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**Helmut Hauptmeier, Dietrich Heutsch
& Reinhold Viehoff**

**LITERARY UNDERSTANDING
FROM AN EMPIRICAL POINT OF VIEW**

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LITERARY UNDERSTANDING FROM AN EMPIRICAL POINT OF VIEW

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Summary

This paper is a report on research into literary understanding. The authors attempt to outline a model of the process of comprehension by discussing basic issues from a perspective that focusses on theoretical and methodological aspects as well. An interdisciplinary and empirically oriented framework is advocated as an approach to a deeper understanding of understanding.

Zusammenfassung

Forschungsergebnisse zum Literaturverstehen als Prozeß werden vorgestellt und diskutiert. Methodologische Fragen stehen dabei ebenso im Mittelpunkt wie Probleme der Modell-Konstruktion. Das Verstehen von Literatur wird als ein Objektbereich betrachtet, der interdisziplinär zu bearbeiten und konsequent empirisch anzugehen wäre.

Literary Understanding From An Empirical Point of View

Helmut Hauptmeier, Dietrich Meutsch & Reinhold Viehoff

1. Preliminaries

1.1. Hermeneutics on understanding

Recent studies in understanding the understanding of literary discourse are still, for the most part, hermeneutical ones, spiraling up and down the meander of the circle of understanding. The spiral approach to understanding has, however, generated as many problems as hermeneutical readings have been constructed. In their investigations and reflections hermeneuticians routinely ask the texts what they mean, intend, and stand for. This, in turn, has yielded as many answers as there have been questions, depending on the personalities and attitudes of the interpreters. Some scholars, who are sensitive to the internal intersubjectivity of such a scientific process, have therefore started to advocate the abandonment of the hermeneutical understanding and its deceptive practices and scientifically dubious outcomes. They have urged members of the scientific community to relate their personal understanding to a kind of meta-reflection or meta-discourse about the socio-historically and acquired frames, presuppositions, and interests that shape the process of the personal understanding of any literary text. Nevertheless, those hermeneuticians who first took such a critical perspective towards their understanding of a text or a socio-historical context have not yet provided any plausible solution to the main problem: the (home-made) problem of the adequate, correct, and objective reconstruction of the meaning of the text. In fact, the source of the crisis of literary studies is not the lack of subjectivity in speculations about higher order processes of understanding but rather the lack of empirical research on more basic processes.

About a decade ago, several scientists proposed a new approach to studying the problem of the author, the textual work of art, and the reader from a combined perspective. Following the new theoretical framework of the literary text as an object produced by an author and to be constituted within the act of reading, literary studies were expected to defocus the artwork by referring to those three theoretical cues at the same time. The gradual, yet crucial, growth, put forward by that progressive change of perspective, established new domains like Trivialliteratur (light fiction), Leserforschung (reader research), Medienwissenschaft

(media science), and others. The object to be investigated had not only become larger but also different in character. As a relational object, the text had to be treated with respect to contextual (reader, situation) factors. At the beginning of reception theory and reception research, however, scholarly work still stuck to the usual tools for getting results, i.e., to reading and interpreting on the assumption that contextual, functional factors could be found within the texts. The theoretical framework and above all an empirical methodology thus developed rather slowly. The starting point for an empirical orientation, however, had been created.

Although this new empirical orientation in literary scholarship had been propounded in opposition to traditional hermeneutics, the reception research movement itself was entangled in many difficulties. It is not our task to trace all the causes and events which left a mark on literary scholarship and its development. However, without mentioning some of the more decisive influences, it would be hardly possible to understand what happened to the study of literature at that time, at least in Germany.

Remember, for example, the student's movement in the late sixties and its direct influence on the Germanistentag held in Berlin 1968. A striking instance of a radical confusion between the two modes of procedure in literary studies (one politically and the other non-politically oriented) had occurred. As a result the humanities grasped the impact and importance of implicit political and critical ramifications linked to the object of their scientific interest. It is important to note as well that politicians reacted to the so-called educational crisis in West Germany by founding new universities. This, quite naturally, facilitated new perspectives and new paradigms in the academic discussion which had been dominated by outstanding but orthodox scholars before. One of the most notable influences on literary studies came from linguistics and its development. In our view one can hardly underestimate the productivity of linguistics for literary scholarship, concerning e.g. the intersubjective standards of theory construction and methodology in linguistics. Generally speaking, this and many other circumstances cultivated the academic landscape and prepared it for a very specific seed: a non-hermeneutical, Empirical Study of Literature.

1.2. A strong intrinsic motivation for the development of an empirical perspective in literary studies was the experience that the discovery of the reader, as a prominent and important object for theoretical reflection and practical interpretation, did not dissociate the hermeneuticians from their traditional domains. And soon it became obvious that literary scholars could not be won for a paradigmatic turn that easily. Such a pessimistic experience and attitude was even nourished by the development of the main strand of reception aesthetics following especially the ideas of Hans Robert Jauß and Wolfgang Iser. The primary interest of all of those investigations into the reader was directed by a more or less subjective description of the

reader in the text, the ideal reader, the fictitious reader and so on. Instead of doing empirical research on the question of what the readers actually do when they understand a literary text, the new approach almost exclusively concentrated on the potential reader. This "reader", however, was the good old buddy of the traditional scholar, i.e. the literary text, that occurred in its new disguise as "implicit reader" in "empty places". Witnessing these steps towards the wrong direction, some scientists from other disciplines who were familiar with the general idea of literary scholarship decided to support the empirical research program in literature. Especially the so-called subsidiary disciplines like Psychology, Linguistics, Mathematics, Sociology, Communication research, and Philosophy of Aesthetics began to feed literary scholars with new plans, goals and interests (cf. Viehoff 1983a, 1988). In fact, these scholars advanced towards the actual reader, and consequently they devised empirical techniques and procedures for literary problems, including references to the analytical sciences in order to provide an appropriate theoretical foundation as well. Many hermeneutical ideas had to be dropped in questioning the theoretical, epistemological and methodological presuppositions of text-oriented approaches to literary studies from an empirical, scientific perspective.

So the advocates of empirical research in literary studies lost little time in creating a research program that should be confirmed by real experience and objective, i.e. intersubjective, consensual, utterances of real participants in literary discourse. So one can see that the whole process of empirization in literary studies was embedded in the ongoing conflict between hermeneutical vs. empirical, hermeneutical vs. analytical, hermeneutical vs. natural approaches. And it is not in any way surprising that these conflicting configurations thoroughly influenced the thematic turn away from the text and towards the reader.

1.2.1. Norbert Groeben's "Literaturpsychologie. Literaturwissenschaft zwischen Hermeneutik und Empirie" was published in 1972 and soon followed by his "Rezeptionsforschung als empirische Literaturwissenschaft" (1977). In his "Psychology of Literature" Groeben tried to evaluate the results and relevance of some studies which dealt with the question of how to implement empirical psychological research within the frameworks of literary studies, especially with regard to the problems of biography, creativity, and interpretation. He was one of the first to create the idea of an empirical foundation of literary studies which he worked out in the following years mainly with respect to methodological issues. He pointed out that one of most decisive obstacles to scientific methodology in the study of literature resided in the so-called "subject-object-confoundation". Studies taking Ingarden's phenomenological concept of "concretization" in terms of the construction of textual meaning on the basis of certain textual properties, not only reduce the actual variety of "concretizations" to the scholar's allegedly "objective" one, but also confound reception (concretization) and interpretation, reader and researcher. Interpretation as a scientific operation,

and Groeben does not question its necessity, is conceived of as an explanation of textual understanding to be tested for validity on the basis of reception data (concretizations).

In other words, Groeben installs the real reader by separating consistently reception and interpretation, and at the same time allows the interpreting scholar to remain in office. But from now on the scholar is now supposed to test his hypotheses on textual meaning against concretization data). And consequently, Groeben concentrated on solving at first the manifold problems of inventing and adapting empirical methods for his empirization program.

To collect the relevant data of the concretisation-process (that is the term he now prefers to describe the reception process of the reader), he adopted the direct and the indirect methods of observation well known and often applied in general psychology, in particular, the so-called paraphrasis method, content analysis, free association and recall, semantic differential, cloze-procedure, card-sorting, etc.

Although Groeben is a well known theoretician in Psychology his main topic in the discussion of establishing the new paradigm in literature is that the pivotal point can only be reached by methodical thinking and by conscious and careful application of empirical methods.

1.2.2. Siegfried J.Schmidt, his counterpart in the development of an empirical study of literature in West Germany, started his programme, called the Empirical Science of Literature (or ESL, for short), just the other way around, i.e. with theoretical considerations. Being a philosopher in the first place, he initiated his project with contributions to the debate on how to turn literary studies into a scientific, rationally arguing discipline (see his "Literaturwissenschaft als argumentierende Wissenschaft" (1975)). As text theory was the other domain to which he contributed substantially (see his "Texttheorie" (1973)), it was not a big step towards developing a radically new paradigm for literary studies by elaborating theoretical solutions to the problems under consideration. Bearing in mind the question of a theoretical foundation for a new paradigm of literary studies, Schmidt advocated abandoning hermeneutical conceptions of literary studies and their fixation about interpretation, too. In accordance with his conviction that theoretical reflections have to be the starting point for paradigm shifts, he urged the need for a systematic, theoretical framework.

Schmidt and the research-group NIKOL at the Universities of Siegen and Bielefeld (cf. the series "Konzeption Empirische Literaturwissenschaft", edited by A. Barsch, P. Finke, H. Hauptmeier, D. Meutsch, G. Rusch, S.J. Schmidt and R. Viehoff; 1980ff) have begun to advance and test such a framework, i.e. the Empirical Science of Literature. The everyday concept of literature is explicated by the NIKOL-group as a system of human actions, the LITERATURE-SYSTEM, and not as a set of literary works of art. So the theory of literature must necessarily be based on a theory of

action and this theory in turn must be specialized towards theories of linguistic, aesthetic, and literary communication. This is a result of the pragmatic orientation and a consequence of the necessity to explicate the set of presuppositions intrinsic to the construction of a scientific theory. (For details of the structure of the empirical theory of literature and its relationship to the theories of action and communication see: Schmidt 1980, 1982; Hauptmeier & Schmidt 1985.)

1.3. Summing up, we can describe the two approaches, the Groebenian and the Schmidtian one, as designs for empirical studies of literature, emphasizing methods on the one hand, and theory formation on the other. Though both strategies lead to establishing empirical research in literature, there remains the difference that starting with theory construction and foundational efforts produces an entirely new object domain and outlook on the function and research problems of literary studies, whereas the adoption of empirical methods as the primary means to advance literary studies virtually leaves the (reception aesthetically) given conceptions untouched. The notorious problem of literary interpretation elucidates this difference quite clearly. In the Schmidtian design, interpretation is regarded as one operation among others within the literary system, that is, interpretation is an action to be studied by the researcher and not to be performed by himself as a researcher. (Reasons why interpretation is to be taken as a research object rather than a research strategy, have been given by Schmidt in abundance; see 1980, 1983). Groeben, however, merely modifies interpretive strategies without doubting their function for literary studies. He suggests to perform interpretation as a scientific, explanatory operation that needs to be tested for (historical, situational) validity against reception data.

