

Motivating word order differences: Givenness and scrambling

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Handout 1

Introduction

Plan for today

1. Introduction: basic phenomena, research questions, the shape of the partial answer we can offer, information structure
2. Form and meaning: form, meaning, and the way they relate
3. Syntax and word order: basic assumptions, relation between the two
4. Prosody: basic assumptions, the way it relates to syntax

1.1 Introduction

Phenomena and research questions

- (1)
 - a. Dave is watching Sue.
 - b. Sue is watching Dave.
- (2)
 - a. Miloš obdivuje Katku.
Miloš.nom admires Katka.acc
 - b. Miloš Katku obdivuje.
Miloš.nom Katka.acc admires
 - c. Katku obdivuje Miloš.
Katka.acc admires Miloš.nom
'Miloš admires Katka.'
- (3)
 - a. Gestern hat der Student ein Buch gelesen.
yesterday has the student.nom a book.acc read.pst.ptcp
 - b. Gestern hat ein Buch der Student gelesen.
yesterday has a book.acc the student.nom read.pst.ptcp
 - c. Ein Buch hat der Student gestern gelesen.
a book.acc has the student.nom yesterday read.pst.ptcp
'The student read a book yesterday.'

Two types of word order changes

- *Scrambling of constituents*: A “local” reordering (as in (2b) or (3b))
- *Placement of constituents in the left-periphery*: A reordering that targets the initial sentence field (as in (2c) or (3c))

Research questions

- What motivates a change in word order if not a change in meaning?
- Does information structure have a direct impact on the word order?

Our (partial) answers

- *Scrambling in Czech*: Word order changes are often motivated by the need to comply with prosodic rules.
- *Left-periphery placement in German*: Some word order changes are motivated by purely formal syntactic requirements and seem to be restricted by prosodic rather than information structural properties.
- These answers support the general hypothesis that the impact of information structure on word order is only indirect (cf. Horváth 2010; Fanselow and Lenertová 2011). This hypothesis is incompatible with the classical Prague school functionalist approaches, e.g. Mathesius (1939), its modern formal versions, particularly Kučerová (2007), as well as the generative cartographic approaches, e.g. Rizzi (1997).

Information structure

Information structure Both scrambling and left-periphery-related phenomena are often discussed under the rubric of information structure (in the Czech linguistic tradition also called *aktuální členění větné/výpovědi*, e.g. Mathesius 1939, *functional sentence perspective*, e.g. Firbas 1957; 1992, *information packaging*, e.g. Vallduví 1992, or *common ground management*, cf. Krifka 2007).

(4) **Information structure** (working definition)

Information structure of a sentence refers to the set of properties of the sentence (and its subparts) which are determined by the context in which the sentence is uttered.

1.2 Form and meaning

Form

What is the form of a sentence? All formal aspects...

- Words
- Phonology (segmental and suprasegmental)
- Morphology (inflectional and derivational)
- Syntax and word order

Meaning

What is the meaning of a sentence?

- (5) The meaning of a sentence = The conditions under which the sentence is true. (cf. Tarski 1944)
- (6) ‘Obama smokes’ is true if and only if Obama smokes

The standard procedure in determining the truth conditions of a sentence

1. Construct a toy model of reality M .
2. Take a sentence S .
3. “Translate” that sentence into a metalanguage (predicate and propositional logic); by convention, such a translation is written as $\llbracket S \rrbracket$.
4. Check whether the statement $\llbracket S \rrbracket$ matches the state of affairs in the model; by convention, such an evaluation is written as $\llbracket S \rrbracket^M$.
5. If there is a match, then $\llbracket S \rrbracket^M$ is true. If there is a mismatch, then $\llbracket S \rrbracket^M$ is false.

The procedure applied to example (6):

1. M_1 : Obama is a smoker, M_2 : Obama is a non-smoker
2. S : Obama smokes.
3. $\llbracket S \rrbracket$: $\llbracket \text{Obama smokes} \rrbracket = \text{SMOKES}(\text{obama})$
4. $\llbracket S \rrbracket^M$: $\llbracket \text{Obama smokes} \rrbracket^{M_1} = \text{true}$, $\llbracket \text{Obama smokes} \rrbracket^{M_2} = \text{false}$

Meaning identity (synonymy):

- (7) For any two sentences S_1, S_2 , S_1, S_2 have an identical meaning (are synonymous) if and only if there is no model in which S_1 is true and S_2 is false (or the other way around).

Form-meaning dependency

Which formal changes lead to a change in meaning?

- (8) *Lexical choice*
- a. Romney loves **Obama**.
 - b. Romney loves **hamburgers**.
 - c. Romney loves **the American president**.
- (9) *Morphology*
- a. Ekologičtí aktivisté nesnáší Klause.
ecological activists.nom hate Klaus.acc
‘Ecological activists hate Klaus.’
 - b. Ekologické aktivisty nesnáší Klaus- \emptyset
ecological activists.acc hates Klaus.nom
‘Klaus hates ecological activists.’

