

Subpart of Focus Fronting is discourse subordination

Kenneth Baclawski Jr. (UC Berkeley)
kbaclawski@berkeley.edu
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1 Introduction

- This paper makes three specific claims:
 - (1) German ‘Subpart of Focus Fronting’ is in fact constrained by discourse context, contra the current literature
 - (2) Information structure should be present in the syntactic derivation, minimally via discourse relation features on C
 - (3) The Question/Answer Paradigm alone is insufficient to control for the complete information structure of the answer
- A growing body of evidence suggests that information structure should be modeled in terms of prosody (e.g. Zubizarreta 1998’s *p*-movement; Horváth 2010’s Strong Modularity Hypothesis), but not syntactic features (e.g. [TOPIC], [FOCUS] after Rizzi 1997)
- One of the strongest pieces of evidence is ‘Subpart of Focus Fronting’ in German and Czech: \bar{A} -movement constrained only by prosody, independent of discourse context (Fanselow & Lenertová 2011)
- The data is generally presented as in (1):
 - (1b) and (1b’) are claimed to be discourse equivalents
 - It is assumed that the answer to ‘What happened’ is a sentence-focus/thetic sentence, assuming the Question/Answer Paradigm

- (1) (a) What happened?
(b) *[[Er] hat die FLinte ins KORN geworfen]_{FOC}*.
he has the gun into-the grain thrown
‘He has given up.’ [‘Formal Fronting’]
(Fanselow & Lenertová 2011: 179)
(b’) *[[Die Flinte] hat er ins KORN geworfen]_{FOC}*.
the gun has he into-the grain thrown
‘He has given up.’ [Subpart of Focus Fronting] GERMAN
- I argue that (1b,b’) are fully controlled for discourse context
- In fact, ‘What happened’ is actually ambiguous between two readings with different discourse structure (Segmented Discourse Representation Theory: Asher & Lascarides 2003)
 - (2b–c) involves a ‘Discourse Coordination’ relation
 - (3b–c) involves a ‘Discourse Subordination’ relation
- (2) (a) A: First, I went to the store. Then I went to the bank. Then...
(b) B: What happened? / Then what happened? / #Why?
(c) A: I came back home.
- (3) (a) A: John hasn’t come to class for the past week.
(b) B: What happened? / #Then, what happened? / Why?
(c) A: He got the flu.
- In German, Subpart of Focus Fronting (1b’) is licensed by the ‘What happened’ meaning in (3b), but not the meaning in (2b)
- This casts serious doubts on the claim that it is entirely discourse independent
- I propose that the SDRT concepts of discourse coordination and discourse subordination should be encoded in the syntax as two different C heads: C_{DC} and C_{DS}
- SFF is then derived by a re-ranking of Optimality Theoretic constraints, triggered by a [SUBORDINATION] feature (Cophonology theory: Inkelas & Zoll 2007; Jenks & Rose 2015)

Roadmap:

- **Section 1:** The Question/Answer Paradigm is explored in Catalán, using the SDRT framework
- **Section 2:** New tests are applied to German fronting, leading to the introduction of C_{DC} and C_{DS}
- **Section 3:** Implications for the Question/Answer Paradigm and the field of information structure

2 Discourse subordination in Catalán

- In this section, it is shown that topicalization may occur in the answer to ‘What happened’ in Catalán
- This leads to a revision of the Question/Answer Paradigm

2.1 The Question/Answer paradigm (QAP)

- According to the QAP, the form of a question controls for the information focus of the answer
 - This result is highly robust and underlies a variety of theories of information structure (cf. Paul 1880[1891], Halliday 1967, Jackendoff 1972, Lambrecht 1994; Alternative Semantics: Rooth 1992; Question Under Discussion: Roberts 1998; many others)
 - The QAP remains the standard focus diagnostic (e.g. Aissen 2015)

