What do Contrastive Topics and Frame Setters have in Common? The Role of Addressing and Delimitation in Information Structure.

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1. The fuzzy nature of Topic/Comment

Jacobs (2001): Topic / Comment relates to four distinct phenomena; they are called T/C because they resemble each other (or a "prototype" of T/C).

1.1 Informational Separation

- A complex constituent [X Y] is informationally separated iff its semantic processing involves two steps, one for X, one for Y.
- Cf. Hockett (1958): "the speaker announces a topic and then says something about it."

Categorial (T/C) vs. thetic sentences; informational separation by prosodic phrasing:

- (1) a. $(\underline{P\acute{e}ter})_{T}$ (ist endlich éingeschlafen)_C. 'Peter finally fell asleep'
- b. (*Mein Béin ist eingeschlafen.*) 'My leg fell numb.'

1.2 Predication

In [X Y], X is the semantic subject and Y the semantic predicate iff X saturates an argument of Y, and there is no Z that c-commands [X Y] such that Z specifies an argument of Y.

Argument specification also applies to the situation argument (time & space adverbials).

- (2) a. <u>Den Peter</u> habe ich in Bern getroffen.
 'Peter I've met in Bern.'
 b. <u>In Bern</u> habe ich den Peter getroffen.
 'In Bern I've met Peter'
- 1.3 Addressation
- ➢ In [X Y], X is the address for Y iff X marks the point in the common ground where the information carried by Y has to be stored at the moment of utterance.
- Cf. Reinhart (1982), "aboutness topic", corresponds to a file-card structure.

Addressation often involves predication, but not obligatorily so:

- (3) [What about Bill? What did he want to do?] <u>Bill</u> wanted to go to a pub and have a beer.
- (4) <u>As for Goethe's birthday</u>, the city theatre plans a performance of "Doktor Faust".

1.4 Frame-setting

In [X Y], X is the frame for Y iff X specifies a domain of (possible) reality to which the proposition expressed by Y is restricted.

Cf. Chafe (1976), topic as "the frame within which the sentence holds".

Frames specify an aspect under which a proposition is true, e.g. (5.a) by fixing open parameters (e.g. of *is doing well*), (b) by specifing the situation variable of a sentence, or (c) by restricting what type of information can be given.

- (5) a. <u>Financially</u>, Peter is doing well.
 - b. <u>In my dream</u> you were a crocodile.
 - c. <u>As for his health</u>, he had a bypass operation recently, but he is recovering quickly.

1.5 T/C constructions and T/C properties

Jacobs identifies a number of German T/C constructions and shows that they behave differently with respect to the four T/C properties:

Left dislocation (most prototypical)

- (6) Den Peter, den kann niemand leiden. 'Peter, this guy no-one can stand.'
- [+ Separation], [+ Predication], [+ Addressation], [± Frame Setting]

I-Topicalization

- (7) /Jéden Freund Peters kenne ich \nícht. 'I don't know every friend of Peter.'
- (8) All that glitters isn't gold.
- [+ Separation], [+ Predication], [± Addressation], [± Frame Setting]

Free topics

(9) As for Peter's birthday, I don't know what to give to him as a present.
Properties: [+ Separation], [± Predication], [+ Addressation], [± Frame Setting]

2. Main Claims

2.1 What is information structure to begin with?

Chafe (1976): Information structure (IS) refers to the ways how information is **packaged** so that it fits best the current informational need of speaker and addressee. Ideally, it does not affect the information itself.

This can be made precise within the help of the notion of **Common Ground**, the mutually known information that is continuously enriched in communication.

We distinguish between **CG content** (the information present in the CG) and **CG management** (the strategies used to develop the CG, e.g. by structuring questions), cf. Krifka (2006).

IS is a general term for the technques used to deal with CG management, among others:

- \succ focus in answers to indicate the alternatives offered by questions,
- \succ focus in contrast to indicate the points of contrast in contrasting expressions,
- \succ givenness marking to indicate reference to entities already introduced in the CG
- \succ topicality that indicate what a sentence is about.

2.2 Some IS-functions that are not essentially related to topicality

<u>Informational separation</u> applies to many phenomena outside of topic-like constructions, e.g. parentheses and modifiers, and is not not necessary for T/C structuring, cf. topic elitization:

- (10) a. (*The weather*), (*they say*), (*will change*).
 - b. Susan (smoked) (in the tent).
- (11) [What about you? What will you do when you retire?] <u>I'll buy a rocking chair</u>.

<u>Predication</u> (being the highest argment) also is not necessarily an indication of T/C structure, cf. (1.b), and it is not sufficient to assume it, as topics can be outranked by higher arguments:

(12) [What happened to Peter?] A swarm of mosquitoes attacked him.