- c. Ekologický aktivisti nesnášej Klause.
 ecological activists.nom hate Klaus.acc
 ‘Ecological activists hate Klaus.’
- (10) *Word order* (switching order among clauses)
- a. Markus hat **uns** gesagt, dass er Würstchen gekocht hat.
 Markus has us told that he sausages cooked has
 ‘Markus told us that he cooked sausages.’
- b. Markus hat gesagt, dass er **uns** Würstchen gekocht hat.
 Markus has told that he us sausages cooked has
 ‘Markus said that he cooked sausages for us.’
- (11) *Word order* (order of adverbials)
- a. We **simply** spoke about it.
- b. We spoke about it **simply**.
- Information structure related formal changes
- (12) *Word order* (order of quantifiers)
- a. Jeden student vyzvedne na nádraží **každého hosta**.
 one student.nom picks.up at station every guest.acc
- b. **Každého hosta** vyzvedne na nádraží jeden student.
 every guest.acc picks.up at station one student.acc
 ‘A student will pick up every guest at the railway station.’
- (13) *Word order* (order of referential expressions)
- a. Karel vyzvedne **Jitku**.
 Karel.nom picks.up Jitka.acc
- b. Karel **Jitku** vyzvedne.
- c. **Jitku** Karel vyzvedne.
 ‘Karel will pick up Jitka.’
- (14) *Intonation*
- a. Karel vyzvedne Jitku.
 Karel.nom picks.up Jitka.acc
- b. Karel vyzvedne Jitku.
 ‘Karel will pick up Jitka.’

How do information structure related formal changes influence meaning as defined above?

1.3 Syntax and word order

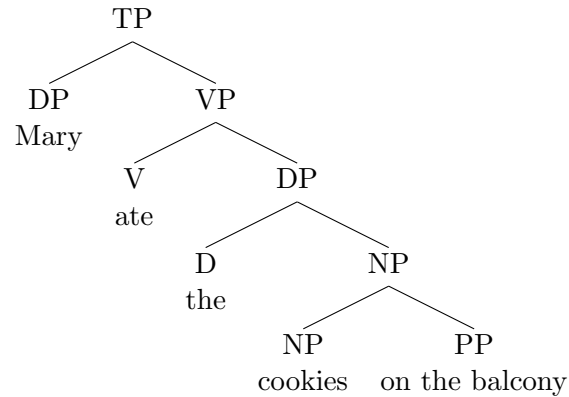
Hierarchical structure

- We saw that a change in word order can change the meaning (the truth-conditions) of a sentence. To see why, it is relevant to consider not only the linear order, but also the hierarchical structure of sentences.
- Within a sentence, there are elements that stand in a closer relation to each other than others. This can be indicated by brackets or in a tree structure.

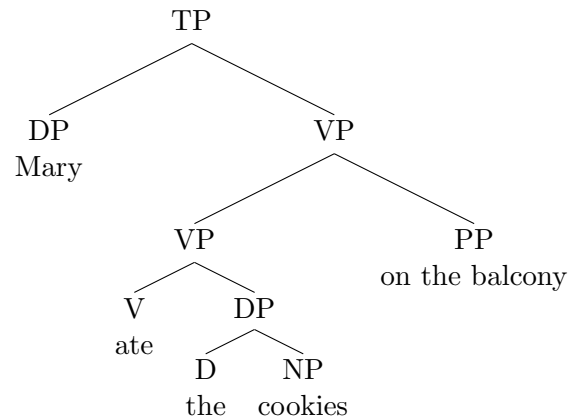
- Sometimes two different structures can be realized as the same linear string. This is e.g. evident from the two interpretations that the sentence in (15) which involves a **structural ambiguity** can have. Although there is a mapping relation between syntactic structure and linear word order, it is not a one-to-one-relation.

- (15) a. Mary [ate [the cookies on the balcony]].
 b. Mary [[ate the cookies] on the balcony].

- (16) a.



- b.



- In other cases, a reordering of the words forces or allows different bracketing that comes with a different interpretation.

- (17) *German:*

- a. [Kurz, [wir haben gestritten]].
 briefly we have argued
 ‘To put it briefly, we argued.’
 b. [Wir [haben [kurz gestritten]]].
 we have briefly argued
 ‘We argued briefly.’

- However, as we already saw, a different word order does not necessarily induce a different interpretation, even if the bracketing changes:

- (18) *German:*
- a. [Ich [habe [den Jungen gesehen]]].
I have the boy seen
'I saw the boy.'
 - b. [Den Jungen [habe [ich gesehen]]].
The boy have I seen.
'I saw the boy.'

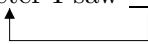
- Elements that share one common node to the exclusion of all other elements form a **constituent**. E.g., “the cookies on the balcony” form a constituent in (18a), but not in (18b).

Movement

- Deviations from the “basic” word order can be conceptualized in different ways.

- (19) a. I saw Peter at the station.
b. Peter I saw at the station.

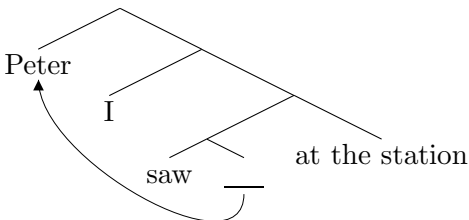
- The conceptualization that we will be using is the one of “movement” or “copying”: An element that appears in a deviating syntactic position has “moved” from its base position where it leaves a “gap” or “trace”:

- (20) Peter I saw at the station.

 A diagram showing a horizontal line from the gap to the position before 'I', with an upward arrow at the end pointing to the gap.

- Or it is “copied” to another position and the lower “copy” is not pronounced.

- (21) Peter I saw ~~Peter~~ at the station.

- Below, the same concept is illustrated in a tree representation. We will assume that only constituents can move.

- (22) 
 A tree diagram for the sentence 'Peter I saw at the station'. The root node branches into 'Peter' and another node. This second node branches into 'I' and another node. This third node branches into 'saw' and another node. This fourth node branches into a gap (represented by a horizontal line) and 'at the station'. A curved arrow points from the gap back up to the 'Peter' node, indicating movement.