- | | |
|--|--|
| (a) Q: What happened? | A: [My brother cooked RICE] _{FOC} |
| (b) Q: What did your brother do? | A: My brother [cooked RICE] _{FOC} |
| (c) Q: What did your brother cook? | A: My brother cooked [RICE] _{FOC} |
| (d) Q: Who cooked the rice? | A: [My BROTHER] _{FOC} cooked rice |
| (e) Q: What did your brother do to the rice? | A: My brother [COOKED] _{FOC} rice |

- A number of scholars additionally contend that the QAP controls for the complete information structure of the answer (i.e. topic)

- This assumes that topic and focus are in a dichotomous, complementary distribution¹
- For Erteschik-Shir (1997,2007), the only possible topic in (a) is a silent ‘stage-topic’, because the entire sentence is under focus

- In particular, the (a–b) contexts are used by Fanselow & Lenertová (2011) to diagnose focus and a lack of topic in the predicate
- However, can Question/Answer pairs be embedded in a broader discourse?

2.2 Discourse coordination & subordination

- López (2009) introduced the idea that topicalization in Catalán is constrained by the ‘discourse subordination’ relation
- Segmented Discourse Representation Theory and its precursors in DRT and NLP posit a major dichotomy between the following two types of relations between utterances: (SDRT; Grosz & Sidner 1986; Asher & Lascarides 2003; Asher & Vieu 2005)

- Discourse coordination (\rightarrow): two separate events (e.g. A. Then B.; A. As a result B.)
- Discourse subordination (\Downarrow , mother-daughter nodes): one utterance expands upon another (e.g. A. Because B.; A. More about A.; levels of bullet points)²

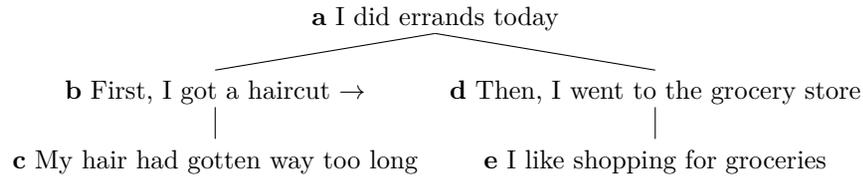
- (4) (a) I did errands today.
 (b) First, I got a haircut.
 (c) My hair had gotten way too long.
 (d) Then, I went to the grocery store.
 (e) I like shopping for groceries.

- These relations do not have to be between adjacent utterances, and utterances can have multiple relations

- (2,4) are in a non-local discourse coordination relation
- (1,2), (2,3), (1,4), and (4,5) are in subordination relations

¹The QAP does control for givenness or old information, notions that are variously equated with topic, but do not predict overt topicalization (cf. Ward 1988, López 2009, a.o.).

²SDRT formalizes numerous subtypes of coordination and subordination, such as Narration and Elaboration. For ease of presentation, only this high-level distinction is used.



- In Catalán, topicalization (here, clitic right-dislocation) is only felicitous in discourse subordination contexts (5)

- (5) (a) *El Joan va cuinar la carn.*
 the John PAST cook.INF the meat
 ‘John cooked the meat.’ (López 2009: (2.56)) CATALÁN
- (b) *#Després se la va menjar, la carn.*
 afterwards CL CL.ACC PAST eat.INF the meat
 ‘Afterwards he ate the meat.’ [Coordination with (a)]
- (b’) *Li agrada molt, la carn.*
 CL.DAT like.3SG much the meat
 ‘He likes the meat very much.’ [Subordination with (a)]

2.3 ‘What happened’

- López (2009) does not analyze Question/Answer pairs, but consider the paradigm in (6–7)
 - Topic movement is infelicitous in (6c’), because there is no discourse subordination
 - It is licensed in (7c’), despite the intervention of ‘What happened’
 - If the (a) utterances are omitted from the context, the question *¿Què va passar?* apparently results in optional topic movement
- (6) (a) A: First, the cafe was renamed. Then, it moved. Then...
- (b) B: *¿Què va passar?* ‘What happened?’ (cf. ‘Then, what happened?’)
- (c) *El cafè va tancar.*
 the cafe PAST.3SG close.PART
 ‘The cafe closed.’

