

On the so-called evaluative material in informative text*

RACHEL GIORA

Abstract

The study attempts to examine the function of digressive material in informative texts. Such material seems equivalent to non-narrative material in narratives of the kind Labov (1972) termed 'evaluation'. Like 'evaluation', digressive material in informative texts is 'free' in that it is not bound to the constrained set of relevant messages. Like 'evaluation', it is comprised of analogy, metaphor, comparison, and the like.

*Two alternative theories make claims about the possible function of such material in the literary text. More classical theories of the poetic text attribute a 'poetic' function to 'evaluation' (Jakobson, 1960, *inter alia*). Later theories of narrative attribute a communicative function to 'evaluation'. Evaluation is claimed to be necessary, since it contributes to text understanding by facilitating it. It is both conducive to the narrative *raison d'être* (Labov, 1972; Polanyi, 1985, *inter alia*), and it helps establish the Discourse Topic of the story (for example, Reinhart, *i.p.*; Hunt and Vipond, 1986).*

In view of the similarity between narrative and informative texts, it makes sense to ascertain whether 'free' material might be functional in informative text-processing. My findings do not show this to be the case. Rather, while digressive or meta-linguistic material may have an evaluative function in narratives, it does not have this function in informative text. On the contrary, what is termed evaluation does not improve understanding in informative texts.

*This, however, is not entirely unpredictable. Theories of text coherence show that the structure of coherent texts is not neutral to significance, but rather marks the Importance Hierarchy and makes clear the Discourse Topic (Giora 1985b, 1988, *inter alia*). Given the requirements for text well-formedness, digressions are not intended to participate in marking the Importance Hierarchy.*

So what are digressions for? The reactions of the subjects interviewed seem to weigh the evidence in favor of the 'poetic' function.

This paper is an attempt to examine the function of digressions in informative texts. The example below will serve to illustrate the kind of digressive material (in italics) which I will discuss here:

It has often occurred in the history of science that an important discovery was come upon by chance. A scientist looking into one matter, unexpectedly came upon another which was far more important than the one he was looking into. *Such scientists resemble Saul who, while looking for donkeys, found a kingdom.* Penicillin is a result of such a discovery.

Such material seems *prima facie* equivalent to non-narrative material in narratives, of the kind Labov (1972) termed 'evaluation'. Like 'evaluation', digressions are structurally 'free'. A digression, by its very name, is not bound by the constraints which limit the set of Relevant and Informative messages (section 2). And it resembles 'evaluation' semantically as well, since digressions, too, are comprised of analogy, metaphor, comparison, repetition, and the like (section 3).

The function assigned to 'evaluative devices' in narratives, for instance, by Labov (1972), Polanyi (1985), and Reinhart (i.p.), is to facilitate understanding. Though the present paper establishes the similarity between narrative and informative texts, it questions the role 'evaluation' is said to play in processing. I suggest that the information structure of any coherent informative text is such that it guarantees the transparency of the Discourse Topic, and so renders 'evaluative devices' superfluous for purposes of text comprehension.

The conditions that I have elsewhere postulated for text coherence require that a text consist of propositions which obey both the Relevance Requirement (Giora, 1985b) and the Graded Informativeness Requirement (Giora, 1988). Briefly, the Relevance Requirement ensures the amount of redundancy necessary for comprehension (see also Attneave, 1956; Barthes 1970; Arnheim, 1971; Suleiman, 1980). It requires that all the propositions in a given text be related to a unifying DiscourseTopic (see also van Dijk, 1980). The Graded Informativeness Requirement constrains the amount of new information added to the text. Texts that obey these two constraints are coherent and easy to process. Yet, it is known that coherent texts do allow for digressions from Relevance as well (Giora, 1985a,b). What is the function of these digressions? My view predicts that, contrary to the common belief concerning digressions in narratives (classified as 'evaluative devices'), digressions in informative texts will not serve to facilitate understanding.

Experiments were conducted to examine the claim that evaluative devices do not facilitate processing of informative texts. Results revealed that in fact evaluative devices in informative texts either inhibit or fail

to improve understanding. Their role in informative texts is thus clearly problematic. What, then, are they there for? I suggest that 'evaluative' devices may serve what Jakobson (1960) terms 'the poetic function'; they act as attention getters, and as a means to slow down processing so as to make a piece of writing more interesting or more aesthetically appealing.

1. Theoretical background

Though the study presented here deals with non-narrative texts, some of its insights originate in work on narratives. The distinction drawn by Labov (1972) between the two kinds of propositions that make up a narrative has been a source of inspiration. Labov distinguished the temporally ordered 'narrative' propositions, from all the other, 'free' or 'independent' propositions. Narrative clauses are 'bound' in that their serial position in the text is predetermined by the narrative schema or by the order of events outside the linguistic presentation. However, for a narrative to be well-formed it must also contain nontemporal propositions, that is, propositions whose textual position is not bound by an *a priori* narrative schema. Such propositions either serve as background information or 'evaluate' the narrative sequence (Reinhart, 1984). Narrative propositions in themselves are indifferent to the 'message' of the narrative. It is the non-narrative, nontemporal sentences which perform the function of evaluating the narrative so that the point of the story and its *raison d'être* are clearly conveyed.¹

Reinhart (1984, i.p.) elaborated on the evaluation function proposed by Labov, arguing against the 'poetic function' assigned by the formalists to what Labov termed evaluation. Devices such as repetition, metaphor, analogy, simile, comparison etc., which are conventionally assumed to abound in poetic texts (and thus to account for their aesthetics) are claimed to play a functional role in text understanding. In narratives such devices not only establish the purpose of telling the story, but they also seem to construct its meaning by signalling the Importance Hierarchy (for example, Shen, 1985b) which would otherwise go unnoticed in the narrative sequence.

