

COGNITIVE PROCESSING OF LITERARY DISCOURSE

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1. INTRODUCTION, AIMS. PROBLEMS

In this paper we would like to apply some recent results from cognitive psychology to the study of literary discourse. These results pertain to processes of the reading and comprehension of discourse, and to the ways textual information is stored in, and retrieved from, memory.

In the study of literature such results are of primary importance for the analysis of so-called “interpretation” and “reception” processes. Of course, the problem of “how we understand” a literary text has always been a main concern of both traditional and more recent literary scholarship: both in hermeneutics and in semantics it has been tried to account for the various kinds of meanings of literary texts. Such a meaning is assigned in a process of interpretation. Interpretation may be “formal,” i.e., formulated in terms of an explicit (grammatical or logical) semantics, or it may be more subjective in the sense of a hearer/reader assigning some meaning to a discourse.

In order to get more insight into the ways actual readers of literature understand or interpret a literary text – which is a necessary condition for further processing, e.g., the assignment of values to the text – we need empirical psychological data about how language users read and understand a discourse.

These applications from psychology to the study of literature are taking place within the more general development in poetics towards an interdisciplinary approach. More and more we have come to realize that literature is not merely a particular set of discourses, defined, perhaps, on the basis of specific textual properties. It should at the same time be viewed in terms of various aspects of communication. Thus, we may take literary texts, in pragmatics, as a kind of ritual

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speech act, and try to show what the *social conditions*, functions and effects of such acts are in the communicative context of writers, publishers, readers, reviewers, school teachers, etc. In other words, we will no longer try to define "literariness" in terms of literary discourse structures by themselves, but rather in terms of the role of such discourses in processes of *socio-cultural interaction*. One basic aspect of these communicative processes are the various cognitive operations of the various participants mentioned above, in the "literary context." In order to be able to explain what the, particular functions and effects of literature are, we must know how readers understand, evaluate, memorize, paraphrase summarize reproduce, etc., literary texts. The same holds for art explication of the Processes of production: what are the social conditions of: writers and which the personal "cognitive set" (knowledge, opinions, attitudes, feelings, etc.) that operate in the cognitive processes involved in writing a literary text?

In this paper we can only make a small beginning in such a cognitive analysis of literary communication processes. First of all, we will not go into the specific problems involved in literary text production at this time, but rather focus attention upon the reception side: perception, reading, comprehension/interpretation, memorization, etc. Moreover, we will further restrict our discussion to processes of *understanding* and *memorization*, and leave out the emotive, evaluative and attitudinal aspects involved in literary reception. We have suggested above that we should first know something about comprehension before we can say anything about evaluation. We will pay only brief attention to the links between these important aspects of literary communication. Finally, it is impossible to deal in detail with all the cognitive processes which are relevant in reading and understanding a (literary) text: so we will pay attention primarily to the *semantic* aspects of the literary comprehension processes. This is exactly the area which was traditionally called "literary interpretation." We think that a cognitive analysis can shed some light on, or make explicit, the various problems of this kind of literary interpretation. Thus, one problem we should try to solve is that concerning highly ambiguous, vague, or incomplete sentences which may occur in some kinds of literary texts: how are they actually understood by readers? We can see that instead of a *normative* approach ("what should readers do in interpretation") we are advocating an empirical approach ("what do readers *actually* do when reading literature").

2. COGNITIVE PROCESSES IN DISCOURSE COMPREHENSION

There has been increasing attention in the last few years to the cognitive processes involved in the comprehension of discourse. Whereas psycholinguistics and experimental psychology were originally interested mainly in the cognitive processing of words, phrases and

sentences, first from a syntactic and later from a semantic point of view, we are now witnessing an extension of this earlier research towards more complex units of information. Psychologists and scholars working in the field of so-called “artificial intelligence” have, for instance, become interested in the ways a story is understood and represented in memory. In this section we will briefly summarize the main issues of this development. For details we must refer to the many books and papers which have appeared in the last few years on this topic. Our survey will in part be given in the perspective of our own theoretical and experimental work on discourse structures and cognitive discourse processing.