We may call this latter approach the minimum solution to the foundational crisis in literary studies, that is, the empirization of given theories of literature. The actual research process is objectified, sophisticated, or made intersubjectively testable by adopting methods from the social sciences and techniques from statistics. That is - in a nutshell - the strategy for changing the hermeneutical approach in literary studies as proposed by Groeben. Following Schmidt, we may speak of a maximum solution based on the idea that the traditional text-centeredness of literary studies must be replaced radically by an action-theoretical foundation of a new object domain, that is, the social action system LITERATURE.

Putting the difference and the common ground together, one may say that, on the "minimum" conception, traditional research problems and object theoretical concepts are worked out under the aegis of social science methodologies, while on the "maximum" conception, new research problems and object theoretical concepts are worked out on the basis of the empirical methods brought to literary studies by Groeben's empirization programme (see also Hauptmeier 1981; Groeben 1983; Schmidt & Groeben 1987).

Yet it goes without saying that the recent development of empirical studies of literature are characterized by their common opposition to the hermeneuticians who still dominate the scientific community, at least in the humanities and especially in German literary scholarship. So from the very beginning the empirical "approaches" have tried to tie themselves up to other disciplines and to participate in their findings, too. To be successful in this interdisciplinary orientation, research in text theory, in psycholinguistics, in cognitive psychology, and in other neighbouring branches have, quite naturally, been of utmost importance to empirical studies in literature (cf. Viehoff & Meutsch 1987). And, in our opinion, many of the current models, methods, and findings of those disciplines have to be noted by the empirical "approaches" more than ever before. For example, today it is taken for granted that literary studies are faced with many more embarrassments than those which crop up from the obsessive problem of the correct interpretation of the manifold meanings of a literary text. The textual contexts, i.e. eventually the entire field of human activities concerned with text production, mediation, reception, and post-processing, are to be regarded as the problem area of the literary discipline.

So it is not at all surprising that there is a strong connection between the main strands in empirical studies and remarkable investigations in the frameworks of texttheory and cognitive science, for example. As far as today's research in literary study is engaged in the observation and description of textual contexts, its research methods must necessarily be coordinated with techniques developed within the framework of empirically oriented social sciences.

1.4. Before giving our actual report on empirical research in understanding, it seems advisable to add a few remarks on the development of Psychology in order to point out some more parallels that motivate interdisciplinary cooperation. There is, we think, more than a methodical resemblance or a one-sided connection of a methods import to literary studies. There is, first of all, a conceptional resemblance expressing itself in the mutually shared concept of processing as a constructive mental activity.

After World War II the two main strands to be found in psychology (and in logic as well) were spread out over the whole collection of ideas and activities sometimes assembled under the label of cybernetics, and over the exploitation of these ideas in artificial intelligence and information processing theories as well.

Especially the information processing models were the forerunner of the overwhelming shift from the behaviorial paradigm to the cognitive paradigm in Psychology and to Psycholinguistics. The basic ideas characterizing the cognitive approach with respect to problems of language and thinking, to problem solving and information theory, emerged in the early 50s and have paid off until today. In our view, these interwoven strands in the development of concept formation gained paradigmatic importance when they

produced a vast increase in studies concerning the constructive mental activities of subjects. As is well known, the research groups led by Bransford, Neisser, or G.A. Miller in the USA, by Berlyne in Canada, or by the Piagetian-school in Western Europe, the psycholinguistic studies by Hans Hörmann, and the staff of the ACTA PSYCHOLOGICA - Bartlett, Revesz and others -, propounded a constructivist perspective on the mental activities of human beings, the cognitive as well as the sensori-motor or pragmatic ones (see Knobloch & Viehoff 1988). Today this emergence of the human factor is obvious, and, indeed, many scientists make use of constructivism - i.e. processing is explained as subject-dependent construction - in the various fields and disciplines their works are related to. This holds true for literary problem domains as well, as one can see in the continual increase in significant monographs contributed to advancing this cognitivist, constructivist view towards the problems in question.

Now we have reached the point where we should keep in mind that the conceptions of empirical studies of literature have practically been obtained through the joint efforts of interdisciplinary suggestions, presuppositions, and interests. Surveys on recent empirical research in literary studies would, therefore, be incomplete if they did not have a look at neighbouring disciplines and their influence on the process of paradigmatic change in literary studies. At the same time, however, such a complete report about the state of the art would have to meet the (unsolvable) problem of being perfectly informed and particularly competent as to all of those interdisciplinary results one has to integrate. So the following report is not at all complete but rather restricted to the problems of comprehension or the understanding of literary texts from a psychological point of view, in particular. The question of participation and exploitation of the results of the other disciplines concerning the problem of how to construct a theoretically sound model of literary understanding, and to test this model in an empirical way, will be taken here as the central theme or an Ariadnean thread, as it were.

2. Dimensions of Research in Literary Understanding: Text - Situation - Interaction

2.1. The text factor

Today interdisciplinarity is an integrative component of empirical studies of literature that distinguish them from the monodisciplinary orientation of traditional literary scholarship. And for that very reason there are two increasing difficulties the new paradigm is confronted with. First, the different scientific and, of course, political interests of the scholars have led to a complex variety of picking up sometimes restricted questions. And second, there is a comparable variety of theories as well within such a broad research programme. As one can gather from the introductory remarks in chapter 1, the Groebenian interest in further methodological expansion and the Schmidtian arguments for further theoretical advance are obviously an example of this situation. To defuse the problem of how to design our survey in view of the fact that there are not only more or less divergent conceptions but also a diversity of findings stemming from different disciplinary backgrounds and theoretical considerations, we decided to follow the historical line of contributions to the (still developing) paradigm by tentatively subsuming them under the (systematic) dimensions of text, situation, interaction.

2.2. Complexity. Text as a basis for aesthetic values?

Following the main questions in reception aesthetics - devised by scholars like H.R.Jauß, W.Iser, R.Warning, U.Gumbrecht and others - one may observe that their concept of the vagueness of the literary text has also been highly and steadily confirmed as an important question within the framework of the empirical studies of literature. Yet there is a remarkable difference between these two approaches. The first one is based on a text-oriented hermeneutical conception and the latter an empirical one, interested in human actions. From an empirical point of view the vagueness of the literary text may be reformulated in terms of the "polyvalence-concept". This concept is related to the idea of convention-driven actions of subjects (see further explanations below). Polyvalence as a concept for explaining literary action and as a factor in cognition is, of course, not to be simply equated with the textual category of "ambiguity", "polysemy", or "vagueness". The following list of questions (which are to be tested empirically) may illustrate these matters a bit further:

- (1) To what extent are readers guided by textual components?
- (2) What is the extent to which the linguistic complexity of textual structure is combined with the reader's experience of ambiguity?
- (3) Which procedures are appropriate to elicit polyvalence as experienced by readers? The construction of multiple mean-

ings and sense within the act of reading itself, or the diversity in the construction of meanings and sense across groups of readers?

- (4) To what extent is the linguistic complexity of the text related to the reader's interest in being guided towards a delightful experience?

2.2.1. Schmidt & Zobel (1980) tried to solve some of the problems addressed in questions (2) and (4) above. They developed an experimental design which was mainly bound to the question of the reciprocal influence of two variables. One variable was defined as the complexity of the text as described on the basis of recent linguistic methods, and the other was determined as the reader's dislike to the complexity of the textual material. There was, however, no linear or in any way strong correlation as a kind of positive connection between the two variables.

This outcome was interpreted by Schmidt & Zobel within the frame of emotional tolerance of the subjects while reading a literary text. The more this tolerance increases as an attitude of the subject's literary reading the more the subject's cognitive strategy tolerates almost any degree of complexity of a text, at least so, if the subjects assess the text as a literary one. Unfortunately that group of reader was not subjected to a special research program for proving their rational cognitive activities in a voluntary way. Nevertheless, the outcomes of this study are really remarkable because this investigation has been very singular in its orientation towards text complexity and towards the reader's acceptance and tolerance of such a complexity at the same time. And with respect to results, one can regard as conclusive evidence that literariness is mostly allied with high complexity of text and yet without any strong or definite inclination on the part of the reader to stop reading and understanding.

2.2.2. Methodically Schmidt & Zobel operationalized the concept of "complexity" as follows. A text is regarded as complex for readers, if they get into difficulties in constructing a communicate about the text (i.e., roughly speaking, "communicate" means the cognitive operations a reader performs when dealing with a text). Factors impeding the construction of a communicate were determined at the levels of words (unusual or unknown expressions like archaisms, neologisms, or special idioms), sentences (e.g. ellipsis, inversions, hypotactical structures), text (unusual stylistic structures like highly redundant repetitions), presentation (e.g. non-sequential arrangement of letters, missing colons, use of small initial letters), text semantics (e.g. ambiguity of relations between intensions of text elements, ambiguity of referential frames). Missing or ambiguous narrative structures were taken as impediments to emotional identification with characters, actions, and events.

In order to confirm the concept of "complexity" by the above measures, Schmidt & Zobel tested their validity with the help of the Hamburger Texteinschätzungsmethode (Hamburger text rating method, cf. Langer, Schulz v. Thun, Tausch 1974), and they achieved a high positive correlation index for their own ratings ($.70 < r < .80$). Nevertheless one can argue that the general idea of the concept of complexity propounded by Schmidt & Zobel does not yet fully represent complexity. They account for the linguistic levels of text complexity, only (cf. Kindt 1980), and therefore they miss the operational state as a result of the subject's cognitive constructive ability which one has to presuppose.

With respect to this problematical dimension of the concept of complexity of literary texts, some recent studies by Meutsch (1984, 1987) and Viehoff (1986a,b) show some methodically stricter reflection on complexity by conceptualizing it empirically. As Schmidt & Zobel failed to introduce an experimental task to their subjects that would allow them to create a freely chosen frame of referential coherence, they missed the operational state of the complexity concept in their experimental design. And they were not able to confirm the dominance of the polyvalence convention about the complexity of the textual material in terms of statistical significance. Meutsch & Schmidt (1985) therefore tried to clarify this correlation (see chapter 4). But let the problem of complexity be ever so reluctant to simple empirical research, it should be remembered that there are earlier studies which confirm another high-ranking problem concerning literary discourse.

2.2.3. Humberto Eco (1968) speculated about the openness of the work of art. About a decade later, Norbert Groeben demonstrated that the most comprehensive and fundamental category of this openness was polyvalence (Groeben 1977, 20). The work of art is regarded as an object to be completed by the recipient its meaning to be constituted through cognitive activities. Groeben discusses three means of justifying these theses: historico-sociological, methodical, and empirical ones. Having rejected the historico-sociological arguments (cf. Jauß 1975, 315), he consults the methodical justification. He views the literary work as a constant integration of two opposing tendencies: indeterminacy vs. determinacy, certainty vs. uncertainty, norm-fulfilment vs. norm-violation, and so on. He notes, however, that highly polyvalent text experience is the most complex case and, therefore, has to be taken as the basis for literary theory. Simpler cases would not be so readily feasible. Accordingly he works out polyvalence as an influential gradation rather than an absolute quantitative standard. The novelty of this assumption might be seen in the attempt to test it by empirical experimentation based on the explanatory power of the "inverse U-function" borrowed from the aesthetics of Daniel Berlyne (1974).