- (c’) *#Es va tancar, el cafè.*
 CL PARS.3SG close.PART the cafe
 ‘It closed, the cafe.’ [Coordination with (a)]

- (7) (a) A: Paolo stopped working at the cafe.
- (b) B: *¿Què va passar?* ‘What happened?’ (cf. ‘Why?’)

- (c) *??El cafè va tancar.*
 the cafe PAST.3SG close.PART
 ‘The cafe closed.’

- (c’) *Es va tancar, el cafè.*
 CL PAST.3SG close.PART the cafe
 ‘It closed, the cafe.’ [Subordination with (a)]

- SDRT allows interrogative sentences to have the same discourse relations as declarative sentences (e.g. ‘Coordination_q’, ‘Subordination_q’)
- (6b–c) together constitutes a coordination relation, and (7b–c) a subordination relation (giving rise to topicalization in the answer)
- Hence, the question ‘What happened’ is not sufficient to diagnose topic movement in the response

Disc. Relation		Intervening Q		Topicalization
Coordination	→	∅	→	✗
Subordination	→	∅	→	✓
Coordination	→	<i>Què va passar?</i> ‘What happened?’	→	✗
Subordination	→	<i>Què va passar?</i> ‘What happened?’	→	✓

- In essence, the question ‘What happened’ is ambiguous between a discourse coordination question (‘Then what happened’) and a discourse subordination question (‘Why, what happened’)

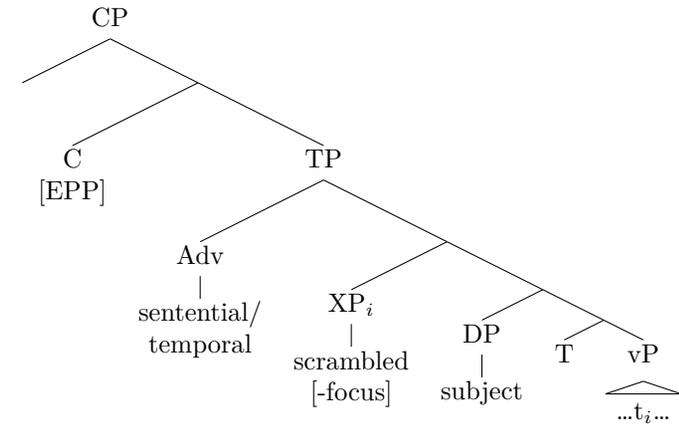
3 Fronting in German

- With the Catalán data in mind, let's reexamine the fronting phenomena in German from Fanselow & Lenertová (2011; henceforth F&L)
- 'Fronting' generally refers to the movement of phrases to initial position (i.e. Spec-CP, the prefield/Vorfeld; cf. Frey 2006; many others)
- Note that V-to-C movement/V2 effects will be ignored in this paper, though they are certainly present

3.1 Formal fronting

- 'Formal fronting' (FF) describes the process by which unstressed phrases move from the TP domain to Spec-CP (cf. Fanselow 2002; a.o.)
- The set of phrases that can undergo FF are those that are otherwise predicted to be in the TP domain:
 - Subjects, including non-specific indefinites (8)
 - Sentential adverbs like 'probably' (9)
 - Non-focussed phrases that escaped the vP through scrambling (10; cf. Webelhuth 1992; Fanselow 2002)

- (8) *Ein Kind hat einen Hasen gefangen.*
 a child has a.ACC rabbit caught
 'A child has caught a rabbit.' GERMAN
- (9) *Wahrscheinlich hat ein Kind einen Hasen gefangen.*
 probably has a child a.ACC rabbit caught
 'A child has probably caught a rabbit.' (F&L: 173)
- (10) *Den Bürgermeister_[-FOC] hat wohl der Villenbesitzer angezeigt.*
 the.ACC mayor has supposedly the owner.of.villa reported
 'The owner of the villa supposedly reported the mayor.' (F&L: 172)



Adapted from Fanselow & Lenertová (2011: 190)

- F&L derive these facts with an unspecific edge feature on C (Chomsky 2008)
- FF (8–10) readily falls out from this EPP feature and Locality