A first, basic aspect of discourse comprehension which has been emphasized in the psychology of discourse processing, and of complex information in general for that matter, is the *predominantly semantic* nature of the processes involved. Understanding a text basically requires that a language user, i.e., a hearer or reader, assigns a semantic structure to the respective units of the text. He thereby gradually constructs a semantic or *conceptual representation* of the text in memory. Thus, the variety of “surface structural,” e.g., morphophonological and syntactic, information in the text is “translated” or “transformed” into meanings which are cognitively represented in terms of “concepts.”

This cognitive process of conceptual comprehension takes place in several subsequent phases and at several levels. Crucial in the respective phases of discourse comprehension is the role of *memory*. Usually we make a theoretical distinction between short term *memory* (STM) and long term memory (LTM). Short term memory, which has limited capacity, is the place where all incoming information from our various senses is analysed and interpreted. In discourse comprehension this means that in short term memory we analyse sound sequences as phonemes, morphemes and syntactic structures (of a particular language) which we assign conceptual meanings. The difference with an *interpretation* as it is specified in a grammar is that in actual comprehension these various processes of analysis and interpretation may take place in strategically varying order. Thus, our knowledge or expectations about the meaning of a word, phrase or sentence may determine their syntactic analysis. Short term memory, apparently, functions as a so-called working memory: perception, understanding, thinking, etc., takes place here. Long term memory, however, is the storage room where the information from short term memory eventually is deposited. Although much information gets stored in this way in LTM this does not mean that we can actually remember all the information, because recall or recognition of information depends on processes of retrieval. In fact, most information which is stored in LTM, after processing in STM, can never be retrieved. An important

example of information mostly “forgotten” in this way are the various surface structures of a text. We are hardly ever able to remember the precise verbatim structure of the sentences or texts we have heard or read. Even after several sentences we are no longer able actively to recall a sentence we have read minutes before. In fact, it is also unnecessary: as soon as we have understood such a sentence, i.e., by assigning a conceptual meaning to it, we no longer need the surface structure information. We will see in the next section that this fundamental property of language comprehension may be challenged in some kinds of literary communication.

We have seen that a text is gradually assigned a conceptual meaning in STM. Since STM has limited storage capacity, this process must take place in several “chunks.” We do not simply “read in” a whole sentence, let alone a whole text, and start to assign it a meaning in STM. Cognitive interpretation (=comprehension) begins right away, and as soon as the storage capacity of STM requires it, the resulting conceptual information is transported to LTM. In other words, if we assume that a sentence is interpreted as a *sequence of propositions* we must take into account that such a sequence is stored in LTM as soon as subsequent sentences have to be interpreted.

Typical for discourse comprehension, however, is the general requirement that texts must be assigned *coherence*. This means, among other things, that the respective sentences of a text should be (semantically) connected. In order to do this in STM we must assume that a previous sentence, or rather its underlying propositions, are still available in the storage room (the “buffer”) of STM, so that they can be related with the propositions of the actual sentence being interpreted. This whole *process is cyclical*: as soon as new information is put into the STM-buffer, and as soon as old information is no longer necessary for immediate coherence establishment, the old information will, at least in part, be stored in LTM. From there it may eventually be called back as soon as it is needed (if it is stored in such a way that the information can be retrieved at all, of course). Information from a previous sentence must remain in STM in order to establish semantic coherence, we said. This involves, for instance, certain *conditional* relations between propositions (e.g., causes, reasons and consequences). Similarly, we may want to “keep in mind” that the main participant(s) of a *fact* denoted by the previous sentence also appears in the fact denoted by the actual sentence. If this were not the case we would not be able to give a quick interpretation of pronouns for instance.

The kind of semantic interpretation of discourse we are dealing with here will be called *local*: it involves the interpretation of sentences and the establishment of coherence relations between successive sentences. In discourse comprehension, however, we also have a process of *global* interpretation. Such a global interpretation is necessary in order for the

