Notes towards a Theory of Text Coherence

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NOTES TOWARDS A THEORY
OF TEXT COHERENCE*,**

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1. INTRODUCTION

It is widely acknowledged in the field of text linguistics that for a text or a text segment (e.g., a paragraph) to be pragmatically well-formed, it must meet the requirement of cohesion. Of the many recent studies concerned with connectedness as a textual phenomenon that has a linguistic manifestation — such as: Bellert (1970), Vuchinich (1977), Daneš (1974), Enkvist (1978), Gutwinski (1976), Halliday and Hasan (1976) — Reinhart (1980) is the most comprehensive. Reinhart argues that for a text to be coherent it must meet the requirements of consistency, cohesion and relevance.

For Reinhart, cohesion is viewed in terms of linear relations between pairs of sentences that are "either referentially linked [. . .] or linked by a semantic connector" (1980:168). She further specifies that for a referential link to count as a cohesive device, the linked referent in the second sentence of the pair must be part of the topic or scene-setting expression of the sentence. She adds, however, that if a text fails to be referentially linked it can still be cohesive "if its sentences are connected by semantic sentence connectors" (p. 176).

My controversy with the various theories of coherence regards the function of cohesion in the construction of a well-formed text. I will argue that cohesion as a linear relation that obtains between pairs of sentences is neither a necessary nor a sufficient condition for text coherence (section 2). Moreover, coherence does not obtain linearly between pairs of sentences, and it is thus not transitive in those cases where pairs of sentences do cohere (section 3). My claim is that

coherence is independent of cohesion. They differ in that cohesion obtains linearly between sentences and relies on the notion of sentence topic while coherence cannot be pursued linearly. Rather, coherence can best be characterized in terms of the notion of "discourse topic," while analysis at the sentence level is irrelevant to the understanding of the notion of text coherence. Subsequently, I take text coherence intuitively as well-formedness and then describe it later (section 6) in terms of the notions of discourse relevance (section 5) and discourse topic (section 7).

2. COHESION CANNOT ACCOUNT FOR COHERENCE

In this section I will query the contention that for a text to be coherent it must meet the requirement for cohesion, testing particularly the requirement for topic control dealt with at some length in Reinhart (1980). Reinhart argues that not all uses of referential links produce cohesive texts, not even those following the condition for referential links as formulated by Paducheva (1974), which requires that the first expression of each sentence be controlled by a previous expression. Though I fully agree with Reinhart's view that a sentence in which the topic element (namely, the element which the sentence is interpreted as being about) is controlled by an expression mentioned previously is more cohesive than sentences manifesting other types of connectedness, I do not consider cohesiveness a condition for text coherence.

I will start by arguing that cohesion cannot be considered a sufficient condition for text coherence. Although this, in fact, is assumed in such works as Enkvist (1978) and Reinhart (1980), it is still important to emphasize this point because it serves as a basis for my next assumption that cohesion is not an independent requirement, but a by-product of coherence.

Consider first the sequence in (1):

(1) Mira lives near Rona. Rona has a moustache. She went on a trip yesterday. Yesterday was a rainy day.

In this sequence, the requirement for topic control (according to Reinhart 1980) is satisfied: the second sentence of the pair in (1) is cohesive in that its topic element, Rona, or yesterday, which the sentence is interpreted as predicating something about, is controlled by a previous expression in the previous sentence. Yet, given out of context, the above string does not accord with our intuition of a well-formed combination and would be marked as odd.

Furthermore, the sequence in (1), taken out of context, is not improved by the occurrence of an explicit semantic connector:

(1.1) Mira lives near Rona. ⎧ Concurrently, ⎫ Rona has a moustache. She went on a trip yesterday. ⎪ However, ⎪
⎨ Nevertheless, ⎬
⎪ Even, ⎪
⎩ In addition, ⎭

The inappropriateness of (1) and (1.1) lies in that it is not clear what they discuss. Even though (1) and (1.1) meet the requirement for topic control, and (1.1) is further connected by an explicit semantic connector, they do not seem to make up a discourse interpretable as discussing some topic. Note that the semantically connected sentence in Reinhart (1980:176) repeated here in (2) is well formed not because it is connected by a semantic connector but because it discusses a topic (such as "the unfair distribution of human resources"):

(2) The first man landed on the moon. At the same time a boy died in Alabama of untreated pneumonia.