<u>Frame setting</u>, if understood as in Jacobs (2001) as specifying a situation variable or fixing parameters of predicates, is not necessarily related to topic-like functions:

- (13) a. Peter has been <u>financially</u> dead twice in his life.
 b. Currently, Peter is doing well <u>financially</u>.
- (14) Sue was kissed by a snake, but only in her dream.

<u>Givenness</u> (a dimension related to topicality in the Prague school tradition) is a dimension that is often, but not necessarily related to topicality:

- There are contextually given expressions that do not have properties normally associated with topics, e.g. that fail the *about*-test:
- (15) A: I know that Bill loves Sally, but what about John? B: John loves her, too.
- > There are topics that are not contextually given, e.g. in text beginnings:
- (16) A wealthy mearchant had two daughters. One of his daughters was a gifted musician, the other one was good at painting...

2.3 A proposal: Two information-structure functions that are truly topic-like

Addressation:

"Point out an entity; add information to it."

This is a function that would be called "topic" according to everyone's use of the term. We could also call it "aboutness topic", or perhaps simply "topic".

Problem: It is not all that clear what addressation actually means.

Delimitation:

"If the informational need cannot be satisfied by a simple statement, break up the issue into sub-issues, and indicate how they answer the big issue."

Delimitation is typically done by indicating alternatives (with the help of focus) that would occur in sentences that would supply other information relevant for the informational need at the current point in discourse.

(17) [How is Bill doing?]

Financially he is doing fine, but he had a heart operation last month.

Delimitation is compatible with addressation (aboutness topic):

(18) [How are your parents doing?]

My /<u>fáther</u> is doing \fine, but my /<u>móther</u> had a \héart operation last month.

Such topics have been called "contrastive topic", but this term also has been understood in a more wider way, similar to "delimitation" (e.g., Büring 1997, 2003), in cases that are not related to addressation.



Claims:

Prototypical uses of the term "topic" preferably apply to addressation, also to delimitation. There are cases in which an address term is also a delimiter term (so-called "contrastive topics") that may have made it difficult to keep these notions apart.

Furthermore, there are commonalities between addressation and delimitation.

3. Addressation

3.1 Adressation and human information storage

Addressation applies to a central principle how humans store information; yet it also belongs to IS, as the structuring of information can facilitate this particular type of storage.

Addressation is not necessary for information storage – cf. relational database vs. file-cards:

(19) Database on eruption of vulcanoes: relational database vs. file-card database

Vulcano	Year	Strength		Vulcano	Year	Strenght
Pinatubo	7460 BC	6+		Pinatubo	7460 BC	6+
Sakura-Jima	3550 BC	4			3550 BC	6
Karymsky	2500 BC	5	Sakura-Jima	3550 BC	4	
Pinatubo	3550 BC	6		Sakura-Jillia	2900 BC	4
Sakura-Jima	2900 BC	4		Karymsky	2500 BC	5

We call the file-card structure of Reinhart (1982), Lambrecht (1994) **address-centered**. With respect to the file-card database, (20.a) is more natural than (b) or (c).

- (20) a. <u>*Pinatubo*</u> erupted again around 1200 BC, with an unprecedented strength of 7+.
 - b. <u>1200 BC</u> witnessed an eruption of Pinatubo, with an unprecedented strength of 7+.
 - c. <u>An eruption of strength 7+ occurred when Pinatubo erupted in 1200 BC</u>.

3.2 Flexibility of address-centered information storage

Different address-centered perspectives that are invoked by different address choices:

- (21) a. <u>Columbus</u> discovered America in 1492.
 - b. In 1492, Columbus discovered America.

Choosing persons as centers appears to be more natural, but special interest (e.g., biography vs. history) might shift these natural tendencies.

There is a tendency to keep the perspective constant within a given stretch of discourse (topic chains, cf. Givón 1983), but there is a certain stilistic playfulness in doing unexpected things:

(22) <u>Columbus</u> was born in Italy in 1451.

<u>He persuaded the Spanish monarchs, Ferdinand and Isabella, to sponsor an expedition</u> to sail across the Atlantic in search of Asia. He set sail with his three ships in 1492 and discovered the New World.

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Cf. also the asymmery with multiple questions, cf. Higginbotham & May (1981), Kuno (1982), Krifka (2001):

(24) A: Which vulcano erupted in which year?

B: Pinatubo erupted in 7460 BC and 3550 BC, Sakura-Jima in 3550 and 2900 BC, and Karymsky in 2500 BC.