reader to be able to establish the theme, topic or gist of a text or a passage of a text. That is, when he is reading and understanding a sequence of sentences of a text, the reader will know or try to know what the sequence, as a *whole*, is about. This kind of global interpretation is made explicit in terms of *semantic macro-structures*. Such macro-structures are also sequences of propositions, but at another level of interpretation. Thus we may represent, at a global level, the semantic content of a story about John's trip to Mexico by one (macro-)proposition "John made a trip to Mexico." We are able to do this by a series of specific semantic operations which are called *macro-rules*. Such macro-rules *organize* and reduce the complex propositional information of a text. They allow us to reduce thousands of propositions to a few (macro-)propositions. These macro-propositions represent the "same" facts, but only at a more "distant" or more "abstract" level. The various macro-rules operate as follows: from a sequence of propositions they will first of all delete propositions which are (thought by the reader to be) irrelevant for the interpretation of the rest of the text; secondly, they will try to *generalize* sequences of propositions in terms of one more general proposition (with the help of a "super-concept," e.g., "pets" instead of "dog," "cat," "canary," etc.); third, a macro-rule will try to keep together propositional information which represents the various aspects or events of a socially well-known episode, and then substitute the various propositions by one proposition representing this episode as a whole, e.g., "John made a trip to Mexico" for all the propositions describing the respective actions of this trip. This latter rule is called a rule of construction. It is possible to apply this rule only when we have a certain *knowledge* of the world: we must know how to take a plane, get to the airport, etc., because if we do not have this knowledge about social episodes we can not know what global episode is represented at all; as a result we cannot construct a macro-proposition.

In cognitive processing the formation of macro-propositions, by applying the various macro-rules, takes place in STM at the same time as we interpret the respective sentences of a text. That is, we are often able to *locally* connect such sentences only if we know what the *global topic* of the text or the passage is. We now see that in the cyclical process of local discourse comprehension we should assume that the STM-buffer not only contains information from the previous sentence, but also the macro-proposition which is "valid" for this stretch of the text.

We should even assume that because macro-propositions can only be formed on the basis of our *knowledge of the world*, STM must also, at least momentarily, contain propositions which come from this knowledge of the world as it is stored in LTM. In fact, even for the local connection of sentences we often need knowledge from the world

in order to establish coherence: when we read *John showed his ticket to the girl at the check-in counter*, our knowledge about taking planes must provide us with the information that at an airport there are check-in counters, that we usually have a ticket for this kind of transport, and that we must show our ticket to somebody occupying the counter, etc. That this kind of knowledge is cognitively present is also grammatically signalled by the definite articles in this sentence. The knowledge of the world we have in our LTM is so voluminous that, in order for us to use it in an effective way, we must assume that it is highly *organized*. One of the organizational principles we just witnessed is that of conventional *frames*, i.e., a set of propositions about some social episode, such as taking a plane or eating in a restaurant. Such a cognitive frame allows us to effectively take part in such episodes, to correctly interpret events and actions in such episodes, to derive necessary expectations about what may or will happen, and finally to understand discourses about such episodes. Thus, a text for us is comprehensible, in the last analysis, if we understand which facts denoted by the sentences of the text may “belong together” according to our knowledge of the world. In the same way we have organized knowledge about the structure of chairs, rooms, horses, towns and faces. In other words, all cognitive processes, including discourse comprehension, are based on our knowledge system as it is orderly stored in LTM

Besides the local and global semantic interpretation of textual sentence sequences, a reader will finally also try to assign so-called *schematic super-structures*. A typical example of such schematic structures are *narrative structures*, which are expressed in stories. Note that such structures, which consist of a hierarchical sequence of schematic categories (e.g., Setting, Complication and Resolution, etc., in a narrative), are independent of the semantic structure of the text: a story may be about nearly anything and still be a story. There are only some semantic constraints for the various schematic categories. These constraints operate at the global level of macro-structures: a Resolution, for instance, may require that a *passage as a whole*, hence a macro-proposition, denote a specific action by a human being. Other schematic structures are those of an argumentation or of a psychological paper. The classical example in literature, for instance, would be the segmentation of tragedies in various “acts,” which more or less correspond to the basic categories of narrative. In the process of reading and comprehension, the reader will thus try to use the (e.g., narrative) schema in order to *organize* the macro-structure of the text. The macro-propositions may fall into the slots of a conventional schema.