3.2 Subpart of Focus Fronting

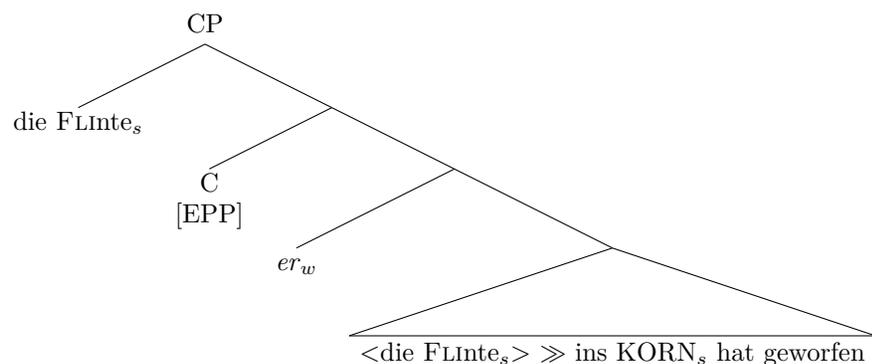
- 'Subpart of Focus Fronting' (SFF) refers to the fronting of stressed phrases, which are either the whole focus, or part of a larger focussed phrase
 - Crucially, if there are at least two stressed phrases, only the (linearly) leftmost phrase can undergo SFF (11b'')
- (11) (a) What happened?
 (b) *[[Er] hat die Flinte ins KORN geworfen]_{FOC}.*
 he has the gun into-the grain thrown
 'He has given up.' [FF]
 (b') *[[Die Flinte] hat er ins KORN geworfen]_{FOC}.*
 the gun has he into-the grain thrown
 'He has given up.' [SFF]
 (b'') **[[Ins KORN] hat er die Flinte geworfen]_{FOC}.*
 the gun has he into-the grain thrown
 'He has given up.' (F&L 2011: 179)

- Despite the fact that SFF is constrained by prosody and linearization, a variety of evidence is presented to establish that SFF must be \bar{A} -movement:
 - SFF can involve long-distance dependencies
 - It is sensitive to islands
 - It licenses parasitic gaps
 - Idiomatic meaning is reconstructable (F&L 2011: 182–183)
- To account for this, F&L (2011: 185) propose an ‘Early Accentuation’ operation that obligatorily linearizes stressed phrases immediately following Merge (so, *die Flinte* would be linearized ahead of *ins Korn* in the above example)

(12) **Early Accentuation** (\gg):

Structural accents are determined when phrases are merged.

- From there, they propose that C has the same EPP feature as FF, which is now only constrained by Early Accentuation (i.e. not by the Minimal Link Condition or phases)
- Thus, in (11b’), the EPP feature can attract either *er* or *die Flinte*, but *ins Korn* is blocked by EA



- Early Accentuation/linearization constraints in the syntax are explanatory and are recently gaining traction in syntax (cf. Richards 2016)
- However, does this data hold up to our new tests from Catalán?

- In fact, SFF proves to be just as constrained by discourse subordination as topic movement in Catalán
 - In (13), SFF is infelicitous if the utterance is clearly in a discourse coordination context

- (13) (a) A: John tried to climb the wall. He tried a second time. Then a third.
- (b) B: *Was ist passiert?* ‘What happened?’ / *Was passierte dann?* ‘Then what happened?’
- (c) *Er hat die FLinte ins KORN geworfen.*
 he has the gun into-the grain thrown
 ‘He has given up.’ [FF] [Coordination with (a)]
- (d) *#[Die Flinte] hat er ins KORN geworfen.*
 the gun has he into-the grain thrown
 ‘He has given up.’ [SFF]

- However, SFF is possible in discourse subordination contexts like (14)
 - Note that the FF version is somewhat degraded for this speaker

