Grammatical Marking of Givenness

Ivona Kučerová

Abstract

   Schwarzschild's (1999) account of givenness, following Rooth (1992a),
elaborates a notion of complementarity of givenness and focus in an intri-
cate way: While givenness is semantically interpreted, focus is grammatically
marked. As Wagner (2005, 2006b) noticed, however, under certain circum-
stances givenness in English is grammatically marked as well. Movement
plays a role in this process.

This paper provides further evidence for marking givenness. I present a case
study of three Slavic languages (Czech, Russian, and Serbo-Croatian) in which
givenness is *always* grammatically marked. In these langauges, given ele-
ments must linearly precede new elements. If this relative ordering cannot be
achieved by base generation, the ordering can be fixed by movement. I will
provide an account of the data in terms of givenness and the Maximize Presup-
position principle of Heim (1991). In particular, I will argue for an operator
that marks elements in its scope as given. The operator divides the structure
between a given and a new part. The role of Maximize Presupposition is to
enforce that every given element is in the scope of the operator. The operator
and Maximize Presupposition work in tandem with an economy condition on
movement that licenses movement only if it yields an otherwise unavailable
semantic interpretation (cf. Fox 1995, 2000; Reinhart 1995). The proposal
thus provides independent evidence for a competition in grammar and for the
role of Maximize Presupposition in the process.

1   Introduction

Czech is a *pro*-drop language with fairly free word order. To have a descriptive
label at hand, I will refer to SVO based (SV IO DO, etc.) orders as the *basic word
order* and to other orders (VSO, OSV, etc.) as *derived word orders* (Veselovská,
1995, among others). Interestingly, the basic word order and a derived word order
differ in the range of their interpretations. I will demonstrate the interpretational
differences on example (1).

(1)   *An example of a basic word order and a derived order:*
     a.   SVO: Chlapec našel lízátko.
              boy.Nom found lollipop.Acc
     b.   OVS: Lízátko   našel chlapec.
              lollipop.Acc found boy.Nom

To describe the readings I will use labels *given* and *new* to indicate whether the relevant item has been previously introduced into the discourse. The labels are used here only as a first approximation, they do not refer to the denotation of an item.

Focusing on the interpretation of DPs within the basic word order in (1-a) (putting aside the rest of the utterance for now), three different readings are readily available:[1,2]

(2)   *Possible interpretations of the basic word order:*
     a.   SVO: Chlapec našel lízátko.
              boy.Nom found lollipop.Acc
          (i)   'A boy found a lollipop.' ⟵ new > new
          (ii)   'This boy found a lollipop.' ⟵ given > new
          (iii) 'This boy found this lollipop.' ⟵ given > given
          (iv) #'A boy found this lollipop.' ⟵ #new > given

As we can see, if 'boy' is given, 'lollipop' may be new or given. If 'boy' is new, 'lollipop' *must* be new. The given interpretation is not possible. In other words, even though the basic word order is compatible with (at least)[3] three different interpretations, one logically possible interpretation is missing. To obtain the missing interpretation, the word order must be changed:

(3)   OVS: Lízátko   našel chlapec. ⟵ given > new
             lollipop.Acc found boy.Nom
          'A boy found this lollipop.'

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[1]I will be concerned here only with utterances without contrastive or corrective focus. All examples are pronounced with neutral sentential intonation. The main sentential stress falls on the first syllable of the last prosodic word. There is no other pitch accent except for the main sentential stress that falls on the first syllable of the last prosodic word. I also put aside cases of the so called aboutness topics in which the speaker changes the word order to mark what she is going to concentrate on in the coming utterance.

[2]Notice that there are no overt determiners in Czech. In translations, I use either 'a' or 'this/that' in order to avoid uniqueness presupposition that the reader might associate with English 'the'.

[3]We have put aside the non-nominal part of the utterance.

A first attempt to characterize the restriction on word order and the corresponding interpretation is given in (4).

(4)   **Generalization I: *New ≻ Given** [to be modified]
        In Czech, given elements must linearly precede new elements.

I suggest an account of the Czech data in terms of a natural-language operator that marks elements in its scope as given. I will call this operator a *G-operator*.[4] The operator is designed to capture the fact that there is a point in the structure above which everything is given. The G-operator is recursive and it freely propagates upwards, thus enforcing the structure to be divided between a given and a new part.

(5)   *The G-operator marks structurally higher elements as given:*
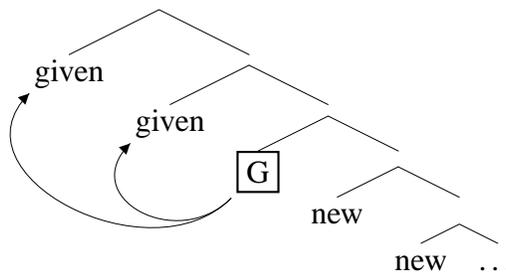
The question that arises is why we need such an operator in the first place. Consider the following scenario:

(6)   *Scenario I:*
        a.   A little girl on her way to school lost a lollipop. And then. . .
        b.   #chlapec   našel   lízátko
              boy.Nom found lollipop.Acc

Since 'lollipop' in (6-b) is given, it should be marked by the G-operator. However, because of the way the operator works, it would not mark only 'lollipop': 'boy' would be marked as given too. But such a marking would yield presupposition failure. In short, this will not do. What about not having any G-operator in the structure? Notice that the utterance would still be syntactically well-formed and semantically interpretable. Furthermore, if we consider a definition of givenness as that one of Schwarzschild (1999)[5] according to which an element is interpreted as

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[4]I will properly define the operator in Section 3.
[5]

(i)   *Definition of* GIVEN (Schwarzschild 1999, p. 151, (25))
        An utterance U counts as GIVEN iff it has a salient antecedent A and

given if it has a salient antecedent, 'lollipop' would be correctly interpreted as given.