With this last example we have noticed again that reading and comprehension, at various levels, involve basically the assignment of

various *structures*. This is a fundamental aspect of any kind of information processing. As soon as we are able to structure information we reduce the difficulty of processing it: we organize the information into respective “chunks”; these chunks may then be linked to other information chunks in memory, etc. Thus, it is easier to read, comprehend and memorize a sequence of words when it has a syntactic sentential structure. The same holds when we organize sequences of sentences by relations of coherence at the local and the global level. And finally, we organize the macro-structure(s), that is the respective themes or topics of the text, not only by the usual linear coherence links, but also by a schematic super-structure. Since this schematic super-structure is conventionally known by the language users of a certain socio-cultural community, it is easy to handle such schemata in the production and comprehension of discourse.

The fundamental principle characterizing the next phase of discourse comprehension, namely *the storage of textual information* in (long term) memory, is that this storage takes place in terms of the structures assigned to the text during comprehension (in STM). In this way, each piece of information, e.g., each proposition, has its own *structural value*, which may be measured in terms of the number of structural relations it has with other propositions, with macro-propositions, or with schematic structures. Of course, these links between propositions not only hold for the information of the text itself, but also for the information which was already stored in memory or which comes from an interpretation of the communicative context. Thus, when we read about John making a trip to Mexico, the information picked up from the text is also linked, as we saw, to our general knowledge about plane trips, as well as with our knowledge about Mexico, our knowledge about John, and our *interests, opinions, attitudes*, etc., towards this kind of information. The cognitive state of a reader, in which all these factors play a role in the comprehension and storage of information coming in at a particular moment, will be called the cognitive set of the language user. This cognitive set is contextually variable: in another situation the reader may have different knowledge, opinions, wants, attitudes, etc., and this will affect the ways the information is understood and linked to (other) information in memory. Similarly, different readers will have different cognitive sets. This explains that there may be variations in the ways readers understand and store the same text, although in communicative interaction there will, of course, be a minimal conventional identity in these interpretations; otherwise communication would be impossible. Depending on the cognitive set, readers may therefore also construct different macro-structures, that is assign different topics or themes to a text. What is *important* or *relevant* in a text for one reader, may be less so for another.

The *representation* of a text in memory is thus a complex conceptual structure, which is both internally and externally organized by various structural links. It should be stressed that the final representation is the result of a number of *transformations*. A first set of transformations has already been mentioned, viz., the macro-operations, which delete, generalize and construct propositions at various macro-levels. But, due to our general knowledge and other factors of our cognitive set, we may apply all kinds of other *deletions*, *permutations*, *additions* and *substitutions*. Thus, we may add to the representation of the text all kinds of information we already possess about an episode or objects denoted by the text.

If we now consider the final phase in discourse processing, viz., *retrieval* and *reproduction* or use of the information in memory, we notice that indeed the structural organization of the representation of the text is absolutely crucial. The general principle is that information with higher structural value can be better retrieved from memory than information with a lower structural value. We all know, for instance, that when we read a text, we will in general be unable to retrieve all the respective sentences or propositions from the text. Roughly speaking, we will remember what was important or relevant (for us) and will only occasionally remember details. After some time it will be more difficult to retrieve even such details. It has been shown in various experiments that the macro-propositions, which represent the "most important" or "most topical" information of a text, are best and longest retrieved. We now are able to explain this by the fact that each macro-proposition will be higher in the hierarchical structure of the text representation, which implies that such a macro-proposition has a high structural value due to its many links with (i) the micro-propositions from which it is derived, (ii) other macro-propositions and (iii) schematic categories (e.g., of narrative structure). Details, on the contrary, may only be linked with one preceding or following proposition. If however such a "structural detail" is linked with much information in our cognitive set, e.g., a certain task, interest, attitude, value, etc., this detail may nevertheless become "salient," and be easily retrieved.

If we ask subjects in a recall experiment to reproduce a text they have read they will, thus, primarily produce the schematically organized macro-propositions of the text, as well as some "striking details." Of the original 200 propositions of a certain story, for instance, they will in immediate recall merely reproduce between one-fourth and one-half of the original propositions, including most macro-propositions and all kinds of (otherwise) transformed propositions. After some months they will only remember the macro-propositions and have forgotten most details. That is, in discourse comprehension we will mainly pay attention to the global

theme or topic, and these will also be remembered best and longer than most details. After very long delays, however, even these macro-structures will disintegrate.