1.4 Prosody

Basic notions (see e.g. Nespor and Vogel 1986; Truckenbrodt 1995; Selkirk 1996; Ladd 1996)

- **Prosodic units** Syntactic phrases map on prosodic units; generally, two types of prosodic units above the word-level (ω) are assumed: 1. ϕ (prosodic-phrase units), which correspond to major syntactic phrases (DPs, VPs, AdvPs, etc.), and 2. ι (intonational-phrase units), which correspond to syntactic clauses (TPs/CPs).

Applying the rules

- We can conceptualize the rule application in a step-by-step fashion, first Stress-XP is applied (28a), then NSR-I (28b). Notice that the phrasal pitch accent satisfies Stress-XP for both the DP *Mary* and for the VP *met Mary*. NSR-I strengthens the rightmost pitch accent, i.e. *Mary* in this case.

- (28) a. [DP John] [VP met [DP Mary]].
 b. Stress-XP → John met Mary.
 c. NSR-I → John met Mary.

- Notice that in (29) Stress-XP is satisfied twice for VP2: once by the accent on *Mary* and once on *at the station*. Notice also that NSR-I gives a different result for (29) than for (28): the sentence stress is placed on *station*.

- (29) a. [DP John] [VP2 [VP1 met [DP Mary]] [PP at the station]].
 b. Stress-XP → John met Mary at the station.
 c. NSR-I → John met Mary at the station.

1.5 Summary

Take-home messages:

- Not all formal differences, including word order changes, entail differences in meaning (where the “meaning” of a sentence is its truth-conditions).
- Differing syntactic structure can but need not lead to different meanings.
- Syntactic structure is mapped to prosodic structure in a semi-predictable way.

Handout 2

Givenness

Plan for today

1. Givenness: some initial impressions
2. Givenness as presupposed discourse salience
3. Givenness and accent
4. Consequences and further issues

2.1 Introduction

Givenness has been used in (at least) three senses in the literature (cf. Prince 1981):

1. **Givenness_p** (predictability, recoverability) (Bolinger 1972; Kuno 1972, 1974; Halliday 1967; Halliday and Hasan 1976): An expression is given_p if it (or its meaning) is predictable (for the participants) from the sentence/discourse context or from the extra-linguistic situation.
 - (1) Shall we?
 - a. ‘Shall we **dance?**’ (in a ballroom)
 - b. ‘Shall we **jump?**’ (on a seacliff)
 - c. ‘Shall we **go?**’ (after finishing lunch at a mensa)
 - d. ...
 - (2) The telephone **is ringing**.
2. **Givenness_k** (shared knowledge/belief, assumed familiarity) (Clark and Haviland 1977e.g.): An expression is given if its referent is familiar to discourse participants in general.
 - (3) **Thu sun** will rise at 6:20.
 - (4) Mary didn’t know **that Britain is a kingdom**.
3. **Givenness_s** (salience) (Chafe 1976): An expression is given_s if it is salient/prominent, provided the discourse or the extra-linguistic situation.

2.2 Givenness as presupposed discourse salience

Givenness as *presupposed discourse salience* is most closely related to Chafe's (1976) givenness and Prince's (1981) givenness_s. In one form or another, the notion has been used by Rochemont (1986; his "c-construability"), Schwarzschild (1999), or Wagner (2012). *Discourse salience* means having been explicitly mentioned in recent discourse. *Presupposed* means shared by all discourse participants.

(5) **Givenness** (informal definition)

An expression A is **given** if (the discourse participants know that) there is an expression B in the discourse that recently precedes A such that A and B are synonyms (are identical in meaning) or A is a hyperonym of B.

Some initial examples: given expressions are boldfaced

- (6) a. I invited Dave [B] but **the idiot** [A] refused to come.
 b. – Do you have a parrot [B]? – No, but I want to buy a **parrot** [A].
 c. I cooked lentils for dinner [B]. My girlfriend loves **legumes** [A].

Synonymy and hyperonymy for different semantic types

- **Individuals** Two referring expressions α and β , referring to some individuals (in some model) a and b, are *synonymous* if the two individuals are identical (in that model), i.e. if $a = b$. Hyperonymy is undefined for individual-referring expressions.

(7) α_R is a synonym of β_R with respect to some model M if $\llbracket \alpha \rrbracket^M = \llbracket \beta \rrbracket^M$, i.e. if $a = b$.

- (8) a. *Obama* and *the American president* are synonyms in a model M which is identical to the actual world with respect to who the American president is.
 b. *Dave* and *the idiot* are synonyms in a model M in which Dave is the only discourse salient idiot (from the perspective of the speaker).

- **One-place predicates** Two predicative expressions α and β , referring to some set of individuals (in some model), say A and B , are *synonymous* if the two sets are identical (in that model), i.e. if $A = B$. α is a *hyperonym* of β if A contains B as its proper subset, i.e. if $A \supset B$.

(9) a. α_P is a synonym of β_P with respect to some model M if $\llbracket \alpha \rrbracket^M = \llbracket \beta \rrbracket^M$, i.e. if $A = B$.
 b. α_P is a hyperonym of β_P with respect to some model M if $\llbracket \alpha \rrbracket^M \supset \llbracket \beta \rrbracket^M$, i.e. if $A \supset B$.