2.2.4. Berlyne (1974) investigated the hedonistic value of stimulus objects according to observable preference, extent of preoccupation (involvement) and time of processing. He

concludes that a positive hedonistic value can arise in two ways: either by eliciting a not unduly strong emotional or cognitive arousal or else by releasing or reducing arousal when an unpleasantly high intensity has been attained. This process is graphically illustrated by the "inverse U-function". This curve is shown in figure 3 according to Berlyne (1974, 10).

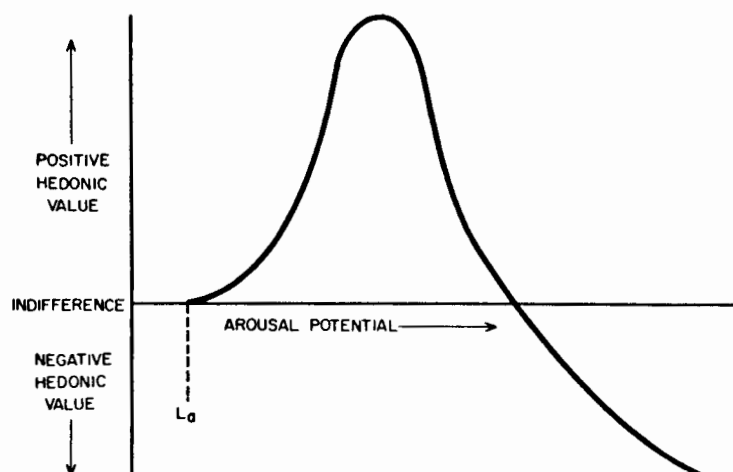


Fig. 1: : THE INVERSE U - FUNKTION (Berlyne 1974, 10)

Groeben now proposes to transform the two-dimensional inverse U-function into a three dimensional model in order to account for the processing potential of readers while receiving a text as a literary text following polyvalence in terms of a convention. He refers to a study by R.Kamman (1975) on reader preferences about lyric poetry in which cloze-procedure was used to test verbal complexity. Kamman came to believe that readers prefer a medium level of complexity according to their own individual complexity level. Groeben views this medium complexity as a factor of the necessary freedom needed for a positive hedonistic evaluation by the reader. Consequently, polyvalence is, to some degree, shown to be necessary for aesthetic experience. Up to now these are the most prevalent empirical results of the attempt to gain a more detailed insight into the operational link between the verbal complexity of textual material and the individual complexity of the cognitive processes performed by subjects when reading texts as literary texts.

2.2.5. Another attempt to deal with complexity was started by Fröh within the framework of empirically oriented media research (Fröh 1980). The result of his study can also be estimated as relevant to text oriented approaches as well. Fröh focusses the very subjective information processes as a the theoretical setting for his experimental investigation. Consequently he does not only define the complexity factor in relation to the textual material but he also induces the experimental

subjects to judge the textual factors and signals that he, beforehand, determined as relevant indicators of complexity. Due to this type of methodical thinking and designing, he was quite successful in observing and describing the arousal potential of some politically informative texts together with a strong and empirically testable reference to the respective cognitive processes of the subjects. So he came to conclude that the cognitive level of processing in understanding informative texts is, in its depth, strictly combined with the subjects' own potential for (post-)processing, with a hardly raised difficulty of the textual material relative to this advanced cognitive ability, and, last but not least, with the subjects' affinity to the main values that are expressed in those informative text (Früh 1980, 217).

Früh concludes that the empirical discrepancy between the demands made by textual structures and the subjects' mental capabilities increases only up towards a medium level, if one is interested primarily in successful communication. In the end, this justification of the communication process depends on the reader's own strategical thinking and evaluation of the patterns of contextual situations.

So Früh propounds that further empirical investigations into the complexity of textual material are necessarily to be bound more and more to the so-called interactive model of the reading process, i.e. to both the objective mode of the text and to the subjective state of mind of the reader.

2.3. Narrative structures from an empirical point of view

Some studies, orientated differently and methodically related to the literary reading process, are to be reviewed here in addition to the above mentioned research following to the "two factorial design of aesthetic value" (Groeben 1982b, 156). In some recent investigations, Faulstich and Ludwig (1981; 1985) tried to pin down the textual factor in the literary comprehension process by manipulating the very point of view of the narrator. First of all, they developed some so-called 'perspective markers' which were viewed as special textual features and settings to produce artificial, new versions of the story in question, viz. "Old Man at the Bridge" by Ernest Hemingway. These 'perspective markers' were primarily regarded as indicating a strict division of both the narrator's first-person- and third-person-perspective and, additionally, as a productive feature for partializing more elaborated and masked textual structures that depend on these different viewpoints of the narrator and on the narrative character of the novel in general. Faulstich came to believe that the results of the study must be judged as a kind of Pyrrhic victory that costs the hermeneutical background more than it costs its empirical rival, i.e. the empirical hypothesis the text-reader-interaction. This personal assessment is true because the empirical evidence for some main presuppositions of the theory of narration have not yet been confirmed by the data. Though Faulstich & Ludwig went thoroughly into the viewpoint theories (cf. Stanzel 1978) selected by them, into the questions

of how and to what extent the narrator could be fixed to the four dimensions of PERSON, NARRATIVE LEVELS (telling vs. showing; internal vs. external perspectives), DISTANCE / MODALITY, and FOCALIZATION (identity vs. non-identity) (cf. Faulstich & Ludwig 1985, 98 ff. and 111 ff.), they eventually missed their object. And this failure was not due to any deficiency or any weakness of their design or to some unsound steps of operationalization, which especially Faulstich discusses very comprehensively and frankly. So one can be tempted to consider the outcome of their study as a rejection of the general concepts of narrative theory. The result is that textual features like the difference between first-person- and third-person narration cannot be regarded as a determining factor of the reader's construction of the meaning of the text.

Faulstich & Ludwig used the textual 'markers' to generate five different versions of the original text "Old Man at the Bridge", which were supposed to have the potential to manipulate the four dimensions of the textual setting. Having subjected 800 readers to this particular research design, including various types of tasks, Faulstich himself found that "with respect to the varied versions of the text no significant distinctions of the reception process can be confirmed" (Faulstich & Ludwig 1985, 132). And he concludes - assessing this outcome according to the general importance of perspective-markers in the tradition of viewpoint theory - that no empirically tested determination of the process of concretization can be assigned to the narrative character of the story (ibid.). That means indeed that "the description and analysis of the narrative character of a literary prose text should not be regarded as an 'objective', i.e. intersubjective factor in the unfolding of the meaning of such a text" (Faulstich & Ludwig 1985, 136; our transl.).

2.3.1. In our view this study justifies the assessment that even paramount topics of traditional narrative theory within the framework of the hermeneutical paradigm do not describe the empirical structure of the "bottom-up" processes in text-reader-interaction. Presumably the textual factor must be estimated as a more problematical notion than the hermeneutical theoreticians would concede down from their ivory-tower.

Following in Faulstich & Ludwig's wake of empirical investigation, Andringa (1986) created a small but effective design by applying the methodical idea to varying only the perspective of the hero. She herself developed versions of different stories by changing the first-person and third-person perspectives of the narrator, of the hero of the novel and of his opponent. She administered these artificial versions to different groups of subjects. Due to her methodically well-reflected research design, she succeeded in confirming the hypothesis that different components of the ongoing holistic processes of literary reading and understanding are connected with the textual perspective markers centered in the personal view of any reader by more or less strong identification and evaluation as the dominant behavioural attributions (see also: Laszlo 1986; Halasz 1986). But this study

is not in any sense a salve for the hermeneutical view of text-ontological constraints. With regard to the subjective process of literary comprehension nothing, as indicated in the experimental design of Andringa's investigation, can be taken as ontological but as interactionally related only. So her result is a modification of the more general remarks on perspective-markers made by Faulstich & Ludwig before.

2.3.2. Another study dealing particularly with the question of how text processing is managed by the readers was done by Heuermann, Hühn & Röttger in 1982. This has been one of the most extensive empirical studies ever undertaken to determine empirically the various factors of textual influences on the constructivity of the reading and understanding processes in literary discourse (see Heuermann, Hühn & Röttger 1982; Viehoff 1982). In contrast to the methodical decision of Faulstich & Ludwig not to be carried away into any outrageous questioning of details, especially those details of the textual settings and structural configurations, Heuermann, Hühn & Röttger confronted their 1,500 subjects with important but portending text-oriented as well as personal questions. Before we go more thoroughly into the particulars of the methodical design of their study "Werkstruktur und Rezeptionsverhalten" (The structure of the work of art and the behavioural structure of reception processes), we have to comment on the general idea underlying the special methodical orientation of their study. Heuermann, Hühn & Röttger explicitly intended to establish an empirically tested, critical sketch of the didactics of today's literary studies. Following this goal they bump into the traditional hermeneutical emptiness of argumentation in literary didactics. In their view this argumentation deals only with the one and only true unfolding of the author's intention or even of the message itself which is to be dug out by the teacher of literature alone. Straightforwardly rejecting this main strand in today's didactics, they, nevertheless, preferred to keep an eye on the factual constraints of the reception process instead of being more careful about the theoretical lapse into mystification. As a result of such considerations they furnished their methodical design with three operationalized dimensions, i.e. the textual setting, the individual as well as sociological background of the subject's orientation in reading and comprehension, and last but not least, the reception process itself.

Setting aside critical objections to the theoretical foundation of those methodical cornerstones, it should be noted what the main question of this study actually was, viz.: What is the extent to which the subjective reception process varies even if the investigated textual material is quite the same for different subjects (see Heuermann, Hühn & Röttger 1982, 74)?

Each of the three critical dimensions was then tried to be explored in a methodical way strictly bound to the standards of today's empirical research methods. With the help of one and half a dozen literary experts, the text-dimension was explained by resorting to a specific, directed rating of the textual structures (in terms of the theoretical outline given by Lotmann, 1972).

Heuermann, Hühn & Röttger regard this procedure as perfectly qualified for the empirical construction of a fixed and steady point - first established by the experts - in order to measure the results of the different concretizations of other subjects. The subjects themselves were confronted with a systematic series of questions for the purpose of gathering detailed information about their feelings, thoughts, and associations during their interaction with the text. Later on, of course, the subjects were given a questionnaire for subjective background features they were possibly influenced by, i.e. the common sociological and socio-psychological constraints of different classes. Heuermann, Hühn & Röttger made their subjects read only two of a total of six rated literary texts, in particular those two, which were derived from extremely different macro-structural elements. So the authors worked out that there are no variables at all that depend on the subject's social background and on his or her intellectual capabilities as well as emotional states which, on other views, determine the reading process.