We now have a rough picture of some of the main processes and principles of “normal” discourse comprehension. Let us now see how all this takes place in literary discourse comprehension.

3. LITERARY DISCOURSE COMPREHENSION

The processes and principles of discourse comprehension discussed in the previous section have a *general* nature. That is, they characterize complex semantic information processing of any kind. This means that, *in principle*, they also hold for literary discourse comprehension. In other words, our cognitive mechanisms will simply not allow us to understand discourse or information in a fundamentally different way. In this respect we should emphasize that literary discourse and literary communication generally will follow the principles holding for any kind of discourse and communication, and, therefore, we strictly deny the completely “specific” nature of so-called “literary interpretation” as it is normatively postulated in traditional literary scholarship.

This general principle, in the analysis of processes of literary discourse comprehension, does not imply that it would not make sense to search for some particular aspects in the ways the general procedures are *applied* or *used* in the interpretation of literary discourse. This is not, or at least not primarily, due to possible specific structures of literary texts, but rather to the pragmatic and socio-cultural functions of literature in communicative interaction. That is, many kinds of literature, e.g., novels, will not exhibit structures which would require different semantic processes of comprehension. Whereas certain literary texts, e.g., certain forms of modern poetry, which do seem to have such structures, may share such structures with all kinds of non-literary texts, such as advertisements and everyday conversation. To put it bluntly: semantically speaking, there is as much semi-grammaticalness or semi-nonsense in a poem as there is in our everyday talk. Common to both types of discourse is the fact that a reader or hearer will try to “make sense out of it.” The pragmatic and socio-cultural context, however, may be different: the poem is produced, read and understood as a speech act which need not have the usual “practical” pragmatic functions, such as a (real) assertion, question, threat, or promise in our everyday conversation, but may have only or primarily a ritual function. In that respect the poem, just like the novel, but also the joke or various kinds of word-play, stories, etc., in non-literary communication, functions in a context in which the speaker-writer primarily intended to change the evaluation set of the reader with respect to the text (or its various properties) itself. This does not mean, of course, that the literary text may not function

indirectly as another kind of speech act, e.g., indeed, an assertion, a threat, a promise, a congratulation, a question, a request or a protest. Finally, this specific pragmatic function of literature as a kind of ritual speech act is further specified by the *socio-cultural context*, defined by the specific participants and their various roles or functions (writers, readers, reviewers, teachers, historiographers, publishers, booksellers, etc.) in literary communication processes, and the specific institutions, actions and conventions which characterize the various *social frames* in which literature is used (the class-room, the literary conversation, the newspaper, the textbook, etc.). It is this socio-cultural background which establishes for each culture which discourses *count as*, or are accepted as, ritual or, more in particular, as “literary.” It is the same background which determines our social behaviour in our “interaction” with literature: the way we should be interested in it, evaluate it, buy it, read it, understand it, and talk about it (and about our understanding of it).

For our discussion this means that the specific socio-cultural context in which (our kind of) literature functions may require specific ways of reading, comprehending and using discourse. One of those conventions was already mentioned above: in literary communication the discourse does not, or should not, have a primarily *instrumental* character, e.g., in the framework of speech acts of which the basic *purpose* is defined in terms of changes in the knowledge, wishes and actions or hearers/readers with respect to extra-textual facts: a state of the world, an action, an opinion of the speaker, etc. This leads to the well-known intuitive adagium that in literary communication (and in ritual communication in general), the attention, or *focus of interpretation*, of the reader is “on the text itself.” We should now try to make this principle more explicit by investigating what its cognitive basis might be.