I argue that it is not enough to interpret an element as given: given elements must be *marked* as given because of an independently needed pragmatic condition: Maximize Presupposition of Heim (1991), stated in (7). The principle requires that if an element may be presupposed, it must be presupposed. Consequently, if a given element failed to be marked, the Maximize Presupposition principle would be violated.[6]

(7)   **Maximize Presupposition** (after Heim (1991))
        In context C use the most informative presupposition satisfied in C.

Consider now again the utterance in (6-b), repeated below:

(6-b)   #chlapec   našel   lízátko
           boy.Nom found lollipop.Acc
           'A boy found the lollipop.'

If the G-operator were inserted below 'lollipop', it would necessarily mark the rest of the utterance as given as well, resulting in presupposition failure. On the other hand, if the operator were not inserted, 'lollipop' would fail to be grammatically marked as given. Consequently, Maximize Presupposition would be violated:[7]

(8)   a.   *The structure with the G-operator (presupposition failure):*
               $\boxed{\text{a-boy}_{Given}}$ $\boxed{\text{found}_{Given}}$ the-lollipop$_{Given}$ **G**

        b.   *The structure without the G-operator (Maximize Presupposition failure):*
               a-boy$_{New}$ found$_{New}$ $\boxed{\text{the-lollipop}_{New}}$

The only way to resolve the tension between presupposition failure and Maximize Presupposition is to reorder the structure:

(9)   *Reordering of (6-b) resolves the pragmatic tension:*

          a.   if U is type e, then A and U corefer;
          b.   otherwise: modulo $\exists$–type shifting, A entails the Existential F-closure of U.

[6]The definition of Maximize Presupposition in (7) refers to a choice from a candidate set of presuppositions. I will define the relevant reference set and its evaluation in Section 3.

[7]The source of the relevant pragmatic violation in the following examples is marked by boxes.

a. lízátko   našel chlapec.
   lollipop.Acc found boy.Nom

b. the-lollipop$_{Given}$ **G** found$_{New}$ a-boy$_{New}$

We have just derived Generalization I, i.e., the linear order dependency between given and new elements, as a result of an interaction of the G-operator and the Maximize Presuppositon principle.

The rest of the paper is organized as follows. In Section2, I will show that as it stands, Generalization I is too strong and its application must be further restricted to a certain type of domains. In the same time we will see that Generalization I is not only too strong but it is also too weak: it justifies more word order patterns than we find. I will argue that Generalization I is further restricted by an independently needed economy condition on syntactic operations. Generalization I can be understood as a statement about a partition between given and new: since given and new seem to be complementary we might reduce the proper characterization of the pattern to marking one of the sides of the partition. In Section 3 I will also introduce data from Russian and Serbo-Croatian showing that Czech is not unique in its givenness marking properties. In section 3 I will introduce a semantic proposal which will account for the pattern. In Section 4 I will investigate further predictions made by the semantic proposal. Section 5 will conclude the paper.

2   Generalization I: *New ≻ Given

In the previous section I introduced a generalization according to which in Czech given material must precede new material. This section looks at the generalization, repeated below, in more detail and introduces further refinements. This section also introduces data from Russian and Serbo-Croatian showing that the Czech word-order pattern is not unique.[8]

(4)   **Generalization I: *New ≻ Given** [to be modified]
      In Czech, given elements must linearly precede new elements.

We can think about the boundary between given and new material as a partition: in the following examples I will mark the partition by ‖. The generalization predicts that we should find exactly one partition per an utterance such that all given elements are to the left of the partition and all new elements are to the right of the

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[8]Even though I introduce data from Russian and Serbo-Croatian, most of the proposal will be demonstrated on Czech.

partition. The structural status of the elements should be irrelevant for the ordering. As we will see, the prediction is borne out.

Let's start with a simple example of an intransitive clause. In Czech there are word-order differences between unergatives and unaccusatives coming from a different base-generated position of the subject. As can be seen in (10)–(13), in an out of the blue context, the unergative subject which is structurally higher than the verb, linearly precedes the verb. However, if the subject is new and the verb is given, the word order must be reversed, as in (14)–(17).

(10) *Unergatives:*
  a. *Context:* It was just a normal party. Nothing special. Some people just drank, some people sang, and. . .
  b. `subject > verb`

(11) *Czech:*
  a. Marie tancovala.
    Marie danced
  b. #tancovala Marie
    danced   Marie
  'Marie danced.'

(12) *Serbo-Croatian:*
  a. Marija   je igrala
    Marija.Nom is danced
    'Marija danced.'
  b. #Igrala   je Marija
    danced is Marija.Nom
    'Marija danced.'

(13) *Russian:*
  a. Marija   pritancovala
    Marija.Nom danced
    'Marija danced.'
  b. #Pritancovala Marija.
    danced   Marija
    'Marija danced.'

(14) *If the verb is given, the order must be reversed:*
  a. *Context:* A: I'm sorry I missed the party yesterday. Did you go?
    B: No, but I heard that it wasn't such a great party. There was suppos-edly only one person that danced.

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A: Do you know who danced?

b. `verb > subject`

(15) *Czech:*

Tancovala ‖ Marie
danced   Marie
'Marie danced.'

(16) *Serbo-Croatian:*

Igrala   je ‖ Marija
danced is   Marija
'Marija danced.'

(17) *Russian:*

Tancovala ‖ Marija.
danced   Marija
'Marija danced.'

Since in unaccusatives the base generated position of the surface subject is lower than the verb, we expect unaccusatives to form a mirror image of unergatives. This is indeed what we find. If both the surface subject and the verb are new, the verb linearly precedes the subject, as in (18)–(21). However, if the verb is new and the subject is given, the word order must be reversed, as seen in (22)–(25).

(18) *Unaccusatives:*

a. *Context:* A and B walk on a street in A's neighborhood and suddenly there is a very loud noise. A knows that there is a railway station in front of them but B doesn't. B: 'What was that noise?' A: 'There is a railway station ahead of us. I guess...'

b. `verb > subject`

(19) *Czech:*

Přijel   vlak.
arrived train
'A train arrived.'