Or, to put it in other words: following the authors, there are no statistically significant results to confirm the opinion that the reception process is only and exclusively related to the subject's own cognitive and processing capability because this process also depends on the different textual settings that may be described in terms of text-theory.

As we said before, Heuermann, Hühn & Röttger chose the idea of a new perspective for literary didactics as the starting point for their study. They now assess their outcome as a basis for postulating some different theses. But it cannot be our present concern to go into that matter. Nevertheless, it deserves attention and careful criticism that even if Heuermann, Hühn & Röttger certainly went vastly beyond the boundaries of our own point of view and beyond previous standards of the statistics of modelling literary response data as well, their empirical methods and their results are sufficient to support the interactional paradigm as the general outline of a four-factorial model (cf. Jenkins 1979, Meutsch 1987), i.e. a model accounting for text, reader, encoding and retrieval.

2.4. Research in light fiction

Besides these psychologically or socio-psychologically orientated studies one has to consider the many contributions of other research domains to our current question. Again the question is if and to what extent the textual factor is involved in the effects of individual and social processes of literary reading. It goes without saying that there are a lot of contributions to this problem (cf. Grimm 1976; Hohendahl 1974; Silbermann 1975; Barsch et al. 1982; Groeben 1982a) but unfortunately not all of these studies in literary reception are based on or intended to be subjected to empirical testing. Nevertheless, we would like to finish our remarks in this chapter by reporting some results of research in light fiction because of the non-hermeneutical ideas those investigations have set in motion.

2.4.1. Light-fiction has become a widespread domain of literary research in general during the increasing politically orientated social movements in the later sixties. Interested in understanding and interpretation of the literary text, almost any literary scholar applied a hermeneutical framework in which he, quite frequently, interpreted his personal assumptions as given textual elements. But in the late sixties, a more strongly sociological perspective on research in light fiction research finally became tied up to all levels of argumentation and communication in literary studies. In the middle of the sixties it was Helmut Kreuzer who focused his attention on research in light fiction. His aim was to answer this question: how can we reconcile the almost always observable and efficient hierarchical structure of aesthetic values in literary criticism with an additional sociological fact: the fact that there are quite different groups of readers participating in the literary system and operating within highly divergent frames of literary evaluations (Kreuzer 1967). Dealing with the historical background from the European Enlightenment to the present day, Kreuzer corroborated his point of view (by regarding many sociological and historical studies) that in future nobody should be permitted to state that light literature must of necessity be rated and analyzed scientifically against some more or less high complexity of the literary text and a conveniently implicit poetics, and - as often done - with reference to some more or less distinctive evaluative categories of lower or higher aesthetical noblesse. The very point of his argument, however, was that those explanations must fail which rely only on text-ontological arguments. Instead of those arguments he came to believe that the relationship between special socio-historical clusters of readers, special configurations of needs and motivation structures, and, of course, special textual components and interrelations, e.g. the complexity of a literary text, can be regarded as a productive theoretical framework for further historical considerations and empirical investigations (Kreuzer 1967, 191).

Following this outline an increasing number of studies within the sociological paradigm of interactional processes considering light literature and its readers can be witnessed (cf. Fetzner & Schönert 1980).

2.4.2. In order to conclude our remarks on text factors in processing, we would like to report one momentous study published 1973, "Novels for the lower class" (Romane für die Unterschicht) by P. Nusser. As confirmed by qualitative content analysis and secondary exploration of previous empirical mass media research, Nusser argues that one has to accept the existence of a vicious circle in the field of light fiction and its reading. That is, the higher the socio-determined levels of mental orientation, of being capable to handle the embarrassments of societal surroundings, of linguistic competence, and of performance in actual communication, i.e. the higher these and many more social constraints are organized on a low state of "complexity", the lower the acceptable degree of textual complexity with reference to the received works of literary art. This result

should be judged, in our view, as a confirmation of the general idea that the concept of the "complexity" of any textual material cannot be defined without referring to an interactive model of the reader's cognitive abilities and the material surface of the text.

2.5. Conclusion

To sum up: we have dealt with a few of studies related to the problem of literary understanding, and our intention has been strictly directed towards answering the question if or if not aesthetical reading, i.e. literary reading and comprehension of a text guided by aesthetic conventions, can be explained by textual factors. Or, in other words, we've tried to strengthen the following question: can aesthetic reading be explained by textual factors only? To explain literary understanding monofactorially at the level of data is obviously insufficient. A theoretical concept that centralizes the textual factor could not have been confirmed until now. Hence the answer to the question is practically "No". Considering this sketch of the state of the art in literary understanding and its research results, the literary scholars ought to have developed a new and suitable perspective on the problem. But the first remarkable steps into this new direction owe a lot to other disciplinary schools, especially to Psycholinguistics. And this is, first of all, due to the fact that the psycholinguistic framework has almost always asked for the situational aspects as well as the personal capabilities in creating textual markers and structures as factors that determine the process of literary understanding.

2.6. The situational factor

In giving an outline of research into situational factors and in evaluating the results, one has to bear in mind that the paramount investigations are interspersed with questions dealing with genuine psychological or psycholinguistic principles. We will not go into these principles deeply but restrict ourselves to the issues contributed by those studies to literary understanding. In doing so, we will have a look at schema-oriented and strategy-oriented approaches.

2.7. Schema and strategy-oriented contributions to literary understanding

According to schema-theory (for a summary see e.g. Anderson 1978, Mandler 1984, and Rumelhart 1980), cognitive processes are influenced by specific elements of the communicative situation (in so far as the situation is perceived by the person and the elements of the perceived situation allow an adequate, i.e. socially consensual, assessment of the situation by the subject). This idea emphasizes the schemata as an interactive mode of the specific cognitive cluster of knowledge related to the situation and its personal assessment. The function of these schemata is explained as the subject's possibility and, of course, faculty of constructing almost always a suitable cognitive frame for any

text elements, and handling common problems of understanding, i.e. ambiguity of textual elements and e.g. lack of coherence (Clark 1977; Bower, Black & Turner 1979). They also allow subjects to build cognitive bridges for the purpose of conveniently passing stored knowledge to textual elements (Belezza & Bower 1981, 1982), or even to organize and to regulate the continual cognitive processes while reading a text and talking about it (Anderson & Pichert 1978). But here the limits of this approach have already been reached in so far as the model fails to give a conclusive interpretation of the procedural structure of a single cognitive step which can lead to master situations as well as texts (Thorndyke & Yekowich 1980).

This topic has been incorporated into recent research by theoretically sketching an answer to what leads the subject to solve the problems he feels entangled in. As is common in real life, subjects decide to be guided by deliberately orientating themselves, from the very beginning of their action, towards a clearly defined goal. So, at the beginning of any reading process the subjects, so-to-speak, "amend" the text by constructing a thematic outline relative to the constraints of the situation and to their personal intellectual and emotional motivation. This thematic outline is modified during the process of reading, and continuously elaborated according to the goal-directedness of the entire action (Collins, Brown & Larkin 1980; Rumelhart 1980). The theoretical description of that process is modeled in the framework of interaction. The text, the reader, and the situational factors are regarded as the knots of the interactional net, which is fully influenced by the cognitive goal-directedness of the reader's actions, and also by plans, interests, and wishful thinking (Carbonell 1981; Bower 1982). It is not at all surprising that both the schema-theory and the strategy-theory led the researchers to the conviction that processes of understanding texts must be explained through conventionalized action. Literary understanding is a process of conventionalized interaction between the reader, the text, and the situational factors. And it is evident from the work of Walter Kintsch, Teun van Dijk, Michael Cole and other outstanding scholars that people normally strive to be guided by cultural patterns when they learn their story-schemata (Kintsch & Greene 1978; Cole 1985), and that schemata and metacognitive components (van Dijk & Kintsch 1983) are only acquired through social learning.

2.8. On aesthetic comprehension

This general theoretical background of schema-theory and strategy-oriented theory can also be made plausible and productive in explaining the so-called meaning of a literary text. This is, of course, one of the hottest and mostly disputed topics of the empirical studies of literature, and at the same time it is a problem that must be almost as old as the human construction of fictitious worlds. For one can undoubtedly note a never ending discussion of that theme since the poetical reflections and suggestions of Aristotle. Again schema and strategy theories have helped to expand the cognitive approach to the problems of lite-

rary scholarship, especially to that ageless question of how people understand literary texts.

2.8.1. Components of the context are treated as triggering the specific literary schemata (Beaugrande 1983; Brewer 1980; van Dijk 1978; Spiro 1980), and they also allow to solve specific problems of the literary understanding process, i.e. the integration of ambiguities in metaphorical thinking and understanding (Brewer & Hay 1984; Hintzenberg, Schmidt & Zobel 1980). It has been demonstrated by representative empirical research that two conventionalized patterns of literary action must be postulated: these are called the polyvalence literary convention (PLCO) and the aesthetic literary convention (ALCO).

Compared with the text-ontological view of literariness it is obvious that following this cognitive approach of conventionalized action must be quite a shock to the traditional approaches. In this dynamic perspective of conventionalized literary production and reception, there is no place for any allegedly superior aesthetic values. The definition of aesthetics now relies on the empirical question of how, why, and to what extent readers follow specific literary conventions in terms of dominant strategies in cognitive operations while reading and understanding a text.

2.8.2. The Canadian researchers Vipond & Hunt (1984; Hunt & Vipond 1985) reformulated the traditional question in view of the cognitive approach and speculated that elaborative processes qualify the process of literary understanding. This dominating structure of cognitive elaborative steps are called point-driven understanding, in contrast to information-driven or story-driven modes of understanding. Those elaborative steps are certainly related to the state of feeling and thinking, to modes of consciousness, to the power of needs and motivation of each of the readers personally (Mandl & Ballstaedt 1982).

Following the path of theoretically outlining the literary understanding process, in its dependence upon contextual cues and its goal-directedness as well, Meutsch (1987) developed an empirical design to answer the following questions :

- how strong is the influence of contextual cues in literary reading and understanding ?
- how strong is the influence of literary goal-directedness in literary reading and understanding ?
- to what extent are the subjects determined by the factor of being instructed to operate within special literary context or special literary-goal-directedness ?

Concerning the latter question, the situation factor, subdivided into the encoding/retrieval distinction, forces the researcher to distinguish more precisely than ever the process of reading and constructing a personal meaning of the text (encoding) from the

(re-constructive) process of reporting and commenting on the first process later (cf. Dooling & Christiansen 1977; Viehoff 1983a). And interestingly enough, it has been observed that as soon as those re-constructive processes are oriented by practical needs for mastering the situation of reporting by means of conventionalized strategies, the re-constructive processes begin to follow the non-literary modalities of everyday conversation. Nündel and Schlotthaus (1978) and Schlotthaus (1987) have shown this process of an orientational switch to non-literary contexts to be at work in literary instruction at school.