First of all, this cognitive basis of literary communication pertains to the pragmatic and socio-cultural contexts themselves: a reader *knows* what the typical frames, conventions and actions are which characterize literary communication. Thus, besides an interpretation of the text, the reader will be obliged to interpret the social situation, thereby constructing the specific (pragmatic) context required for adequate literary (ritual) interaction. The cues used in this pragmatic interpretation process come from various sources: (sub-)titles of the book/discourse being selected for reading, knowledge about “literary writers and publishers, the specific social context frame (home, school, etc.) involved, etc. On the basis of this information, the reader knows that possibly the kind of speech act to be performed is ritual. He will therefore *expect* a number of specific properties of the discourse and the writer: he expects that the writer’s primary purpose will not be to inform him about “the world” as it is, nor will he have specific

intentions regarding the wishes, opinions or actions of the hearer connected to this specific knowledge of the world. In other words, the contextual constraints of ritual communication induce a specific *cognitive set* in the reader. This cognitive set will determine the ways in which the text is analysed and interpreted. One of the factors of the cognitive set, for instance, is the specific *task* or *problem* the reader has when reading a text. Thus, a reader may, in general, have the task of detecting a certain theme. But he may also be required to focus attention on certain words, grammatical constructions or spelling, as is the case for a student of grammar or style, a proof-reader or a subject in a psychological experiment. This kind of task will be called *non-normal*, because it does not focus on the global semantic and pragmatic themes (macro-structures) of the discourse, as is the case in everyday conversation and printed discourse in the newspaper, in a manual, etc., where the information from the discourse is used for further (inter-)action. In other words, in certain kinds of communication our cognitive set may induce non-normal ways of analysis and interpretation. This may, for instance, involve a kind of *selection* mechanism which in STM picks out the specific information as required by the cognitive set schema defined by the particular task. In this way it is possible to select not only semantic information, but also surface structure information of various kinds, e.g., certain phonological structures (rhyme, alliteration, metrical schema, etc.) or syntactic operations of a rhetorical or stylistic nature (parallelism, inversion, semi-grammaticalness, etc.).

The problem in this case is the further processing of this kind of specific information. We have seen that in most kinds of non-literary communication, surface-structure information is not consciously processed and as such stored in memory, because it will very rarely be needed in later retrieval processes. Moreover, we have no way structurally to connect this kind of surface structure with other information from the text or in our knowledge. Hence, the tendency will be that our memory and processing resources are able only in a very restricted way to store and retrieve these kinds of surface structural information, even if the communicative conventions require specific attention on such structures. Thus, no normal reader of literature will be able, after reading a literary text of some length, to reproduce it verbatim. He will not even be able to *recognize* most of the sentences used in the text, even if *locally* he paid particular attention to them. Only occasionally, viz., as a so-called *salient structural detail*, the choice of certain words and a syntactic structure may be recognized or even recalled. Of course, this recall threshold may be lowered by processes of rehearsal. If we read a (literary or any kind of) discourse several times, our memory for (surface) structural information may be extended, at least in short delays. This kind of

enhanced capacity for surface structures depends on the particular structural salience of particular sentences or sequences: if we find them unique, beautiful, etc., they may be assigned specific values in memory – due to the evaluation set providing specific evaluations in our cognitive set – which means extra structural links for those sentences, and hence enhanced retrievability.

This explanation of the possibility of processing specific kinds of information from texts also explains *why* most poems are relatively *short*, a question we seldom ask when we talk about poetry. As soon as we need extra memory resources for the processing and storage of (surface) structural information, memory for those particular words, phrases, sentences – and the various phonological, graphematic, syntactic operations based on them – is possible only when the amount of information is rather low. And, for the same reason, literary conventions require that poems are read more attentively, more repeatedly (learned by heart), than for instance novels. In longer poems or in novels we will, in general, expect or require additional forms of organization, e.g., a narrative schema and, of course, themes and topics at a more global level. Typical for many kinds of poetry, then, is that the kind of predominantly *local* processing allows a lower organization degree at the global level. Although we may perhaps assign one fragment of a *global* theme (a “theme concept,” such as “life,” “death,” “love,” “misery,” etc.), it is not always possible to normally summarize a poem in the same way as we can summarize the global meaning of a novel by its “plot.” This means that a poem may well have no macro-structure, because its processing is (i) short term, (ii) surface structural and finally (iii) predominantly locally semantic.

This latter point brings us to the *specific semantic* properties of literary discourse processing. Apparently, some literary texts do not have a semantic macro-structure, or only a very fragmentary kind of macro-structure. In certain kinds of poetry this “lack” of global coherence may be counterbalanced by specific semantic processing at the local level. It may be the case, for instance, that (i) surface structure cannot easily or unambiguously be translated into propositions and (ii) that these propositions from the respective (semi-) sentences cannot easily be connected by explicit conditional relations (involving e.g., identical referents), or by propositional information drawn from memory. This is possible only when the reader has enough time, resources and attention to “decode” the sentences and local sentence connections anyway, e.g., by neglecting the construction of the global theme of the text.

