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Discourse Topic and Children's Emerging Ability to Handle It
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Discourse topic, broadly defined as the propositional content of discourse, has been, and still is, something of a bugbear, in discourse study. It is often cited to explain some linguistic fact such as the switching of codes, but it is rarely actually focussed on as an entity in itself; and where it is, there seems to be a distressing array of confusing terminologies and definitions. The current paper combines work that I have been doing with Sharon Sabsay (of UCLA's Neuropsychiatric Institute), on the precise nature of topic in adult discourse, with my own work on child language and children's emerging ability to handle discourse. It aims to examine some aspects of the organization of content in discourse, as a contribution to the formulation of a linguistically tight definition of discourse topic.

The most tangible aspect of discourse topic (propositional content) is clearly seen at the level of specific linguistic markers in the text that signal the cohesion of the content. Thus, people such as Halliday and Hasan (1976) and Grimes (1975) and others have looked at the distribution of repeated NP's and anaphora to indicate thematic participants, the use of definite versus indefinite reference, and so forth. These are markers at the sentence level. There are also markers at the discourse level--things like "right", "well", "so", "but", etc. that signal changes of content. All these textual markers are clearly indicators of topic continuation and topic change, but that is what they are: indicators, markers of an organization that is elsewhere, at the level of the organization of propositional content in discourse. To see that this is the case, examine the hypothetical conversation below:

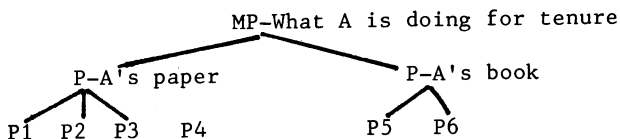
- 1.a. P1 A. Guess what, my paper was accepted.
P2 B. Oh, good.
P3 A. Now all I have to do is write it.
P4 That shouldn't be too bad.
P5 B. How's the book coming along?
P6 A. Oh, fine.

Here, there is a sequence of assertions and questions that together constitute a clearly cohesive discourse. It is also clear that there are textual markers of this cohesion that signal some of the links in the content, (e.g., it). However, there is a break in such markers between P4 and P5. On one level, something new has been introduced; however, on the level of the overall content of the discourse, we, as speakers, clearly know that we are still dealing with the same topic. That is because we can fill in background propositions that have to do with writing papers and writing books (e.g., that they both have to do with getting tenure), such that we know that there is a relationship between the question in P5 and what

has gone before. (We can supply what Clark and Haviland (1974) call bridging assumptions.) So, clearly, cohesion in text is to do with more than textual markers. One might be tempted to say, however, that it is nonetheless to do with semantic links rather than propositions, because of the items paper and book, which belong to the same semantic field. However, consider a situation in which A says "Hey, can you open this?" and B says "sure". Here, there are not only no thematic textual markers, there are also no semantic items in common between the two utterances, and yet they are clearly perceived as cohesive. They are perceived as cohesive precisely because the entire proposition in A's question is presupposed in B's answer. As with the sequence of propositions in 1a above, they are all relevant to the topic in hand (see Foster and Sabsay, forthcoming).

A notion of relevance is clearly vitally important for an adequate consideration of discourse topic. Ill-defined a notion as it still is, it is clearly involved in accounting for the cohesion of discourse. In fact, there are two types of relevance involved. The first, I have already talked about--propositional relevance. But there is also functional--speech act--relevance. Notice that the utterances in 1a cohere not only because they are propositionally related, but also because they are a sequence of assertions that receive a comment (P1 and P2); a follow-up comment (P3 and P4), and a question that receives an answer (P5 and P6). The importance of this distinction between propositional and functional relevance will be discussed further below, where we shall see that children can "do" functional cohesion without propositional cohesion, but first a further observation about propositional cohesion. Not only do we readily perceive that discourses cohere propositionally, but we have a natural ability, it seems, to extract from a cohesive sequence of propositions, a macro-proposition that represents the whole sequence. 1b below is a schematic representation of the relationships between the propositions of 1a, that shows how the relationship is a hierarchical one that has at its top node the macro-proposition that the whole sequence is about:

1b



The notion of macroproposition has been most extensively discussed by van Dijk (1980) who suggests that the ability to extract a macro-proposition from a sequence is the result of our ability to perceive both overt and covert relationships between propositions, i.e. to react to the textual markers, if there are any, or to supply the expected, or usual, bridging propositions, if necessary. Although he does not discuss it in terms of hierarchies, clearly what he is saying is that there is a relationship between the propositions of individual utterances and some higher proposition, that may or may not be explicitly stated as one of the lower level propositions. Hence, the

is, in the organization of propositions in discourse, the kind of hierarchical arrangement shown in 1b.

