology.

First, consider the traditional environment in which Russian makes use of the present tense in the complement under a past tense in the matrix:

(4) Он **сказал**[up], что **живет**[un] под Москвой. (Viktor Pelevin, "Pokolenie P")
(5) He **said**[up] he **was**[up] living just outside Moscow.

Using the metaphor of the attitude holder's *subjective now*, we can say that the reported "living just outside Moscow" is simultaneous with the attitude (speech) report itself from the perspective of the subject of the sentence (the attitude holder "on – he"). The different feature checking mechanisms in English and Russian are depicted in Figure 1.

a. PAST He said he was living outside Moscow   (English)

ip   up   up

|_____|_____| (non-local agreement)

b. PAST On skazal, čto "subjective NOW" živet pod Moskvoj   (Russian)

ip   up   in   un

|_____| |_____| (local agreement)

Figure 1. Feature transmission in complement tense.

The SOT parameter distinguishes Germanic (and Romance) languages from Slavic languages. The former, unlike the latter, may exhibit tense agreement between the tense of the matrix (auxiliary) and the tense morphology of the embedded verb forms, as we see for English in Figure 1. Interestingly, the parameter enables us not only to derive the traditional SOT data from attitude contexts (with matrix speech verbs, factive verbs and perception verbs) (Grønn & von Stechow 2010), but also some intriguing agreement phenomena in adjunct tenses (Grønn & von Stechow 2011). In this respect the non-trivial example below with different translation patterns in German/Norwegian and English illustrates several relevant points:

(6)　Кроме того, никогда не было случая, да и не будет, чтобы Абадонна появился перед кем-либо преждевременно. (Michail Bulgakov, "Master i Margarita")

(7)　Besides, there has never yet been, and never **will**[un] **be**, an occasion when Abaddon **appears**[un] before someone prematurely.

(8)　Außerdem ist es noch niemals vorgekommen, und es **wird**[un] auch niemals **vorkommen**, daß Abadonna vorzeitig bei jemand **erscheint**[un].[4]

(9)　Dessuten har det aldri forekommet og **vil**[un] heller aldri **forekomme** at Abadonna **viser**[un] seg for noen før tiden (*Norwegian*) (= *never will happen that A appears…*)

The German (and Norwegian) translation uses a construction with complement tense, while the English translator has chosen a temporal adjunct. In both cases, semantic tense dependency on the matrix verb ("vorkommen"/"be an occasion") leads to morphological tense agreement with the finite auxiliary ("wird"/"will") in the matrix, as we see in Figure 2.

　　a.　NOW wird vorkommen daß A erscheint (German)

　　in　　un　　(un)　　　　un
　　|_____|_____|_____|

　　b.　NOW never will be an occasion when A appears (English)

　　in　　　　un　(un)　　　　　　　un
　　|_____|____|_____|

Figure 2. Feature transmission in complement tense (German) and adjunct tense (English).

We assume that verbs like "be an occasion", "happen" or the German "vorkommen" are verbal quantifiers (see Section 8 below). The examples above are therefore rather involved since we have *two* verbal quantifiers: "be an occasion" ("vorkommen") and the future time shifter "will" ("wird"). Since the former is non-infinite it does not have

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[4] The German translation was retrieved from the parallel corpus *Parasol*: http://parasol.unibe.ch/.

any inherent morphological feature and therefore simply transmits the tense feature from the finite verb, the future quantifier "will", which carries present tense morphology. The result is that the subordinate verb "appears" ("erscheint") derives its present morphology from "will" through "be an occasion". In the theory proposed here, "appears" and "erscheint" are in the semantic binding domain of "be an occasion" and "vorkommen", respectively, – the former in an adjunct and the latter in a complement. We observe feature transmission under semantic binding. In this way both the future reference time and the present morphology originating with "will" ("wird") are carried over to the subordinate verbs.

3. 'Used to' and the SOT parameter

If tense morphology under *byvalo* (or *byvaet*) is ultimately to be explained in the light of Russian being a non-SOT language, we should expect SOT rules to be relevant for tense morphology under *used to* in English.

The main reason why these constructions in Germanic languages have not (to my knowledge) been analysed in the light of SOT rules is probably due to the simple fact that verbal quantifiers like "used to" subcategorize for an infinitive complement, i.e. a non-finite verb form without tense morphology. Hence, the issue of morphological tense agreement between the matrix and complement does not arise.