The first cognitive task, then, for a reader of this kind of poetry (or specific kinds of prose), is to arrive at a semantic interpretation of the sentences of the poem. This may be difficult because of possible semi-sentences, categorical violations, etc., and because there is no

redundancy or contextual information – as is the case in the interpretation of semi-sentences in everyday conversation. In this way the usual interaction between syntactic and semantic structures in comprehension may be partly blocked, which may lead to *partial comprehension*. In this case various strategies may be applied by the reader. First, he may leave the partial interpretations as such (the “wait and see” strategy) and try to find information in the rest of the text which supplies possible missing links. This information may also be supplied by a full or fragmentary macro-structure. The latter possibility will especially be applied when more or less appropriately interpreted sentences cannot be directly connected. In that case they are linked together only macro-structurally and not locally, e.g., by a common concept. The second strategy is to consider the partial interpretation as a basis for *free interpretation sets*. A free interpretation set is a set of possible meanings of which the partial meanings are compatible constituent parts. The personal variation of interpretations of this kind may, of course, be very high, but due to the basic pragmatic and socio-cultural principles this personal variation is not prohibited because it does not lead to conflicts in the future (inter-)action of the reader. We know this kind of strategy, which sometimes is even normatively required, under such terms as “ambiguity,” “polyvalence,” etc., in literary interpretation. A third strategy is more restrictive and requires that the reader with the help of the partial interpretation nevertheless tries to find “the” meaning of a sentence or sentence sequence. This task is very much in the nature of a *problem solving* task, because no immediate and obvious complete interpretation is available from the text (other sentences and macro-structures) or the context (knowledge about the world, about the author or other texts of the author). The semantic search strategy in this case requires checking off various meanings from the free interpretation set for possible local and/or global coherence with the text. Of course, it will not always be the case that a reader thus, e.g., by exploring association sets, will arrive at the assumed intended meaning of a sentence, but he will at least make a hypothesis about the *best possible fit* of an interpretation. Something similar takes place in the interpretation of metaphorical expressions in the text, a specific cognitive problem which we cannot go into here.

Although it has been argued above that the cognitive interpretation of certain kinds of poetry is predominantly local, the various possibilities of partial interpretation at this local level may require that the poem is also, or even exclusively, interpretable at the *global* level. That is, the sentences in relation to each other do not make much sense (coherence), but as a whole they clearly express or imply one or more common (fragmentary) macro-structures, that is a “theme” in the traditional sense of that term.

The cognitive interpretation of narrative prose has quite different properties. With the exception of certain kinds of modern prose, the interpretation of sentences and sentence connections will seldom be partial: at the local level we mostly know what the story is about. However, the general communicative principles of literary (ritual) discourse exposed above still allow (modestly) enhanced attention to surface structures and local structures in general, such as specific stylistic variations (choice of words, sentence complexity, sentence connections, etc.). As for reading poetry, these processes may lead to local evaluations (possibly determining local “pleasure”) of the text, which may be part of the normal literary conventions. It will often even be claimed that precisely this local level processing is the specific difference between literary (or ritual) and non-literary (natural) stories, but this claim needs empirical verification: it may well be that our “pleasure” in hearing everyday stories is also determined by the local “style” of the story.

The complexity of (literary) narrative, however, requires that semantic processing also take place at the global level: the formation of macro-structures is necessary, otherwise we do not know what the story is about. In principle the same macro-rules operate as for other kinds of discourse. Yet, again at this macro-level, interpretation may be partial. It may be the case that the respective sentences (propositions) do not unambiguously define a specific (set of) macro-proposition(s): the reader does not know exactly what the story is about, or may assign several (free) global interpretations. Yet, in order to understand the rest of the text, it is necessary that at least a hypothetical, possible macro-structure be constructed; otherwise complete cognitive incoherence may result, at least at the global level. The reader will then either be forced to local interpretation only, or be satisfied with a partial global interpretation, e.g., a “theme” or “atmosphere” or global description of a discourse agent.