- (10) a. *moon* is a synonym of *natural satellite of a planet*
 b. *die* is a synonym of *kick the bucket*

- (11) a. *vegetable* is a hyperonym of *carrot*
 b. *smoke* is a hyperonym of *smoke a cigarette* is a hyperonym of *smoke a cigarette quickly*

2.3 The givenness-accent relation

How does the above-defined notion of givenness relate to form? (Cf. the literature cited above for givenness.)

(12) Givenness and accent

If some expression α is given it must not bear sentence stress (in English, German, ...).

Look at (13) and their sentence-stress marking (assuming the rules introduced before and assuming no particular context).

- (13) a. The idiot refused to come.
 b. I want to buy a parrot.
 c. My girlfriend loves legumes.

Now have a look at the initial examples in (6), repeated below with sentence-stress marking (single underlining); boldface marks givenness:

- (14) a. I invited Dave but **the idiot** refused to come. $\llbracket \text{Dave} \rrbracket^M = \llbracket \text{the idiot} \rrbracket^M$
 b. – Do you have a parrot? – No, but...
 (i) #...I want to buy a **parrot**. $\llbracket \text{parrot} \rrbracket^M = \llbracket \text{parrot} \rrbracket^M$
 (ii) ...I want to buy a **parrot**.
 c. I cooked lentils for dinner, ...
 (i) #...my girlfriend loves **legumes**. $\llbracket \text{legumes} \rrbracket^M \supset \llbracket \text{lentils} \rrbracket^M$
 (ii) ...my girlfriend loves **legumes**.

2.4 Further consequences and issues

Hyperonymy vs. hyponymy

Compare (15a) (repeated from above) with (15b).

- (15) a. – Do you have a parrot? – No, but...
 (i) #...I want to buy a **parrot**. $\llbracket \text{parrot} \rrbracket^M = \llbracket \text{parrot} \rrbracket^M$
 (ii) ...I want to buy a **parrot**.
 b. – Do you have a parrot? – Yes, yesterday...
 (i) ...I bought a budgie. $\llbracket \text{budgie} \rrbracket^M \subset \llbracket \text{parrot} \rrbracket^M$
 (ii) #...I bought a budgie.

Word repetition \neq givenness

- (16) Mary wanted to empty a bucket but then...
 a. ...she kicked the bucket.
 b. #...she kicked the bucket.

Non-shared givenness

See the worksheet.

Givenness \neq shared knowledge/belief

- (17) **Common ground** (informal definition)
Common ground is the set of beliefs shared by all discourse participants.

Does shared knowledge support deaccenting?

- (18) – Hi, where are you going? – I'm going to the observatory, ...
a. ... I'd like to see the eclipse of the Sun.
b. #... I'd like to see the eclipse of the Sun.
- (19) I'm really interested in the Sun. It's my hobby. But so far, ...
a. ... I haven't seen any eclipse of the Sun.
b. #... I haven't seen any eclipse of the Sun.

Givenness \neq predictability

Does predictability from the situation support deaccenting?

- (20) *In a ballroom...*
a. Shall we?
b. Shall we dance?
c. #Shall we dance?

Givenness \neq definiteness

- (21) **Definiteness** (informal definition)
A nominal expression is definite (with respect to some model M) if there is a unique individual (or a unique set of individuals) in M which has the property expressed by the nominal expression.

Does definiteness support deaccenting?

- (22) *In a classroom*
a. Paul, could you please clean the blackboard?
b. #Paul, could you please clean the blackboard?

The independence of givenness and definiteness:

- (23) A There were so many dogs around last night.
B Really? I didn't see a dog. [+G, -D]
B' Yeah, I couldn't stand the dogs. [+G, +D]
- (24) A Did you hear the barking last night?
B Yeah, but I didn't see any dog. [-G, -D]
B' Yeah, but I didn't see the dog. [-G, +D]

Non-shared givenness**Some problematic cases**

In some cases (the ones below are mostly taken from Rochemont 2012), non-default stress-assignment happens without any clear motivation from givenness (or focus).

- (25)
- a. The telephone is ringing.
 - b. The baby's crying.
 - c. Your father called this morning.
 - d. A bomb exploded.
 - e. A dog's been barking all night.
 - f. A new book by Chomsky just hit the newsstand.

2.5 Summary

Take-home messages:

- Givenness defined as presupposed discourse salience has a clear near-obligatory effect on the prosody in that given expressions must not bear sentence stress.
- There are many notions related to givenness, which, however, are not related to prosody in any direct way.

Handout 3

Givenness and scrambling

Plan

1. The given-before-new hypothesis
2. Grammatical encoding over given-before-new
3. A prosodic approach to the given-new ordering effect

3.1 Introduction

Some initial examples:

- (1)
- a. Slyšel jsem, že Karel se chystá stavět **dům**.
heard aux.1sg that Karel refl going.to build.inf house
 - b. Slyšel jsem, že Karel se chystá **dům** stavět.
 - c. Slyšel jsem, že **dům** se Karel chystá stavět.
'I heard that Karel was going to build a house.'

Formulated in one way or another, (2) represents a popular hypothesis (Weil 1844; Mathesius 1939; Firbas 1957, 1992; Clark and Haviland 1977 and many others):

- (2) *The given-before-new hypothesis*
Expressions that are informationally given/old tend to precede expressions that are informationally new.