- (14) (a) A: Jessica used to be in the German department. Now, she’s working at Starbucks.
- (b) B: *Was ist passiert?* ‘What happened?’ / *Warum?* ‘Why?’
- (c) *??Sie hat die FLinte ins KORN geworfen.*
 she has the gun into-the grain thrown
 ‘She has given up.’ [FF]
- (d) *[Die Flinte] hat sie ins KORN geworfen.*
 the gun has she into-the grain thrown
 ‘She has given up.’ [SFF] [Subordination with (a)]

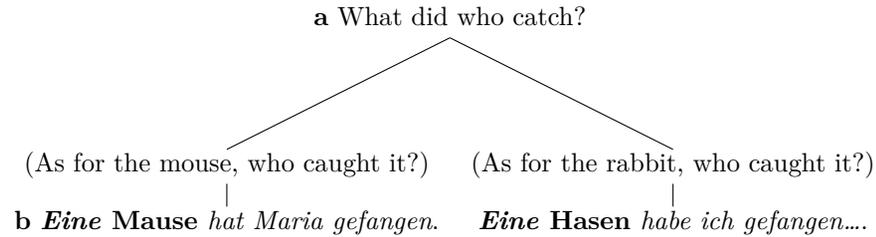
- The idiom ‘throw the gun into the grain’ is considered antiquated by the speakers I worked with
- Nevertheless, the same pattern is replicated by more modern idioms like ‘make theater’
- SFF is infelicitous in (15d), as Result is a standard coordination context

- (15) (a) A: Hans showed he was a bit upset,
but Maria didn't pick up the clues.
- (b) B: *Was ist passiert?* 'What happened?' /
Was hat er getan? 'What did he do [as a result]?'
- (c) *Er hat so ein Theater gemacht.*
he has such a theater made
'He got so dramatic.' [FF] [Coordination with (a)]
- (d) *#So ein Theater hat er gemacht.*
such a theater has he made
'He got so dramatic.' [SFF]
- By contrast, SFF is acceptable in an elaboration (here explanation) context (7d)
 - In this example, SFF is even considered preferable to FF, which is somewhat degraded
- (16) (a) A: Joseph isn't allowed in the cafe anymore.
- (b) B: *Was hat er gemacht?* 'What did he do?' /
Was ist passiert? 'What happened?' / *Warum?* 'Why?'
- (b) *Er hat so ein Theater gemacht!*
he has such a theater made
'He made such a scene!' [FF]
- (c) *So ein Theater hat er gemacht!*
such a theater has he made
'He made such a scene!' [SFF] [Subordination with (a)]
- Finally, this pattern is replicated in non-idiomatic contexts
 - SFF of *ein Pferd* 'a horse' is licensed in an explanation context (17d)
- (17) (a) A: Yesterday, I went to a farm, and I was so happy.
- (b) B: *Was ist passiert?* 'What happened?' / *Warum?* 'Why?'
- (c) *Wir haben ein Pferd gesehen!*
we have a horse seen
'We saw a horse!' [FF]

- (d) *Ein Pferd haben wir gesehen!*
a horse have we seen
'We saw a horse!' [SFF] [Subordination with (a)]
- SFF is infelicitous, however, in a coordination context (18d)
- (18) (a) A: Yesterday, I went to a farm.
- (b) B: *Und was hast du heute gemacht?* 'And what did you do today?'
- (c) *Wir haben ein Pferd gesehen!*
we have a horse seen
'We saw a horse!' [FF] [Coordination with (a)]
- (d) *#Ein Pferd haben wir gesehen!*
a horse have we seen
'We saw a horse!' [SFF]

Additional evidence from metalinguistic judgments:

- Some speakers accept (18d), but only with additional pragmatics
 - (a) "If the question was 'What else did you see?'"
 - (b) "You're about to say more about the horse"
 - (c) "Starting a list ('We saw a horse', 'She saw a pig', etc.)"
 - This seems to indicate accommodation to discourse subordination
 - (a–b) imply another level of question in the discourse (e.g. 'What did you see?' ↓ 'What else did you see?')
 - (c) implies a contrastive topic, which necessarily requires multiple nested questions under discussion (Büring 2003; Constant 2014)
 - Indeed, SFF correlates with contrastive topic in German:
- (19) (a) A: Who caught what? ("Making a list by what is caught")
- (b) *Eine Mause hat Maria gefangen. Eine Hasen habe*
a mouse has Maria caught a rabbit have
ich gefangen...
I caught
'Maria caught a mouse. I caught a rabbit...' [SFF]
[Subordination of (a)]