Meutsch (1987a) demonstrated that literary understanding is strictly combined with literary contextual cues and specified goal-directedness at the level of the subject's awareness of the ongoing literary action. Contextual cues (e.g. "This is a short story") and goals of action (e.g. "Please give an interpretation of this text") seem to suffice to produce literary understanding processes, no matter what kind of textual material is presented to the subjects. Meutsch also found that the moment of giving the subjects such cues and goals, that is, before or after encoding, is irrelevant to the process of literary understanding as a whole. Having read a text without being given cues as to literary qualities of the that text, subjects are apparently able to re-construct such qualities just by instruction. According to Meutsch, those re-constructive processes can be described in terms of three different types of elaborations that might be characteristic of literary comprehension. These types are extracted from retrieval data and specified as follows:

- (1) elaborations referring to personal experience of content and fictionality of the text;
- (2) elaborations referring to personal experience with the formal, stylistic surface of the text;
- (3) elaborations referring to both kinds of experience but including highly subjective evaluations.

The first type can be identified as unusual schemata-clustering (see also Meutsch & Schmidt 1985). The second type is exactly the same as the one postulated and proved for processing specific literary modes of text presentation (see Schmidt 1980; Brewer & Hay 1984). The third type, however, refers to a new quality. Meutsch interprets this type as a reflection of the literary conventions defined in the Empirical Theory of Literature (see Schmidt 1980). These conventions are supposed to allow participants in literary communication not only to produce divergent readings of a text, but also to make use of their intellectual, emotional, and moral possibilities in an integrative and subjectively optimal way within one and the same process (cf. Hauptmeier & Schmidt 1985: 19).

2.8.3. As the interpretation of reception/processing data is primarily oriented towards particular elements of the situation of understanding, reading, and reporting, we may locate

the above results within the so-called "situationist" paradigm. Studies on the situationist basis are, quite certainly, necessary, but they do not suffice unless the text factor as a systematically controlled variable is introduced to the experimental designs of such studies (but see : Wildekamp, Montfort & Ruiswijk 1980). A short discussion of some of the findings yielded by the extensive body of approaches to the understanding of metaphors might indicate the direction which the situationist paradigm, as we see it, would have to take in order to expand its scope.

2.9. The understanding of metaphors

According to Graesser et al. (1987), empirical research into the understanding of metaphors has shown that sentence semantics (cf. Katz & Fodor 1963) as well as Richard's theory of the metaphor do not work properly. In our view, theories of the metaphor will, in principle, be inadequate as long as they employ the model of inherent lexical meaning, that is, theories that presuppose that e.g. given semantic features of a lexeme are transferred to another lexeme and change the meaning of that lexeme. Instead of presupposing given semantic features that per se belong to the constituents of a metaphor, an empirically based, yet, as we have to admit, rather general theory of the understanding of metaphors should be able to account for the following factors (cf. Orthony 1979):

- (1) Context: The meaning of metaphors depends on situational and textual contexts. According to Graesser et al. (1987), the textual context of metaphors is well defined but the situational or pragmatic factors are not. The authors propose to explicate the situational factors within speech act theory.
- (2) Constructivity: the understanding of metaphors has to be explained by the subjects' ability to use alternative frames of reference. These frames of reference are schemata within a fictive world (Miller 1979) and they regulate the process of inference generation during the subject-dependent process of understanding (Searle 1979).
- (3) Communication: Orthony (1979) states that metaphors can be used to realize three specific communicative intentions: (a) they enable the subject to stress concepts within a text; (b) they guarantee a highly effective mode of expression within a common culture (Petrie 1979); and (c) they help to develop the power of imagination (Paivio 1979; Fonagy 1987). Processes involving imagination influence storage- and retrieval processes in a positive manner (Marchark & Hunt 1985).
- (4) Planning: Metaphors enable producers of language to plan their actions effectively in a given culture with workable conventions.

2.9.1. This outline of a theory has led to an intensive empirical research programme (1) on comparisons between metaphorical and non-metaphorical expressions, (2) on the definition of differences between content and form in metaphors, (3) on the description of the cognitive processes during the understanding of metaphors, and (4) on the rhetorical dimensions of metaphors. In this paper, however, we can only deal with the third aspect as it is obviously relevant to our topic of aesthetic literary comprehension. In terms of common assumptions about metaphors as rather complex, often highly unusual modes of speaking, it may seem obvious that the understanding of metaphors might not run like a straight, one-stage type of processing, and therefore take a significantly longer time of reading. "Two-stage processing" (see van Dijk & Kintsch 1983; Miller 1979; Clark & Lucy 1975) is the hypothesis to account for that idea, and measuring reading times would be the appropriate method of testing that hypothesis. Others, however, have demonstrated that the understanding of metaphors does not take longer reading times when compared to the processing of "ordinary" language (Orthony, Schallert, Reynolds & Antes 1978, Swinney & Cutler 1979, and Clark, 1979). So one may assume (see van Dijk & Kintsch 1983; Meutsch 1988) that both, the understanding of metaphors and the "literal understanding" of language, work in much the same way. At least the "cognitive" type of strategy does not require extra time of processing in understanding metaphors.

2.9.2. Graesser et al. (1987) develop a system of nine types of metaphors according to Hoffmann & Honeck (1980) and Searle (1979), as shown below. In addition to these nine types of metaphors there are three types of cognition which are relevant to the understanding of metaphors. In an experiment, Graesser et al. demonstrate that cognition in terms of classificatory behaviour can be described via

- (1) explicit comparisons
- (2) special literary devices
- (3) personifications

as types of cognitive indication. And these three types are regarded, in the statistician's jargon, as significant predictors of classificatory behaviour.

- Explicit comparisons
- Predicate nominative
- Predicate adjective
- Relations, actions, and events
- Context-determined metaphors
- Orientation metaphors
- Personification
- Objectification
- Social literary devices

Fig. 2: TYPES OF METAPHORS ACCORDING TO GRAESSER ET AL. (1987)

Graesser et al conclude that it "appears that a metaphor must be a good metaphor (i.e. creative, imaginative, a special literary form) before it has a special status psychologically" (1987: 31). In this sense the results of the experiment underline the important role of conventionalization of language use in non-literal expressions. They are in accordance with Orthony's general theory of the understanding of metaphors, and they are compatible with the central assumption of the Empirical Science of Literature, i.e. the understanding of (aesthetic) language only works as a convention-driven process.

2.10. Prospects for an interactionist framework

Emphazing that research into literary understanding depends, first of all, on object-theoretical considerations as to what literature or literariness is supposed to be, we have tried to point out in the preceding chapters that, although there is a rather widely shared functional concept of text, empirical research seems to suffer from at least two types of short-sightedness. One is the text-centered paradigm that accounts for surface text structures as independent variables (i.e. the basic assumption is that reading depends on text components), the other is the situationist paradigm that explains literary processing as dependent upon situational or contextual elements which are, therefore, treated as independent variables. If literary reading and understanding are, however, conceptualized as something that ought to be different from "ordinary" language processing, it may seem obvious, from the results presented in this paper so far, that this (potential) difference has not been worked out satisfactorily within both paradigms. And moreover, the concept of the literary, for methodological reasons possibly, has largely been restricted to either textual qualities or situational aspects, none of which have been proved conclusively to be specific of literary processing. Concerning the process of literary understanding, it might not even be an exaggeration to state that research into that process has mostly been narrowed down by two-factorial designs (text influences reading; situation influences reading). A more extensive theory might orient empirical research towards a larger set of constraints on literary reception and processing by elaborating an interactionist approach.

On such an approach one would have to combine text, reader, and situation (encoding and retrieval) variables and, consequentially, to develop four-factorial research designs (cf. Meutsch 1988a). The interactionist approach might therefore be regarded as an improved research strategy in two ways:

- (1) The approach explicitly takes into consideration textual variables. These variables are regarded as independent variables which should be varied systematically (cf. Hoffstaedter 1986). Theoretically, one may not expect these variables to be (universally) characteristic of literature but rather to be socio-historically determined. So one has to be aware of the fact that the text structures to be varied experimentally are selected from a set of socio-historically bound

aesthetic norms and values.

- (2) The approach leads to more and more methodologically refined thinking and to an elaboration of methods. It eliminates the intermediate state and unattended effects of memory contents in the experimental tasks. On the other hand the approach allows to observe more carefully the procedures of cognitive operational steps in constructing the "literary understanding of a text by a subject" psychologically.

In addition, if we may venture an optimistic opinion, there need not be, on such an approach, a yawning gap between the main questions of the traditional and the empirical concept of literature that could not be bridged by elaborating the interactionistic approach empirically. Yet to avoid blatant contradictions between traditional and empirical studies of literature, there have to be not only somewhat similar grounds as to the concept of literature itself, but also and above all as to the concept of literary studies, literary methodology, and the goals of our discipline.

2.10.1. In this sense let us summarize ten principles, which are empirically established and which one can provide for a basis of such interactionistic models of literary understanding:

- (1) The so-called play-factor is fundamental to the literary construction of the meaning of a text. This factor tells the subject which type of convention to apply in a given reading situation. This factor is derived from the integrative connection between redundancy and entropy.

- (2) Redundancy vs. entropy are roughly comparable to the inverse U-function according to Berlyne's outline of experimental aesthetics.

- (3) Texts which are intended and socially expected to be objects processed in the domain of aesthetic action are never (positively or linearly) correlated with the level of textual complexity or with the reader's refusal to react to that complexity.

- (4) Contextual cues and goal-specificity are confirmed as the fundamental constraints on the situational determinants that evoke the subject's procedural capacities of reading and understanding a text as a literary one.

- (5) The empirical description of literary comprehension accounts for the situational influence which occurs in the subject's memory-bound talking about his or her experience after having constructed a model for his or her "understanding a literary text".

- (6) Literary processes of comprehension always go together with special kinds of elaborations in retrieval situations, i.e. elaborations with reference to subjective ways of experiencing and evaluating structural-stylistic and fictional com-

ponents of the communicate constructed by the subject as a cognitive representation of the text.

(7) The identification of metaphors by adults is predictable only if literariness and creativity of the textual arrangement are analysed with respect to the socialized classificatory abilities of the subjects in concern.

(8) Subjects feeling themselves entangled in unsolvable implications of the comprehension process try to turn their cognitive procedures away from common and usual strategies towards more specific and productive ones.

(9) Problems in understanding are highly correlated with the state of semantical ambiguities and the level of literary polyvalence the subjects are capable of bearing.

(10) If subjects miss narrative structures, this personal experience is, in most cases, followed by an increasing amount of polyvalently experienced qualities of the communicate.

This summary points out and intends to formulate something essentially new, although one can argue if or if not the ideas elaborated and presented here have found their expression elsewhere too. But our aim is to bring widely scattered and often conflicting approaches into a somewhat consistent theory which may form a starting point for a theoretical discussion and for further empirical research on the processes of literary understanding as well. We have advocated that the text-oriented approach misses its target by dismissing the communicative as well as the very cognitive aspects, whereas, in comparison, the situational approach does not deal with the special textual features and language structures to a sufficient degree. But as both cannot be neglected or done away with easily, we have tried to strike the right balance by advocating an interactionistic approach that should be advanced within theory-guided empirical research in order to gain a more adequate insight into the cognitive processes during the understanding of text.

