Factives and the left periphery of the Balkan clause

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Structure of the talk

- 1. Embedded clauses and their left periphery
- 2. Selection of factive complements
- 3. Factives and veridicals
- 4. Factive complements in various languages (South Slavic and Balkan)
- ▶ 5. The structure and the left periphery of factive complements

Theories of complementation in generative grammar

1960s: Single syntactic category called Comp for complementizers.

- Comps are subordinators which turn clauses into complements (Rosenbaum 1967, Lakoff 1968, Bresnan 1970, Kiparsky & Kiparsky 1970, etc.).
- Certain predicates (i.e., V, N, A) select certain kinds of Comps, and Comps themselves encode certain properties of the complement clauses they introduce, such as clause type, or illocutionary force.
- (1) [_{IP=Matrix clause} [_{CP} Comp [_{IP=Embedded clause}]] John said that Mary bought this book

Layered approach to CP structure (Rizzi 1997, 2001 et seq)

Comp (C) splits into (at least) two basic heads: 'Force' and 'Fin'

(2) $[_{IP}=$ matrix clause [Force [Topic/Focus [Fin $[_{IP}=$ embedded clause...]]]]

(3) John said that [CP [Topic this book [IP Mary bought this book]].

Individual languages can but need not exploit all functional positions within CP.

Refinements: properties of Force and Fin

The Force projection

- Encodes [±assertive] illocutionary force, i.e. introduces declaratives, embedded questions, etc.
- Is selected by weak intensional predicates: say, believe, think, suppose, assume, claim, suspect, etc. or by interrogative predicates: ask, wonder, etc., which take [+Q] complements in their denotation (Ginzburg 1995)
- Introduces propositions which may be evaluated as true or false
- Encodes the anchoring of the embedded proposition to the Speaker (Speaker deixis)
- Encodes the anchoring of the embedded proposition to Tense (Temporal deixis)

Properties of the lower C position Fin(iteness)

The Fin projection

- Is at the interface with the embedded clause and provides information which "faces the inside, the content of the IP embedded under it" (Rizzi 1997: 283).
- Encodes properties related to agreement and mood and differentiates between finite and non-finite clauses
- Is selected by strong intensional predicates (volitionals, directives, modals..) which typically take irrealis complements

Ambiguity of that-clauses

Russell (1905), Vendler (1972: 105), Kiparsky and Kiparsky (1970):

- "that"-clauses are ambiguous, depending on the kind of verb under which they appear (Egrè 2008 for discussion)
- ► E.g.

"I regret that John is ill" = I regret the fact that John is ill'

"I believe that John is ill" but not "*I believe the fact that John is ill"

Factive vs. non-factive complements

regret, be sorry, be happy, hate, remember, know Vs.

believe, think, imagine

presupposition of truth

no presupposition of truth

John knows/regrets that Mary left>> Mary leftJohn believes/thinks that Mary left.//>> Mary left

- (4) a. Ivan znae/săžaljava če Marija e zaminala.
 'Ivan knows/regrets that Mary left'
 b. Ivan vjarva, če Marija e zaminala.
 - 'Ivan believes that Marija has left'

(Bul)

Testing for factivity

Frege (1948), Strawson (1950): 'x V p' is true, iff p is true.

- (5) a. Ivan znae/se radva če Marija si e zaminala #no tova ne e vjarno (Bulg)
 'Ivan knows/ is happy that Mary has left # but this is not true
 - b. Ivan zna/žali što je Marija otišla. # ali to 'Ivan knows/is sorry that Mary has left' # but th
 - # ali to nije istina (S/C)
 # but this is not true



Contradiction unsuccessful

More tests: factives

Negation

(6) Ivan ne znae/ne se radva, če Marija e zaminala 'Ivan does not know/is not happy that Mary left'

>> Mary left.