(20) *Serbo-Croatian:*

Stigao je voz
arrived is train
'A train arrived.'

(21) *Russian:*

Prišol pojezd
arrived train
'A train arrived.'

(22) *If the subject is given, the order must be reversed:*

    a. *Context:* A and B wait for a train and they get lost in a chat. A suddenly notices that the train they have been waiting for is already in the station.

    b. `subject > verb`

(23) *Czech:*

    a. Vlak ‖ přijel
        train   arrived
        'The train arrived.'

    b. #Přijel vlak
        arrived train
        'The train arrived.'

(24) *Serbo-Croatian:*

    a. Voz   je ‖ stigao.
        train.Nom is   arrived
        'The train arrived.'

    b. #Stigao je voz.
        arrived is train
        'The train arrived.'

(25) *Russian:*

    a. Pojezd ‖ prišol
        train   arrived
        'The train arrived.'

    b. #Prišol pojezd
        arrived train
        'The train arrived.'

The same pattern repeats itself in more complex structures. Consider now a double-object construction in which only the direct object is new, the rest of the utterance is given, as in (26)–(29). In the following examples, new material is written in bold. The relevant context is approximated by a question-answer pair.

(26) *Only direct object is new:*
Context: What did Marie give to Pavel?

(27) *Czech:*

   a.   Marie   dala Pavlovi ‖ **knížku**.
          Marie.Nom gave Pavel.Dat   book.Acc
          'Marie gave Pavel a book.'

   b.   #Marie   dala **knížku**   Pavlovi.
          Marie.Nom gave book.Acc Pavel.Dat

   c.   #Marie   **knížku**   dala Pavlovi.
          Marie.Nom book.Acc gave Pavel.Dat

   d.   #**knížku**   Marie   dala Pavlovi.
          book.Acc Marie.Nom gave Pavel.Dat

(28)   *Serbo-Croatian:*

       Marija   je dala Pavlu   ‖ **knjigu**
       Marija.Nom is given Pavel.Dat   book.Acc
       'Marija gave Pavel a book.'

(29)   *Russian:*

       Marija   dala Pavlu   ‖ **knjigu**
       Marija.Nom gave Pavel.Dat   book.Acc
       'Marija gave Pavel a book.'

As we can see in (26), the only felicitious order is the order in which the new element linearly follows *all* given elements. Examples in (30)–(41) show that there is nothing special about a direct object. *Any* new element must follow given elements.

(30)   *Only indirect object is new:*
      Scenario: A really wanted to read a book Marija told A about but Peter told A that Marija gave the book to someone. A: Do you know whom Marija gave the book?

(31)   *Czech:*

   a.   Marie   dala knížku ‖ **Pavlovi**. (Ale ty ho myslím
          Marie.Nom gave book.Acc   Pavel.Dat but   you him think-I
          neznáš.)
          not-know-you
          'Marie gave a book to Pavel. (But I don't think you know him.)'

   b.   #Marie   dala **Pavlovi** knížku.
          Marie.Nom gave Pavel.Dat book.Acc

   c.   #Marie   **Pavlovi**   dala knížku.
          Marie.Nom Pavel.Dat gave book.Acc

   d.   #**Pavlovi** Marie   dala knížku.
          Pavel.Dat Marie.Nom gave book.Acc

(32) *Serbo-Croatian:*

Marija   je dala   knjigu   ‖ **Pavlu**.   Myslim da   ga
Marija.Nom is given boo.Acc   Pavel.Dat think-I   that him
neznaš
not-know-you
'Marija gave the book to Pavel. I don't think you know him, though.'

(33) *Russian:*

Marija   dala knjigu   ‖ **Pavlu**.   (Ty   jego neznaeš.)
Marija.Nom gave book.Acc   Pavel.Dat you him not-know
'Marija gave the book to Pavel. (But you don't know him.)'

(34) *Only subject is new:*
Context: I didn't know that Pavel now has the book. Who gave the book to Pavel?

(35) *Czech:*

a.   Pavlovi   knížku   dala ‖ **Marie**.
     Pavel.Dat book.Acc gave   Marie.Nom
     'Marie gave the book to Pavel.'

b. #Pavlovi   dala   **Marie**   knížku.
     Pavel.Dat gave Marie.Nom book.Acc

c. #dala **Marie**   Pavlovi   knížku.
     gave Marie.Nom Pavel.Dat book.Acc

d. #dala   **Marie** Pavlovi   knížku.
     Marie.Nom gave   Pavel.Dat book.Acc

(36) *Serbo-Croatian:*

Pavlu   je knjigu   dala   ‖ **neka žena**
Pavel.Dat is book.Acc given   some woman.Nom
'Some woman/A woman gave Pavel the book.'

(37) *Russian:*

Pavlu   knjigu   dala ‖ **kakaja to   ženština**
Pavel.Dat book.Acc gave   what   that woman.
'Some woman gave Pavel the book.'

(38) *Only adjunct is new:*
Context: Oh, I didn't know that Marija gave Pavel the book. When did she give it to him?

(39) *Czech:*

    a.   Marie   dala knížku   Pavlovi ‖ **včera**.
            Marie.Nom gave book.Acc Pavel.Dat   yesterday
            'Marie gave a book to Pavel yesterday.'

    b. #Marie   dala Pavlovi **včera**   knížku.
            Marie.Nom gave Pavel.Dat yesterday book.Acc

    c. #Marie   dala **včera**   Pavlovi   knížku.
            Marie.Nom gave yesterday Pavel.Dat book.Acc

    d. #Marie   **včera**   dala   Pavlovi knížku.
            Marie.Nom yesterday Pavel.Dat gave   book.Acc

    e. #**včera**   Marie   dala Pavlovi   knížku.
            yesterday Marie.Nom gave Pavel.Dat book.Acc

(40)   *Serbo-Croatian:*

        Marija   je dala Pavlu   knjigu   ‖ juče
        Marija.Nom is given Pavel.Dat book.Acc   yesterday
        'Marija gave the book to Pavel yesterday.'