This gives us the following schematic preferences, assuming the basic SVO order:

- (3)
- a. $S_N V O_N \gg O_N V S_N$ (all new)
 - b. $S_G V O_G \gg O_G V S_G$ (all given)
 - c. $S_G V O_N \gg \gg O_N V S_G$ (subject given)
 - d. $O_G V S_N > S_N V O_G$ (object given)

3.2 Grammatical marking of givenness: Kučerová (2007, 2012)

Basic idea

- Kučerová (2007, 2012) strengthens the hypothesis in (2) to a strict syntactico-semantic rule. Such a rule could be formulated as in (4) (we will get to how Kučerová does that shortly).

(4) *The given-before-new rule*

In the Czech clause, all given expressions must precede all new expressions (unless this is prohibited by independent syntactic constraints and leaving aside “lexically” given expressions such as pronouns).

- The basic rationale is that just as English marks definiteness grammatically—by an article, Czech is claimed to mark givenness grammatically—by word order.
- Note that from this perspective Czech differs from English quite dramatically in the marking of givenness. In English, givenness interacts with prosody, while in Czech givenness interacts with word order (via syntax).
- Looking at the examples in (5) shows that this hypothesis might very well be on the right track.

(5) A: Co Mirka udělala s tou knížkou?
 what Mirka did with the book
 ‘What did Mirka do with the book?’

B₁: Myslím, že **tu knížku** uklidila.
 think.1sg that the book put.away

B₂#Myslím, že uklidila **tu knížku**.
 think.1sg that put.away the book
 ‘I think that she put the book away.’

(6) Před chvílí jsem viděl Tomáše s kaprem, ...
 before while aux.1sg saw Tomáš with carp
 ‘A while ago I saw Tomáš with a carp.’

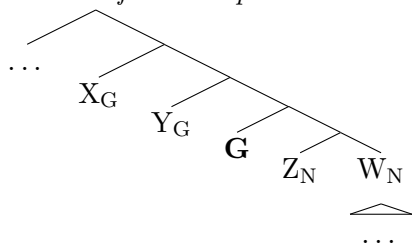
a. Myslím, že **toho kapra** nesl své babičce.
 think.1sg that carp took his.refl grandma

b. Myslím, že nesl své babičce **toho kapra**.
 think.1sg took his.refl grandma the carp
 ‘I think that he was taking the carp to his grandma.’

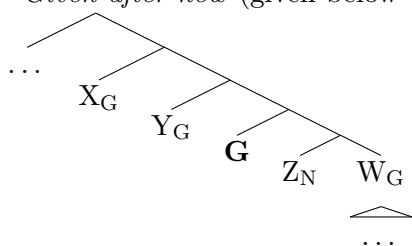
Implementation: the **G**-operator

The **G**-operator is a phonologically invisible syntactico-semantic operator which marks everything that is not in its sister constituent as given.

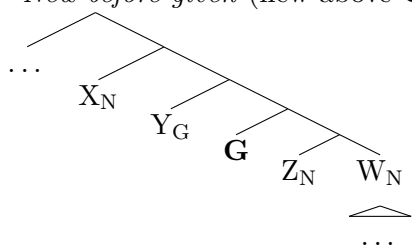
(7) a. *Given-before-new partition*



b. **Given-after-new* (given below **G**)

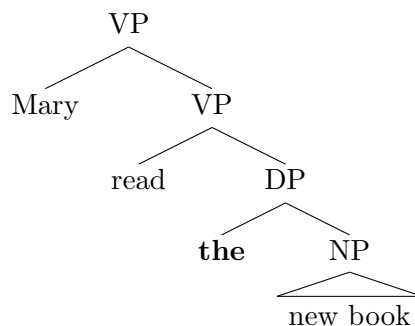


c. **New-before-given* (new above **G**)



One can take this to be similar to how the definite article marks its NP complement as definite.

(8)



Presupposition

How exactly does the **G**-operator work semantically? It introduces a presupposition (cf. our presuppositional definition of givenness):

(9) **Semantics of **G**** (informally)

If an expression α is affected (not in the sister of) the **G**-operator then the meaning of α is marked as being presupposed.

- (10) **Maximize Presupposition** (informally; Heim 1991)
In any situation, use the most informative presupposition satisfied in that situation.
- (11) I saw a huge dog yesterday...
a. **The dog** was bigger than his master.
b. #**A dog** was bigger than his master.

Likewise, (11) will rule out given expressions which are unaffected by **G** in Czech (ignoring the verb for now).

- (12) Mohli jsme podespat tu smlouvu, ale...
could aux.1pl sign the contract but
'We could have signed the contract now but...'
a. ... nechal jsem **tu smlouvu G** doma.
forgot aux.1sg the contract at.home
b. #... nechal jsem **G** doma **tu smlouvu**.
forgot aux.1sg at.home the contract
'...I forgot the contract at home.'
- (13) **Presupposition failure** (informally)
If an expression α is affected (not in the sister of) the **G**-operator and there is no expression β in the preceding discourse that makes α given, the resulting expression is infelicitous.
- (14) a. #The Turkish student in this classroom has black hair.
(provided there is no Turkish student here)
b. #Joe stopped working as an elementary school teacher last week.
(provided Joe never taught at elementary school)

Again, something similar should happen to new expressions which are marked as given in Czech. So, Kučerová predicts that (15B) should be as strange as (14).

- (15) – Máš ještě tu výbornou udici? – Mám, ale už nerybařím, uvažoval
have.2sg still the excellent fishing.rod have.1sg but already neg.fish.1sg thought
jsem,
aux.1sg
'– Do you still have the excellent fishing rod? – I do, but I don't go fishing anymore, so I was thinking'
a. ... že **tu udici G** dám nějakému kamarádovi na narozeniny.
that the fishing.rod give.1sg some friend.dat for birthday
b. ... že dám nějakému kamarádovi **tu udici G** na narozeniny.
that give.1sg some friend.dat the fishing.rod for birthday
'...that I could give the fishing rod to Peter for his birthday.'