The multiple question asks for the function from the set of vulcanoes into the set of years, not just for a set of pairs of vulcanoes and eruption years.

3.3 Quantification, givenness, saliency and recursive addressing

Addressing and quantification

According to Jacobs (2001), addressation is not compatible with quantified statements. However, generalized quantifier theory can be interpreted in such a way that a quantified statement is about the restrictor set (cf. Partee 1991):

(25) [Every [vulcano in the Philippines]] had a major eruption in the last 10,000 years.

This is a statement about the set of vulcanoes in the Philippines.

This analysis explains why quantifiers are conservative (i.e., truth conditions can be stated with respect to the restrictor set only).

But quantifiers do avoid certain constructions typical for addressing, e.g. left dislocation or free topic constructions:

- (26) a. **Jeder Vulkan der Philippinen, <u>der</u> ist in den letzten 10000 Jahren ausgebrochen.* 'Every vulcano in the Philippines, it erupted in the last 10000 years.'
 - b. **As for every vulcano in the Philippines, people are fearful of future eruptions.*

Reason: Quantifiers like *every* N **contain** an expression referring to an address (N, denoting the set of all N), but do not refer to an address. The determiner (*every*) expresses a relation between address and comment, and belongs to the comment part; cf. floated quantifiers:

(27) <u>The vulcanoes in the Philippines [all erupted some time in the last 10000 years]</u>.

Addressing and givenness

Addresses are typically given, but notice that they can be new in case they are specific (cf. Endriss 2006). In this case they are accomodated (introduced as a new address), and properties are added to them within the same sentence. Cf. (16).

Addressing and saliency

Addresses tend to be maintained; sequence of sentences adding to the same address, the one that is currently salient (topic chains). The address often is not mentioned explicitly (prodrop). Changing it requires explicit marking – **shifting topic**.

Recursive addressing

(28) <u>As for the Philippines</u>, <u>Pinantubo</u> has had regular eruptions in the last 10,000 years. Shows that addressing can be recursive (What do I know about the Philippines? There's a vulcano named Pinantubo. What do I know about Pinantubo? It had regular eruptions.)

3.4 How Addressation is realized

Assuming that language facilitates address-centered storage entails several properties:

Address first!

Address is a pointer from which information can be accessed. It is good to first identify that pointer, and then the information attached to it.

Informational separation (reflected in prosodic phrasing)

The identifaction of an address and the information that should be added to this address are two distinct semantic operations; hence we should expect that they typically are informationally separated.

This need not be the case if more information is added to an address already activated, using a weak pronoun, clitic, inflection ending, or no expression at all:

(29) Pinatubo erupted in 7460 BC, and _ exploded in 3550 BC.

No argument requirement

While information can be stored with the address as a syntactic argument, this is not necessary, allowing for free topic statements:

(30) As for Wuppertal, people are mostly working-class.

But addresses and subjects of sentences frequently coincide. This shows two tendencies about human information storage:

We address information typically by entities, not by events or properties, e.g. Columbus crossed the Atlantic vs. A crossing of the Atlantic occurred by Columbus.

There might be cross-lingustic differences, e.g. "nominal" langages like Tagalog with initial verbs in the base position and a structurally more complex option for addressation:

- (31) a. *Kita ng lalaki ang bangka* b. *ang bangka sa kita ng lalaki* visible GEN man NOM boat NOM boat TOP visible GEN man 'The man saw the boat',
 - lit. 'The visible one of the man is the boat'
- > We address actions typically by the agent, and not by the patient,

e.g. Alexander beat Darius at Issos, not Darius was beaten by Alexander at Issos. Again, there are cross-linguistic differences, cf. ergative languages with a tendency of encoding patients as subjects.

4. Delimitation

4.1 The nature of delimitation

Delimitation indicates that the current contribution to the CG is not the full contribution that may be expected at the current point in conversation.

What is expected at a given point can typically be expressed by a question; delimitation suggests that the question is broken up into subquestions whose answers taken together might satisfy the current informational need.

There are many ways to break up a question: by address, by time, by some aspect:

(32) A: How are your parents doing?

B: /My fáther is doing \fine, but my /móther had to go to a \hóspital.

(33) A: How are you doing these days?

B: /Todáy I'm \fine, but /in the last couple of dáys I was feeling \sick.

(34) B: /Jóbwise, it's quite \o.k., but my \girlfriend split up with me. (non-parallel structure) Büring (1998, 2003) has shown that under the assumption that a contrastive topic expression answers only part of the question, we can derive certain scope relations:

(35) /Álle Politiker sind \nicht korrupt. 'Not all politicians are corrupt.'