(41)   *Russian:*

        Marija   dala Pavlu   knjigu   ‖ včera.
        Marija.Nom gave Pavel.Dat book.Acc   yesterday
        'Marija gave the book to Pavel yesterday.'

If there is more than one new element in an utterance, the same generalization still holds: *all* new elements must linearly follow *all* given elements, as can be seen in (42)–(45).

(42)   *Adjunct and subject are new:*
    Context: Oh, I didn't know Pavel now has the book. Do you know who gave it to him and when?

(43)   *Czech:*

    a.   Pavlovi   knížku   dala ‖ **včera**   **Marie**.
            Pavel.Dat book.Acc gave   yesterday Marie.Nom
            'Marie gave a book to Pavel yesterday.'

    b. #Marie   dala **včera**   Pavlovi   **knížku**
            Marie.Nom gave yesterday Pavel.Dat book.Acc

    c. #Pavlovi   knížku **Marie**   dala **včera**   .
            Pavel.Dat book.Acc Marie.Nom gave yesterday

    d.   …

(44)   *Serbo-Croatian:*

a. Pavlu   je knjigu   dala ‖ **juče   Marija**
   Pavel.Dat is book.Acc given   yesterday Marija
   'Marija gave the book to Pavel yesterday.'
b. Knjigu je Pavle   dala juče   Marija
   book   is Pavel.Dat given yesterday Marija.Nom
   'Marija gave the book to Pavel yesterday.'

(45) *Russian:*
a. Pavlu   knjigu   dala ‖ **včera   Marija**
   Pavel.Dat book.Acc gave   yesterdary Marija.Nom
   'Marija gave Pavel the book yesterday.'
b. Pavlu   dala knjigu   Marija   včera
   Pavel.Dat gave book.Acc Marija.Nom yesterday
   'Marija gave Pavel the book yesterday.'

Furthermore, Generalization I predicts that in a basic word order there should be multiple points in which the partition can be placed. Possible placements of the partion in a double object constructions are predicted to be as in (46).

(46) *Possible partition placements in a double-object construction:*
      (‖) Marie (‖) gave (‖) to-Pavel (‖) book.

This prediction is indeed borne out:

(47) *The basic word order is felicitous in several contexts:*
      a. (i)   What did Marie give to Pavel?
         (ii) Marie dala Pavlovi ‖ **knížku.**
      b. (i)   What did Marie give to whom?
         (ii) Marie dala ‖ **Pavlovi knížku.**
      c. (i)   What did Marie do?
         (ii) Marie ‖ **dala Pavlovi knížku.**
      d. (i)   What happened?
         (ii) ‖ **Marie dala Pavlovi knížku.**

2.1 Domain restrictions

Generalization I also predicts that the *New≻Given is a root phenomena. The prediction is that if there is a given element generated in an embedded clause it should precede new elements in the matrix clause. As can be seen in (48)–(51), this prediction is not borne out. This time, the given element is written in bold.

(48)　　*New ≻ Given is not a root phenomenon:*
　　　　Context: A and B are friends of Mary but A has not heard from her for a long time. But she thinks that B might have. 'A: By the way, have you heard anything about Marija?'

(49)　　*Czech:*
　　　　a.　Lucie　　　mi　　　řekla, že **Marie**　　　‖ si　　vzala Petra.
　　　　　　Lucie.Nom me.Dat told　that Marie.Nom　REFL took　Petr.Acc
　　　　　　'Lucie told me that Marie got married to Petr.'
　　　　b.　#Marie　　　‖ **Lucie**　　**mi**　　**řekla**, **že si**　　**vzala Petra**.
　　　　　　Marie.Nom　Lucie.Nom me.Dat told　that REFL took　Petr.Acc
　　　　　　'Lucie told me that Marie got married to Petr.'

(50)　　*Serbo-Croatian:*
　　　　a.　Jedan prijatelj　　izgovorio mi da **Marija**　　sa　　udala za
　　　　　　one　friend.Nom told　　me that Marija.Nom REFL got　　for
　　　　　　Petra
　　　　　　Petar.Gen
　　　　　　'A friend of mine told me that Marija got married to Petar.'
　　　　b.　#**Marija**　　jedan prijatelj　　izgovorio mi da sa　　udala za
　　　　　　Marija.Nom one　friend.Nom told　　me that REFL got　　for
　　　　　　Petra
　　　　　　Petar.Gen
　　　　　　'A friend of mine told me that Marija got married to Petar.'

(51)　　*Russian:*
　　　　a.　Mnje　drug　　　skazal to **Marija**　　vyla za mua Petra
　　　　　　me.Dat friend.Nom told　　that Marija.Nom got　for man Petor.Gen
　　　　　　'A friend of mine told me that Marija got married to Petor.'
　　　　b.　#**Marija**　　mnje　drug　　　skazal to vyla za mua Petra
　　　　　　Marija.Nom me.Dat friend.Nom told　　that got　for man Petor.Gen
　　　　　　'A friend of mine told me that Marija got married to Petor.'

As it stands, Generalization I is too strong. As we can see in (48), the relevant domain of application is a finite clause. Putting aside for now what the relevant domains are, we need to modify Generalization I to be domain-sensitive. The final formulation of Generalization I is given in (52):[9]

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[9] The relevant domains are often smaller than a finite clause. For example in Czech, a complement of a finite auxiliary is a domain for Generalization I application:

(i)　　*The complement of a Future auxiliary is domain for Generalization I:*
　　　　a.　What will happen to the book?

(52) **Generalization I: *New ≻ Given** [final version]
Within a domain [$_{Dom}$ Y ... X], if X is given, so is Y.