Compare the well-formedness of (2) with the ill-formedness of (2.1) in which the adjoined sentences might be true concurrently as is suggested by the semantic connector:

(2.1) The first man landed on the moon. At the same time there was a fly in my aunt's soup. Her soup, however, did not even taste of chocolate.

In fact, Reinhart discusses the inappropriateness of a schizophrenic text in practically the same terms. She treats it as an "example for a text which is largely cohesive but lacks an explicit 'raison d'être' or discourse theme" (166):

(3) I am thinking of Paisley. It is a nice town, it is quite warm. There are houses being built. They pull down houses there, and are building fifteen and twenty story flats. I think in Scotland and Glasgow there are twenty story flats because people are so crowded [. . .].

It is clear, then, that cohesiveness of whatever sort, whether referential control of topics or semantic connectedness cannot be considered a sufficient condition for coherence.

Yet, the fact that cohesion is not a sufficient condition does not in and of itself refute the approach outlined in Reinhart (1980). This approach assumes that cohesion is only one of the necessary conditions for text coherence. Thus, if a cohesive text fails any of the other requirements on coherence (e.g., relevance) it would not be coherent. However, it is crucial for that approach that cohesion be a necessary condition for text coherence. I will argue now that this is not the case.

Consider the appropriateness of (4) below. The text in (4) is devoid of either referential links or semantic connectors, and yet it coheres:

(4) Every person constructs a world of his own, from his illusions and hopes, from his love and weakness. Kafka's Prague was only Prague of his thoughts

1. Erteschik-Shir and Lappin (1979:49) claim that dominant constituents can become topics of future discourse while non-dominant constituents (a relative clause in their example on p. 50) cannot.

and eyes, Nahum Gutman's Little Old Tel Aviv was created by his own hands, Natan Alterman made Jaffa of his own poem. [. . .] Everyone lives in his own Israel, according to his powers and talents [. . .] (Ruth Bondie, *Davar* [a Hebrew daily] 18.12.81. My translation).

Example (4) sounds like a coherent text because it is obvious what topic is under discussion, despite its lack of cohesive devices. It appears that the notion of discourse topic is independent of the notion of sentence topic. Clearly, the notion of sentence topic is necessary for an adequate definition of cohesion, but cohesion as such cannot account for the construction of a well formed text. The notion of coherence will be further discussed in section 4 below. For the time being, it is sufficient to note that cohesion — in the sense of referential control — is not necessarily a factor determining the well formedness of a text.

Theoretically, the problem with any theory that distinguishes between cohesion and coherence is that it is in fact irrefutable. We have clear intuitions about coherence or the well-formedness of the text, but not about cohesion. Given an instance of an incoherent text (see examples 1, 1.1, 2.2 and 5 a–d) it would always be possible to argue that this text is cohesive but incoherent, and it would be impossible to refute this claim or test the intuition behind it.

Given that coherence is independent of cohesion, it is necessary to explain why texts tend, nevertheless, to be cohesive, that is to explicate the function of cohesion. I suggest that we regard cohesion as a derivative notion stemming from a higher principle of coherence. It seems plausible that cohesion and topic control in particular, can be functional in delineating and constructing the discourse topic. Practically, it was found by Kieras (1980) that highly cohesive texts in which the dominant linking device operates through the control of topics, are easier to process. This seems to follow from my assumption that cohesion is a by-product of coherence whose function is to help mark or identify the discourse topic (as will be discussed further in section 9).

3. COHERENCE IS NOT A TRANSITIVE PROPERTY

Apart from showing that linear concatenation of sentences cannot guarantee coherence, I would like to argue that coherence should not be pursued in the form of a linear relation between pairs of sentences. More specifically, given that sentence (a), for instance, coheres with sentence (b), and that sentence (b) coheres with (c), it does not follow that (a) coheres with (c), nor does this assure the well-formedness of the combination of (a)–(c) as a whole. My claim is that linear coherence cannot be considered a sufficient condition for the well-formedness of a text. (For a different approach see Manor 1982. See also Section 5.)

The intransitivity of coherence as a relation that obtains between sentences is exemplified by the inappropriateness of (5) in which each of the strings (a—b), (b—d) and (d—e) coheres, but the whole sequence (a—c) does not:

(5a—b) Ronit is never home nowadays because she lives near school. School, you know, is the center of the kids' social life.
(5b—d) School, you know, is the center of the kids' social life. Uri has missed school a lot this year. He never showed up at tennis, either.
(5d—e) Uri has missed school a lot this year. He never showed up at tennis, either. Orit too has stopped playing chess.