However, once the SOT parameter is extended to capture tense agreement phenomena in adjunct tenses, we can at least try to falsify the hypothesis that "used to" is subject to the SOT parameter. In the English example below, we do indeed find the expected tense agreement in the relative clause: "us**ed** to … take … whom she consider**ed**".

(10) Преосвященный слушал свою мать и вспоминал, как когда-то, много-много лет назад, она возила и его, и братьев, и сестер к родственникам, которых считала богатыми. (Anton Čechov, "Archierej")

(11) The bishop listened to his mother and remembered how many, many years ago she **used**[up] **to take** him and his brothers and sisters to relations whom she **considered**[up] rich.

While verbs in complements under temporal quantifiers are semantically tenseless (bound), the highest tense in adjuncts is *anaphoric* to the matrix reference time (Grønn & von Stechow 2011). On this view "considered" gets its interpretation from the reference time of "take" and its morphology from "used to" (feature transmission under semantic binding via the non-finite "take"). Thus, our initial hypothesis lives on, cf. Figure 3.
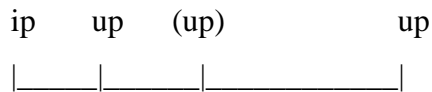
PAST used to take whom … considered

ip   up   (up)   up

|_____|_____|_____|

Figure 3. Feature transmission from "used to" to embedded adjunct.

There is a puzzling fact about the English "used to" construction which is strictly speaking orthogonal to the argument proposed in this paper, but which nevertheless deserves mention in connection with SOT phenomena. It is well known that "used to" is restricted to the past tense *(*John uses to...)*, but, more surprisingly the construction is obligatorily backward shifted when it occurs in complements under attitudes (Boneh & Doron 2010):

(12)   И вдруг ему **вспомнилось**, как они детьми вместе **ложились** спать. (Lev Tolstoj, "Anna Karenina")
(13)   And suddenly he **recalled** how they **used to go** to bed together as children.
(14)   Og plutselig **sto** det for ham i minnet hvordan de som barn **hadde gått** til sengs sammen. *(Norwegian)*

Even without the temporal modifier "as children", the English construction must be backward shifted: the embedded habit cannot be simultaneous with the matrix verb as one would expect in a standard SOT construction.[5]

   In this respect, "used to" is different from "normal" past habitual quantifiers such as *pflegte/pleide å* in German/Norwegian, which can either be shifted (by a local PAST operator) or be simultaneous with a past matrix (SOT). To complete the picture we note that "used to" is *not* necessarily backward shifted in adjuncts, cf. the English relative clause in (16):

(15)   Стихи, которые я писал, — плохие стихи, и я теперь это понял. (Bulgakov, "Master i Margarita")
(16)   The poems I **used to write were** bad poems, and now I understand it.

In this case the habitus of writing poems does *not* precede the state of the poems being bad. The habitus is simultaneous with that state. This is as expected on the view that the highest tense in adjuncts (here: "used to write") is anaphoric to the matrix (here: "were"). The same non-shifted reading is also seen in the anaphoric use in (18), where the reference time of "used to" is anaphoric to the narrative "now" in the preceding sentence.

(17)   Он был женат и имел сына, но с женой разошелся, так как она ему изменила, и теперь он ее ненавидел и высылал ей ежемесячно по сорока рублей на содержание сына. (Anton Čechov, "Dušečka")

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[5] The shifted interpretation of the complement is in the Norwegian translation conveyed by the time shifter "hadde" (= "had").

(18) He was married and had a little boy, but was separated from his wife because she had been unfaithful to him, and **now** he hated her and **used to send** her forty roubles a month for the maintenance of their son.

The reader may have noticed that quite frequently in the habitual constructions above, Russian does not use a verbal quantifier, but simply marks the verb with imperfective aspect. This point will be further discussed in Section 5, but first, in the next section, I shall review the data that motivated this study.

4. Corpus data: *byvalo*

Unlike temporal auxiliaries (*will, has*) or periphrastic constructions (*used to*) in English, which subcategorize for nonfinite verb forms, the Russian *byvalo* combines with finite verbs. The same also holds, of course, for *byvaet*, but the most interesting data are those in which present tense morphology is used under the past tense quantifier *byvalo*.