2.2 Economy condition on movement

Domain partitioning into given and new seems to involve a lot of movement.[10]
Furthermore, Generalization I predicts that any derived order in which given pre-
cedes new should be felicitous. Thus, any partition-internal reordering should be
felicitous. However, this prediction is not borne out. As we can see in (53), if Gen-
eralization I is satisfied in the basic word order, then the basic word order cannot be
changed:

(53) *If the basic word order does not need to be changed, it cannot be changed:*

    a.   What did Marie do?

    b.   Marie   bude **tu knihu**   dávat Petrovi.
          Marie.Nom will   the book.Acc give.Inf Petr.Dat
          'Marie will give the book to Peter.'

    c.   #**Tu knihu**   bude Marie   dávat Petrovi.
          the book.Acc will   Marie.Nom give.Inf Petr.Dat
          'Marie will give the book to Peter.'

(ii) *The complement of Past tense auxiliary is domain for Generalization I:*

    a.   What happened to the boat that got demaged in the last storm?

    b.   Jeden technik   a   já jsme **loď**   opravili .
          one   technician.Nom and I Aux.1pl boat.Acc repaired
          'A technician and I repaired the boat.'

Interestingly, the domain of Generalization I is in principle independent of the tense of the finite
clause. For example, the Past tense auxiliary is present for 1pl subjects, as in (ii), but not for 3sg
subjects, as in (iii). If there is no tense auxiliary, the domain for Generalization I can be the whole
finite clause:

(iii) *3sg.:*

    a.   What happened to the boat that got demaged in the last storm?

    b.   **Loď**   opravil jeden technik.
          boat.Acc repaired one   technician.Nom
          'A technician repaired the boat.'

  If we assume (following Ogihara 1996, among others) that a tense auxiliary selects for a proposi-
tion, we can characterize the domain of Generalization I as propositional domains. This characteri-
zation will become revelant in Section 3.

  [10]The ordering could be in principle derived by base generation. However, we will see in Section
3 that there is evidence for movement being the relevant structural operation.

    b.   Marie   ‖ **dala Pavlovi knížku**.
          Marie.Nom   gave Pavel.Dat book.Acc
          'Marie gave Pavel a book.'

    c.   #Marie   ‖ **Pavlovi dala knížku**.
          Marie.Nom   Pavel.Dat gave book.Acc

    d.   #Marie   ‖ **dala knížku Pavlovi**.
          Marie.Nom   gave book.Acc Pavel.Dat

One might argue that reordering is restricted only for basic word orders. If this were so, we would expect derived word orders to be compatible with multiple interpretations in the same way as the basic word order is. However, as can be seen in (54), this is not what we find. The only interpretation that is compatible with the derived order is the interpretation that is *not available* for the basic word order.

(54)   *Possible interpretations of the derived word order:*

    a.   OVS: Lízátko   našel chlapec.
           lollipop.Acc found boy.Nom
       (i)   'A boy found this lollipop.' ⟵ `given > new`
       (ii) #'A boy found a lollipop.' ⟵ `new > new`
       (iii) #'This boy found this lollipop.' ⟵ `given > given`

I argue that in order to account for the lack of partition-internal reordering and for the limits on the interpretation of derived order, Generalization I must be complemented by a generalization restricting movement:

(55)   **Generalization II: *Inversion**
    The word order may be changed only if the reordering yields a semantic interpretation that would not be available otherwise.

I argue that Generalization II results from an independently needed economy condition on movement. In particular, I argue for a view of syntactic movement as being free but costly: movement is licensed only if it yields an intepretation (in our case, presupposition) that would not be available otherwise (cf. Fox 1995, 2000; Reinhart 1995).

2.3 Summary

The observation that there is a relation between Czech word order and its interpretation is, of course, not new.[11] The particular observation that given material

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[11]To my knowledge, the first grammar that mentions the relation between a word order and its interpretation is Dobrovský (1819). The first attempt to systematically describe the relation is due to

in Czech, Russian, or Serbo-Croatian linearly precedes new material goes back at least to Mathesius's 1908 Prague lectures (Mathesius ([1929] 1983, 1931); Firbas (1964); Sgall (1967); Sgall et al. (1986) to name just a few). Interestingly, there has never been agreement on what factors determined the order *within* the given part and *within* the new part. Furthermore, the generalization has been stated in domain-independent terms.

In this section I argued that characterizing the word-order restriction as *New≻Given is both too strong and too weak. First, the generalization must be restricted to domains. Second, the actual reordering must be restricted by an economy condition on movement.

3 The semantic proposal

We have learned in Sections 1 and 2 that in Czech a structure may be divided into domains and any domain can be partitioned between given and new. One way to understand the partitioning is that there is a complementarity relation between the given and the new part. Consequently, it should be sufficient for the grammar to mark only one half of the partition and to define the other half by an elsewhere condition. The question is whether it should be the given part or the new part. A suggestive evidence comes from the following pattern. As (56) shows, the partition point may be off the main spine and yet, the main spine above is given and the main spine below is new:

(56)   *The partition may be off the main sentential spine:*
    a.   What else did Marie do yesterday?
    b.   **Yesterday Marie** ‖ and Paul came to school.

Gebauer (1900). Gebauer was also the first to notice that it is not only the word order but also prosody that matters for the interpretation. In particular, he argued for a model which derived prosody directly from the syntactic structure, taking into account hierarchical relations.