Empirically, however, evaluative devices were shown to be helpful in detecting the Importance Hierarchy only under certain circumstances. For instance, Shen (1985a) shows that in case the narrative structure is ambiguous, then these evaluative devices will function as tools for assigning meaning; they serve to resolve the narrative ambiguity.

On the other hand, evaluative devices have been shown to impair recall

of newspaper stories. Thorndyke (1979) presented his subjects with two versions of the same text, one 'condensed' and one 'intact'. The 'condensed' version had deleted from it 'evaluative' material: repetition or elaboration of previously presented material such as background information irrelevant or tangential to the main point of the story, and extraneous commentary on the events. The remaining sentences constituted the 'important' information of the story. The stories were presented in different forms of organization, so that subjects could consider important material in terms of various schemata. The condensed form of each organization was better recalled, whereas, the least recalled material was of the kind termed here evaluation. Reading-time measures further showed that irrelevant material was less deeply processed. These findings support the view that text schema is functional in understanding in that it exhibits the Importance Hierarchy (Mandler and Johnson, 1978; Rumelhart, 1975; van Dijk and Kintsch, 1978). However, no one particular schema was found to best effect learning or recall.

Recent research on the usefulness of 'elaboration' has also proven that neither memory nor processing is improved by 'elaboration' (Reder, 1982; Reder and Anderson, 1982). 'Elaboration' is defined as any additional fact about material to be remembered. Given this functional perspective, elaboration can be viewed as similar to evaluation. In a set of studies, college subjects studied informative passages from college texts in their original form and others in summary form. The summaries were written to restate the main points in as compact a fashion as possible. In these experiments, the summary condition was significantly better for true/false questions which were presented both immediately after subjects had read the passages and a week later.

Preliminary fieldwork survey, which I supervised, further revealed that abridged versions of short stories, produced for young students, deleted precisely those sequences termed evaluative by Labov. The shorter and easier the version, the fewer evaluative devices it contained.

It seems that the function of 'free' sequences of text depends on the meaning assignable to the narrative skeleton that is, to the series of events (regardless of the nontemporal material). Structuralists such as Propp (1968), Barthes (1966), Pavel (1978), Prince (1973), resort to the aesthetic function, on the assumption that structures (that is, the set of events) are meaningful in their own right in that they exhibit an Importance Hierarchy. Communicative approaches, in contrast, assign to evaluative devices the function of distinguishing important from unimportant events, on the view that events are indifferent to gradedness of importance (Labov, 1972; Reinhart, 1984, i.p.; Shen, 1985a, b; Hunt and Vipond, 1986).

2. Informative text structure and the Importance Hierarchy

As noted, I am assuming an analogy between narrative and non-narrative texts. Despite the differences, both types of text can be viewed as consisting of two kinds of linguistic material: constrained and unconstrained sequences. The constrained part of narratives is the set of temporally-ordered sentences which make up the narrative structure, that is, the spatial/temporal schema. The unconstrained material is that which is 'free' from the temporal constraint and does not advance the chain of events (Labov, 1972). The structure of non-narrative texts, on the other hand, is categorical. Since they lack narrative/schematic organization, their principle of organization is similarity. But non-narrative text likewise allows both constrained and unconstrained sequences. The constrained material is the set of Relevant and Informative propositions which share a certain number of similar features. The unconstrained material is the set of propositions which digresses from Relevance, that is, does not exhibit a sufficient amount of the common features of the set.

Previous work (Giora, 1985b) has shown that the Relevance Condition on text well-formedness requires that each proposition be related/similar to an underlying governing proposition termed Discourse Topic (DT). This proposition is the least informative and it takes the form of a generalization. It occurs in segment-initial position, since cognitively it functions as the entry relative to which oncoming messages get assessed and stored. Since the measure for assessment and storage is the amount of similarity the various messages bear to the DT, informative texts are highly redundant.

The Graded Informativeness Condition, on the other hand, constrains ordering of information and is indicative of an Importance Hierarchy. It requires that the text proceed gradually along the informativeness axis, so that each message is more informative than the one it follows. In this way, a well-formed text unfolds gradually, repeating information in segment-initial position, and ending with the most informative message. (Giora, 1983a,b, 1985c, 1988). Consider the following example:

1. *It has often occurred in the history of science that an important discovery was come upon by chance. A scientist looking into one matter unexpectedly came upon another which was far more important than the one he was looking into. Penicillin is a result of such a discovery.*

This is an example of a coherent text consisting of a set of Relevant and Informative propositions. It shows a certain amount of redundancy which follows from the Relevance Requirement as indicated in italics in (1). The

example begins with a generalization and evolves informatively, conforming to the Graded Informativeness Requirement. In this way, each oncoming message adds a small amount of new information (the underlined messages in the example) while still echoing the generalization given in the beginning. Thus, the first sentence discusses a (a) scientific (b) chance (c) discovery (d) of some importance. The second sentence introduces another piece of information to the text: (e) the relative importance of the unexpected discovery, but not without echoing the previous four. The third sentence echoes all the aforementioned features while adding a specific example of a scientific discovery: (f) penicillin, which, in the given set, is the most informative message. When subjects were presented with such a text and with another version of it, containing the same propositions but in a different ordering, they preferred the less informative — more informative ordering, to the inverse ordering (Giora, 1988).