I hasten to mention that we often find past tense morphology in the embedded verb under *byvalo*:

(19) Помните, вы, **бывало**, так **говорили**? (Lev Tolstoj, "Anna Karenina")
(20) Do you remember that's what you **used to call** them?
(21) Husker De at De **pleide å kalle** henne det? *(Norwegian)*

(22) Мое писанье — это вроде тех корзиночек из резьбы, которые мне **продавала**, **бывало**, Лиза Мерцалова из острогов. (Lev Tolstoj, "Anna Karenina")
(23) My writing is something after the fashion of those little baskets and carving which Liza Mertsalova **used to sell** me from the prisons.
(24) Disse skriveriene mine er noe av det samme som de utskårne kurvene som Liza Merftalova **pleide å selge** meg fra tukthusene. *(Norwegian)*

Perhaps the embedded verb is temporally independent, i.e. deictic in these examples, but this issue needs further investigation. One possible concern in this respect is how to reconcile a deictic analysis of the embedded past with a possibly modal analysis of habituals. I remain undecided on this point. This said, if there is a modal flavour to the habitual *byvalo*, this modality is obviously very different from, say, the modality of the subjunctive particle *by*. Unlike other verbal quantifiers, *by* subcategorizes for the past tense ("fake tense"). In contrast, *byvalo*, which itself carries past tense morphology, freely combines with embedded verbs with present tense morphology:

(25) **Бывало**[up], прежде чем вырубить елку, дед **выкуривает**[un] трубку, долго нюхает табак, посмеивается над озябшим Ванюшкой [...] (Anton Čechov, "Van'ka")
(26) Before chopping down the Christmas tree, grandfather **would smoke** a pipe, slowly take a pinch of snuff, and laugh at frozen Vanka [...]

(27) Før bestefar hugget grantreet, **pleide** han **å ta** seg en røyk og en god snus og le
litt av den forfrosne Vanka [...] *(Norwegian)*

The interpretation of the embedded imperfective present tense in the example above is obviously not deictic, hence the temporal location of the embedded event does not directly depend on the utterance time. Interestingly, we can also have a perfective present (no less!) under *byvalo*, cf. the continuation of the Čechov story from example (1) above:

(28) *[Всё, **бывало**, с ней через забор **разговариваю** и под конец, чтобы недалеко было ходить, сделал я в заборе калиточку.]* Я ходил к ней и по человечности носил ей чайку, сахарку. А она, **бывало**[up], **увидит**[un,upf] меня и **начнёт**[un,upf] трястись всем телом, **машет**[un,uipf] руками и бормочет: "Уйди!" (Anton Čechov, "Baby")

(29) I went to see her, and from Christian charity I took her a little tea and sugar. But as soon as she **set**[up] eyes on me she **began**[up] to shake all over, **wringing**[uipf] her hands and muttering: "Go away! go away!"

(30) Jeg besøkte henne og av humanitet hadde jeg med til henne te og sukker. Men når hun **fikk**[up] **se** meg, **begynte**[up] hun å ryste over hele kroppen, **vinke** med hendene og mumle: "Gå vekk!" *(Norwegian)*

We shall return to this puzzling aspectual choice in Section 7. But how do we make sense of the present tense morphology under *byvalo*? In the rich literature on Russian tense and aspect I have not been able to find any explicit and fully developed analysis of these constructions.[6] However, Paslawska and von Stechow provide the key notion for a proper understanding of *byvaet/byvalo* in combination with present tense morphology, namely the notion of *bound tense*:

> "The perfective present form [can be] embedded under a habituality operator that gives us a large interval surrounding the speech time. Within that interval, the PERFECTIVE may localize the event time. The IMPERFECTIVE is possible under the habituality operator as well, of course. The surrounding time span can be introduced explicitly, e.g. the verb *byvaet* 'it happens'. [...] Arguably, the present in the subordinate doesn't denote the speech time, it rather is a bound variable." (Paslawska & von Stechow 2003:336–337)

Since the embedded present tense morphology obviously cannot be ascribed a deictic interpretation, the only reasonable alternative is to assume some kind of dependence on the verbal quantifier *byvalo*. Arguably *byvalo*, like attitude verbs, controls (binds) the temporal parameter of the embedded predicate. In the case of *byvalo*, this time is not the "subjective now", but some contextually relevant subinterval of the habitual time span. This embedded predicate is just as "tenseless" as temporal propositions under attitudes, hence present tense morphology is licensed in Russian in accordance with the SOT parameter.

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[6] As pointed out by two of the reviewers, the use of the perfective present in these constructions is known as the *primerno-nagljadnoe značenie* in traditional Slavic aspectology. However, the mere labelling of the construction does not amount to providing an analysis. In this paper I try to go one step further by subsuming this puzzling construction under a more familiar phenomenon, viz. complement tense under attitude verbs.