16

Yesterday

Marie

and   Paul

came to school
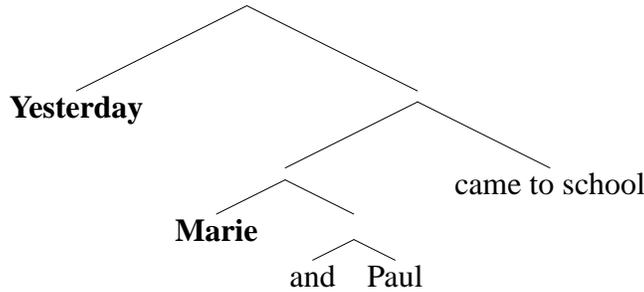
If the structure is marked up from the partition, as in (52), we can define a structural relation between the partition point and the given elements.[12] There is no structural relation that can be used to define the partition with respect to the new elements. If we wanted to mark new elements with respect to the partition point, we would have to first mark 'Paul' and then zig-zag down toward 'came to school', while avoiding marking 'Marie' as new as well. I will use this observation and argue that in Czech only givenness is grammatically encoded. New is defined by the elsewhere condition.[13,14,15]

I thus propose to account for Generalization I, repeated below, in terms of givenness. In particular, I will argue for a natural language operator that recursively marks elements in its scope as *given*. The terminating point of the operator will be defined in terms of a semantic type that corresponds to the semantic type of domains of the application of Generalization I. Furthermore, I will define givenness in terms of existential presupposition and I will argue that application of the operator is enforced by Maximize Presupposition.

(52)   **Generalization I: *New $\succ$ Given** [final version]
         Within a domain $[_{Dom}$ Y ... X], if X is given, so is Y.

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[12] All given elements asymmetrically c-command the partition point.

[13] Note, that the same is not true about focus in general: there is nothing in the present system that would force focus and given to be in the complementary distribution.

[14] The reader familar with the so called cartographic approaches to information structure (Rizzi, 1997, among others) may wonder whether we could capture the Czech data in a feature-checking mechanism. The fact that the partition point may fall off the main spine is one of the facts that suggests otherwise: In this particular example, the derivation would either violate the Coordinate Structure Constraint (Ross, 1967) (in case we assumed only one givenness projection given elements needed to move to), or we would have to posit multiple givenness projections. The latter choice would, however, fail to explain why the structure *must* be affected upwards even if the partition point is off the main spine.

[15] This argument, of course, holds only if we refer to hierarchical relations and not to the linear order. We could avoid the problem by defining newness over linear strings. However, as we will see in Section 4, marking givenness is not only easier but it also makes more precise predictions.

Generalization I says that there is a point in the structure above which everything is given. We can formalize this observation in terms of an operator that would add a presupposition to a syntactic element. Such an operator (i) needs to be able to mark more than one element as given, and (ii) it may operate only within a certain domain. Since in the cases we encountered so far, the relevant domain was a proposition, I will treat the domains as being of type $<s,t>$.[16] I propose to define such an operator syncategorematically as in (57).[17]

(57)   **G-operator:**

$$G([\![B]\!])= \begin{cases} \lambda A_\alpha : Given(A).G([\![B\ A]\!]) & B \text{ is of type } <\alpha,\beta> \text{ for some } \alpha,\ \beta \\ & \text{other than } <s,t> \\[2em] [\![B]\!] & \text{for B of type } <s,t> \end{cases}$$

The operator marks elements in its scope as given. It recursively propagates upwards[18] and terminates on an atomic semantic type (in our case, $<s,t>$). The operator is defined with respect to a syntactic constituent. Thus, whatever can be syntactically (and semantically) combined together qualifies as good arguments for the operator. If B is of type $<s,t>$, the application of the G-operator returns $[\![B]\!]$.[19] Notice that it is immaterial whether the operator is inserted in the narrow syntax or at LF. The only important thing is that it is syncategorematic. For concreteness, I will follow Sauerland (2005) in assuming that givenness gives rise to an existential presupposition (cf. Schwarzschild 1999).[20] My interest lies in how givenness applies compositionally, the actual lexical entry is not crucial.

We now have an operator that does the following two things for us: (i) Once the operator starts propagating upwards, it does not stop unless it reaches the edge of a domain. As a result, structures are divided into domains in which given precedes

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[16]It is not crucial that the domains are of a propositional type. Any atomic semantic type would do as well.

[17]The operator in (57) is due Roni Katzir. I am grateful to Danny Fox, Irene Heim, and Roni Katzir for discussing the properties of the G-operator with me.

[18]The reader might be puzzled that the operator leaves intact its complement and instead it propagates upwards. A more conventional idea of a semantic operator is an operator that applies only to its complement. Notice, however, that such a binary operator is not uncommon. This is exactly how, for example, the generalized conjunction (Partee and Rooth, 1983) or $*$-operator of Beck and Sauerland (2000) work.

[19]To my knowledge, Schwarzschild (1999) was the first to observe that interpreting givenness instead of focus allows given elements to be interpreted in a recursive fashion.

[20]Givenness related deaccenting conditions in English are weaker than the condiitons on reordering discussed in this paper. For example, entailment is sufficient for licensing deaccenting in English but it does not yield reorderig in languages like Czech.

new (the *New ≻ Given generalization). (ii) The operator can be inserted at any place. Consequently, the partition can fall at any place.

We have just derived how to get the broad range of interpretations and possible partitions in a basic word order. The question that arises is what happens in case Generalization I is violated in the basic word order. Consider example (58) in which only the object is given and the subject and the verb are new.

(58)   *Only object is given (S V ‖ **O**):*
         Option I: G operator inserted on O:
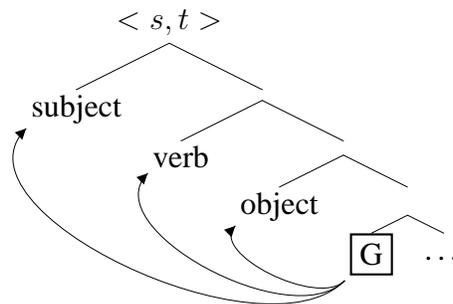
If we insert the G-operator below the object, then not only the object but also the subject and the verb would be marked as given, i.e. presupposed. This would, however, lead to *presupposition failure*. The reader might think that a way out would be to leave out the G-operator. As I discussed in Section 1, such a structure would be syntactically and semantically well-formed. Furthermore, under semantic definition of givenness, such as that of Schwarzschild (1999), the relevant part of the structure would be also interpreted as given. I argue that the given elements must be marked by the G-operator because of the Maximize Presupposition principle of Heim (1991), repeated below. If all given elements are not marked by the G-operator, Maximize Presupposition is violated.