Note, however, the inappropriateness of (5a—e):

(5a—e) Ronit is never home nowadays because she lives near school. School, you know, is the center of the kids social life. Uri has missed school a lot this year. He never showed up at tennis, either. Orit too has stopped playing chess.

The appropriateness of each of the adjoining pairs compared with the inappropriateness of the string as a whole provides evidence for the claim that coherence is not transitive. First, there is a relation of coherence between (a—b) and between (b—d) but not between (a, c and d). Second, the text (a—e) does not cohere as a whole. It follows, then, that linear connectedness cannot be considered a sufficient condition for coherence, and that issues that have been dealt with at the sentence level in an attempt to account for text coherence should, instead, be discussed at the discourse level.

4. COHERENCE AND DISCOURSE TOPIC

The question now arises as to what makes the pairs cited above in (5) coherent (at least intuitively). Consider again the pair in (5a—b), repeated here for convenience:

(5a—b): Ronit is never home nowadays because she lives near school. School, you know, is the center of the kids' social life.

The sequence in (5a—b) can be interpreted as a text segment predicating something about "Ronit" as the topic of the discourse, concerning her social life, for instance, which might be a result of living in the vicinity of a social center. Yet, in fact, (5b—d) does not take this direction.

The sequence in (5b—d) on the other hand can be interpreted as centering on a different discourse topic, namely, Uri's absence from school:

(5b—d): School you know is the center of the kids' social life. Uri has missed school a lot this year. He never showed up at tennis, either.

The sequence in (5b—d) can easily be extended by addition of some information about "Uri" being affected by his frequent absence from school.

The sequence in (5d–e) on the other hand cannot be conceived of as a continuation of a theme in the above direction, but has, rather, a new topic to discuss (such as children's discontinuation of activities):

(5c–d): Uri has missed school a lot this year. He never showed up at tennis either. Orit too has stopped playing chess.

In the same way, it is possible to account for the inappropriateness of the sequence in (1) repeated here in (6). What concerns us here is the digression of the second sentence of the sequence in (6) from the discourse topic suggested in the first sentence of the pair:

(6a) Mira lives near Rona. (b) Rona has a moustache.

Following Erteschik-Shir and Lappin (1974),[1] I claim that the sequence in (6a) can be interpreted only as presenting a new entity "Mira" for further discussion, via background information ("Rona"). "Rona" is taken as a reference point, or the non-dominant constituent, and "Mira" is taken to have a variability whose particular value is at issue, which is of "dominant" status.

Note that the pronoun in (6.1b) will be understood as coreferential with "Mira" (given unmarked intonation):

(6.1a) Mira lives near Rona. (b){She is her most intimate friend.}
{She has a moustache.   }

Thus, if "Mira" is proposed as a future topic, the following discussion is expected to provide more information about her. Instead, (6b) provides new information about the non-dominant constituent ("Rona"), digressing from the proposed future discourse topic of (6a). Note, too, the extent to which (6.2) which employs a digression marker, improves over (6):

(6.2) Mira lives near Rona. Rona, by the way, has a moustache.

The happy use of a digression marker here serves to show that (6b) is indeed a digression.

The oddity of (6) could also be alleviated by a continuation in (6b) that would treat "Rona" as parenthesized background information (see also 5a–b). This, however, will not do unless the discourse topic introduced initially will be resumed at a later stage:

(6.3a) Mira lives near Rona. (b) Rona, you know, is the girl with the moustache. (c) Well, Mira is thinking about moving in with Rona for a while. . .

(6.3b) is of background status while the segment as a whole (6.3a–c) discusses Mira's future plans or something.

To sum up, the discourse in (6) can be considered well-formed only if: (a) its discourse topic is the proposed one in (6a), that is, "Mira" and either (b) (6b) is treated as a digression (see 6.2), or (c) (6b) is a piece of background information (see 6.3).