5. Habituals and aspect marking

Čechov's story in example (25) continues a few sentences later with the imperfective past (without *byvalo*):

(31) *[**Бывало**, прежде чем вырубить елку, дед **выкуривает трубку**, долго нюхает табак, посмеивается над озябшим Ванюшкой ...]* Срубленную елку дед **тащил**[up, uipf] в господский дом, а там принимались убирать ее [...] (Anton Čechov, "Van'ka")

(32) When he had cut down the Christmas tree, grandfather **used**[up] **to drag** it to the big house, and there set to work to decorate it [...]

(33) Det huggede treet **pleide**[up] bestefar **å trekke** av sted til herskapshuset, og der gav de seg til å pynte det [...] *(Norwegian)*

Semantically there is no particular difference in the temporal interpretation of the first sentence (present under *byvalo*) and second sentence (imperfective past) in the story above. In this case both the English and Norwegian translations express the habituality through a verbal quantifier. However, there seems to be an alternative way of expressing habituality in Russian – through imperfective aspect alone, strictly speaking leaving the habitual operator covert.

This comes as no surprise to aspectologists, since the habitual-iterative reading is cross-linguistically (e.g. both for Slavic and Romance languages) considered one of the two main interpretations of the imperfective. Instead of focusing on a unified semantics for habitual and progressive aspect, I will argue that we may need both in one and the same sentence. While the habitus is always "imperfective", the "lower aspect" can be either imperfective/progressive or perfective.

In examples (31)–(33) above, the VP "to drag the Christmas tree to the big house" is presumably telic and therefore receives a "perfective" interpretation. For convenience, let us also look at the example below, where the embedded verb clearly calls for a perfective interpretation:

(34) И скоро, скоро стала эта женщина моею тайною женой. Она **приходила**[up, uipf] ко мне каждый день, а ждать ее я начинал с утра. (Michail Bulgakov, "Master i Margarita")

(35) And soon, very soon, this woman became my secret wife. She **used**[up] **to come** to me every afternoon, but I would begin waiting for her in the morning.

The standard view is to treat aspects as temporal relations between reference times and event times (or states). There are two "conflicting" aspectual relations involved in a sentence such as (34). The speaker refers to a past time interval t and says that the woman had a *habitus s* at that time t. The habitus s might also extend beyond t, thus indicating that the past reference time t is included in the habitus: $t \subseteq s$. This is an imperfective relation.[7] However, there is also the question of how the events of the woman visiting the speaker are temporally interpreted. And here we get the opposite

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[7] The idea of separating imperfective aspect and the habitus was suggested to me by Arnim von Stechow.

inclusion relation: on every day *t'* there is a visit *e*, such that *e* is temporally included in *t'*: $e \subseteq t'$. In other words, we have a "perfective complete event interpretation".[8] In this respect example (34) is particularly transparent because of the overt quantifier *každyj den'* ("every day"), which gives us the relevant subintervals of the habitus. One should bear in mind that this quantification over times is often covert (contextually given).

We can also have constructions involving *two imperfective* operators: one that applies to the habitus, and one which operates locally on the VP. In the following example from Czech[9] we have an imperfective stative verb co-occurring with the imperfective-habitual suffix "-va". So, the two imperfective operators are overtly expressed. In most languages this double aspect marking of a finite verb is not available. The Russian translator has somehow solved this conflict by adding the verb "ljubil – loved to", which conveys the habitus of lying on the grass. In the English translation the imperfective is not expressed through verbal morphology, but the combination of *two* temporal *when*-clauses in one and the same sentence points to the two aspectual relations in question:

(36) Jako kluk jsem **lehával**[up, uipf, uhab] u tety na venkově v noci na trávě. (Jan Otčenášek, "Romeo, Julie a tma") *(Czech)*

(37) Я еще мальчишкой у тетки в деревне **любил**[up, uipf] **лежать**[uipf] по ночам в траве.

(38) When I was little I **used**[up] **to lie** on the grass at night when I was staying at my aunt's in the country.

(39) Som liten gutt, da jeg var på besøk på landet hos tante, **pleide**[up] jeg **å ligge** i gresset om natten. *(Norwegian)*

A comparison with other Slavic languages shows support for the structure assumed here, namely the split of aspect into two operators. Consider again the case of ("perfective") complete events instantiated at subintervals of the ("imperfective") habitus. As we saw above, Russian typically resolves this conflict in favour of the imperfective aspect. However, in Slavic languages such as Czech, Slovak and Slovene the conflict is resolved differently with perfective marking of the verb (Mønnesland 1984). Finally, Bulgarian, which displays an interesting mixture of Slavic type and Romance type aspect, provides us with the desired configuration. In the following example from Maslov (1959), the verb is lexically marked for perfectivity (complete events) and imperfect tense (imperfective habitus):[10]

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[8] Covert semantic operators (here: PF) do not necessarily interact with morphological u-features (here [uipf]), but we must assume that the PF-operator does not block the feature transmission from the higher imperfective operator [iipf].