(7)   **Maximize Presupposition** (after Heim (1991))
         In context C use the most informative presupposition satisfied in C.

In other words, if a presupposition *may* be grammatically marked, it *must* be marked. Thus, the only way to resolve the conflict between Maximize Presupposition and presupposition failure is to reorder the structure (cf. Wagner 2005, 2006b):

(59)   S V **O** → **O** $\boxed{G}$ V S

The consequence of the principle is that the presuppositions we consider form a scale and we need to have a systematic way to choose from them.[21] The reason is that the principle requires the speaker to use the logical form which marks the strongest presupposition compatible with the common ground (Stalnaker, 1973, 1974). The question is how we restrict the set of presuppositions that are relevant for a particular utterance. The recent proposals based on Maximize Presupposition such as, for example, Sauerland (2003) and Percus (2006) build the relevant set by replacing a lexical item with its scale-mates (Horn, 1972) within a fixed structure.

Replacing scale-mates within a fixed syntactic structure would not, however, work in our case. I argue that if we want the principle to regulate the distribution of the G-operator, the reference set must contain different syntactic (syntactic in the LF sense) derivations (see Reinhart 1995; Fox 1995; Reinhart 2006 for proposals using reference set computation over structures).[22] Thus, we need a definition of a reference set that would allow us to compare different structures with and without a G-operator. Such a definition is given in (60).

(60)   **Reference set for Maximize Presupposition evaluation**
         For purposes of Maximize Presupposition, the reference set, toward which Maximize presupposition is evaluated, consists of all derivations

    a.   that are based on the same numeration and free insertion of a G-operator, and
    b.   that make the same assertion.

I assume that the G-operator is not part of the numeration but it is a syncategoramatic operator which the semantic module can introduce without violating inclusiveness (for example, Chomsky (2000)).[23] A crucial part of the proposal is that the semantic module has the capacity to license an otherwise illicit structure but only if there is no other way to achieve the desired interpretation (see also Fox 2000).

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[21]I treat the Maximize presupposition principle as a primitive but see Schlenker (2006) for arguments that it might be possible to derive the principle from neo-Gracean reasoning, if we take into an account the notion of common belief of Stalnaker (2002). But as even Schlenker admits, the results are inconclusive.

[22]I assume that both Sauerland (2005) and Wagner (2006a) define their reference set as a set of derivations as well even though they are not explicit about it.

[23]But a version in which the G-operator would be part of every derivation would do as well.

4 Further Predictions: Coordinations

In the cases we have considered so far it was possible to resolve the tension between Maximize Presupposition and presupposition failure by movement. The question is what happens if resolving the tension by movement violated independent syntactic restrictions on movement such as island constraints. The current semantic proposal makes two differing predictions here: (i) one of the pragmatic principles must be violated, (ii) the pragmatic tension can be resolved in some other way.

The obvious case to test the predictions is syntactic islands. The predictions, however, are not easy to test because islands often coincide with an atomic type. Thus the syntactic domain of movement and the G-operator domain of movement are identical. We need a case in which the syntactic island is not propositional. Such a case is provided by coordinations: coordinations form a syntactic island (Coordination Structure Constraint of Ross 1967) while preserving a semantic type of its conjuncts. We can thus construct test examples in which the relevant coordination would not be of type $< s, t >$.

For concreteness, I will consider a DP coordination in Czech. The current semantic system predicts that there should be no problem with a DP coordination adjoined to an atomic semantic type (for example, a coordinated DP in a subject position). The structure should be well-formed as long as the given part of the coordination precedes the new part of the coordination, as in (61).[24]

(61)   *DP coordination adjoined to an atomic type:*
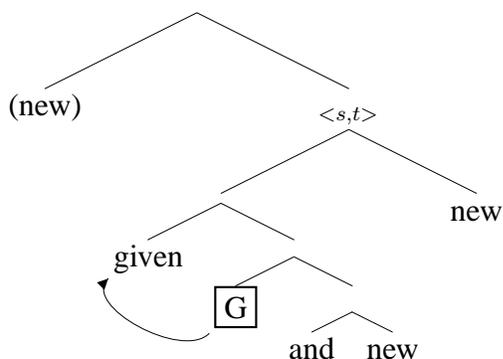
Examples (62) show that this prediction is borne out. In the scenario given in (62-a),

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[24]I assume the asymmetric structure of a coordination (Kayne, 1994, among others).

only (62-b) in which the given part of the coordination precedes the new part of the coordination is felicitous. The reverse order (62-c) can refer only to some other teacher, not the teacher mentioned in (62-a). Notice that in this case the right structure must be merged. It cannot be derived by movement.

(62)　*A coordinated DP adjoined to an atomic semantic type:*

    a.　Na programu byla diskuse　o　nové učitelce.　`context`
         on　program　was　discussion about new　teacher
         'There was a discussion about a new teacher on the agenda.'

    b.　**Učitelku** a　(její) žáky　to překvapilo. ✓**DP** & DP
         teacher　and her　students it　surprised
         'The teacher and (her) students were surprised by it.'

    c.　#Žáky　　a　**učitelku** to překvapilo. # DP & **DP**
         students and teacher　　it　surprised
         'A teacher and (her) students were surprised by it.'

The interesting question is what happens in case the coordination is not adjoined to a semantic atomic type. The prediction is then that inserting a G-operator will necessarily lead to presupposition failure, as schematized in (63). On the other hand, if no G-operator were inserted, the Maximize presupposition principle would be violated. Thus, we predict that if a DP coordination is adjoined to a non-atomic type, a part of the coordination can be given only if the structure above the coordination is given as well. This prediction is borne out, as seen in (64).