It should, furthermore, be a task of such a reviewing summary to note not only the results but also the deficiencies of empirical research into the understanding of literature. So we have to add a few more remarks on some unsolved problems.

2.10.2. Although cognitive science has added the study of processes to the traditional studies of text structures, we are still missing any empirical evidence or at least validated methodical ways of how to deal with this main strand of cognitive science in empirical studies of literature. And although the interactionistic approach is, nevertheless, fairly successful in integrating the processual dynamics of understanding into its methodical creativity and plasticity, we do have to recognize that up to the present day neither a productive theoretical model nor an empirical break-through has been achieved. Psychologists and philosophers of language have traced the problematical notion

of the connection or relativity of language and thoughts since the beginning of this century, yet we have not cleared all the implications of that relativity. This problem is a fundamental one, because most people who are asked to retrieve their reading experiences find themselves confronted with artificial situations. This holds true, in particular, when thinking of subjects who are to be forced to talk about their private experience with the reading of a text. So we are faced with the following difficulties: one can neither confirm empirically the level of relevance attributed to the relation between thinking and verbally reporting, i.e. between external and internal processes (cf. Nisbett & Wilson 1977; Bem 1967; Radford 1974), nor can we definitely decide the theoretical status of the scientific statements about the "nature" of cognitive processes. In addition, we are not at all sure about the scope of our answers to our research questions, no matter if they confirm language-directed hypotheses, or the effects of language, or the subjective experience of both of these dimensions (cf. Herrmann 1985; Miller, Polson & Kintsch 1985).

Another hitherto open question is how to define the interdisciplinarily described object of literary understanding precisely. Groeben (1985) suggests to solve this problem by systematical thinking, i.e. by a stricter orientation towards theoretically and methodically centered approaches respectively. Meutsch (1986b) states that this problem is primarily a consequence of confounding different disciplinary approaches and different levels of description within the same object domain without reaching any meta-theoretical synthesis.

We will elucidate some aspects of these problems in the following chapter.

3. Prerequisites of a model of literary understanding

3.1. On the concept of Communicate Construction

In as far as the need for explicit object description in developing models of literary understanding as interactionistic models has been shown in chapter two, we may now ask now, which principles should be met by such models. To realize this, we are going to develop an outline of the basic components of the process of COMMUNICATE CONSTRUCTION (Viehoff & Schmidt 1985). The noun "Communicate" is different from the English verb "to communicate". Its German spelling is "Kommunikat" (cf. Schmidt 1980) which designates the mental object that subjects construct and assign as meaning to a text in reading or processing a text. COMMUNICATE CONSTRUCTION includes the creation of the meaning of a text, the emotional, intellectual and motivational experience while reading a text, and, as far as necessary, the metacognitive components of the reading process. COMMUNICATE CONSTRUCTION is a mental process and therefore, to say it once again, includes more than the lexical meaning of a text.

The essential aspect of the theory of COMMUNICATE CONSTRUCTION is its explanatory power, compared with descriptions of components of literary meaning. As shown in chapter two, we know a lot about loosely connected variables of the literary reading process. Empirical research has collected sufficient evidence for the constructive basis of literary and aesthetic understanding and isolated several factors of influence to this process. In addition we know that the object of research is not the text itself, nor the text-reader interaction (as assumed in reception aesthetics). Instead, the object of research must be the cognitive process of understanding, that is, a cognitive entity. The theoretical description of this entity, which we call the "PROCESS of COMMUNICATE CONSTRUCTION (PCC)", has to account for knowledge structures, inference rules, text representations and functional processes. The description of those components and processes allows to explain what readers (or the scientific observers of those readers) realize as semantic experience, emotional experience and aesthetic experience. In this respect PCC represents the consistent theoretical evaluation of the more or less connected results of research in the 70s and early 80s (cf. Schnotz 1985, Mandl & Schnotz 1985).

As a contribution to a coherent cognitive theory of literary discourse processing, PCC is restricted to the psychological dimension of reading and disregards the sociological aspects of the process. This restriction, however, does not mean that sociological dimensions are unimportant. The psychological theory we suggest is just a consistent evaluation of the results of earlier research in this area .

3.2. Basic properties of PCC

According to the state of research in discourse comprehension, experimental aesthetics (see Viehoff & Meutsch 1987) and the empirical study of literature, we have to consider some general principles in building an empirically testable model of COMMUNICATE CONSTRUCTION, namely the following ones:

1) PCC is internal, i.e. it is not directly accessible to the subject and not directly observable for the scientific observer. Considerations concerning this mental process must therefore pay attention to epistemological aspects in describing the object (PCC) and in using on- or off-process methods. These epistemological aspects of PCC concern the role of verbalizations as "externalizations" of internal processes. Without discussing the relation of reality and cognition here (see Meutsch 1986b; Pylyshyn 1984; Schmidt 1985), we have to deal with the internal status of PCC according to "short-term-memory-dependent" processes and types of verbalizations ("thinking aloud" may be one possible method of research into PCC; see Ericsson & Simon 1985; Black, Galambos & Reiser 1984; Olson, Duffy & Mack 1984; Viehoff & Meutsch 1985; Viehoff 1986a). Traditional retrieval techniques seem to be more problematic for research into PCC (see Miller, Polson & Kintsch 1984, for an interesting discussion of the relation of between "cognitive" models and validity).

2) PCC integrates prior knowledge of a subject into the actual reading process. That is, we have to account for the importance of knowledge structures (Britton & Black 1985; Walker & Kintsch 1985; Meutsch & Schmidt 1985; Viehoff & Schmidt 1985) either as a basis of structural aspects of schema-oriented processes (Rumelhart 1980; Mandler 1982; Pohl, Colonius & Thüning 1985) or as a basis of strategic inference processes (Scardamalia & Bereiter 1984; Aaronson & Ferres 1984; Vipond & Hunt 1987).

3) PCC is a holistic, mental process. It consists of emotional, motivational, strategic, and metacognitive components. This does not mean that propositional elements of a text are transferred into the mind of the reader but that readers are instructed by propositions to organize their experiential capabilities into the construction of a Communicate. Communicate Construction in terms of a holistic process, encompassing so-to-speak the entire mental household of the subject, adequately fits the common view that processes of discourse comprehension cannot be explained as transformations of textual surface structures into semantic representations or deep structures. The more one becomes aware of different dimensions in discourse analysis (see van Dijk 1985), the more the "process of sense construction" is described psychologically. A consequence of today's development in theory is to regard the role of textual features as instruction (see Schmidt 1973) to building up specific internal states of emotion, intention, or imagination (Collins, Brown & Larkin 1980;

Kintsch 1980).

Instead of looking for transformational rules between surface and deep structure, one becomes more and more interested in looking for the mental processes evoked by language (Johnson-Laird 1983; Schnotz 1985; Meutsch 1986b; Clark & Malt 1984; Miller 1984). In a nutshell, there is an increasing tendency towards replacing purely linguistic descriptions by psychological models of text processing (see also Herrmann 1985).

4) PCC is hierarchical. The hierarchy of subprocesses within PCC runs from automatic processing (e.g. letter identification) up to metacognitive processing (e.g. reflecting upon what an author of a text might have intended). This notion of hierarchy is important in the following respects:

It stresses the role of strategies in PCC (Scardamalia et al. 1983, 1984; van Dijk & Kintsch 1983; Meyer & Rice 1982). It also explains some of the problems which subjects have with verbalizations, because there are components of PCC which are not obliged to be conscious elements (Johnson 1985; Kintsch, Miller & Polson 1984; Viehoff 1983a).

And, last but not least, it allows to integrate into the model of PCC emotional and rational (sometimes called "cognitive") components from an action-theoretical point of view (Dörner 1983; Leventhal 1982; Lantermann 1983).

5) PCC is sequential. The linear order of language forces the reader to perform specific processing procedures due to the limited capacity of short-term memory. The problem of relating linguistically described textual coherence to psychologically described mental coherence (sense constancy according to Hörmann 1976) requires to consider capacity limitations within a model of PCC (Kintsch & van Dijk 1978; Fletcher 1981). Miller (1984, 1985) demonstrates why it is to have this notion if one wants to develop a psychological theory of PCC.

6) PCC is only one possibility of achieving sense constancy or mental coherence. The main goal for readers is to establish one sort of coherence during the reading process. PCC realizes this goal in denoting specific components of itself! Hence it follows that coherence cannot be explained by linguistic description only.

Without relating this strategy to the "holism and hierarchy principle", aesthetic text comprehension is a point-driven (Vipond & Hunt 1984) but not an information-driven process, as we have shown in chapter 2. So we have to consider at least three levels of coherence or sense constancy, namely the level of content-oriented coherence, the level of form-oriented coherence and the level of process-oriented coherence (Meutsch 1987a). We assume that there are some peculiarities of PCC at the content and the form-oriented level. The

process-oriented experience during text comprehension depends on knowledge structures (poetic norms, values and past experience with literature, see Scheele & Groeben 1987). Therefore we suggest that, according to the disposition of the reader, the process-oriented experience (which we call aesthetic experience) can be realized by other types of processing, too. But let this assumption be an empirical question.

7) PCC contains forward and backward oriented processes. While backward processes try to establish textual coherence, forward processes develop the reader's expectations of his subject-specific interest of reading. The traditional view of backward and forward inferences (Crothers 1978; Clark 1977; Warren, Nicholas & Trabasso 1979) is confronted with re-evaluative processes during PCC. According to varying goal criteria during the process of comprehension, we have to account for re-organisations of the cognitive situation (cf. Kintsch et al. 1978; Schmidt 1980).

8) According to Miller, Galanter & Pribram (1960) PCC works like a "test-operate-test-exit" unit (TOTE). The entire TOTE-process is convention-governed. TOTE-units allow to describe explicitly the interactions of content and form-oriented experience. According to specific aesthetic knowledge structures, both levels of experience will function either as goal criteria of the "test-unit" or as an "operation-unit". We assume that it is a characteristic feature of PCC to use processes ("operation-units") as goals of regulation.

9) Even the bottom-up processes in PCC are entirely constructive. Specific semantic qualities of textual elements are constructed according to the processing modalities that the cognitive applies, either the point or information-driven modality.

10) PKC is goal-directed. It is embedded in higher-order actions which cannot be completely explained in terms of cognitive psychology or linguistics (see Viehoff & Schmidt 1985, Viehoff 1988). In addition to this each subject must be characterized by his or her wishes, interests, goals and plans, which motivate and regulate reading processes, too. Presumably, these "personal components" are essential for aesthetic reading because of the high degree of freedom in constructing literary meaning (Schmidt 1985).