[9] The example is taken from the Czech parallel corpus *Intercorp* http://www.korpus.cz/intercorp/?lang=en.

[10] True, this configuration is restricted in Bulgarian to subordinate clauses. I thank Svetlana Krasikova and Kjetil Rå Hauge for discussion of this point.

(40) Deto **pomineše**[up/uipf, upf] našija tren, šapki zachvărčavacha nagore. *(Bulgarian)*
'Wherever our train passed by, hats would be thrown in the air.' (cited from Mønnesland 1984:68)

6. Analysis

Returning to our initial example (1)–(2), repeated below, I shall now sketch a formal analysis:

(41) Всё, **бывало**[up, uipf], с ней через забор **разговариваю**[un, uipf]. (Anton Čechov, "Baby")
(42) I **used**[up] always **to be talking**[uipf] to her across the fence.

Byvalo or *used to* give us a large interval in the past, and furthermore, quantify over subintervals of the past time span. The truth conditions for the above sentence could be paraphrased as follows (slightly modified after Paslawska & von Stechow 2003; Scheiner 2002):

(43) There is a past time t such that the speaker has the habitus s at a superinterval of t and such that for all contextually relevant subintervals t' of s, events e of the speaker talking to her are instantiated at superintervals of t'.

(44) $\exists t \, \exists s. [t < now \, \& \, t \subseteq s \, \& \, (\forall t') [contextually\_relevant(t') \, \& \, t' \subseteq s \rightarrow \exists e \, [t' \subseteq e \, \& \, talking \, to \, her(e)]]]$

Without going into the details of the semantic composition, I propose the following semantic skeleton for the constructions involved in this paper:

[TENSE[IMP[HAB-*byvalo/used* [ZERO TENSE [LOWER ASPECT[*verb*]]]]]]

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ip                    up          in                            un
|_____|              |_____|
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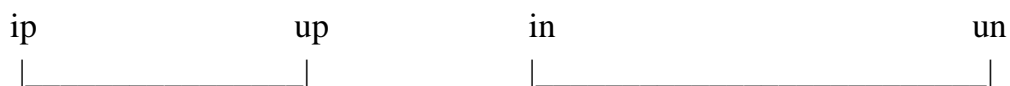
Figure 4. Semantic skeleton of habituals and licensing condition for the present tense in Russian.

In fact, in the Russian example (41), all the semantic ingredients involved are morphologically expressed: the morphology of the habitual operator *byvalo* points to both a tense operator (here: PAST) and the imperfective aspect (the suffix -*yva*). The embedded verb *razgovarivaju* is semantically tenseless (zero tense), but morphologically marked for the present tense in accordance with the SOT parameter. And, finally, the verb is marked with the imperfective aspect reflecting the process interpretation of the embedded talking events.[11]

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[11] As shown in the examples above, we can have either the imperfective or perfective aspect under *byvalo*. This also holds for other verbal quantifiers such as the subjunctive *by*, but not for the future shifter *budet*, which subcategorizes for imperfective verbs.

The English construction in (42) has most semantic elements overtly expressed except the higher imperfective. The embedded infinitival predicate "to be talking" does not have any morphological tense features, and it is therefore semantically tenseless and compatible with any temporal interpretation inherited from the higher predicate.

However, the embedded non-finite verb form overtly expresses the lower progressive aspect: *be talking*. Furthermore, in the English sentence we find an additional quantifying element: *always*. This points to an element of the construction that is neglected in this paper (since it is orthogonal to the main plot), namely the question of determining what intervals are relevant for the instantiation of the events denoted by the VP. In the paraphrase in (43) above, I use the vague expression "contextually relevant subintervals" of the habitus. Indeed, context is a key factor, and the overt quantifier "always" must be further restricted to, say, "every time … after breakfast on a sunny day…" or something similar. I assume that the quantification over contextually relevant times originates with the habitual operator[12], which therefore binds the reference time of the VP and thus takes a semantically tenseless VP as input. We have temporal control, but the event variable remains independent of the habituality operator HAB (hence two independent aspects).