What emerges, then, is that utterances in an appropriate text which can be interpreted as predicating something about a (discourse) topic are conceived of as coherent. By contrast, utterances that do not constitute a comment on some discourse topic, or that cannot be interpreted as being about a discourse topic, are not considered coherent. This is the case with the sequences in (1) and (5a—e), which cannot be interpreted as being about a certain discourse topic. On the other hand, the appropriateness of (4), which, unlike (1) and (5a—e), is a segment that exhibits neither referential links nor semantic connectors, can be accounted for in terms of aboutness: the segment can be interpreted as being about a certain issue.

I have made frequent use of the notion of "discourse topic" in an attempt to prepare the ground for formulation of the conditions for text coherence. This notion is further elaborated in section 7.

5. THE NOTION OF DISCOURSE RELEVANCE

Given the intuitive notion of aboutness, we may attempt a modification of the notion of relevance. The following is not intended as a full-fledged definition, but as a description of the conditions under which the notion of relevance may be defined:

I take a set of propositions to meet the relevance requirement if all the propositions in the set can be interpreted as being about a certain discourse topic.

The reduction of the notion of relevance to the notion of discourse-topic does not constitute a considerable advance. For lack of operative rules for the derivation of a discourse-topic we are left with a "primitive" that leads us no further than the other alternative approaches. Such approaches reduce the notion of relevance either to the notion of foreground (van Dijk 1979) or to the question-answer mechanism (Manor 1982).

Consider van Dijk (1979), for instance, for whom the notion of relevance is a matter of degree. He views as "relevant" the elements of a text that are found important by a reader. As a result, some elements are more relevant — those that are akin to the perceptual Figure — and some are less relevant, that is, of a background nature. Obviously, van Dijk's notion of relevance differs from mine in that it does not serve to explicate coherence. In fact, it bears close relation to the distinction between the notions of foreground and background information, suggesting that what is more striking or more surprising is more (contextually) relevant, given our knowledge of the world in question (p. 119).

Or Manor (1982), who takes two propositions to be relevant *to each other* if they share the same topic. Particularly, Manor considers a sequence of two propositions acceptable if it is apparent what question they answer. Thus, in her example (7, 8) repeated here in

(7), the two conjuncts "seem completely irrelevant to each other," since there is no question which the two conjuncts answer:

(7) John ate the cake and yesterday the bank manager gave me a nice lecture.

Obviously the "question" here is not the "question under discussion" (i.e., discourse topic), but the interrogative form, which could be a formulation of the question under discussion but is not necessarily so.

This, I claim, does not seem sufficient. Consider, for instance, the sequence in (2.2), rephrased here in (8) which could be an adequate answer to a question such as "what happened when the first man landed on the moon," and which, all the same, violates the relevance requirement, at least intuitively:

(8a): What happened when the first man landed on the moon?
(8b): When the first man landed on the moon, a fly dropped into my aunt's soup, which did not even taste of chocolate.

Thus, for two utterances to satisfy the relevance requirement it is not sufficient that they both share a question.

Nor is sharing a question a necessary condition for the well-formedness of conjoined utterances. For example, the following text, from Haim Nachman Bialik's *The City of Slaughter*, can be interpreted as a comment on the world's attitude to man's suffering. What question is it possible to construct for it?

(9): The sun shone. The acacia bloomed. And the butcher slaughtered.

Would a question such as "what happened. . ." do? or, "what happened during the pogrom"? In other words, would the question be the "question under discussion" in the sense that this is the topic discussed?

Assume for a moment that the inappropriateness of the above sequence (i.e., the proposed question plus the string in (9)) can be accounted for in terms of the violation of the foreground-background relations; the string in (10) seems preferable as an answer to the proposed question:

(10a): What happened during the pogrom?
(10b): While the butcher slaughtered the sun shone and the acacia bloomed.

That is, assume that technically it is possible to apply the "question" test for coherence suggested by Manor. Nevertheless, it is still possible to argue that such a mechanism is deficient in that it does not provide for the procedures by which we can construct an appropriate question. It is only when one constructs the discourse topic of a given string that one can transform it into a question. But by then, this mechanism (of the "question" test) is altogether superfluous.

Note, too, that the three propositions (9) do not share any (sentence) topic. Examined linearly the conjoined pairs do not even share the same discourse topic: (9a–b) is interpretable as a text about the qualities of a summer day or spring time:

(9a–b): The sun shone. The acacia bloomed.

(9b–c), however, seems to predicate something about the world's attitude to human suffering as its discourse topic:

(9b–c): The acacia bloomed. And the butcher slaughtered.

(9a–b) and (9b–c) do not share the same discourse topic but together they form one.