More tests: factives

Questions

(7) Žališ/znaš li da je Marija otišla? >> Mary left
 'Do you regret/know that Mary has left'

Antecedents of conditionals

(8) Ako žališ/znaš da je Marija otišla, onda je pozovi natrag. >> Mary left (S/C)

(Bg)

'If you regret/know that Mary has left, then call her back'

Non-factive complements

Assertives: (say, claim); fiction Vs

(imagine, dream)

Epistemics (think, believe, suspect)

-no requirement for truth of the complement clause

(9) A. Ivan kaza/misli/sănuva, če Marija e spečelila 1 milion ot lotarijata. (Bul)

'Ivan said/thinks/dreamt that Maria has won 1 million from the lottery'

B. No tova ne e vjarno. Tja dori ne si kupi bilet.

But that's not true. She didn't even buy a lottery ticket.

Non-factives

- Ne verujem/tvrdim da je Marija otišla. //>> Mary left (10)'I do not believe/claim that Mary left'
- = Verujem/tvrdim da Marija nije otišla
- NEG raising = I believe/claim that Mary did not leave



Embedded proposition can be true or false

More tests for non-factivity

(11) a. Veruješ/tvrdiš li da je Marija otišla?Do you believe/claim that Mary has left

questions

- Ako veruješ/ tvrdiš da je Marija otišla, onda je pozovi natrag.
 If you believe/claim that Mary has left, then invite her back
- Možda veruje/tvrdi da je Marija otišla.
 Maybe he believes/claims that Mary has left

conditionals

other operators

//>> 'Mary left'

Believe vs. know

That-clauses are ambiguous depending on the kind of verb under which they appear (Vendler 1972, Kiparsky & Kiparsky 1970).

(i) John believes that it is raining (John believes a certain hypothesis)

(ii) John knows that it is raining. (#John knows a certain hypothesis)

- Both (i) and (ii): John has the belief that it is raining
- Only (ii): It is raining.

What are presuppositions?

- Basically, two families of approaches:
- a) semantic: veridical, truth entailemnt (Frege 1948, Russell 1905, Strawson 1950, Karttunen 1971 et seq);
- b) pragmatic: implicit assumptions, part of the *common ground*, i.e., shared knowledge between discourse participants or background knowledge (Stalnaker 1974)

Presupposition vs. assertion

- Assertions: convey new information which updates the common ground; can serve as M(ain)P(oint)ofU(tterance) (Simons 2007)
- (12) A. When does the game start? (Djärv, Heycock, Rohde 2017, ex. 9)
 - B. I think/believe/assume that it starts at 10.
 - B'. I found out/discovered that it starts at 10.
 - C. # I know/regret that it starts at 10.
 - Presuppositions are part of the common ground, so they cannot serve as MPU

Presupposition vs. truth entailment

- A. The president was assassinated.
- B. \models The president is dead.

- A. The king of France is bald.
- B. >> There is a king of France.

- A. The president was not assassinated. Is the president assassinated? The president might be assassinated. If the president is assassinated, he will need to be replaced.
 - B. \nvDash The president is dead.
- A The king of France is not bald. Is the king of France bald? The king of France might be bald. If the king of France is bald, he will not need a hairdresser.
- B. >> There is a king of France

Veridical and factive predicates

A verb V is veridical if it entails the truth of its complement when used in the positive declarative form, namely if it satisfies the schema V $p \rightarrow p$ for all p, where p is a "that"-clause. (Egrè 2008).

A verb V is factive if asserting V p presupposes the truth of the complement p. (Kiparsky and Kiparsky1970) \Rightarrow Speaker is committed to the truth of p.

For philosophers and logicians factive = veridical (see e.g. Williamson 2000) but for linguists, Speaker is committed to the truth of p only under factive verbs.

Cancellability of presupposition with some factive predicates

- Some factives do not appear to always project a presupposition, cf. *know* vs. prove
- like prove: it is clear, find out, realize, verify, show, indicate (soft triggers)
- (13) a. John knows that Mary is the killer
 - b. John proved that Mary is the killer.
- (14) a. Jo didn't know that Mary is the killer
 - b. Jo didn't prove that Mary is the killer. //>> Mary is the killer.
- >> Mary is the killer.

More on **semi-factives**

Karttunen (1971)

(15) a. If I later realize/discover/find out that I have not told the truth I will confess it to anyone

//>> 'I have not told the truth' (no presupposition – semi-factives)

b. If I later regret that I have not told the truth I will confess it to everyone.