The coherence structure of this text is transparent since it both, explicitly states the Discourse Topic ('chance discovery in science') in the first sentence, and highlights the most 'important' or most informative message ('the chance discovery of the penicillin') in the last sentence. Establishing the Discourse Topic is achieved by both formulating it as a generalization and placing it in initial position. The most 'important' informative message is highlighted by being in final position (Giora, 1983a,b, 1988). In other words, a well-formed informative text is easy to understand since it contains enough redundancy to be easily assigned meaning and its ordering is indicative of 'importance'.

Coherent texts also allow for digressions, on condition they are marked as such (Giora, 1985a). Thus passage (2) below, the original version of (1), is, also coherent:

2. It has often occurred in the history of science that an important discovery was come upon by chance. A scientist looking into one matter, unexpectedly came upon another which was far more important than the one he was looking into. *Such scientists resemble Saul who, while looking for donkeys, found a kingdom.* Penicillin is a result of such a discovery.

The additional proposition (in italics) is irrelevant, as it is not about the Discourse Topic: It is about the relative importance of chance discovery, while the Discourse Topic in question concerns *scientific chance discovery*. But the sentence is explicitly marked as a digression by the semantic connector 'resemble', and so can be considered coherent with the rest of the text.

The assumed analogy to narratives is clearly structurally feasible. The conditions on coherence allow for two sets of propositions to reside in a

text: Relevant and Informative (R and I) propositions and marked digressions.² The set of R and I propositions, which is constrained in terms of content and ordering, is similar to the constrained material in narratives. The set of marked digressions is similar to the 'free', unbound material which digresses from the narrative sequence in narratives.

3. Background information in the informative text

The correspondence between narrative and informative texts is further revealed by comparing digressive material in the two types of texts. First, Reinhart's (1984) division of the nontemporal material of narratives into (a) informative background and (b) evaluation seems applicable to informative texts as well (section 3.1). Second, the variety of the evaluative devices found in informative texts is similar to the narrative repertoire (section 3.2).

3.1. *Informative background*

Consider, first, the division of background material into informative and evaluative. Reinhart (1984) has shown that the overall distinction in the narrative text between background (nontemporal) and foreground (temporal) material is not a matter of choice, but depends on our cognitive modes of perception. To be able to perceive temporally ordered events, we must have some background. That part of the text which serves to explain temporal events is termed informative background.

Evaluative background material is necessary for a different reason: It assigns meaning to the temporal material, which in itself is neutral. It signals what is important in the story and why it is told.

Background material, both informative and evaluative, is found in non-narrative texts as well. Informative texts also differentiate between main assertions and subordinate material. It is not as yet clear whether this can be accounted for in terms of gestalt theory, as Reinhart did for narratives. Yet whatever the explanation, I will try to show that the distinction between informative and evaluative background material holds for informative texts as well.

Only material which is clearly background, that is, digressions which are overtly marked, are considered in the present analysis. Moreover, for ease of presentation, only full sentences are analyzed (which does not mean that background material is not to be found elsewhere). The informative texts in (3) and (4) below obey all the conditions for coherence and mark the digressions overtly. In both, the digression from Discourse

Topic serves as an informative background necessary for understanding the Discourse Topic:

3. Not all sounds made by animals serve as language, and we have only to turn to the extraordinary discovery of echo-location in bats to see a case in which the voice plays a strictly utilitarian role.

To get a full appreciation of what this means, *we must turn first* to some recent human invention. Everyone knows that if he shouts in the vicinity of a wall or a mountainside, an echo will come back. The further off this solid obstruction, the longer time will elapse for the return of the echo. A sound made by tapping on the hull of a ship will be reflected from the sea bottom, and by measuring the time interval between the taps and the receipt of the echoes, the depth of the sea at that point can be calculated. So was born the echo-sounding apparatus ...

A few years ago it was found that certain bats emit squeaks and by receiving the echoes they could locate and steer clear of obstacles — or locate flying insects on which they feed. This echo-location in bats is often compared with radar, the principle of which is similar.

(Maurice Burton, *Curiosities of Animal Life*)

4. It is animals and plants which lived in or near water whose remains are most likely to be preserved, for one of the necessary conditions of preservation is quick burial, but even in the most favourable circumstances only a small fraction of the creatures that die are preserved in this way before decay sets in or, even more likely, before scavengers eat them. *After all*, all living creatures live by feeding on something else, whether it be plant or animal, dead or alive, and it is only by chance that such a fate is avoided.

(Errol White, *The Past Life of the Earth*)

The Discourse Topic of (3) is formulated in the first paragraph and can be paraphrased as follows: the device of echo-location in bats is a case in which the voice plays a strictly utilitarian role. The digression, then, marked semantically by a digression connector, is a discussion of the echo-location device in general, knowledge of which is necessary in order to understand the Discourse Topic. This digression, then, serves as an informative background without which understanding of the Discourse Topic might be incomplete or impaired.

The digression in (4) into background information which the author assumes to be in the addressee's mind, is likewise introduced. When discussing the conditions of animals and plants preservation, mention of

risks coming from other animals is a necessary piece of background information. As opposed to the example in (3), where the digressive material is not taken to be in the addressee's mind, the author of this piece assumes that this information is 'given' or 'accessible': The digression marker is chosen accordingly (Ariel, 1985, 1988).³

In addition to informative background, digressions also consist of evaluative material as illustrated, for instance, in (2) above. This evaluative material takes a variety of forms in informative texts as shown below.