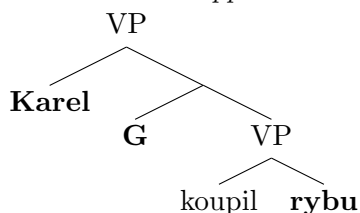
Scrambling/G-movement

Scrambling is a local (clause-internal) reordering of constituents, for instance (16).

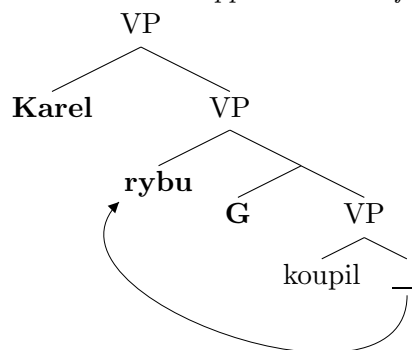
- (16) SVO → SOV
Karel koupil rybu → **Karel rybu** koupil.
Karel bought fish Karel fish bought

Kučerová dubs srcrambling “G-movement”. She argues that constituents are allowed to reorder/scramble/G-move in order to satisfy the Maximize Presupposition principle. (Given expressions are in boldface.)

(17) a. *Maximize Presupposition violated:*



b. *Maximize Presupposition satisfied:*



3.3 Prosodic marking of givenness

Basic idea

- Czech is like English in that given expressions avoid sentence stress.
- Czech differs from English in that it has scrambling: it can easily locally reorder constituents within a clause.

Two ways of not stressing given expressions:

1. Keep the order constant and change the default stress assignment (stress-shift).

(18) **John** bought fish. → **John** bought **fish**.

2. Keep the stress assignment constant and change the default order (scrambling).

(19) **Honza** koupil rybu. → **Honza** **rybu** koupil.

3.4 Summary and outlook

Take-home messages:

- There are (at least) two competing accounts of the phenomenon of scrambling in Czech:
 1. Scrambling happens for a semantic/pragmatic purpose (givenness/presupposition).
 2. Scrambling happens for a prosodic purpose (sentence-stress-avoidance).
- The former approach (at least Kučerová’s version) predicts a strict given-new partition of the clause.
- The latter approach is less restrictive: in principle, any order is fine as long as it complies with the prosodic constraint that given expressions do not bear sentence stress.

Predictions of the prosodic approach (to be explored tomorrow):

- There is no need for scrambling if the given element is in a position where it would not be assigned sentence stress.
- If scrambling takes place, the scrambled constituent need not target a position which is “above” all new expressions. Any position that gives the desired prosodic result should be fine.
- If given expressions in Czech are sentence-stress-avoiding, it is in principle possible that they can avoid stress by deaccenting, just like in English.

Handout 4

Experimental evidence for the prosodic approach

Plan

1. Recapitulation of the research questions and predictions of the prosodic approach
2. Experiments
3. Your questions

4.1 Introduction

Research questions that we started with

1. What motivates a change in word order if not a change in meaning?
2. Does information structure, or, specifically givenness, have a direct impact on syntax/word order?

At least for Czech scrambling, I tried to convince you that

1. Word order changes derived by scrambling are motivated by the requirement that given elements do not get the sentence stress.
2. Givenness has no direct impact on syntax/word order. Givenness has impact on prosody (just like in English) and the syntax is capable of adjusting the word order to comply with the prosodic requirements.

Predictions of the prosodic approach

1. There is no need for scrambling if the given element is in a position where it would not be assigned sentence stress.
2. If scrambling takes place, the scrambled constituent need not target a position which is “above” all new expressions. Any position that gives the desired prosodic result should be fine.
3. If given expressions in Czech are sentence-stress-avoiding, it is in principle possible that they can avoid stress by deaccenting, just like in English.

4.2 Experiments

Experiment 1: Scrambling of given objects

Design

- Question-Answer; Q: *Did you find out why... , Do you know why... , etc.*; A: *Because allegedly...*
- In all Q-A pairs, the direct object of A was given due to its presence in the Q
- **Two factors:**
 1. Word order in the answer: {O} S {O} V {O} PP {O}
 2. Givenness of S in the answer: S given or not
- 2x4: 8 critical conditions
- 32 target items (+110 fillers); an example of a target item in all 8 critical conditions:

- (1) Zjistil jsi, proč dnes sekretářka tak nadávala?
- | | |
|-------------------------------------------------------------------|-------|
| a. Protože prý sekretářku Karel poslal <u>do obchodu</u> . | 1 new |
| b. Protože prý Karel sekretářku poslal <u>do obchodu</u> . | 2 new |
| c. Protože prý Karel poslal sekretářku <u>do obchodu</u> . | 3 new |
| d. Protože prý Karel poslal do obchodu sekretářku . | 4 new |
- (2) Zjistil jsi, proč dnes sekretářka nadávala na Karla?
- | | |
|--------------------------------------------------------------------------|---------|
| a. Protože prý sekretářku Karel poslal <u>do obchodu</u> . | 1 given |
| b. Protože prý Karel sekretářku poslal <u>do obchodu</u> . | 2 given |
| c. Protože prý Karel poslal sekretářku <u>do obchodu</u> . | 3 given |
| d. Protože prý Karel poslal do obchodu sekretářku . | 4 given |