Finally, it may be the case at this level of semantic interpretation that the *conditional logic* of the text is disturbed: certain propositions or sequences may have been expressed in a *transformed* order – without the usual indications of flash-back, previewing, etc. In this case the reader also has a specific problem-solving task, viz.. *semantic reordering*, according to most probable conditional links between (macro-)propositions. This is necessary because the coherence interpretation of a text is determined by a conceptual (re-)construction of the sequences of events and actions represented. Hence, the reader is required to retransform the text into a *normal semantic* ordering of same kind.

In narrative this kind of semantic transformation and its cognitive interpretations will usually be accompanied by *transformed schematic*

(*super-*) *structures*, e.g., a Resolution at the beginning and the Setting and Complication later in the text. Also, here the reader will tend to restore the canonical schematic order as it is stored in his general discourse knowledge in his memory. These kinds of semantic and schematic transformations not only involve reordering (permutation), but may also involve deletions of various kinds, as is the case at the sentence level. A novel may have no (expected) “end,” that is a normal category of “Evaluation” or “Coda.” The same semantic strategies as described above will be applied in this case: the reader will search for one likely missing (macro-) proposition, or just be satisfied with a free interpretation set.

These various kinds of surface structural, semantic and schematic processes operating in the interpretation of literary texts also have their specific consequences for *memory* and *recall*. We already indicated above that memory for surface and local (stylistic, etc.) structures is limited. The paradox of this fact is that our memory for literary discourse will first of all affect those properties which are usually considered to be of primary importance in literary communication: we will tend to recall of a novel its global plot, and not (each of) the stylistic surface structure manifestations of the story at the local level. At most we have a *global* memory for the major stylistic properties, or incidental memory for *salient detail*. We might say, then, that in literary processing, more than in other kinds of communication, cognitive comprehension, storage, rehearsal, and memory (and reproduction: i.e., telling about it), is geared towards the assignment of relevance of salient detail. This is possible only by additional resources (attention), rehearsal/repetition (even in the text), and the structural link of such detail with personal experience of similar events, evaluations, etc.

4. CONCLUDING REMARKS

It has been shown in the previous section that a number of well-known properties of literary communication can be formulated in terms of the cognitive processes determining discourse comprehension. We have also seen that in literary comprehension we have a number of interesting properties, involving interpretations of incomplete structures, semantic transformations, lack of local and/or global coherence, and schematic transformations.

Clearly, our discussion has been highly informal and incomplete: we have barely scratched the surface (and this is not merely a “conclusion” formula for a scholarly paper). Research in the area of discourse comprehension has just begun, and similar research on literary discourse comprehension is virtually non-existent: there are no theoretical models and only very few tentative experiments about our actual understanding of literary discourse. It was merely our aim to

indicate briefly what the general cognitive information processes are which also, in principle, play a role in understanding literary texts, and at the same time to suggest where *additional* processes might be involved. This latter remark does *not* imply that similar processes do not play a role in the comprehension of other kinds of discourse: style and rhetorical operations at all levels occur everywhere in language use. This means only that our general model of discourse processing should be *refined* to handle the analysis, comprehension and memory storage of such specific structures. The same holds for the various *effects* of these processes on opinions, evaluations, and attitudes.

5. BIBLIOGRAPHICAL REMARKS

For further reading about the various notions, principles and cognitive models from psychology used in this paper, the reader should consult Kintsch (1974), Meyer (1975), Just & Carpenter (1977), Freedle (1972). For my own work in this area (partly in collaboration with Walter Kintsch see, e.g., van Dijk & Kintsch (1977), Kintsch & van Dijk (1978), van Dijk (1977a; 1978). Although this work is mainly about the specific aspects of discourse production and comprehension, it should be recalled that it presupposes psycholinguistic and psychological work on language production and comprehension, e.g., of sentences. For a recent survey of this work the reader might consult Clark & Clark (1977). Given the importance of knowledge (frames, etc.) in discourse comprehension, the reader should also consult Bobrow & Collins (1975), Schank & Abelson (1977). For other kinds of applications of psychology in literary studies, cf., e.g., Poetics VII, 2. For a general textlinguistic background, cf. van Dijk (1977b).

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