The fact that the embedded VP is semantically tenseless makes it all the more natural that *used to* in English and similar quantifiers in other Germanic languages embed an infinitive complement (non-finite with respect to tense, i.e. tenseless, but possibly marked for aspect as in (42)). There is not much room for a semantic tense under a tensed habituality operator. Nevertheless, for Russian we have to justify the tense morphology (present tense) of the finite embedded predicates, and this is why we need the licensing condition depicted in Figure 4: tenseless propositions (VPs) have the feature "interpretable now" [in].

7. "Perfective present" in Russian habituals

With the SOT parameter we can finally provide an explanation for data such as the following, repeated from (28) above:

> (45) Я ходил к ней и по человечности носил ей чайку, сахарку. А она, **бывало**[up, uipf], **увидит**[un, upf], меня и **начнет**[un, upf], трястись всем телом, **машет**[un, uipf], руками и бормочет: "Уйди!" (Anton Čechov, "Baby")

In the traditional literature on Slavic aspect, this use of the perfective aspect under an overt or covert *byvalo* is known as the *primerno-nagljadnoe značenie* (e.g. Bondarko

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[12] See Scheiner 2002 for a more fine-grained analysis on this point.

1971).[13] However, this label does not capture the essential point: the reference time is temporally bound by a higher operator.[14]

Before explaining the puzzle presented by the occurrences of "uvidit" and "načnet" above, let me remind the reader that the feature combination [un, upf] is problematic since the corresponding operators would normally result in the aspectual relation $e \subseteq s^*$, i.e. the event e is temporally included in the speech time, which conflicts with the assumption that the speech time denotes a point in time. This has the consequence for Russian that perfective verbs with present tense morphology in deictic contexts are coerced into a perfective future interpretation. Thus we have a special rule to the effect that an operator with the features [if, ipf] (interpretable future and interpretable perfective aspect) can check the morphological features [un, upf]. This future-perfective operator does two things: it shifts the reference time to a future time t, and it requires the event e to be temporally included in t.

What happens when the feature combination [un, upf] occurs in a verb that is temporally bound by a higher operator? A reinterpretation of the perfective present as a (relative) future tense also takes place in complements of attitudes:

(46) Он **сказал**[up, upf], что завтра **сообщит**[un, upf] ей свое решение. (Lev Tolstoj, "Anna Karenina")
(47) He **said**[up] that tomorrow he **would**[up] **let** her know his decision.
(48) Han **fortalte**[up] at han **skulle**[up] **meddele** henne sin beslutning dagen efter. *(Norwegian)*

If we adopt the "subjective now" metaphor from Section 2, we can easily see that we risk ending up with a similar contradiction to that encountered in deictic contexts. If the embedded perfective is combined with a present tense, i.e. is interpreted as equal to the local reference time of the complement, that is, the "subjective now", we get the configuration $e \subseteq s^{**}$ (where s^{**} = the attitude holder's subjective now). On the reasonable assumption that the "subjective now" denotes a minimal interval (a point) in time, we are again faced with a contradiction.

Thus, the forward shifted interpretation of (46) makes sense. The reference time of the complement is shifted to a time interval after the attitude holder's (the agent of the saying event) own perspective time, or "subjective now". Accordingly, we get the configuration that $e \subseteq t \ \& \ t > s^{**}$.

To sum up, in most cases, perhaps 99% of perfective non-past verb forms, the present perfective is indeed coerced into a future perfective. The utterance time (or subjective now) is too small to allow for a perfective complete event interpretation with an internal viewpoint (the event cannot be completed within the utterance time).

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[13] Translated as "exemplifying function" (Mønnesland 1984:57): "one instance is presented as a typical example".

[14] Since Russian is a non-SOT language and therefore does not transmit features from verbal quantifiers to the embedded verbs, the verbal quantifier *byvalo* (or *byvaet*) need not be overtly expressed.

However, under *byvalo* a forward shift makes little sense semantically, since we are quantifying over subintervals *t* of the habitus. Furthermore, there is no reason to assume that the contextually provided subintervals *t* would be *minimal* intervals (i.e., points in time). Accordingly, the natural interpretation is the non-coerced "present perfective": $e \subseteq t$, where *t* is identical to the subintervals provided by the habitual quantifier and the context. The local reference time *t* – the "lower tense" – is therefore neither forward shifted with respect to the habitus nor forward shifted with respect to the contextually given subintervals of the habitus. The present tense morphology is simply a reflex of a bound and tenseless form – bound by the contextually relevant subintervals induced by *byvalo*. The morphological present tense feature [un] in "uvidit" and "načnet" in example (45) must therefore be licensed by the [in] feature which comes along with semantically tenseless propositions in Russian.