Predictions

- Prosodic approach: 1, 2, 3 should be good (unless further restrictions are introduced), 4 should be bad
- Given-before-new approach: 1 new, 1 given, and 2 given should be good, everything else should be bad

Results

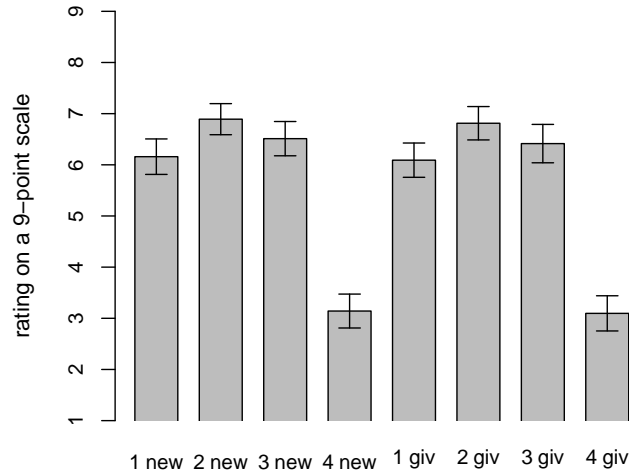


Figure 4.1: E1: Plot of means with 95% confidence intervals

Discussion

- The overall results are clearly more compatible with the prosodic approach: the given object is very acceptable in any position where it receives no sentence stress (→ Prediction 2 of the prosodic approach is borne out).
- The manipulation of the subject’s givenness yielded no results that would support the given-before-new approach.
- The preverbal/post-subject position of the given object (2) yielded the best results, though the postverbal position (3) is very good, too, and possibly, the difference between the two is not really significant.
- The results of Experiment 2 suggest that position 3 might be base-generated. If this were the case, this would show that no scrambling is in principle needed if prosodic constraints are satisfied (→ Prediction 1 of the prosodic approach is borne out).

Experiment 2: Scrambling of new objects

Design

- Question-Answer; Q: *What did you read in the newspaper? What did you see on TV?* etc.; A: *Yesterday allegedly... , Tomorrow allegedly... , etc.*
- Answers were all new (there was nothing given)
- **Two factors:**
 - Word order in the answer: {O} S {O} V {O} PP {O}

– Definiteness of the object: O definite or indefinite

- 2x4: 8 critical conditions
- 32 target items (+110 fillers); an example of a target item in all conditions:

- (3) Dávali něco zajímavého ve zprávách?
- Dnes prý ředitele ING-banky maskovaní muži unesli na neznámé místo. 1 def
 - Dnes prý maskovaní muži ředitele ING-banky unesli na neznámé místo. 2 def
 - Dnes prý maskovaní muži unesli ředitele ING-banky na neznámé místo. 3 def
 - Dnes prý maskovaní muži unesli na neznámé místo ředitele ING-banky. 4 def
- (4) Co ses dočetl v novinách?
- V Praze prý starší pár útočník napadl kvůli penězům. 1 indef
 - V Praze prý útočník starší pár napadl kvůli penězům. 2 indef
 - V Praze prý útočník napadl starší pár kvůli penězům. 3 indef
 - V Praze prý útočník napadl kvůli penězům starší pár. 4 indef

Predictions

- Both approaches: Base order should surface. No scrambling for givenness reasons is needed.
- Yet, weak versions of both approaches do not really prohibit scrambling of new constituents.
- The particular approach of Kučerová's (2012) actually does prohibit scrambling of new over new. In other words, Kučerová prohibits unnecessary derivational steps.

Results

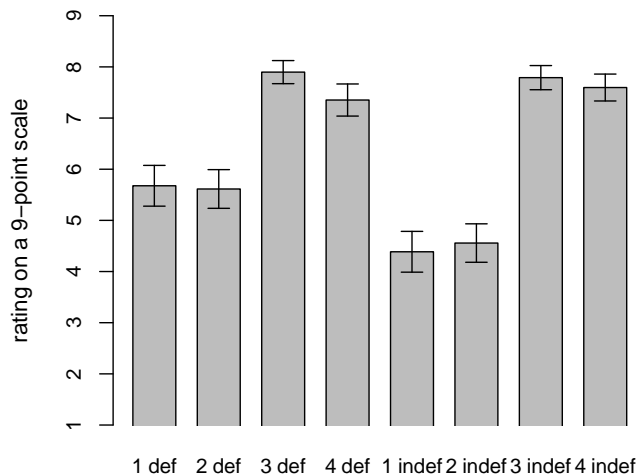


Figure 4.2: E2: Plot of means with 95% confidence intervals

Discussion

- As expected, the base orders (3, 4) come out as the best ones.
- It is interesting how relatively well the scrambled orders (1, 2) are rated. Though there appears to be a significant difference between definite and indefinite objects, the former being more acceptable in scrambled positions, even indefinite objects are fairly acceptable.
- This might mean that no grammatical restriction is violated in these cases: scrambling of new constituents is in principle allowed.

Experiment 3: Scrambling, givenness, and definiteness

[We've already written up a paper on this experiment, see Šimík and Wierzba (2012).]

Motivation

- Recall: Kučerová's (2007; 2012) definition of givenness is stronger than the givenness we have used:
 - (5) **Givenness** (our working definition)
An expression A is **given** if (the discourse participants know that) there is an expression B in the discourse that recently precedes A such that A and B are synonyms (are identical in meaning) or A is a hyperonym of B.
 - (6) **Givenness** (adapted from Kučerová)
An expression A is **given** if it is given in the sense above AND it is existentially presupposed (as e.g. definite expressions).
- In this experiment, we manipulated the definiteness of given objects in order to hold these two notions of givenness apart.