In the remainder of this paper, one of the things I shall try to demonstrate is that there is both sequential and hierarchical organization of propositions in discourse, i.e. that discourse topic involves both types of organization, by looking at the way the organization of content in discourse emerges in small children. Children are illuminating in this respect because at first they cannot produce a sequence of utterances that coheres in any way except sequentially, and even this cohesion is of the most elementary kind in which there are little more than pairs of cohesive utterances. However, this does not mean that children's early conversations are highly disjointed in their content, because there is the other kind of cohesion that initially takes the place of propositional cohesion--namely, functional cohesion. In other words, they cohere because they are doing something; they have some functional goal.

Speech act analysis, which has evolved to deal with the functional aspect of language, has been traditionally concerned with the function of single utterances. There are those, though, such as Ferrara (1980a & b), who have begun to explore the fact that sequences of speech acts may work together to realize a single goal. At the very lowest level of organization of speech acts are adjacency pairs (Sacks, Schegloff and Jefferson 1974), in which the first-part expects the second-pair-part, (as in a question-answer, or a request-grant sequence, for example). Here, there is cohesion between utterances because one predicts the function of the other. It is also the case, as Ferrara has discussed, that whole sequences of speech acts may work together to make a request and justify it, for example. Thus functional organization, too, has a hierarchical structure.

So, functional organization brings with it a kind of dependent propositional cohesion, as well as there being bona fide cohesion due to propositional organization. And discourses vary in the degree to which they are primarily cohesive because of the functional goal they are working towards, as opposed to being primarily cohesive because of the propositional content expressed by the speakers. So, for example, if the purpose of the interaction is to persuade someone of something, to invite someone somewhere, or to elicit a sequence of directions from someone, then the organization of speech acts that will do that has to be put into action. In these cases, the purpose of the interaction is very clear, and the actual content is, to a large extent, organized by what the interaction is for. In other types of interaction, the propositional material is much less predictable, particularly in casual conversation, where the purpose of the interaction is for speakers to have a relatively free rein in what they can introduce as the content of the conversation.

So, in what follows, I shall provide evidence from child language that there are two kinds of cohesion--propositional and functional--and then that, within propositional cohesion, there is both sequential and hierarchical organization of propositions, i.e. of topical material. In doing so, I shall show that, in the beginning stages of language development, propositional cohesion is there by default, as a result of functional cohesion. I shall also show that

children produce some of the textual markers discussed briefly at the beginning of this paper, clearly in advance of understanding how they function in the adult system.

First, consider the data in 2a below, showing a child who, though communicating, has not yet really begun to acquire the linguistic system:

2a. Kate at 1;10

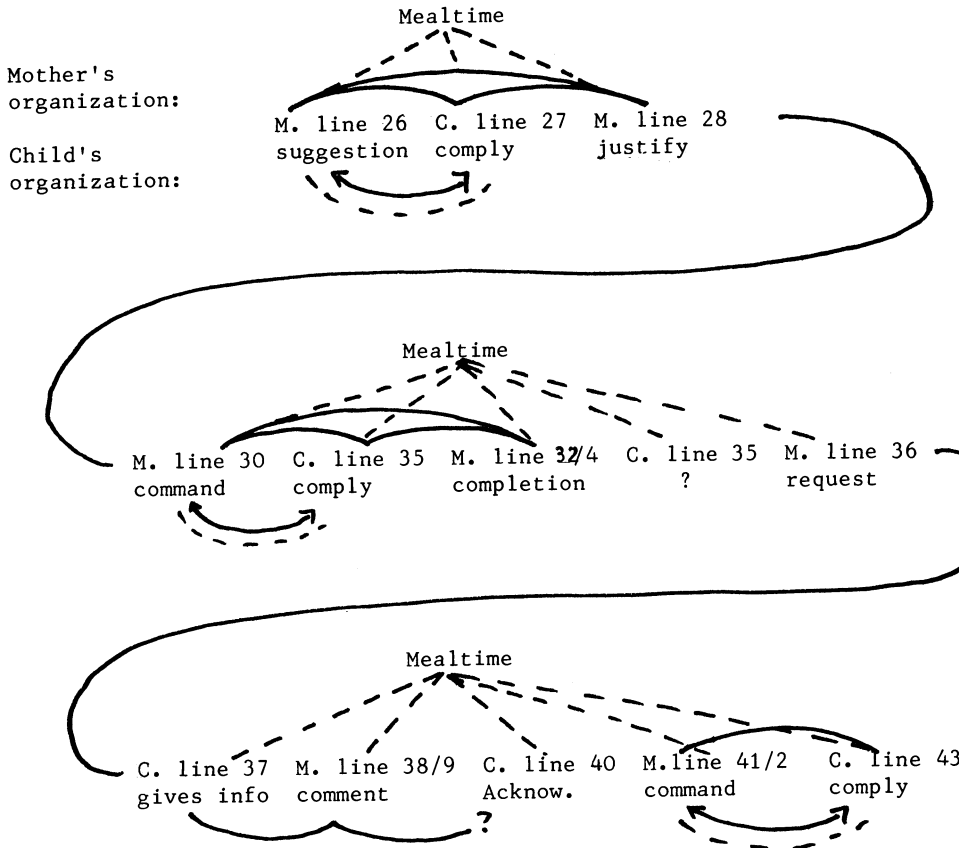
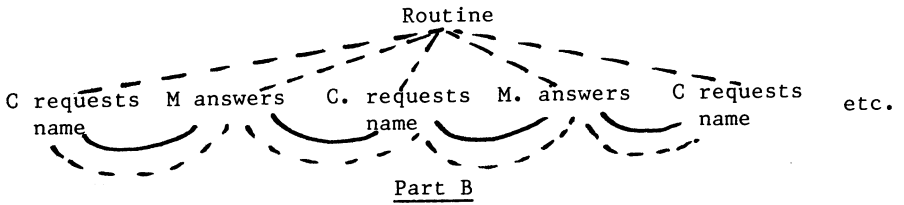
(Mealtime)

- 1 M. "'s that nice?" (i.e. food Kate is eating)
- 2 C. /hæʔ/
- 3 M. "it is is it?"
- 4 C. /gæ kʰ/ + points at camera
- 5 M. "that's Sue"
- 6 C. /gæʔ/ + points at mother
- 7 M. "and Mummy"
- 8 C. /gæʔ/ + points at M's mug
- 9 M. "and that's Mummy's tea"
- 10 C. /gæ / + points own mug
- A 11 M. "Kate's got milk hasn't she
12 's it nice?"
- 13 C. /dæʔ/ + points M's mug
- 14 M. "that's mummy's tea"
- 15 C. /gæʔ/ + points own mug
- 16 M. "Kate's milk"
- 17 C. /gæʔ/ + points own food
- 18 M. "Kate's got cheese on toast for tea hasn't she?"
- 19 C. /hahahæ:gæʔ/ + points camera
- 20 M. "What- that's Sue"
- 21 C. /gæʔ/ + points at mother
- 22 M. "that's Mummy and where's Kate?"
- 23 C. puts hand on own head
- 24 M. "that's right ((laugh))
- 25 chew hard that crust's a bit hard isn't it
- 26 act- oh that's a big piece shall I cut it up?"
- 27 C. /æ / + allows mother to cut up food
- 28 M. "It'd make it easier I think wouldn't it?" + cuts up C's food
- 29 "That cheese is all rubbery
- 30 It's hot too you blow "
- 31 C. blows
- 32 M. "that's right
- B 33 there you are
- 34 cheese"
- 35 C. blows on food
- 36 M. "is it hot still?"
- 37 C. /haha:ha / + lifts a piece of food in each hand
- 38 M. "what's the matter with those?
- 39 Oh they're joined together are they?"
- 40 C. /hə: / ((laugh--)) + puts food to mouth
- 41 M. ((laugh)) "now love don't put any more in until
- 42 you've finished what you've got"
- 43 C. /ə:ha / + hands piece of food to mother