>> 'I have not told the truth' (presupposition constant – factives)

Problematic cases

BUT (Egrè 2008):

(16) a. Falsely believing that he had inflicted a fatal wound, Oedipus regretted killing the stranger on the road to Thebes (Klein 1975, quoted in Gazdar 1979: 122)

b. Falsely believing that he had inflicted a fatal wound, Oedipus became aware that he was a murderer (Gazdar 1979, cited in Egré 2008)

c. (??) John wrongly believes that Mary got married and he knows that she is no longer single.

Regret not truth entailing (veridical) but factive?; know both truth entailing and factive

The semi-factives of Bulgarian

dokazvam 'prove', jasno e 'it is clear', otkrivam 'find out', osăznavam 'realize', ustanovjavam 'verify', pokazvam 'show', posočvam 'indicate'

(17) a. Ako edin den razbera, če ne săm kazala istinata, šte si go priznaja

'If I later realize that I have not told the truth, I will confess it' (adapted after Kartunnen 1971)

b. Može bi Masha e otkrila, če koleloto j e bilo otkradnato

'Perhaps Masha discovered that her bike was stolen.' (the bike may have been stolen or not)

(18) a. Ivan dokaza, če Maria ne e bila tam onazi nošt

'John proved that Mary was not there that night' [# but in fact she was there]

b. Ivan ne dokaza, če Maria e bila tam onazi nošt

'John did not prove that Mary was not there that night' [and in fact she may have been there]

The true factives of Bulgarian

Emotives: *săžaljavam* 'regret', *radvam se* 'be glad', *žal mi e* 'be sorry', etc.

(19) Ako edin den săžalja, če si si otišla, šte te potărsja otnovo 'If one day I regret that you are gone I will look for you again'

Factives: towards a definition

- Factivity implies veridicality since all verbs that are factive are also veridical, but not the other way around
- It takes something more to be factive embedded proposition must necessarily be true according to the Speaker
- Factive complements express a relation between an agent (the Speaker) and a fact (Russell 1918).

Veridicality hierarchy

Factivity implies veridicality but not the other way around

factive > veridical > non-veridical

Syntactic differences betweeen factives and semi-factives

Complementizer deletion

(20) a. Dean knows/realizes (that) Lily doesn't eat vegetablesb. Dean regrets *(that) Lily doesn't eat vegetables (Shim and Ihsane 2015)

Allow a DP-complement:

(21) a. I regret John's awful behavior.

b. *I know John's awful behavior. (cf. also non-factives, e.g. *I think John's awful behavior)

Syntactic differences

- Can select an interrogative (whether) complement (Egrè 2008)
- (22) a. John knows that/whether Mary left (or not).b. * John regrets whether Mary left (or not).
- (23) a. Ivan znae če/dali Marija e zaminala (ili ne).Ivan knows that/ whether Marija left (or not)
 - b. * Ivan sâžaljava dali Marija e zaminala (ili ne). Ivan regrets whether Marija left (or not)
- (Bul)

Summary

- True factives: emotives; small class, cross-linguistically stable resent, regret, bother, be sorry, be happy
- Semi-factives: cognitives/doxastics; more heterogenous and messy) know, learn, realize, discover, find out, prove, forget, remember
- Semi-factives are polysemous; two lexical entries (Tsohatzidis 2012, Lombardi Vallauri and Masia 2018), each sense factive or non-factive gets activated by context

The toughest case: know

(25) Bulgarian a. Factive

> Az [znam]_F, če ti si kupi_{Aorist} apartament. #No se okazva, če ne si. 'I know that you bought an apartment #But it turns out you haven't'

b. Veridical

Ivan $[znae]_{T}$, če ti si si kupil_{PresPerf} apartament. No se okazva, če ne si. 'I know that you bought an apartment. But it turns out you haven't

c. Non-factive (=think) Az znaex, če ti si kupi/si si kupil apartament 'I knew that you bought an apartment'

d. Non-factive (=believe)

Predi vekove xorata znaexa, če zemjata e ploska. 'Centuries ago people knew that the earth was flat'

More examples with know as semifactive

(26) a. Everyone knew that stress caused ulcers, before two Australian doctors in the early 80s proved that ulcers are actually caused by bacterial infection.