In the future these loosely connected aspects of PCC must be integrated into a consistent theoretical model. Only some of above aspects of PCC are based on an empirical ground so that is difficult enough to deliver valid descriptions. But at present we will not continue, nor finish, the task of a theoretical integration of the principles mentioned so far. Instead we would like to point out two reasons for the heterogeneous results in the respective research domains.

3.3. Problems of research into PCC

The first reason is due to the fact that PCC uses textual elements (propositions) to build up a specific personal experience as a result of the mental operation. So we have to measure objects, which ought to be described psychologically. The second and stronger reason is the inaccessibility of PCC at the level of the cognitive system. As a consequence of this, we assume that our measures are of a different status. Both reasons need further discussion, because the understanding of literature depends on the form and the content of linguistic elements (see Graesser et al. 1987). Due to the form components as instructions of experience, we must separate the linguistic from the psychological level of description to avoid a confoundation of

- the researcher's description of textual components and the experience of subjects when reading a text, and
- structural description of an independent variable of the reading process (text) and a functional description of the process itself (comprehension) (as often done within the Chomsky paradigm of psycholinguistics).

As already mentioned in chapter 2 (cf. also Meutsch 1986a), we are theoretically obliged to develop four-factorial designs for research into textual understanding (cf. also Jenkins 1977, 1979). Text, readers, encoding and retrieval are the four independent variables of textual understanding. But we intend to measure the process of COMMUNICATE CONSTRUCTION. This object, however, corresponds to an experience of a subject within his or her cognitive domain. To describe and to measure this experience or, to be precise, the modalities of the class of such experiences, we cannot rely on literary scholarship, nor on linguistics or any other theoretically guided textual description but on psychological phenomena only.

The cognitive turn in language comprehension research (cf. e.g. Bransford 1979) has validated that text is just one factor of influence in the process of comprehension. Moreover, other researchers have pointed out that verbal reports on comprehension processes are not simply to be taken as definite transformations of cognitions into linguistic elements. Verbalizations have to be explained as re-constructive processes as well (Dooling & Christiaansen 1977; Spiro 1982; Meutsch 1987a). So what we do know is that research into comprehension presupposes a theory of mental processes.

3.3.1. As subjects are unable to report on the psychological modalities of their own "hardware" (e.g. short-term-memory or processing capacity), all they can do is to resort to what we call the "self-observer situation", that is, an observer function that constructs descriptions of what goes on at the level of the cognitive system. Note that this observer function is iterative; so there can be an observer of a self-observer, etc. The observer functions are not to be misunderstood as an automat that reads and

records lower level processes and descriptions for output purposes. Constructivity applies to the operations of the observer, too. So it is important to note the impossibility of measuring the "real" process of comprehension (cf. e.g. Köck 1986). The factor called "self-observer" is theoretically designed to integrate the re-constructive operations (producing verbalizations) and the cognitive operations to which the verbalizations are related from the observer's point of view.

3.3.2. The step from textual to psychological theories of language processing is not a step closer to "reality", but perhaps a more viable one, as it includes a more encompassing, elaborated constitution of the object theory. In this sense, we should have a look at the following four stages of research into PCC (level 2 is of dominant interest here):

- Level #1: General reflections on the epistemological nature of cognitive models of text understanding. These have to refer to the theoretical as much as to the empirical consequences of the "self-observer factor", i.e. to determine the kind of correspondence between cognitions and verbal re-constructions.
- Level #2: Discussion and explication of the object-theoretical consequences of the theories used. The reasons for choosing a theory and preferring it to others should be explained here. At this level the extent of interdisciplinarity between linguistics, psychology, sociology, and literary scholarship must be defined exactly.
- Level #3: Methodological reflections on the modes and the consequences of empirical reconstruction. These reflections have to deal with the methodological traditions of the discipline(s), which is (are) of primary interest according to the "level-2-decision".
- Level #4: Methodical decisions as a consequence of the "level-2-decision" and as adequate operationalization.

Remembering the ten principles of PCC listed above (3.2.), one might recognize that they are located at different levels of description and that they depend on interdisciplinary decisions ranged on level 2. Let us, for instance, reconstruct a central problem of current research, namely the structure-function difference in theories on text processing: A scientist is interested in the reader's experience of semantics corresponding to some linguistically described features of a specific text. A description of interrelations of textual features and personal experience, however, does not seem to be grounded on thorough theoretical considerations, because an appropriate functional evaluation of structural components has not been provided. Now that does not mean that structurally oriented research has to be irrelevant to cognitive theories. It only stresses the fact that the meta- and object-theoretical decisions for a specific theory in language

processing research produce different objects of research. In a nutshell, theories (of whatever type or degree of explicitness) constitute objects, not vice versa!

3.3.3. Take for example the text: "Peter drives. The boy is drunken". At the propositional level these two sentences are given as (1) (DRIVE,PETER) and (2) (DRUNKEN,BOY). An inference might then be, in terms of propositional representation, (BOY,PETER). According to Kintsch (1974), the inference (BOY,PETER) is necessary to reach a coherent text base by argument-overlapping. This structural description does not explain the process of constructing the inference, but applies the concept of micro-coherence in relation to a linguistic theory. This theory is, of course, very important, yet not explicitly connected with psychological processes. If such a connection were given, one would be able to explain specific inferences as they are based on special, e.g. literary, knowledge structures. This is to say that any decision for an object theory of a discipline (as a level #2 activity) also presupposes other theories and has consequences for the methodological issues at levels #3 and #4. Descriptions of literary knowledge structures, however, will also not suffice for an explanatory theory of PCC. To meet the requirements of a holistic theory, or to be precise, to develop a consistent network of theories, the aspects of processing and approaches mentioned have to be integrated into a psychological model of PCC on the basis of a common, epistemological and meta-theoretical framework, e.g. the cognitive, constructivist frame. Without criticizing Kintsch's propositional theory, the example above shows that structural and functional theories of comprehension apparently behave like the two sides of a coin.

3.4. Some results of research into the process of constructing literary communicates

In the previous sections we have been concerned with PCC from a general, linguistic and psychological point of view. The construction of a literary communicate, we have to add here, is supposed to be somewhat different from "ordinary" PCC, at least in theory. Empirical research into the process of constructing literary communicates (or PCLC, for short) has come up with quite a few results which will be discussed right now.

3.4.1. PCLC is a convention governed process. Relying on ideas of the analytical philosophy of action, Schmidt (1980,1982) explicates the general concepts of his Empirical Science of Literature (ESL) and elaborates an extensive theoretical foundation for his approach. According to Schmidt, participants in literary communication follow different social conventions in processing a text as a literary or non-literary communicate. If a reader decides to assess his or her communicate as being e.g. true or false with respect to the socially consensual model of reality and as e.g. being determined in its meaning, this reader is supposed to follow primarily the fact convention and the monovalence convention. These two conventions, and this is the decisive idea of Schmidt, apply to communicative actions within

any other social system but the literary system. Communicative actions within social systems, except the literary system, are socially expected to be decidable according to (socio-historically) given criteria of producing true or false statements, useful or useless actions, definite or ambiguous references to the consensual model of reality, etc. The system of literary action, however, is supposed to be dominated by the aesthetic and polyvalence conventions which, so-to-speak, release the participants from the social force of the above mentioned criteria. The aesthetic convention, in particular, subordinates referential connections to the socially established model of reality by opening alternative frames of reference. The polyvalence convention in turn dominates the usually expected monovalence of every-day communication.

Viewing literary understanding as polyvalent, aesthetic actions, these two special conventions become the most important factors in explanations of the cognitive relations between the reader and the text. As (procedural and/or declarative) knowledge of what one is allowed and expected to do when reading a text as a literary text, these conventions presumably serve readers as strategies of

- creating alternative frames of reference
- looking for or construing signs of literariness in the textual material according to socialized constraints of the social group the subjects belong to
- evaluating their cognitive representation of the text in relation to aesthetic criteria
- constructing different meanings of the same text at the same time, admitting other readers in turn to construct different communicates, too (for further details, cf. Schmidt 1980, 1982).

Empirically the idea of such a conventionalized organization of cognitive operations has been confirmed by investigations (cf. Hintzenberg, Schmidt & Zobel 1980; Hess-Lüttich 1980; Viehoff 1982a; Wirrer 1982, 1984; Meutsch 1984, 1987a). Some new research processes, methodically related to the problems of verbal-data-collection, have just been completed.

3.4.2. Viehoff (1986b) developed an experimental design to test the general hypothesis of a dominant influence of literary conventions on cognitive operations. His focus of attention was the question of how readers master their problems of understanding when confronted with "unusual" texts. For his experiment Viehoff selected a text which had to appear incomprehensible whenever a subject tried to construct its meaning by following every-day rules of understanding, i.e. by referring to the established model of reality, to the fact and monovalence conventions only.

The experiment was administered to a group of 16 subjects (11 women and 5 men), all of them students at the University of Siegen. They were paid volunteers and tested individually in a quiet room. Each subject was familiarized with the method of thinking aloud. Goals and intentions were explained to them, namely to find out how and what readers think while reading a text. The instruction to think aloud was given to them in written form. At the same time they were informed that their facial and verbal expressions were recorded by a visible video camera. The subjects were given the poem "Fadensonnen" (threadsuns) by Paul Celan. This text was presented without any further background information about poems in general or any hint at the literariness of that text. This openness of the experimental situation was intended to have the subjects decide on their own what to construe as situational and contextual cues for selecting an alternative frame of reference. The text was presented one line per page. This procedure was chosen to intensify the anyway high unintelligibility of the text. In order to be able to read the whole text, the subjects had to turn over the pages. The complete text was given on the last page, however. The students were allowed to decide when to consider the experimental task finished. Later on the tape-recorded thinking-aloud protocols were transcribed and statistically evaluated to test the hypotheses.

Following some recent methodological reflections on thinking aloud (cf. Deffner 1984), Viehoff interpreted the results of his study as confirmation of the hypothesis that the degree of creating cognitive coherence of sense decreases with the subjects' lack of success in mastering the "resistance" of the text-reader-situation interaction. And furthermore he observed that there was a decrease in meta-statements, i.e. statements referring to action goals, situational components, and the subject's mental processes, that correlated with the subjects' growing orientation towards regarding the text from an aesthetic point of view. In a nutshell, to follow literary conventions seems to enable subjects to produce cognitive coherent readings of a text which would not be, to a certain extent, possible by following the fact and monovalence conventions only.

3.4.3. To gain more insight into the specific processes while following literary conventions, Meutsch & Schmidt (1985) carried out an investigation in which they too made use of the thinking aloud method. They used two texts, a modern short story and a modern poem (for details see Meutsch & Schmidt 1985). The procedure of presenting the texts to the subjects was the same as in the Viehoff experiment, but the subjects were informed about the texts in question ("This is a literary text") before reading. The authors demonstrated that in reading texts they deem literary, readers usually have problems of understanding, too. But in case of literary reading and understanding these problems are evaluated positively in contrast to the non-literary case. The mean for changes of frames of reference indicates that the subjects really tried to constitute different types of coherence while reading the texts as literary texts. Moreover, this chan-

ging of frames of reference was evaluated positively by the subjects. In addition to these, shortly reported, findings the authors carried out some individual analyses of the reading process and demonstrated another interesting effect. The simultaneous experience of different frames of reference at one and only one phase of the reading process is evaluated positively by their subjects. Unfortunately, Meutsch & Schmidt (1985) have not statistically tested these qualitative descriptions until today.