3.2. *Evaluative material*

In discussing evaluation, Labov (1972) pays special attention to digressions from the basic narrative sequence which he classifies as comparators, intensifiers, correlatives, and explicators. In the present context I focus on comparators and intensifiers, since explicators belong in the informative background (as in 3 above) while correlatives do not have a parallel in informative texts.

3.2.1. Comparators. Comparators consist of material which is not directly relevant to the Discourse Topic but against which the relevant material can be weighed:

5. *At one time*, people thought that the figures appearing in dreams were messengers from the gods. It was generally believed that dreams came from something outside the person dreaming, and could be understood only by persons with special skills.

Today it is believed that dreams are created by the dreamer himself. And because dreams are something a person creates, they may have a special meaning for the person who dreams them ...

The Discourse Topic of (5) is formulated in the second paragraph: the special meaning that dreams have for the dreamer. The rest of the paragraph elaborates on this Discourse Topic. The first paragraph, on the other hand, constitutes a digression which evaluates the Discourse Topic by explicitly comparing 'at one time' with 'today'.

6. In our society there is a growing dislike of original, creative men. The manipulated do not understand them: the manipulators fear them. The tidy committee men regard them with horror, knowing that no pigeonholes can be found for them. We could do with a few original, creative men in our political life — if only to create some enthusiasm, release some energy — but where are they? We are asked to choose between various shades of the negative. The engine

is falling to pieces while the joint owners of the car argue whether the footbrake or the handbrake should be applied. Notice how the cold, colourless, men without ideas and with no other passion but a craving for success, get on in this society, capturing one plum after another and taking the juice and taste out of them. Sometimes you might think the machines we worship make all the chief appointments, promoting the human beings who seem closest to them. *Between midnight and dawn*, when sleep will not come and all the old wounds begin to ache, I often have a nightmare vision of a future world in which there are billions of people, all numbered and registered, with not a gleam of genius anywhere, not an original mind, a rich personality, on the whole packed globe. The twin ideals of our time, organization and quantity, will have won for ever.

(J.B. Priestley, *Thoughts in the Wilderness*)

The digression into a vision marked by 'between midnight and dawn' functions as a comparator. Moreover, the passage is rich in metaphors (the underlined material), which are also comparators; but they are not marked as digressions since metaphors, unlike similes, are not marked by semantic connectors.

7. How it came about that snakes manufactured poison is a mystery. Over the periods their saliva, a mild, digestive juice like our own, was converted into a poison that defies analysis even today ...

In the conversion of saliva into poison one *might suppose* that a fixed process took place. It did not ...

(John Crompton, *The Snake*)

(7) is an example of a modal comparator. It introduces into the text a situation which might have happened, so as to weigh it against the one which actually is the case.

3.2.2. *Intensifiers*. Intensifiers deviate from the Informativeness Requirement but weight the relevant material by repeating it as in (8) and (9):

8. Let's deal with what seems a simple topic, but which is rather complicated. The topic is names. *Yes, as simple as that, our name. The first name and the second name.*

9. In the organization of industrial life the influence of the factory upon the physiological and mental state of the workers has been completely neglected. Modern industry is based on the conception of maximum production at lowest cost, in order that an individual

or a group of individuals may earn as much money as possible. It has expanded without the idea of the true nature of human beings who run the machines, and without giving any consideration to the effects produced on the individuals and on their descendants by the artificial mode of existence imposed by the factory. The great cities have been built with no regard for us ... The modern city consists of monstrous edifices, and of dark narrow streets full of petrol fumes, coal dust, and toxic gases, torn by the noise of the taxi-cabs, lorries and buses, and thronged ceaselessly by great crowds. *Obviously*, it has not been planned for the good of the inhabitants.

(Alexis Carrel, *Man, the Unknown*)

The repetitions in (8) and (9) intensify or emphasize the Discourse Topic by repeating it.

In this respect, too, then, there is a clear parallel between narrative and informative texts.

4. Text comprehension — an experimental view

The idea that evaluative material should contribute to text understanding is plausible for several reasons. A certain amount of redundancy is known to be necessary, since it guarantees a certain amount of order (see for instance, Attneave, 1954; Barthes, 1970; Arnheim, 1971; Suleiman, 1980). Redundancy is clearly among the evaluative devices (for example, repetition, analogy), and as such is rightly assumed to help assign meaning to texts. But redundancy is exactly what well-formed informative texts exhibit structurally. As shown above (section 2), the Relevance and Graded Informativeness Requirements ensure a certain amount of redundancy. It follows from my theory of text coherence mentioned here (Giora, 1985a,b, 1988) that evaluative devices will therefore not contribute to text understanding, since the necessary redundancy is already there.

The role of evaluation in signaling the Importance Hierarchy also seems to be realized by the set of Relevant and Informative propositions in the informative text. The Importance Hierarchy in well-formed informative texts was shown to be structurally inbuilt (section 2). It follows, then, that digressive material will not be functional in building a Importance Hierarchy in informative texts.

To confirm this view, experiments in text comprehension were conducted, where the variable was the presence or absence of evaluative devices. The objective was to test the effect of so-called 'evaluation' on text processing. Since recall of Relevant and Informative material must be functional in comprehension, I started with examining recall.

Experiment 1

Aim: to ascertain whether evaluative material marked as a digression (D) improves recall of Relevant and Informative (R and I) material.

Materials: 9 pairs of coherent informative texts as defined in Giora (1985a, b, 1988), of various lengths, identical in every respect apart from the presence or absence of marked digressions in each. One version contained the digression (as in 2 above where the discovery of penicillin was compared to Saul's discovery of his kingdom), while the other did not (as in 1 above). The passages also varied in length of the digressive material (D), in order to check the effect of amount on understanding.