b. In school we learned that World War I was a war to "make the world safe for democracy", when it was really a war to make the world safe for the Western imperial powers.

c. I had trouble breathing, sharp pains in my side, several broken ribs and a partially collapsed lung, and I was in the middle of nowhere without any real rescue assets. It was then that I realized I was going to die out there. (examples from Hazlett 2015)

Non-factives

- doxastics: put forward a belief): mislja 'think', vjarvam 'believe', smjatam 'think, consider', sămnjavam se 'doubt'
- rešavam 'decide that' (but see Giannakidou 2009)
- assertives (put forward a claim): kazvam 'say', tvărdja 'claim', povtarjam 'reinterate', negative assertives: otričam 'deny';
- responsives (Lahiri 2002): kazvam na NP 'tell s.o.'

(27) Ivan misli/vjarva/smjata/reši/kaza na Marija, [če Boris e živ] //>> Boris is alive
 'John thinks/believes/ decided/told Mary that Bo is alive'

Different categorizations of verb classes

Factive/non-factive – Kiparsky & Kiparsky (1970)

Five verb classes (Hooper and Thomson 1973) two of which factives

Cattell (1978) three way distinction:

non-stance (factive): regret, know, remember, realize, notice, etc.

response stance: *deny, accept, agree, admit, confirm, verify*, etc

volunteered stance: *think, suppose, assume, claim, suspect, etc*

Class A say, report

Class B suppose, expect

Class C doubt, deny

Class D resent, regret, be sorry

Class E realize, learn, discover, know

Languages with factive complementizers

Greek, Serbian, Macedonian, Bulgarian, Japanese, Korean, Southern Italian dialects possess specialized complementizers for facitivity, which can optionally replace equivalents of *that*.

Modern Greek: Roussou (1992, 1993, 2000, 2010), Varlokosta (1994), Ginzburg & Kolliakou (1997): pu

- (28)a. O Yanis lipate/xerete *pu* mallon dhen tha parevrethi sti sinandisi (Haegeman, 2006:1665)
 The John is sorry/is glad that probably not will attend-3sg in the meeting
 "John is sorry/is glad that probably he won't attend the meeting"
 - b. Thimame *oti/pu* dhjavaze poli (Roussou 2000; different meanings) remember-1s that read-3s much
 - "I remember that he was reading'
 - c. O Janis (dhen) antilifthike *oti/*pu* tu eklepsan ta lefta (Roussou 2000) the John not realized-3s that his stole-3s the money
 - "John realized (/didn't realize) that someone had stolen his money."

South Slavic

(29) a. Mi e milo što/deka si otide.	(Mac)
to-me is glad that has left	
'I'm glad that he/she (has) left.'	
b. Žalim što/da si povrijedio Ivana.	(SC)
be sorry that have-2sg hurt John	
'I regret that you hurt John.'	
c. Săžaljavam, deto/če ne si pri men sega	(Bg)
regret-1sg that not are-2sg with me now	

'I regret that you are not with me now'

South Slavic factive complementizers are always optional according to preferences, register and style.

Semantic differences: Bulgarian

With true factive predicatescomplements deto = če 'that'

(30) Radvaš li se, če/deto utre šte idva bašta ti? 'Are you happy that your father is coming tomorrow?'

Deto as a factivity trigger of strong presuppositions/hard trigger

(31) a. Bašta mi oplaka li se, če se pribiram kăsno? No tova ne e vjarno!'Did Dad complain that I come home late? But this is not true!'

- b. Bašta mi oplaka li se [za tova] deto se pribiram kăsno #No tova ne e vjarno!
 - 'Did my father complain [about the fact] that I come how late? #But this is not true!'