Design

- Context-Answer; C: introducing the object of the answer; A: ... VO / OV, where O is always a bare noun
- **Three factors:**
 - Word order: OV, VO
 - Definiteness of the object: O definite, O indefinite
 - Sentence stress: Sentence stress on O, sentence stress on V
- 2x2x2: 8 critical conditions
- 40 target items (+86 fillers); an example of a target item in all conditions:
 - (7) Nevíš, jestli bude na té akci nějaký doktor?
 - a. Jo, podle mě **doktora** pozvali. indef O; OV
 - b. Jo, podle mě doktora pozvali. indef O; QV
 - c. Jo, podle mě pozvali doktora. indef O; VO

- d. Jo, podle mě pozvali **doktora**. indef O; VO
- (8) Vzpomínáš si na toho doktora? Nevíš, jestli bude i na té akci?
- a. Jo, podle mě **doktora** pozvali. def O; OV
- b. Jo, podle mě doktora pozvali. def O; OV
- c. Jo, podle mě pozvali **doktora**. def O; VO
- d. Jo, podle mě pozvali **doktora**. def O; VO

Results

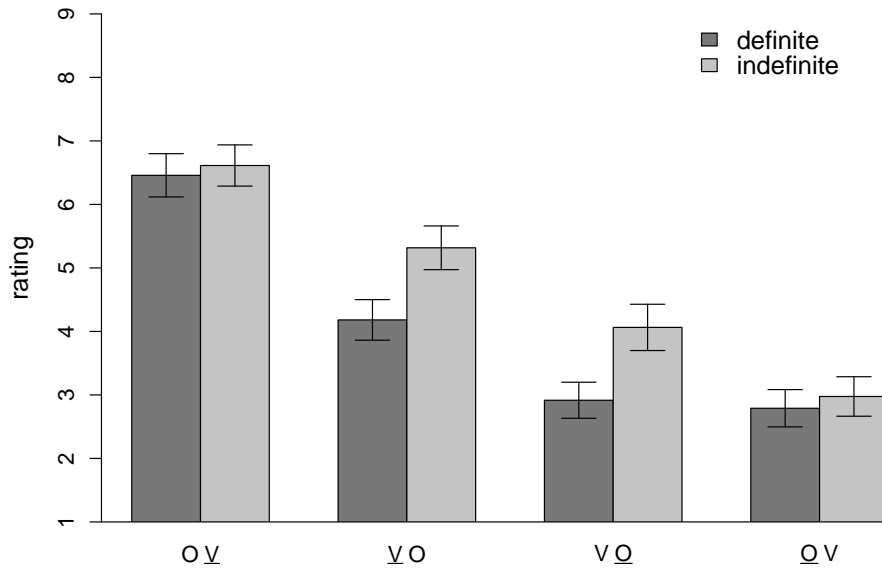


Figure 4.3: E3: Plot of means with 95% confidence intervals

Discussion

- For both definite and indefinite given objects, scrambling is the best-rated option. This is somewhat unexpected under Kučerová's stronger notion of givenness.
- For both definite and indefinite given objects, accenting the objects represents the worst option: this is in line with the prosodic approach.
- There are differences between definites and indefinites that we have no answer to.

Appendix A

Worksheet 1

1. Write as many notions related to information structure (functional perspective, aktuální členění) as you can think of.

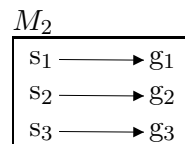
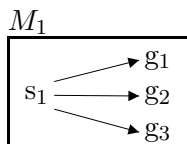
2. Prove for (1) and (2) that (a) has a different meaning than (b). Use pictures of models as a prove.

(1) a. The sun is shining.
b. Birds are singing.

(2) a. Dave is watching Sue.
b. Sue is watching Dave.

3. Have a look at the sentences in (3) and the models M_1 and M_2 . Provide your truth-judgements by answering (4) and (5).

(3) a. Jeden student vyzvedne na nádraží každého hosta.
b. Každého hosta vyzvedne na nádraží jeden student.



(4) Can (3a) be true in M_1 ?
Can (3b) be true in M_1 ?

(5) Can (3a) be true in M_2 ?
Can (3b) be true in M_2 ?

Appendix B

Worksheet 2

1. Suppose that Dave is A's brother. Look at the hypothetical conversations in (1) and (2). Answer the questions in (3).

(1) A: Did you invite my brother?
B₁: Well, I only called Dave.

(2) A: Did you invite my brother?
B₂: Well, I only called Dave.

- (3) a. What does speaker B₁ believe about the identity of Dave and A's brother?
b. What does speaker B₂ believe about the identity of Dave and A's brother?
c. How does the overall meaning (truth-conditions) of the answers differ in (2) and (3)?

2. Construct two sentences out of the three words/phrases *sežral*, *to maso*, *pes* – one which fits the context in (4A) and another which fits the context (5A). Mark the sentence stress by underlining one of the words.

(4) A: Co se stalo?

B:

(5) A: Co se stalo s tím masem?

B:

3. Construct contexts/questions that would make the responses in (6B) and (7B) sound felicitous.

(6) A:

B: Katka ředitelke kontaktovala.

(7) A:

B: Ředitelke kontaktovala Katka.

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