Subjects: 480 students varying in sex, age (10–30) and environment. Most of them read the passages as part of their routine class work and some were told they were participating in an experiment.

Procedure: The subjects were divided into two groups, one was given the version with the evaluation and the other without it. They were asked to read the passage at their own natural speed so as to be able to answer questions afterwards. After they had read the passage once, they were no longer allowed to look at it. Immediately after reading they were instructed to write down the passage as close to verbatim as possible. Unlimited recall time was provided. Measure was taken of number of Relevant and Informative messages recalled.

Results: As shown below, evaluative digression did not improve recall of Relevant and Informative sentences, but rather impaired it. Recall deteriorated relative to the length of the digression:

Table 1. *Recall*

Percentage of recall of R and I propositions						
I. Passages with short and medium length digressions						
Text*:	13%	24%	25%	32%	44%	50%
N**:	58	16	20	22	38	260
+D:	23%	55%	75%	1%	19.4%	82%
-D:	35%	57%	83%	8%	30.2%	85.3%
II. Passages with lengthy digressions						
Text*:	79%	80%	95%			
N**:	12	18	36			
+D	16.6%	50%	22.2%			
-D	65.6%	100%	100%			

* Percentage refers to the amount of digressive material in the specific text.

** Number of subjects.

Percentage of recall of R and I propositions

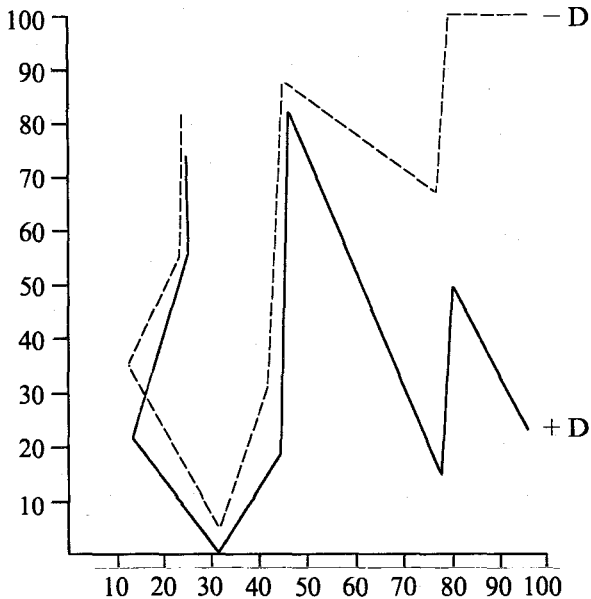


Figure 1. Recall of R and I propositions relative to percentage of digression

As predicted by the coherence theory proposed here, so-called evaluative digression either does not improve or it impairs recall. Moreover, there is a correlation between the length of the digression and the amount of recall of Relevant and Informative messages. The passages with the highest amount of digression (part II of Table 1) show significant deterioration of recall ($Z > 1.96$). Note that where digressions are of short and medium length (no longer than 50%), the curves are rather close to each other with a slight preference for the digressionless (-D) version. However, above 50% digression the curves differ significantly, the distance between them growing substantially.

Experiment 2

Aim: to check whether evaluative material, marked as a digression (D) improves understanding of Relevant and Informative (R and I) material.

Materials: 14 passages as in Experiment 1.

Subjects: 646 students varying in sex, age (10-30) and environment. Most

of them read the passages as part of their routine class work, the others were told they were participating in an experiment.

Procedure: Subjects were divided into two. One group read the version with the evaluation and the other without it. They were asked to read the passage so as to be able to answer questions afterwards. They read the passage at their own speed, and after they had read the passage through once, they were no longer allowed to look at it. Immediately after reading, they were asked questions of the form: What is the passage about? What is the topic of the passage? They were asked to answer by writing one or two sentences.

Results: As shown below, evaluative digressions did not improve text comprehension, but rather impaired it. Comprehension deteriorated relative to the length of the digression:

Table 2. *Comprehension*

Percentage of the number of subjects who understood the DT

I. Passages with short and medium length digressions

Text*:	12.5%	13%	15%	16%	20%	24%	25%
N**:	36	58	32	32	36	16	20
+D	83.3%	82%	75%	44%	72%	100%	83%
-D	94.4%	94%	87.5%	69%	94.4%	100%	100%
Text*:	32%	44%	50%	50%			
N**	22	38	36	260			
+D	36%	13.2%	78%	74%			
-D	100%	34%	94.5%	78%			

II. Passages with lengthy digressions

Text*:	79%	80%	95%
N**:	12	18	36
+D	50%	62%	22.2%
-D	83.3%	100%	100%

* Percentage refers to the amount of digressive material in the specific text.

** Number of subjects.

Results show that 'evaluative' digressions do not improve comprehension of well-formed informative texts, but rather impair it. Moreover, comprehension is shown to deteriorate relative to the length of the digression. Passages whose digression is lengthy (80%, 95%) score significantly better without digressions ($Z > 1.96$). Again, where digressions are short and medium length (no longer than 50%), the curves are rather close to each other with a slight preference for the digressionless version (-D) (with the exception of one passage of 32% digression, though). However, above