(63)　*DP coordination not adjoined to an atomic type:*
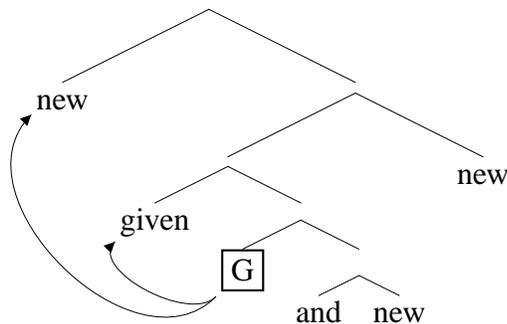
(64)　　#　　To　　překvapilo **učitelku** a　　(její) žáky.
     it surprised teacher and　　(her)　students
    # new > **DP** & DP

'That was surprising for the teacher and her students.'

Example (65) is here as a control. If the tree above 'teacher' is given as well, the utterance from (64) becomes felicitous:

(65)   *Control:*
        a.   There was a discussion about a new teacher on the agenda. Quite a few people were surprised by it.
        b.   **Překvapilo to také učitelku** a   žáky.   ✓given > **DP** & DP
              surprised   it too   teacher   and students
              'It was surprising for the teacher and students too.'

4.1   Pronouns

The coordination cases teach us that if the pragmatic tension between Maximize presupposition and presupposition failure cannot be resolved by movement, neither of the pragmatic principle can be violated. The interesting question is whether the pragmatic tension can be rescued in some other way.

Let's consider again (64), repeated below. Surprisingly, for the utterance to be felicitous, the given element must be *pronominalized*, as seen in (66).

(64)   #To překvapilo **učitelku** a (její) žáky. #   new > **DP** & DP
        it surprised teacher and (her) students
        'That was surprising for the teacher and her students.'

(66)   To překvapilo **ji** a (její) žáky. ✓new > **DP** & DP
        it surprised her and (her) students
        'That was surprising for her and her students.'

Why should pronominalization be relevant? I argue that if a lexical entry of α gives rise to a presupposition, there is no need to introduce the presupposition by the G-operator as Maximize Presupposition is already satisfied.

If this explanation is on the right track, we make the following prediction: If pronouns never require to be marked by the G-operator, they should not undergo movement because of givenness. This prediction is borne out. As can be seen in (67), pronouns differ from other DPs in that they may freely follow new elements within their presuppositional domain. Example (68) is here as a control: There is nothing wrong with a pronoun being in the sentence-initial position as long as the pronoun is interpreted contrastively.

(67)   What do you know about Pavel?

   a.   Marie   **ho**   viděla na nádraží.   ✓new > pron.
        Marie.Nom him.Acc saw   on railway-station

   b.   #Marie   **Pavla**   viděla na nádraží.   # new > DP
        Marie.Nom Pavla.Acc saw   on railway-station

   c.   #**Jeho**   viděla Marie   na nádraží.   # pron. 1st
        him.Acc saw   Marie.Nom on railway-station

   d.   **Pavla**   viděla Marie   na nádraží.   ✓DP first
        Pavel.Acc saw   Marie.Nom on railway-station

   'Marie saw him/Pavel in the railway-station.'

(68)   JEho   Marie   neviděla. Jenom Petra.   ⟵ control
       him.Acc Marie.Nom not-saw   only   Petr.Acc
       'Marie didn't see HIM. She saw only Peter.'

To summarize, if the lexical entry of α gives rise to a presupposition, there is no need to introduce the presupposition by the G-operator.[25]

Notice that if we chose to motivate the syntactic reordering by newness instead of givenness, we would have no explanation for the behavior of pronouns. Furthermore, the difference between pronouns and lexical DPs is entirely unexpected under other proposals. Functional proposals and parsing proposals, including various forms of Accessibility theory, (Sgall, 1967; Sgall et al., 1986; Ariel, 1990, among others) predict that items encoding information which is already activated in the brain/memory/discourse etc. should behave a par. Similarly, proposals which assume that information structure is encoded by syntactic configurations, such as Neeleman and van de Koot (2008), do not expect any difference stemming from the denotation of lexical items. Feature-checking proposals (Rizzi, 1997, 2004; Chomsky, 2000, among others) cannot deal with the full-DP vs. pronoun asymmetry either because they assume that for an element to be interpreted as given the element must come to the derivation with some form of a syntactic [+givenness] feature that needs to be checked in syntax. Finally, the asymmetry is unexpected under phonology-driven proposals (Zubizarreta, 1998; Bader, 2001; Arregui-Urbina, 2002, among others) as well.

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[25]One might wonder whether we need to change the definition of the reference set for the Maximize Presupposition evaluation as our current definition takes only assumes structures based on the same numeration. This might not be necessary if we assume that pronouns are either DP ellipses (Elbourne, 2005), or pronunciation of ϕ-features (cf. Heim To appear.)

5 Conclusion

I argued that in some Slavic languages a structure may be divided into domains and any domain can be partitioned between given and new. Furthermore, I argued that presence of a discourse antecedent is not sufficient for an element to be given. In particular I showed that syntactic elements must be grammatically marked as given in order to Maximize Presupposition (Heim, 1991).

The proposal has three componenents. First, I argued for a natural language operator that marks elements in its scope as given. The operator divides the syntactic structure between a given and a new part. Second, Maximize Presupposition requires every given element to be in the scope of the operator. Consequently, the operator must be in the lowest possible position in the structure otherwise its insertion would lead to presupposition failure. Finally, the proposal assumes an economy condition on movement. Movement is viewed as free but costly and it may be licensed only if it yields otherwise unavailable presupposition.

To conclude, under the current proposal the role of information structure in the grammar is rather diminished: instead of being an independent module, it relies on independently needed pragmatic principles and independently attested grammatical means (movement, pronominalization).

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