But "contrastive topic" is misleading, as it need not be a contrastive address (as in (32).

4.2 How delimitation is realized

Contrastive focus

It is crucial for delimitation that there is a restriction with respect to some default expectation – e.g., *father* w.r.t. *parents*, *today* w.r.t. *these days*, *jobwise* w.r.t. in general.

This restriction is typically expressed by a **alternatives** (e.g. *father* vs. *mother*, *today* vs. *in the last couple of days* etc.

The information-structural function that indicates alternatives is called **focus** (cf. Rooth 1985). One of several uses of focus is to indicate alternatives in delimitations.

Focus indicating delimitation is not the main focus of the sentence (indicating the choice of altenatives given by the context question), hence it is realized in a weaker way.

Initiality

Delimitations are perferably expressed sentence-initially. In this way, they flag the sentence as giving only a partial answer, and make the addresssee aware that the context question has been refined into subquestions.

Independence of syntactic roles

There are many ways in which a question can be split up into subquestions, hence delimiters can occur in many different syntactic functions. Examples with evidentials, with frame adverbials.

- (36) [How will the weather be today?] <u>According to the /weather report</u>, there will be snow.
- (37) [Are there any tourist boats going out today?]
 Also, /barkássenmäßig ist heute \nichts los, aber Sie können ein Tretboot nehmen.
 'As for ##

Independence of Informational Separation

Delimitation is not necessarily a separate referential act, hence there is no requirement for informational separation.

5. Addressation and Delimitation

5.1 Addressation and Delimitation in the same sentence

- (38) a. <u>Bill</u> is <u>financially</u> doing fine, but he has a heart problem.
 - b. <u>Financially</u>, <u>Bill</u> is doing fine, but he has a heart problem.

5.2 Commonalities between Addressing and Delimitation

As stated, delimitation can be expressed on addresses; this might have given rise to the notion of "contrastive topic" (and the notion of "topic" in Chafe 1976),

But addressing and delimitation have more in common:

- Addressing involves the selection of a discourse referent as the address to which information is added. This applies in particular to shifting topics that pick out a nonsalient discourse referent.
- (39) *The garden was a mess.* (possibly associated: the flowers, the lawn, the apple trees, ...) <u>The lawn hadn't been mowed for months.</u>
- Delimitation involves the selection of a certain aspect under which the the context question can be broken down, under which the requested information can be given, at least in part.
- (40) *How is Bill doing?* (possible aspects: financially/healthwise, professionally/personally) *Financially, he is doing quite well.*

Hence: Both addressing and delimitation involve selection;

more specifically, selection concerning the way **how** something should be said, and not **what** should be said, i.e. not the focus associated with the answer to questions.

This explains why the marking strategies of addressation and delimitation are often very similar, e.g. initial position, *as-for* construction, *wa*-marking in Japanese.

6. References

Büring, Daniel (1998), The 59th Street Bridge Accent, Routledge, London.

- Büring, Daniel (2003), "On D-trees, beans, and B-accents", Linguistics and Philosophy 26, 511-545.
- Endriss, Cornelia (2006), Quantificational Topics. A Scopal Treatment of Exceptionalwide Scope Phenomena, Universität Potsdam,
- Givón, Talmy (1983), Topic Continuity in Discourse: A Quantitative Cross-Language Study, John Benjamins, Amsterdam.

Higginbotham, James & Robert May (1981), "Questions, quantifiers, and crossing", *The Linguistic Review* 1, 41-80. Jacobs, Joachim (2001), "The dimensions of topic-comment", *Linguistics* 39, 641-681.

Krifka, Manfred (2001), "For a structured account of questions and answers", in Caroline Féry & Wolfgang Sternefeld, *Audiatur vox sapientiae. A Festschrift for Achim von Stechow*, Berlin, Akademie-Verlag, 287-319.

Krifka, Manfred (2006), "Basic notions of information strucutre", Interdisziplinäre Studien zur Informationsstruktur (ISIS) 8.

Kuno, Susumo (1982), "The focus of the question and the focus of the answer", 134-157.

Lambrecht, Knud (1994), Information structure and sentence form. Topic, focus, and the mental representation of discourse referents, Cambridge University Press, Cambridge.

- Partee, Barbara H. (1991), "Topic, focus and quantification", in St. Moore & A.Z. Wyner, *Proceedings from Semantics and Linguistic Theory 1, Cornell Working Papers in Linguistics*, Cornell, 159-188.
- Reinhart, Tanya (1982), "Pragmatics and linguistics: An analysis of sentence topics".
- Rooth, Mats (1985), Association With Focus, University of Massachusetts at Amherst,