- To summarize, SFF is constrained by discourse subordination
- This is entirely unexpected under F&L's prosodic account
- On the other hand, Early Accentuation is explanatory, and SFF does not target information structural referents (anaphora, topics, foci, contrast, etc.), unlike Catalán topicalization, which must target anaphora

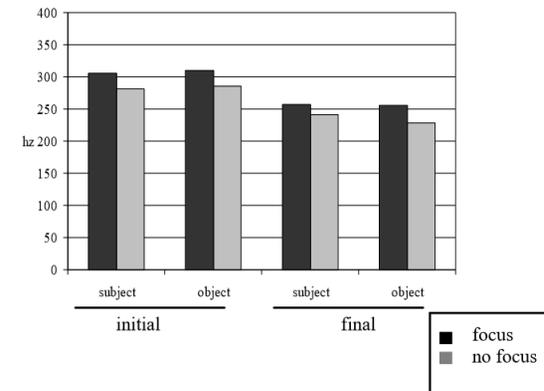
3.3 Analysis

- It is difficult for existing information structure formalizations to account for the correlations we have found:

Discourse coordination ↔ FF ↔ locality (TP)
 Discourse subordination ↔ SFF ↔ stress

- Purely prosodic accounts like F&L and the Strong Modularity Hypothesis would have to say that discourse subordination happens to correspond with a distinct stress pattern
 - Reported data tends to be along the lines of Müller et al (2006):
 - * Foci (black bars) have a significantly higher F0 than non-foci
 - * Phrases in initial position (left two bars) have a significantly higher F0 than non-initial phrases
 - Discourse subordination has not, to my knowledge, been reported to correlate with special stress patterns in German, or any other language
 (Accounts of the Nuclear Stress Rule and stress shift do not generally make reference to syntactic position, e.g. Truckenbrodt 2006 on German; Reinhart 2006)
 - This is a testable hypothesis: do subordination contexts happen to correlate with higher F0?

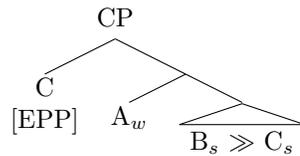
- Though this would seem to miss the generalization about discourse context



Average pitch measures in adult German speech (Müller et al 2006: Figure 4)

- A purely syntactic account is likewise unfeasible, given existing features in the literature
 - The features [Topic], [Contrast/Kontrast] (Molnár 2006; Frey 2006), and [+Anaphora] (López 2009) are not useful, as SFF clearly does not target anaphoric or contrastive phrases
 - Any combination of these features would also miss the discourse context generalization
- Instead, I propose a recasting of CP, which otherwise preserves F&L's analysis
- C has two flavors in German:
 - $C_{DISC.COORD}$: C, [EPP]
 - $C_{DISC.SUBORD}$: C, [EPP], [SUBORDINATION]
- [SUB] triggers a cophonology: the high ranking of an Optimality Theoretic constraint that overrides Locality
 (Cophonology theory: Inkelas & Zoll 2007; Jenks & Rose 2015)
- I will assume that this constraint interacts with Schwarzschild (1999)'s Nuclear Stress Rule constraints

- Consider a schematic structure as below, with stress marked in metrical tree notation (strong vs. weak stress; Liberman 1979; Szendrői 2001; Reinhart 2006)



- FF (C_{DC}): [EPP] attracts A_w via Locality, not B or C
 - This cleanly accounts for the restriction of FF to phrases in the TP domain
- SFF (C_{DS}): [SUB] triggers a new constraint, **Align-L(φ)**: Align a (stressed) phonological phrase to the left of C^0
Ranking: ALIGN-L(φ) > LOCALITY
 - Here, C_{DS} attracts the closest stressed phrase, B_s
 - Movement of A_w is suboptimal, because it does not bear stress
 - Movement of C_s is blocked by Early Accentuation