The first thing to notice here is that there are two clear phases to this stretch of interaction. I have labeled them A and B. Within each section, there is a cohesion of content that might appear, at first sight, to be little different from the topical cohesion that can be found in adult interaction. This is not, however, the case. For one thing, both A and B are cohesive for basically functional reasons, rather than propositional ones. Though, in Part B, the mother may be trying to maintain propositional cohesion, her child cannot yet do so. Part A coheres because it is a routine. As such, it is an example of the most highly functionally controlled type of interaction. Once one enters into a routine, the content is entirely predicted by the fact that one is in a routine. This does not mean, however, that the end of the routine is predictable, and, in this case, it could theoretically go on for ever, or until everything in the environment has been named. It therefore provides a tightly constraining frame that allows the child to produce a fairly long sequence of propositionally related utterances/communications. In fact, I would like to suggest that routines, which always have this property of being functional frames that allow propositional content to be buoyed up, may have a developmental function for children, in aiding their ability to maintain cohesive discourse.

Part B is slightly different. It is also in one sense a routine, because meals are routines of a kind, but it is not a routine that the child is controlling in the way she is in Part A. Here (in B), the mother knows what has to be done, and can steer the child in the appropriate direction. Notice that, here, where the child has little control over the function of the interaction, the child's utterances, while being contingent on the adult's, do not form sequences anywhere near the length of that in Part A. In Part B, we see the ability to produce contingent next communications. In lines 41-43, for example, we see something that looks like a preverbal version of the kind of contextual contingency that Bloom et al. (1976) talk about, in which the child produces an appropriate next that does not use any part of the mother's previous utterance. Also, in this section, there are responses to questions or commands, as in lines 30-31, and, in line 37, we see this child initiating new concerns.

This child can, then, produce initiations that are responded to, and responses to other people's initiations--and I think that there is a good case to be made for saying that this child is evidencing the ability to handle adjacency pairs. But that is all there is. The schematic representations under 2b show that, in both A and B, there is almost no organization/cohesion that is propositional (indicated by the solid lines) that is not there as a result of the functional organization (indicated by the broken lines). The showing of the toast may be an exception, but it is not clear that this may not be a request to have the toast cut up, rather than just a comment for the intrinsic interest of the thing. The second occasion on which the child blows on the toast is interpreted by the mother as if it is a return to a previous topic, but it does not look as though the child is even deliberately communicating at all. In fact, what we see here is an example of repetition, in this case of an action, which is built into the topic structure by the mother.

2b Schematic representation: Part A

Repetition, as discussed by Keenan (1977) and Bloom et al. (1976), is quite frequent among children aged between 2;0 and 3;0. Sometimes, as Keenan suggests, it has clearly specifiable meanings, such as agreement with the previous speaker, but, at other times, it seems to be produced with no other intention than to fill up a turn with something that comes to mind. And just-mentioned, salient lexical items come to mind rather easily. A typical example is given below:

3. Ross at 1;11

Mother is sharing a book with Ross. She is talking about how a mouse needs thread rather than string to tie up a parcel.

M. "if you gave them a piece of string, they wouldn't be able to tie up the parcel with string, it would be like giving them a piece of rope"

C. "rope"

M. "rope"

Propositionally empty though this is, it does cohesive work, and behaves rather like the kind of repetition of NPs that we find in adult discourse (Bernstein 1981). As a strategy, it is even more effective if the child produces it after a little delay, when he can even give the impression that he is adding something new:

4. Ross at 1;11

Mother is describing a picture of a submarine.

M. "It goes under the water and there are people doing things inside there"

C. "mm"

M. "they're they're called submariners"

C. "people"

M. "um- people that's right. They're people yes. Submariners."

Another default device that results in unplanned propositional cohesion happens when children produce vertical constructions (Scollon 1976) as in 5:

5. Ross at 1;11

Mother and child are playing with crayons in a container.

M. "Let's have 'em all out" + tips out all the crayons

"can you find the green one?"

C. puts crayons back in container

M. "oh I see you're going to put them all back again now"

C. "top" + putting lid back on container

M. "That's all the drawing you're doing now?"

No more for today"

C. "go on"

M. "yes well you put the lid back on didn't you"

In "top" and "go on". this child seems to be producing an utterance across more than one turn; a proposition across more than one utterance (Keenan, Schieffelin & Platt 1976). (A little later, Ross produces the whole utterance in one turn: "top go on".)

As with the routines and the repetition, what children are doing in a vertical construction does not involve a deliberate attempt to produce a cohesion of propositional material across utterances, but, in all cases, this is the result of the child's behavior. The child is doing topical cohesion in advance of understanding it, but seems to be interpreted as if he/she were doing so. This seems to be similar to the way gestures are produced as the ability to communicate emerges (Foster 1981a & b).