Given our definition of relevance, the three propositions of (9) are all relevant (to an underlying discourse topic), as they are interpretable as predicating something about an underlying theme. Note that relevancy (to a discourse topic) does not obtain linearly between pairs of sentences, but between a set of propositions and a discourse topic. That is, it is not the case that a set of propositions are relevant to each other (Manor 1982:94) but they must be relevant to an underlying discourse topic. Reducing the notion of relevance to the notion of discourse-topic might not take us much further, yet it seems a step in the right direction.

Given the claim that a linear approach is unable to characterize text coherence, and that the relation of relevance obtaining between a set of propositions of a given text segment and an overall discourse topic or hypertheme cannot be pursued linearly either, it is nevertheless obvious that the interrelations between sequenced propositions must be somehow constrained. A detailed analysis of the local relation between the various propositions in a text is beyond the scope of this paper,[2] but it is clear that such an analysis is needed to arrive at an adequate characterization of coherence. It seems to me that such research should be along the lines suggested by Stalnaker (1978), investigating the relations between a proposition and a context set. (See also Section 8.)

6. TEXT COHERENCE

Given the vague notion of text relevance, we can now attempt a definition of text coherence:

(11) A text is coherent if [(a) and either (b) or (c):]
(a) it satisfies the requirement for consistency as argued for in Reinhart (1980),[3]

2. For an attempt in this direction see van Dijk (1980:49–65) and Sternberg (1981).
3. I assume, for the moment, that Reinhart is correct in arguing that for a text to be coherent it has to meet the consistency condition which requires "that each sentence will be consistent with the previous sentences, i.e., that they can be all true in the same state of affairs (given our common assumptions about the world)" (Reinhart 1980:164).

and

(b) it satisfies the requirement for relevance,

or

(c) it is explicitly connected by a connector marking the digression.

The requirement stipulated in condition (11b) for relevance, was discussed in Section 5. Consider now the requirement for explicitly marking the digression (from relevance in 11c). In light of the partial description of the conditions for relevance discussed in Section 5, a text segment would be considered irrelevant when at least one of its propositions could not be interpreted as being about the given segment discourse topic. Consider again (5a—b) and (5c—d), repeated here for convenience:

(5a—b) Ronit is never home nowadays because she lives near school. School, you know, is the center of the kids' social life.
(5c—d) Uri has missed school a lot this year. He never showed up at tennis, either.

As we saw in Section 4, (5a—b) and (5c—d) do not satisfy the relevance requirement because put together, they cannot be interpreted as predicating something about an underlying discourse topic. To support the claim that condition (11c) holds I will show that their oddity as a unified continuous text (5a—d) can be compensated for or corrected by the introduction of an explicit connector which marks the digression. Consider the improvement of (12) below over (5a—d):

(12) Ronit is never home nowadays because she lives near school. School, you know, is the center of the kids' social life. Oh, by the way, I forgot to tell you that Uri has missed school a lot this year and that Orit, too, has stopped playing chess.

To cite another example, consider Dascal and Katriel's discussion of digression (1979:211—212):

A is explaining to B a certain view on the nature of knowledge. After stating the view, he presents an example of a justified claim to knowledge, namely,
(13) A: John knows that it is raining in Honolulu.
B: replies
Case 1
B: On what grounds can he be said to know that?
Case 2
B: By the way, how long has it been raining in Honolulu?

Dascal and Katriel, following Schutz (1970), regard case 1 as "topically relevant" and case 2 as "marginally relevant." They consider texts with digressions well-formed so long as the digression is "marginal." I regard the same text segment (case 2) well-formed not because there is some "semantic (although marginal) relevance"

between the utterance of A and B, but due to the digression marker
(by the way) which indicates that there is a digression (of whatever
degree).

Written texts also utilize connectors marking the digression to
cohere irrelevant[4] text segments. Notice how the text in (15) im-
proves on the text in (14), where (14) lacks digressive connectors
while (15) has them. (15) is my translation of a text segment of
Ludvik Vaculik (1970). The text "Morcata (Die Meerschweinchen)"
deals with apparently unrelated topics: pets and the bank. To shift
from one discourse topic to another, Vaculik employs digressive
connectors. As a result, the text in (15) is coherent while that in (14)
is not:

(14) This engineer, Halavatzek, a person whom no one notices, sat one day at
a piece of squared paper and wrote down the account he had relentlessly
developed for a couple of months. What he found out excited the state bank.
It has long been known that the money that the guards confiscate is not to be
found in the cash box the next day. [. . .] Consequently we will reach a stage
of unemployment in our bank. This is engineer Halavatzek's prediction and
this is the good we are to expect next year. I am lying on the floor by my pet
and watching it. Watching it intensively, I reach a state of mind that I
once experienced but have forgotten[. . .].