Input: C_{DS} [EPP]... A_w B_s C_s	ALIGN-L(s)	LOCALITY
a.) A_w C_{DS} ... t B_s C_s	*!	
b.) B_s C_{DS} ... A_w t C_s		*
c.) Not generated, due to Early Accentuation: C_s C_{DS} ... A_w B_s t	–	–

- This analysis retains the idea that German SFF is largely constrained by prosody, without the need for [TOPIC] or [FOCUS] features (cf. the Strong Modularity Hypothesis, Horváth 2010)
- However, we must build discourse coordination and subordination into German syntax

Constraint ranking	C_{DC} : C, [EPP]	C_{DS} : C, [EPP], [SUB]
	LOCALITY	ALIGN-L(s) \gg LOCALITY

4 Discussion

- German FF and SFF are in fact constrained by discourse context
 - Not by topic, focus, or contrast, but discourse coordination and subordination
- This alters the debate on the syntax–information structure interface
 - At least [SUBORDINATION] must be present in the syntax
 - This flies against the emerging Strong Modularity Hypothesis (Horváth 2010) and Chomsky (1995)’s Inclusiveness Condition
- Finally, this data necessitates a revision of the Question/Answer Paradigm if it is being used to test more than information focus
 - As it stands, the QAP correctly predicts information focus
 - To control for the complete information structure, however, each Question/Answer pair must be carefully embedded in a broader discourse
 - For example, one could force discourse coordination by using the Narration frame ‘First...Then...’

CONTEXT: Start of the conversation

- (a) First, my brother cut vegetables.
- (b) Q: Then what happened? Ans: [He cooked RICE]_{FOC}
- (c) Q: What did your brother do next? Ans: He [cooked RICE]_{FOC}
- (d) Q: Then what did your brother cook? Ans: He cooked [RICE]_{FOC}
- (e) Q: Then who cooked the rice? Ans: [My BROTHER]_{FOC} cooked it
- (f) Q: Then what did your brother do to the rice? Ans: My brother [COOKED]_{FOC} rice

Optionality

- One issue underlying this data is the general optionality of SFF
 - FF is almost always an acceptable alternative of SFF, even in strongly subordinating contexts (though, cf. 7c, 14c)
- This can be captured in multiple ways under this analysis:
 - C_{DS} can be optionally assigned with [SUBORDINATION] (cf. Mikkelsen 2005 on the optional assignment of [TOPIC] to T^0)

- The cophology triggered by [SUBORDINATION] could equally weight the constraints ALIGN-L(φ), LOCALITY, resulting in true optionality
- Under both analyses, SFF would still be infelicitous in discourse coordination contexts
- However, it remains to be tested whether FF and SFF are fully equivalent in terms of discourse context

Analysis 1 [SUB] triggers re-ranking: ALIGN-L(φ) = LOCALITY

Analysis 2 C_{DS1}: C, [EPP], [SUB]
C_{DS2}: C, [EPP]

Future research

- Are there lexical instantiations of C_{DC} and C_{DS}?
 - Coordination and subordination are widely known categories of complementizers, connectives, relativizers, conjunctions, and other word classes (cf. Fabricius-Hansen & Ramm 2008’s volume on the subject)
- Should other syntactic heads have DC and DS flavors?
 - López (2009) analyzes Catalán discourse anaphora (clitic right-dislocation) as triggered by Catalán vP
 - López & Winkler (2003) show that English topicalization is possible in vP’s in certain gapping constructions
- Can topic movement in other languages be analyzed as combinations of [SUBORDINATION] and other features like [+contrast] and [+anaphora]?
- Finally, can the [SUBORDINATION] feature be indexed sociolinguistically?
 - Several speakers identified SFF as ‘rural’ or ‘gossipy’
 - Conversely, FF was identified as ‘learned’, ‘stoic’, or ‘neutral’
 - Conceivably, these judgments could be due to dialect differences, or even differences in pragmatic conventions

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