Complementizer deto as a factivity trigger

Inter-speaker variation is observed (marked by %) correlating with different interpretations (Baunaz 2018)

(32)a. Pomniš li če/deto te srešnax na pazara?
(Bul)
'Do you remember that/the fact that I met you at the market?'
b. Znam če/%deto si bil v Ghent
'I know that you have been in Ghent/I know you were in Ghent'
(33) Znam da/%što si bio u Gentu
'I know that you have been in Ghent/I know that you were in Ghent'

Some generalizations about Balkan factives

- Factive complementizer can be obligatory (in Greek) but optional (in Slavic) according to selection properties of the matrix predicate
- With semi-factives usually only the all-purpose complementizer is allowed in the Balkan language area but there is interspeaker variation
- Factive complements show similar distribution and similar semantic and syntactic properties across the Balkan territory

Syntactic properties of factive complements

1. No complementizer deletion in South Slavic/Balkan languages, i.e., factive complements have a left periphery

(34) Pomnja *(če/deto) togava te sreštnax na pazara (Bul)remember-1sg that then you.Acc met-sg at market-the

'I remember meeting you/having met you at the market'

Syntactic properties of factive complements

► 2. No speaker-oriented adverbials ⇒ is the left periphery of a factive complement different?

(35) *Ivan sažajava, če/deto verojatno/očevidno/za neštastie ne e prisăstval na săbranieto '*John regrets that probably/obviously/unfortunately did not attend the meeting'

Factive complements do have a left periphery!

De Cuba 2006, 2007; Basse 2007, Haegeman 2006 (see also Haegeman and Ürőgdi 2010) assume that factives select for a different clause type: a truncated CP, which correlates, according to them, with the fact that factives denote propositions without illocutionary Force; lack of assertion (Basse 2007).

BUT:

Factives denote true propositions, therefore they have a Force projection encoding Speaker/Tense deixis. In fact, it is the Speaker who presupposes the truth of the factive complement. This is precisely the reason why speaker-oriented adverbs are illicit. The latter are licit if the complement is non-factive. Cf. (35) with (36) :

(36) Ivan misli/predpolaga, če verojatno/očevidno Maria njama da băde na săbranieto

'Ivan thinks/supposes that probably/evidently Maria will not be at the meeting'

What is special about Balkan factive complementizers?

Balkan factive complementizers have a definiteness feature /similar to a definite article appears not only in complement clauses but also in relatives (Roussou 2000, 2010).

Bg/SC/Mac *de-to, š-to* contain the weak demonstrative 'to' (with no person and number features)

- D element which spells-out [fact]
- (Strong) presupposition is triggered by the factive complementizer itself rather than by selectional properties of the matrix verb

Factive complements have a fullfledged left periphery!

Proposal:

The left periphery of a factive complement contains a nominal projection above the left periphery (much like in the classical analysis of Kiparky and Kiparsky 1970)

(37) I [regret [D it [CP that [John couldn't go to Italy]]]]

Evidence for a richer structure 1

- Topic phrases cannot be located to the left of the complementizer if the complement is factive
- (38) Săžaljavam (*[_{Topic} knigite]) deto [_{Topic} knigite] ne săm gi vărnala ošte 'I regret that I haven't returned the books yet'
- (39) Săžaljavam za [DP tova [_{CP} deto [Topic/Focus [_{IP}= embedded clause
- regret for it that the books I did not bring back

Evidence for a richer structure2

No wh-extraction out of factive complements: D acts like an operator blocking both argument and adjunct extraction (Krapova 2010)

(40) a. *Kakvo săžaljavaš, deto Ivan otkradna _?'What do you regret that John stole?'

b. *Kăde săžaljavaš, deto lvan otide _ ?

'Where do you regret that John went?'

Mapping syntax to semantics...

- Propositions include (at least) true propositions (facts) and propositions with no determined truth-value
- Ernst (2002): Fact-Event Objects
- Speech-Act > Fact > Proposition > (Specified) Event
- "Fact, proposition, and event are the three subtypes of clausal FEOs. .. For any event, it is possible to make a proposition about that event and thus also a fact, if the proposition is true» (Ernst 2002: 54).

...Mapping syntax to semantics

Elaborating on the Bulgarian Left Periphery: the Comp system

Factivity > (Topic/Focus) Force > Topic/Focus > Fin(iteness)
 deto če/dali da

Complementizer *če* 'that': Force [+declarative] ([+finite] by default) Complementizer *deto:* Factivity ([+declarative] by default, [+finiteness by default) Complementizer *dali* 'whether': Force [-declarative]

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Thank you! Grazie mille!