(15) This engineer Halavatzek, a person whom no one notices, sat one day at
a squared piece of paper and wrote down the account he had relentlessly
developed for a couple of months. What he found out excited the state bank.
It has long been known that the money which the guards confiscate is not to
be found in the cash box the next day. [. . .] Consequently we will reach a
stage of unemployment in our bank. This is engineer Halavatzek's prediction
and this is the good we are to expect next year. Let's not discuss the bank,
kids, let's talk of pets, which are much nicer and less upsetting. I am lying on
the floor next to my pet and watching it. Watching it intensively I reach a
state of mind that I once experienced but have forgotten[. . .] (p. 22).

In the same way (17) improves on (16) since (17) provides for
connectors marking the digression between apparently unrelated
(i.e., irrelevant) text segments while (16) does not:

(16) In the days following, the new pet's health did not improve. The state
of affairs at the bank was terrible, but it wasn't my fault. There the guards
confiscate everyone's money and deliver it somewhere, and again, nobody
knows anything about it[. . .].

(17) In the days following, the new pet's health did not improve, and I don't
feel like talking about pets. Let's talk about the bank instead. The state of
affairs at the bank was terrible but it wasn't my fault. There the guards
confiscate everyone's money and deliver it somewhere, and again, nobody
knows anything about it[. . .] (p. 41).

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4. I take irrelevance in (literary) texts to be local, ad hoc irrelevance, assuming that in the
framework of the whole text such segments are relevant as they can be interpreted as
predicating something about an ultimate discourse topic. (I owe this remark to Ariel —
personal communication.)

A text segment that exhibits irrelevance in that it cannot be interpreted as being about the same discourse topic of the set of segments in which it is embedded, can still be considered coherent if it marks the digression by means of an overt connector. That is, for various text segments with different discourse topics to meet the relevance requirement, they must be related to an underlying hyper discourse topic in terms of aboutness; they must be interpretable as being about a hyper theme which the text/discourse as a whole is actually about. However, those which are not, can still be considered coherent if they make use of an explicit connector to mark the digression.

7. ON THE NATURE OF DISCOURSE TOPIC

Even though I cannot at this point propose any formal procedures for deriving the discourse topic of a given text segment, it seems to me that discourse topic should be formulated in terms of propositions or argument-predicate nominalizations, and not in terms of NPs alone. Consider, first, some analyses of discourse topic which prima facie seem to hold the same view.

Keenan and Schieffelin (1972:341) approach the notion of discourse topic in terms of presupposition. As such, discourse topic is formulated in terms of propositions. Yet their use of the term discourse topic is a misnomer, since it is in effect a sentence topic. Consider, for instance, their analysis of example (3) repeated here in (18):

> (18a) Mother: Well, we can't hold it on like that. What do we need? Hmm? What do we need for the diaper?
> (18b) Allison: Pin.
> (18c) Mother: Pin. Where are the pins?
> (18d) Allison: Home.

Here, the discourse topic is established at (18a) (We need something for the diaper) and is collaborated on in (18b). In (18c) Allison's mother passes a different but related question (of immediate concern). It is being elicited, "the pins are somewhere," presupposes that "there exist pins."

What Keenan and Schieffelin do is to propose a linear concatenation of pairs of sentences/utterances (18a–b; 18c–d) via sentence topics which take the form of presuppositions. But sentence topics cannot account for the coherence of a discourse (see Section 2).

Formulated as a proposition, the term topic is used by Schank (1977) in essentially the same way. His notion of topic, too, is limited to the sentence level. Topics change (or shift) from sentence to sentence: "the next response can shift the reduced old topic into the new topic according to the rules for topic shift" (p. 425). Schank claims that sentences "don't have topics in isolation" meaning that sentences have topics only when they are embedded in conversation.