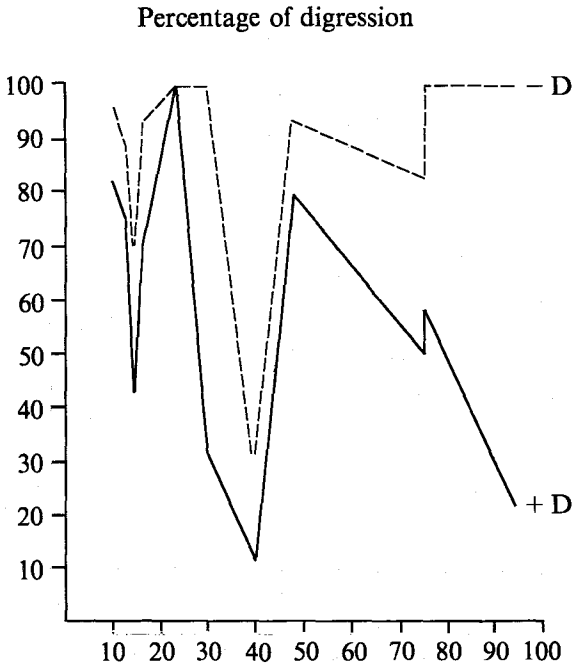


Figure 2. *Comprehension of DT relative to percentage of digression*

50% digression, the curves differ significantly, the distance between them growing substantially (Figure 2).

Thus, the analogy drawn here between narratives and informative texts is only partial, after all. While narratives and informative texts are seemingly parallel structurally, the function of their 'free', unconstrained materials varies. Evaluative material in narratives may well be functional in text understanding. In informative texts, however, it does not facilitate comprehension. Given the theory of text coherence here supported (Giora, 1985b, 1988), this should not come as a surprise. In terms of text coherence, the set of Relevant and Informative propositions in informative texts contain enough redundancy which grades importance. As a result, digressions are sidetracking.

4.1. *Text comprehension — an experiential view*

The experiments reported in section 4 do not allow a full appreciation of the process of understanding involved in texts with and without digressions. To see the effect of digressions on text processing more

clearly, I had subjects read the texts aloud (having Olshavsky, 1976 in mind) and then questioned them. In view of the controversy concerning the validity of interviews, I regard the findings reported here with caution. They are not to be taken as clearcut evidence, but rather as a supplementary to the experiments reported above.

Experiment 3

Aim: to check the effect of digression on understanding.

Materials: two passages. One (2 above) consists of 4 sentences one of which (25%) is a digression — that is, an analogy. The other contains a lengthy digression of the same nature — 5 sentences out of 6 (83.3%).

Subjects: 6 subjects aged 14–44.

Procedure: a direct observation of the performance of a reading aloud assignment was followed by questions concerning understanding. The questions were asked immediately after subjects had read the passage.

Description of the interviews:

Itay, a junior high-school student aged 14, was asked to read the passages aloud. When he reached the digression in the first passage he stopped and reread it. He was then asked what the passage was about. He hesitated for a while and then answered correctly. He was then asked whether there was any sentence not directly related to the topic he mentioned. He pointed out the digression. He was then asked to try and say why he thought it was there, anyway. He said it had at first confused him, but then when he read it again he understood the connection and the rereading made him recall that particular sentence better. It was there to emphasize the notion of chance discovery (i.e., the Discourse Topic) and the relative importance of that discovery. Because it slowed down the reading, it made the point clear.

While reading the second passage with the lengthy digression, he wanted to stop the reading after the second sentence (the first digression sentence), implying that he already got the point. Yet he read the passage to the end, as this was the assignment. He was confused when he had to formulate the Discourse Topic but corrected himself. He detected the digression at once. He said this digression was too lengthy, boring and distracting. He said this passage reminded him of his school text-books which he finds tedious. He then commented on the first passage, complimenting such a digression. Though the passage was a little more difficult than he imagined would be a similar one without a digression, the

digression made him try harder. As a result (he speculated) he remembered and understood the passage better. The digression added some flavor to the passage.

Yoav, another 14 year old junior high school student, read the passages aloud. The digression in the first passage did not inhibit his reading but when asked about the Discourse Topic he hesitated for a while and then answered incorrectly by overgeneralizing. When asked if that was really an exact answer he corrected himself. When asked about an unrelated sentence he pointed it out easily. As to the question why he thought it was there, he said it was there to add flavor to the passage and to improve understanding of the Discourse Topic by giving an example from a field known to the reader.

When reading the second passage with the lengthy digression, he accelerated his pace on reading the digression, implying that he had already got the point. He was confused when he had to formulate the Discourse Topic; he again overgeneralized, but then corrected himself. He detected the digression at once. He said this digression was too lengthy, boring and distracting. He then commented on the first passage saying he liked it. He would rather have such passages than ones without any digressions at all.

Noam, a high school student aged 16, read the first passage, identified the Discourse Topic and the digression and commented that the digression was there to enhance a point in the Discourse Topic and embellish the text.

Ran, a high school graduate aged 18 read the same passages. His reading was not inhibited at all. In response to the second passage, he said it was totally confusing and badly organized, though he could form the Discourse Topic easily. As to the first passage, he liked it and said it clarified the point in a nice way. The Discourse Topic was quite clear to him.

Galia, M.A., aged 40 and Asher, M.A., aged 44, read the second passage first. The Discourse Topic they proposed for this passage was too general, in fact, general enough to govern both the intended Discourse Topic and the digression. However, they had no difficulty in generating the Discourse Topic of the first paragraph, commenting that the digression there has a poetic effect.

These reports show that readers can detect the digression, that they try either to integrate it into the Discourse Topic or discard it, but that both strategies require some extra effort. This could nevertheless be rewarding, if the digression were interesting and not too lengthy. The impression

one gets from the subjects' reaction is that the digression functions in the manner attributed to poetic devices.