In this respect there is no temporal difference between the perfective verbs *uvidit* and *načnet* on the one hand and the imperfective *mašet* on the other in this particular environment (under *byvalo*). The aspectual difference in example (45) can then be reduced to a truly aspectual (Aktionsarten) opposition: the perfective punctual achievements *uvidit i načnet* versus the imperfective activity predicate *mašet rukami*.

8. Open ends: from habituals to implicatives

The present article is motivated by the idea of extending the SOT parameter to "new" data. Along the way I have also made some comments on the role of aspect in the constructions under consideration. However, the analysis of aspect is strictly speaking not essential to the plot.

An issue that has not been covered here is whether the analysis of habituals should be modalized. Owing to the "imperfective paradox" we need a modal operator in the lower aspect when we have a progressive interpretation (the event is located at a superinterval of the contextually given local reference time, and therefore we don't know whether the event is "completed" in the actual world). Similarly, the habitus (higher aspect) is also imperfective in that it is located at a superinterval of the "higher" reference time. In habituals we do not necessarily know how many – if any (?) – VP-events are actually instantiated in the actual world.

Ideally, one would furthermore like to explain the cross-linguistic parallels between habituality and counterfactuality[15] (and imperfective marking), or the simple observation that English uses the verbal quantifier *would* in both counterfactuals and habituals.[16]

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[15] Note that the phenomenon of "fake tense" in counterfactuals is different from "zero tense" in complements under attitudes and *byvalo*, cf. (Grønn & von Stechow 2010).

[16] A parallel perhaps worth exploring further is the following: in counterfactual constructions the operator "would" is typically modified by a semantically tenseless *if*-clause, while the habitual operator ("would"/"used

However, the precise nature of habituals – modal or not – is not crucial for our main plot, since we find similar tense phenomena with verbal quantifiers that are not habituals. In this respect the following construction with the subjunctive complementizer *čtoby* under *byvaet* is rather puzzling:

(49) Ведь **бывает**[un, uipf] же так, королева, **чтобы надоел**[up, upf] муж. (Michail Bulgakov, "Master i Margarita")

(50) It **does**[un] **happen**, Queen, that one **grows**[up] weary of one's husband.

(51) Det **forekommer**[un] jo, dronning, at man **blir**[un] lei av mannen sin. *(Norwegian)*

The English and Norwegian translations clearly use constructions that are normally not considered to be habituals. Verbs like "happen", etc. are known as "implicative verbs" since (Karttunen 1971). There is a link to factivity, but unlike factive verbs ("to know", etc.), which presuppose the truth of their complements, implicative verbs *entail* their complement (which makes the subjunctive in the Russian original in (49) rather mysterious).

With respect to habituals versus implicatives, the Russian *byvaet/byvalo* construction provides a nice contrast. Without a complementizer the interpretation is habitual, but with the complementizer *čto (čtoby)*, we seem to get something more like an implicative reading (leaving the subjunctive element *by* in *čtoby* above as a puzzle). Here are some relevant examples:

(52) Вдовьины яйца каждое воскресенье появлялись на Стекловском рынке, вдовьиными яйцами торговали в Тамбове, а **бывало**[up, uipf]**, что** они **показывались**[up, uipf] и в стеклянных витринах магазина бывшего Сыр и масло Чичкина в Москве. (Michail Bulgakov, "Rokovye jajca")

(53) Each Sunday the widow's eggs appeared at Glassworks market. They were sold in Tambov and **were**[up] even occasionally **displayed** in the windows of the former Chichkin's Cheese and Butter Shop in Moscow.

Under *byvalo, čto* the past tense is most frequently used, as in (52), presumably owing to the implicative (factive) character of the construction. Interestingly, however, we also find the present tense – even with perfective verbs – under *byvalo, čto*:

(54) Прежде **бывало**[up, uipf] так, что мисс Гуль **найдет**[un, upf] и **покажет**[un, upf] ей. (Lev Tolstoj, "Anna Karenina")

(55) It **had**[up] always **happened** before that Miss Hoole **found**[up] them *[the mushrooms]* and **pointed**[up] them out to her.

(56) Før **hadde**[up] det **vært** slik at miss Gull **hadde**[up] **funnet** soppene og **vist** henne dem. *(Norwegian)*

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to") can be modified by a semantically tenseless *when*-clause ("when" can be considered a temporal relative pronoun, hence an abstractor over the reference time).