There is evidence of a more intentional planning of propositional material in the following:

6. Ross at 2;6

Mother and child are sitting at the table having a meal. They are not sitting in their customary chairs for having meals.

C. "that's Mummy's chair" + points to an empty chair

M. "Yes, I usually sit over there don't I?"

This is where Daddy sits isn't it?"

C. "Ross's chair over there" + points at the other empty chair

M. "That's right, you sit there"

Though this sequence does involve the repeated naming of things, it does not seem to be the kind of fixed routine we saw earlier. The intonation (one associated with introducing new, and surprising, information) of Ross's first utterance suggests that he is producing his utterances as the result of a planned intention to inform rather than simply to engage in a game. Also, note that he only names the things that his mother does not, so the repeated naming of objects seems not to be his aim here. This kind of data, though, may illustrate a transitional stage of development where routines are planned, but more evidence is needed in order to suggest this seriously.

A clearer example of planned propositional content is seen in 7. below, where the child goes on developing his topic even when his mother has ceased paying attention or giving any help in its development:

7. Ross at 2;6

Mother and child are sitting at the table. On both of the walls (to the child's left and right) are ornamental plates with designs on them.

C. "des dat's flower" + points to the plate on his right

M. "That's not a flower"

C. "plate"

M. "It's a plate with a pattern on, but it's not like a flower"

C. "It's a flower pattern"

M. "ooh dear" (She's referring to her sandwich, which has fallen

C. "dis another plate dere" + pointing to the other plate /apart)

M. "mm" (She's still attending to her sandwich)

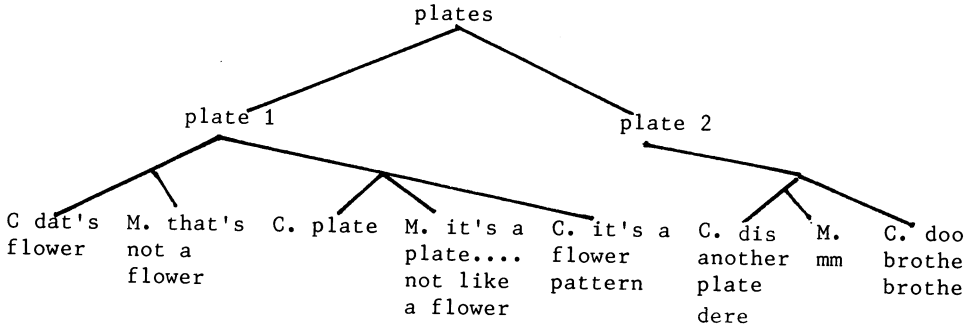
C. "dook buvvers buvvers" + pointing to the two plates at once

M. " what did you say, what was that word, what did you say?"

(It seems clear that the word was "brothers", but the conversation soon turns to other things, and never resolves the problem.)

The propositional organization of this last sequence is given below in 8. and clearly shows the kind of hierarchical organization of propositions that was discussed at the beginning of this paper:

8. Schematic representation of the propositional organization of the data in 7. (There is also, of course, functional organization, in this sequence, but I have not shown it, here.)



As we see in this representation, by 2;6 children can produce sequences of utterances that are related to each other in terms of their propositions. Each utterance is appropriate both to the preceding utterance (their own, or that of the other speaker) and to the general topic in hand.

In this data, therefore, we begin to see the organization of propositions clearly separated from the textual markers that characterize adult discourse. It is also possible to see that functional speech act organization need not be aligned with propositional organization--they are different things that can be analyzed separately. Text, propositions and speech acts form three aspects of discourse that deserve separate treatment, though of course they are not entirely separate entities. To use an analogy, they are like three faces of a prism: you can focus on one face, but the other two are always there, affecting the way the light falls on, or passes through, the face you are interested in.

With respect to the emergence of propositional structure, an important question to ask now is: what precisely are we seeing in the hierarchical organization? Is this organization simply a reflection of the way ideas are organized? Clark and Clark (1977) make a case for saying that propositions are the unit of memory storage. If this is so, does discourse structure translate memory storage directly into language, in this respect? And what about the functional structures? Why are they the way they are? And how, precisely, do they interface with the propositional material, as children develop discourse skills?

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