I attempted another experiment relying on mentalistic measures. These are a direct means of research, allowing the subject to 'read' her/his mind aloud. Following methods of elicitation of verbal data (Radford, 1974; Olshavsky, 1976; Lieberman, 1979; White, 1980; Ericsson and Simon, 1980; Alderson and Short, 1981; Mann, 1983; Sarig, 1989 *inter alia*), I checked protocols of students who are well-trained in verbal elicitation who were given the task of 'reading aloud' a passage containing a digression.

Experiment 4

Aim: to check the effect of digression on understanding.

Subjects: 8 college students aged 21–25, well-trained in methods of verbal elicitation.

Materials: One passage consisting of a digression in the form of a flashback whose function is to illustrate the point.

Procedure: Students elicited a passage as a preparation for an assignment of a multi-source integration.

Results: Only one student out of the eight referred to the digression and mentioned its function. The rest simply ignored it.

In their attempt to understand the passage, readers ignored sidetracking information. Apart from indicating recognition of digressive material by ignoring it, disregarding information is an energy-consuming effort. This partly explains why digressionless versions (Experiment 1,2) were found easier to understand.

5. Discussion

The study attempted to examine the function of digressive material in informative texts. Such material seems equivalent to non-narrative material in narratives of the kind Labov (1972) termed 'evaluation'. Like 'evaluation', digressive material in informative texts is 'free' in that it is not bound to the constrained set of Relevant and Informative messages. Like 'evaluation', it is comprised of analogy, metaphor, comparison, repetition and the like⁴ (section 3).

Two alternative theories make claims about the possible function of

such material in the literary text. More classical theories of the poetic text attribute a 'poetic' function to 'evaluation'. Their claim is that such material is intended to draw the reader's attention to the text so as to slow down processing and make her/him invest more effort in understanding the ulterior message of the text (Jakobson, 1960, *inter alia*). Later theories of narrative attribute a communicative function to 'evaluation'. Evaluation is necessary, since it contributes to text understanding by facilitating it. It is both conducive to the narrative *raison d'être* (Labov, 1972; Polanyi, 1985 *inter alia*), and it helps establish the Discourse Topic of the story (for example, Reinhart, *i.p.*; Hunt and Vipond, 1986) (section 1). However, my findings do not support this view. Rather, they show that evaluative material impairs understanding (see also Thorndyke, 1979).

In view of the similarity between narrative and informative texts in terms both of the structurally constrained sequences and of the content of the 'free' material, it makes sense to ascertain whether 'free' material might be functional in informative text-processing. Again, my findings do not show this to be the case. Rather, while digressive or meta-linguistic material may have an evaluative function in narratives, it does not have this function in informative text. On the contrary, what is termed evaluation does not improve understanding in informative texts (section 4).

This, however, is not entirely unpredictable. Theories of text coherence show that the structure of coherent texts is not neutral to significance, but rather marks the Importance Hierarchy and makes clear the Discourse Topic (Giora, 1985b, 1988 *inter alia*). Given the requirements for text well-formedness, digressions are not intended to participate in marking the Importance Hierarchy.

So what are digressions for? The paper leaves this question unanswered, as an avenue for further research. The reactions of the subjects interviewed (section 4.1) seem to weigh the evidence in favor of the 'poetic' function^{5,6}.

Notes

* I am grateful to my students in Levinsky College for cooperating in the research and to my colleagues Mira Ariel, Ruth Berman, Yosef Glickson, Gisi Sarig and Yeshayah Shen for their insightful comments. This research was supported by a grant from Levinsky College.

1. For the sake of simplicity, I do not distinguish here between clauses, sentences and propositions.
2. This is somewhat confirmed by Ariel (1985), who found that the deletion of such digressions does not inhibit coherence.
3. Though for simplicity's sake I have selected only full sentences, these texts also contain

clause level digressions, which exhibit background information of the type discussed above:

It is animals and plants which lived in or near water whose remains are most likely to be preserved, *for* one of the necessary conditions of preservation is quick burial, *and* it is only in the seas and rivers, and sometimes lakes, where mud and silt have been continuously deposited, that bodies and the like can be rapidly covered and preserved.

4. Melton (1967), Cuddy and Jacoby (1982) show that repetition is beneficial for memory only when the repeated item is not accessible.
5. 'Poetic' devices can be functional beyond the role attributed to them in the literary text. They could add 'flavor' to the text, hedge it, and make it more interesting. The recent probabilistic approach to language (see Giora, i.p.a., for review), particularly Givón's (1986) view of the hierarchical/graded structure of the set of a speech-act, is applicable. Thus, the set of informative texts might be viewed as having the digressionless version as the prototype and similar texts with digressions as less prototypical, varying in degree of prototypicality relative to the number and length of the digressions.
6. Future research should also concentrate on the nature of digressive material and how it relates to the complexity of the text. Findings that analogies, for instance, do not facilitate understanding should be given further consideration (see Giora i.p.b).