In this sense they are discourse dependent, although this does not
make them a topic of discourse. The idea of a topic which actually
regulates topic shifts amounts to a formulation of topic as a
proposition, part of which is the Reduced Old Topic, while the rest
is a "new conceptualization that comprises the new topic shift"
(p. 424). Yet the two parts which together make up the Potential
Topic operate linearly and hence will not help us in trying to
formulate what constitutes a discourse topic, namely, a topic which a
whole set of propositions is about.

   Unlike Keenan and Schieffelin (1972) or Schank (1977), van
Dijk (1976) makes a clear distinction between a sentence topic and
a discourse topic. Arguing in terms of aboutness, van Dijk suggests
that sentence topics be formulated in terms of NPs and discourse
topics in terms of propositions. His approach, however, is intuitive
and somewhat arbitrary. Out of the two possible formulations —
that of delineating discourse topic as an NP and that of articulating
it as a proposition — he arbitrarily prefers the latter. He takes the
view that a discourse topic is "an acceptable *summary* of the story
fragment" which is an account of the most "important fact(s) of the
story. . ."; it is "a *construct* 'taking together' semantic information
from the discourse as a whole." Van Dijk believes that he can derive
discourse topic, namely, a summary, by means of macro rules.
Subsequently, it is necessary that a discourse topic be "a full prop-
osition" as the sequence as a whole is both about the (identical or
central) referent and the major predications of this referent
(van Dijk 1979).

   I agree with van Dijk that it is necessary to formulate discourse
topic in terms of argument and predicate relations but for different
reasons. Unlike him, I argue that with the notion of discourse topic
as an NP it would be impossible to account for the ill-formedness of
(19):

   (19a) They say Mary is a smart student.
   (19b) Yeah, she has a nice handwriting and she lives with her uncle and she
   dyes her hair every now and then.

(19) is a combination of many comments about Mary. Still, the fact
that all the utterances are interpretable as being about Mary does not
ensure a coherent reading of the text. That is, if discourse topic is
taken to be an NP, the ill-formedness of (19), which can be inter-
preted as a discourse about Mary, cannot be accounted for. In order
for a text segment to be coherent, it is not enough for it to be inter-
pretable as being about an NP as its discourse topic. Its range of
predicates, too, has to bear a relevance relation to or be subsumable
under the discourse topic, which should thus take the form of
argument and predicate. Hence a coherent text segment that seems to
revolve around an NP as its discourse topic is in fact a text segment
that has an NP and a subsuming predicate for its discourse topic.

8. THE READING PROCESS AND THE FORMULATION OF DISCOURSE TOPIC

Though the procedures of constructing a discourse topic are still a mystery, it is nevertheless clear that they are partly dependent on the reading process which is linear by nature. The reader is presented with "a language continuum[. . .] and he has to shift from sentence to sentence, from paragraph to paragraph, from scene to scene" (Hrushovski 1976:7). This reading involves "linking up numerous elements" towards an "understanding" of the text, which is primarily a process of constructing hypotheses as to what the text is about (p. 2). "Any reading of a text is a process of constructing a system of hypotheses or frames which can create maximal relevancy among various data of the text which can motivate their 'co-presence' in the text" (Perry 1979:43). Given that both the process of reading and of constructing unifying hypotheses proceed linearly, and taking into account Stalnaker's (1978) theory of context set,[5] I suggest that we examine the addition of a proposition to a context set in relation to the discourse topic already established in the context set. The notion of context set helps us in delineating the relations that obtain between a proposition and a set of propositions revolving around a discourse topic rather than between the newly added proposition and the immediately preceding one.

Going beyond Stalnaker, Reinhart (1981:80) suggests two procedures for the construction of a context set. It is unrealistic to assume, she says, that the information in a discourse is a list of unrelated propositions. "During the construction of the context set the speakers attempt some organization and classification of the information" (1981:79): they *assess* what they already know about a topic and *store* it under an entry corresponding to this topic. This is where notion of discourse topic helps classify the propositions in the context set: being about a certain discourse topic is the entry around which the information is organized.

Given that a new proposition is added to a context set with an already established discourse topic, either the newly added proposition can be interpreted as being about the discourse topic already established in the given set or, the newly added proposition cannot be interpreted as being about the discourse topic already established in the given context set.