My Russian informants[17] confirm that the English translation in this case is misleading with the quantifier "always", suggesting a habitual interpretation, while the Russian original should rather be interpreted as reporting on more or less accidental event plurality. A search in the monolingual Russian National Corpus provides several examples with the present (perfective or imperfective) under *byvalo, čto*:

(57) Переезд на подводах практиковался в радиусе до 40 верст, с расчетом, чтобы подвода к вечеру могла добраться до дачи. **Бывало**[up, uipf], что дачники **приедут**[un, upf], а подводы нет, спать не на чем. (Russian National Corpus)

The same mechanism that is responsible for the present tense under *byvalo* should also explain the present tense under *byvalo, čto* in examples such as (54) and (57). This raises the question: Do we find SOT effects with implicatives in SOT languages? Indeed, we do find such data. In fact, we also run into some (more or less familiar) problems for SOT theories. Consider the English (or Norwegian) construction below:

(58) Но в тридцатилетней практике бухгалтера не было случая, чтобы кто-нибудь, будь то юридическое или частное лицо, затруднялся бы принять деньги. (Michail Bulgakov, "Master i Margarita")

(59) But there **had**[up] **been** no **case** in the bookkeeper's thirty years of experience when anyone, either an official or a private person, **had**[up] **had** a difficult time accepting money.

(60) Men i hele bokholderens tredveårige praksis **var**[up] det ikke en eneste gang **forekommet** at en person, den være seg juridisk eller fysisk, **hadde**[up] **vegret** seg for å motta penger. *(Norwegian)*

We can safely consider "to be the case…" a verbal quantifier with an "implicative" semantics (if it is true that "it is the case that *P*", then *P* is obviously also true). The past tense on "had [up] had a difficult time" in the subordinate *when*-clause can be analysed as a case of tense agreement with the matrix past. However, there is no semantic justification for the presence of the verbal quantifier *had* in the *when*-clause (there is no backward shifted interpretation). Thus, although we can explain the morphological features of *had*, we cannot explain the presence of the quantifier itself. This problem, however, is also found in many other environments, such as in *if*-clauses under a past counterfactual operator:

(61) Как **бы** он **обрадовался**, если **бы узнал** об этом! (Jurij Oleša, "Tri tolstjaka")

(62) How happy he **would**[up] **have been** if he **had**[up] **known**!

(63) Så glad han **ville**[up] **blitt** om han **hadde**[up] **visst** det! *(Norwegian)*

The "have" in the main clause is semantically a past time shifter locating the counterfactual hypothesis in the past. The past tense morphology on the counterfactual operator "would" as well as in "had" in the *if*-clause is so-called fake past, i.e. past-pro-subjunctive mood. As in the previous example, there is no semantic motivation for

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[17] I thank Olga Dolžikova, Svetlana Krasikova and Tatiana Nikitina for discussion of the Russian data.

the presence of the verbal quantifier "had". At this point we can only stipulate that the auxiliary (here: "had") is semantically empty in these contexts deleted at LF (Logical Form), and its presence is purely stylistic.

9. Conclusion

The argument presented in this article is rather involved, so let me recapitulate the essential points. The hypothesis explored is that tense in habitual constructions should be analysed in accordance with SOT theory, and, more particularly, that the possible use of present tense morphology under *byvalo* in Russian should be understood in the light of Russian being a non-SOT language.

It does not follow from the fact that Russian does not have tense agreement in complements that the present is licensed under *byvalo*. Importantly, however, the SOT parameter tells us more: in Russian, unlike English, the present tense is licensed in semantically tenseless complements, i.e. in complements that are temporally controlled by a higher operator (a verbal quantifier). This is what complements under habituals (*byvalo, used to*) and complements under attitude verbs (*skazal, said*) have in common.

Given this argument, we expect to find SOT phenomena in Germanic habituals. The evidence here is rather indirect since the complements of *used to* are non-finite (without morphological tense marking). However, we can also look at adjunct tenses under habituals following the recent proposal in the literature that the SOT parameter applies also to adjunct tenses. In adjuncts under habituals in Germanic languages we do indeed find tense agreement. One could object to this argument saying that these adjuncts are temporally independent, i.e. deictic, but in either case the behaviour of adjunct tenses does not falsify our initial hypothesis. Furthermore, since the present tense in Russian under *byvalo* cannot be deictic, the analysis of the phenomenon as a case of bound tense seems to on the right track. In addition, the present proposal gives an explanation for the puzzling use of the perfective present with a non-future reading in these constructions.

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