References

- Alderson, J.C. and Short, M. (1981). Reading literature. Paper presented at the B.A.D. Conference. University of Lancaster.
- Arnheim, Rudolf (1971). *Entropy and Art: an essay on disorder and order*. Berkeley: University of California Press.
- Ariel, Mira (1985). The discourse function of given information. *Theoretical Linguistics* 12: 99–113.
- (1988). Retrieving propositions from context: why and how. *Journal of Pragmatics* 12 (5/6): 567–600.
- Attneave, Fred (1954). Some informational aspects of visual perception. *Psychology Review* 61: 183–193.
- (1956). *Application of information theory to psychology*. New York: Holt, Rinehart and Winston.
- Barthes, Roland (1966). Introduction a l'analyse structurale des recits. *Communications* 8: 1–27.
- (1970). *S/Z*. Paris: Seuil
- Cuddy, J. Lauren and Jacoby, Larry L. (1982). When forgetting helps memory: an analysis of repetition effects. *Journal of Verbal Learning and Verbal Behavior* 21: 451–467.
- Ericsson, K.A. and Simon, H.A. (1980). Verbal reports as data. *Psychological Review* 87: 215–251.
- Giora, Rachel (1983a). Segmentation and segment cohesion: on the thematic organization of the text. *Text* 3(2): 155–182.
- (1983b). Functional Paragraph Perspective. In *Micro and Macro Connexity of Texts*, J.S. Petöfi and E. Sözer (eds.), 153–182. Hamburg: Buske.
- (1985a). Towards a theory of coherence. *Poetics Today* 6/4: 699–715
- (1985b). A text-based analysis of non-narrative texts. *Theoretical Linguistics* 12: 115–135.
- (1985c). Informational function of the linear ordering of texts. Tel Aviv University. (Ph.D dissertation).

- (1988). On the Informativeness Requirement. *Journal of Pragmatics* 12 (5/6): 547–565. Reprinted in *Cognitive Aspects of Language Use*, Kasher, A. (ed.). Amsterdam: North Holland, 1989.
- (i.p.a) A probabilistic approach to language. *Poetics Today*.
- (i.p.b) On the function of analogy in text comprehension. *Hasifrut* (in Hebrew).
- Givón, Talmy (1986). Prototypes: between Plato and Wittgenstein. In *Noun Classes and Categorization*, Colette, Craig (ed.), 77–102. Amsterdam: John Benjamins.
- Hunt, A. Russell and Vipond, Douglas (1986). Evaluation in literary reading. *Text* 6(1): 53–71.
- Jakobson, Roman (1960). Concluding statement: Linguistics and Poetics. In *Style in Language*, T.A. Sebeok (ed.), 350–377. Massachusetts: Cambridge.
- Labov, William (1972). *Language in the inner city*. Philadelphia: University of Pennsylvania Press.
- Lieberman, D.A. (1979). Behaviorism and the mind: a (limited) call for a return to introspection. *American Psychologist* 34: 319–333.
- Mandler, M. Jean and Johnson, Nancy S. (1978). Remembrance of things parsed: story structure and recall. *Cognitive Psychology* 9: 111–151.
- Mann, S. (1983). Verbal reports as data: a focus on retrospection. In *Proceeding of the University of Lancaster Colloquium on Problems, Methods and Theory in Applied Linguistics*, F. Katamba (ed.), 87–109. Lancaster: Lancaster University.
- Melton, A.W. (1967). Repetition and retrieval from memory. *Science* 158: 532.
- Olshavsky, J.E. (1976). Reading as problem solving: an investigation of strategies. *Reading Research Quarterly* 12: 654–674.
- Pavel, T. (1978). *Move Grammar*. Toronto: Toronto Semiotic Circle Monographs, Working Papers and Publications, Victoria University.
- Polanyi, Livia (1985). *Telling the American Story*. Norwood, NJ: Ablex Publishing.
- Prince, Gerald (1973). *A Grammar of Stories*. The Hague: Mouton.
- Propp, Vladimir (1968) [1928]. *Morphology of the Folktale*. Austin: University of Texas Press.
- Radford, J. (1974). Reflections on introspection. *American Psychologist* 29: 245–250.
- Reder, M. Lynn (1982). Elaborations: When do they help and when do they hurt? *Text* 2-1/3: 211–224.
- and Anderson, J.R. (1982). Effects of spacing and embellishment on memory for the main points of the text. *Memory and Cognition* 10: 97–102.
- Reinhart, Tanya (1984). Principles of gestalt perception in the temporal organization of narrative texts. *Linguistics* 22: 779–809.
- (i.p.) A functionalist approach to the poetic function. *Hasifrut* (in Hebrew).
- Rumelhart, David (1975). Notes on a schema for stories. In *Representation and Understanding*, D. Bobrow, and A. Collins (eds.), 337–372. New York: Academic Press.
- Sarig, Gisi (1989). Use of mentalistic measures for the application of individual principles in fostering high-level reading skills. *Education and its Surroundings*: 61–74 (In Hebrew).
- Shen, Yeshayahu (1985a). On importance hierarchy and evaluation in narrative texts. *Poetics Today* 6(4): 681–198.
- (1985b). *The Structure of Action in the Short Narrative Story*. Tel Aviv (Ph.D dissertation).
- Suleiman, R. Susan (1980). Redundancy and the 'readable' text. *Poetics Today* 1(3): 119–142.
- Thorndyke, W. Perry (1979). Knowledge acquisition from newspaper stories. *Discourse Processes* 2: 95–112.
- van Dijk, Teun A. (1980). *Text and Context*. London: Longman

- and Kintsch, Walter (1978). Cognitive psychology and discourse: recalling and summarizing stories. In *Current Trends in Text Linguistics*, W. Dressler, (ed.), 61–80. Berlin: de Gruyter.
- White, P. (1980). Limitations on verbal reports on internal events. *Psychological Review* 87: 105–112.

Rachel Giora (Ph.D) is in the Cognitive Program (General Studies) and in the Film and Television Department, Tel Aviv University. Her recent studies deal with the categorial organization of texts, the cognitive explanation for the structure of jokes, the function of analogies in text processing, the cognitive aspects of the cinematic text, and women, man and language.