If the latter is the case, then the newly added proposition can be interpreted as starting a new segment with a new discourse topic. This segment will be felt to be coherent under two conditions as specified in Section 6. Formally, it has been found that segmentation occurs either immediately before the introduction of a new discourse

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5. The context set, according to Stalnaker, is the set of possible worlds compatible with the speaker's presuppositions which constitute the "live options" relevant to the text.

topic (Longacre 1979, inter alia) or immediately after the intro-
duction of a new discourse topic (Giora 1983). If the former is the
case, then the newly added proposition either (a) fully integrates into
the set of propositions predicating something about a given discourse
topic, or (b) it predicates something about part of the discourse
topic, in which case the discourse topic must be reformulated.

   This holds in Perry's analysis (1976) of Bialik's "inverted" poems
which formulate and reformulate discourse topics as the reading
process unfolds. Taking into account, then, the linear reading process
which involves the addition of a proposition to a context set,
consider example (9) repeated here in (20):

> (20a) The sun shone. (b) The acacia bloomed. (c) And the butcher
> slaughtered.

Following Schank (1977), the potential topics introduced for future
discussion by (20a) (given that this is a text in isolation), can be:
(1) the sun's activities; (2) the sun's shining; (3) the time (of the day
or of the year); (4) the world's (or nature's) creativity. The sequence
in (20a—b) seems to make up a text revolving around the discourse
topic suggested in (4). The addition of (20c) to the context set of
(20a—b), which juxtaposes the world's destructivity and the world's
creativity, gives rise to the reformulation of the discourse topic in
(20a—b). (20a—c) can be interpreted as a text about the world's
indifference to bloodshed.

   Going beyond Stalnaker (1978), we can specify a text as non-
defective insofar as the addition of a new proposition either retains
or necessitates reformulation of the discourse topic already
established, so that the newly formed set can be taken to predicate
something about the discourse topic.

9. DISCOURSE TOPIC AND THE TEXT

It was argued above that discourse topic can be formulated indepen-
dently of sentence topic (see, e.g., example (4) above). Yet, as I
mentioned earlier, it has been observed (Kieras 1981, Longacre 1979,
Chafe 1979) that semantic segments, such as paragraphs, tend to
retain a thematic unity through the recurrence of repetitive sentence
topics which eventually partake in the formulation of the discourse
topic. These findings suggest that sentence topics may help in the
construction of discourse topic in that they might be partly cohesive
with it. To cite Reinhart (1981:80):

> NP sentence-topics[...] will be referential entries under which we classify
> propositions in the context set and the propositions under such entries in
> the context set represent what we know about them in this set. Local entries
> corresponding to sentence topics can be further organized under more global
> entries, thus constructing the discourse topics.

It is interesting to note that even in the cases where the discourse topic is reformulated in the course of reading, the new reformulated discourse topic is also partly cohesive with the sentence topics of the whole text or text segment. Consider, for instance, Perry's analysis of Bialik's "inverted poems" (1976:61). Perry claims that the first two stanzas of "Lo zaxiti ba-or min ha-hefker" ("I was not allotted the light by chance") are (seemingly) about a discourse topic or "frame," to use Perry's terminology, such as "the originality of the light." Given such a discourse topic, the two text segments seem complete and well organized (i.e., coherent). But as the reading process unfolds, the "frame" which allows a proper interpretation of the whole text as a text that has a unifying discourse topic or hyper-theme, turns out to be "the privacy of the light" (p. 63). The last stanza, added to the first two, necessitates a reformulation of the previous discourse topic. As can be seen, this reformulation takes place within the range of predicates, leaving the arguments cohesive with each other. It now remains to be seen whether the sentence topics of the major part of the poem are also cohesive with the discourse topic. Indeed, Bialik's poem retains thematic unity through the repetitive use of "light," which constitutes the sentence topic of almost all the sentences within the poem, thereby making quite a number of sentences or sentence topics cohesive with the discourse topic.

To sum up, this paper is an attempt to treat text coherence at a global level independently of the linear/cohesive relation that obtains between sequenced sentences. Mainly, it is a discussion of coherence in terms of "aboutness," itself a primitive notion that requires further research. The notion of discourse topic, again in largely intuitive terms, is considered crucial to the understanding of text coherence. Despite the lack of more analytical tools at this stage, it seems to me that it is worthwhile viewing text coherence as a distinct plane of investigation, as it might be fruitful, at least in dispersing confusion. Even though research on cohesion is appealing, given that it is grounded in linguistic manifestations, such research ultimately has little to offer for the investigation of text coherence.

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