3.5. Conclusion

To sum up: the results of Viehoff (1986b), Meutsch (1987a) and Meutsch & Schmidt (1985) confirm the concept of literary understanding as a convention-driven process, that PCLC has to be described as a holistic process, and that consequentially a functional model of PCLC should be developed. Such a model will be roughly sketched in the next and final chapter of this report.

4. Aspects of a model of communicate construction

4.1. Presuppositions

Our sketch of a model of the process of communicate construction takes as a starting point a characterization of texts as material bases for instructing readers/hearers to construe mental models (cf. Johnson-Laird 1983; Meutsch 1986b; Meutsch & Schmidt 1985; Schmidt 1983; Schnotz 1985). The material aspect does not need to be discussed here because we are primarily interested in the cognitive issues of constructing a communicate on the occasion of a text. From now on, we will not talk about texts in terms of their material objects (e.g. as syntactically structured sets of lexical items or as sets of sounds or letters) but about communicates only. A fully fledged model of communicate construction will, of course, not do without a linguistic theory that characterizes those material aspects structurally. Before outlining a functional model of PCC, we have to come to an arrangement about our use of the term "model". What we suggest as a conceptual frame for describing and explaining PCC will be called "model" in order to avoid the rather pretentious term "theory" for our heuristic considerations. The term "mental model", on the other hand, is used to refer to the cognitive entity that readers/hearers construe on the occasion of a text.

4.2. Basic components of the model

Our model must be able to account for three basic components that are involved in the construction of communicates. There must be (1) knowledge structures, (2) capacities, and (3) regulations.

4.2.1. On knowledge structures

The process of constructing literary communicates requires linguistic knowledge as well as knowledge of the world and of literary aesthetic norms and values. Knowledge components must be subdivided into declarative and procedural parts (Anderson 1985; Tergan 1984). Declarative knowledge is defined by the lexicon (Petöfi 1983, 1985; Hörmann 1983). In a nutshell, the declarative part enables the subject to talk about "what there is". The procedural part entails the operational tools such as inference rules or rules of evaluation. Roughly put, procedural knowledge enables the subject to do certain things with the declarative parts. Hauptmeier & Rusch (1984) elaborated a highly similar distinction from an epistemological point of view by keeping apart the ontological and the operational knowledge of cognitive systems. However, it should be noted that we take inferential knowledge as knowledge about how to operate, i.e. as procedural knowledge. Hence inferential knowledge is no longer a component of a static or structural description (cf. Rickheit & Strohner 1985). When looking at the different levels of textual understanding from phonetic to semantic elements (Kintsch 1977), it becomes obvious that each level contains procedural and decla-

rative elements.

In our view the knowledge of literary norms and values (poetic knowledge) is of special interest. As we want to avoid normative statements on literariness (Schmidt 1982; Meutsch 1987; Viehoff 1976; Viehoff & Schmidt 1985), we have to focus on the main procedural components, i.e. the regulative conventions, namely the "aesthetic and the polyvalence convention". Both conventions enable the reader to handle textual elements in a specific way. At present, however, we are not in a position to explain the function of poetic knowledge structures during the process of understanding, because empirical answers to the crucial questions are still missing

4.2.2. On capacities

Since knowledge must be regarded as stored and retrievable knowledge, we also have to account for memory capacities. Storage and retrieval are, of course, highly complex phenomena which, we think, do not work like e.g. store-and-read routines of the computer. What is "stored" and in which way seems to depend on the actual state of the cognitive system. And this should apply to retrieval as well. Storage and retrieval states will therefore not be identical in human text processing. But as we are interested, first of all, in the general "architecture" of PCC, and not in the details of the modalities of storing and retrieving, we must now turn our attention to the issue of memory capacities which lead us to state a short-term-memory component and a long-term component during PCC. The short-term component (Bjork 1975; Fletcher 1981; van Dijk & Kintsch 1983; Herrmann 1985) is limited in time and space while the long-term component shows no limitations at all. The central processor, as Meutsch (1986b) calls the short-term component according to van Dijk & Kintsch (1983), contains the current qualifications and regulations of PCC, given at a specific time. Its limitation in time and space has consequences for the use of knowledge structures, for the application of procedural knowledge, and for the control of component processes. We will have to discuss these limitations with regard to conscious and non-conscious processes below. According to present knowledge, however, the determination of these limitations must be left to the researcher's intuition (see Fletcher 1981; Kintsch & van Dijk 1978; Miller 1984).

4.2.3. On regulations

The regulation of mental activities is perhaps the most important and most frequently discussed component of PCC. There, at least, seven aspects to this issue:

- 1) Goal-specificity: PCC can have different qualities for the subjects. According to Schmidt (1980) we have to differentiate hedonistic, intellectual and moral qualities. In any case, the process is interspersed with higher-order processes of action-planning and action-performance (Mandl & Schnotz 1985; Viehoff & Meutsch 1985). According to Hörmann's pos-

tulate of sense constancy(1976), PCC is intentionally structured by the cognizing subject and basically orientated toward a personally satisfactory type of coherence. This main purpose, i.e. to achieve sense constancy and to establish the different qualities of PCC, points to one particularity of PCC: it allows to construct cognitive coherence on different levels of regulation. Poetic norms and social values (see Viehoff 1976, 1981, 1982) have an influence on the level that readers choose for their understanding of literature.

According to Meutsch (1986a, 1987a) and Meutsch & Schmidt (1985) there are three levels of coherence:

- the level of semantic experience
- the text-oriented level, evaluated by poetic criteria
- the reader-oriented level, evaluated by poetic criteria.

The most important condition for the production of goal-specific coherence is the possibility of self-directed activity (Meutsch 1987a; Vipond & Hunt 1984; Hunt & Vipond 1985). Without self-directed activity elaborative processes cannot start.

- 2) Circularity: The subject realizes these goals of comprehension, in contrast to an elementaristic-deductive manner, as hierarchical circle of regulation (Miller, Galanter & Pribram 1960; Powers 1973; Huber & Mandl 1982; Viehoff 1983a). Therefore we cannot explain the specific goals of PCC by observing only one element or operative level of the cognitive system. So we have to describe the character of the regulative processes themselves (Oesterreich 1981). The levels of PCC mentioned above are analytic descriptions of subcomponents of the regulative processes. Each of these subcomponents is to be qualified in a hierarchical circle of regulation. The advantage of this concept is that dualistic concepts of emotion and cognition (Lantermann 1983; Mandler 1982) can be avoided and elementaristic models of comprehension (Viehoff & Schmidt 1985; Schnotz 1985; Collins, Brown & Larkin 1980) are also excluded.
- 3) Selectivity: Not just any text-dependent nor any systemically available instructions can be used in PCC because of the limitation of mental capacities (e.g. of the central processor) and because of permanent reevaluations of the goals of PCC. So the use of instructional elements is intentionally selective and of necessity selective. A theory on the process of PCC has to consider that capacity is limited with regard to its consequences for the subject's dimensions of experience.
- 4) Sequentiality: The textual cues of any text (described here as an offer of instruction to the reader) can be experienced only in a sequential order. There is no possibility of a complete textual experience before having finished the rea-

ding process (the question is what kind of completeness can be linked to this topic).

- 5) Interaction: PCC is characterized by top-down and bottom-up interactions (see the reviews in e.g. Mandl, Stein & Trabasso 1984).
- 6) Evaluation: Capacity limitations and goal-specificity cause modifications and re-constructions of coherence-criteria during the process of comprehension. The principles of hierarchy and circularity allow to explain these modifications within the central processor.
- 7) Flexibility: According to cognitive "facilities" and to individual socialization each reader will accept or endure different "situations of incoherence" during the process of understanding. E.g. people with previous experience in literary reading will react more flexibly in respect to polysemy than people with less experience in literature. Hence the degree of negative connotation will vary with the parameters "poetic knowledge" and "dispositional situation". According to Meutsch & Schmidt (1985) the tolerance of negative connotation is much higher in case of those texts which are accepted as literary texts. These limits of tolerance are important as parameters of the central processor. They regulate the test-elements of each TOTE-unit (cf. 3.2) during PCC. In the case of reaching the limit of tolerance one should expect
 - restrictions of the actual mental model
 - evaluations of goals during PCC, or
 - break-offs in reading the text.

4.3. A heuristic model of PCC

The basic working modality of PCC may be characterized as a as "hypotheses-test-variation-process" (Meutsch 1986b, cf. fig. 3 below). At the beginning of literary reading the goals of this action will be clarified (according to the three central functions of literary action). This first (hypothetical) mental model regulates (top-down) the continuing reading process (via activation of different knowledge-elements). In this sense the mental model determines the relevance and importance of so-called textual stimuli. During the reading process the mental model will be evaluated, enriched or modified. Such variations depend on three levels of experience, with each level being a necessary component of the literary communicate (see fig. 3 below, "knowledge structures"). Please notice that the overall description of PCC as "hypotheses-test-variation-process" combines different levels of description as discussed in chapter three.

The experience of the phenomenon "literary text" includes emotional and motivational factors as well as problems, sense dimensions and reflections upon relevance. An almost exclusively psy-

chological model is not able to cover all these aspects of experience, because it has to be focussed on aspects of process dynamics, primarily. So what we do in developing the model (at this state of research) is to relate its mechanical "machine logic" to phenomenal components.

4.3.1. Let us consider the case of a subject intending to process a given text as a literary text, depending on contextual features of the communicative situation (Anderson & Pichert 1978; Meutsch 1987, 1987a). Before starting the reading process, the relevant knowledge structures must be activated. Let us further assume that syntactic-semantic analyses will be done automatically (Kintsch 1977). In relating the first textual "inputs" to activated knowledge structures, there will also be some first hypothesis on "the meaning of the text" (see Meyer & Rice 1982; Meyer 1984; Kintgen 1986). Within the model this hypothesis is connected to specific parts of knowledge (of the world, of poetic norms, and of language), and this hypothesis is also evaluated. As a result of this, we may get either an activation of additional knowledge, a variation of goals of understanding or we may get top-down expectations to continue the process of reading.

4.3.2. So there are loops from mental model to text structure and so on. In contrast to non-literary processing (which is, of course, supposed to follow the same logic), it is the evaluative component which gains importance in PCLC. Within the mental model the results of previous processes are judged according to individual norms and interests (that is because "the rules of the games" are given by the aesthetic and the polyvalence convention). They are related to knowledge structures of individual interest (Miller 1985) and brought into an individual frame of coherence or sense constancy (Marcel 1980). On that basis it is decided whether or not the level of coherence achieved is adequate. So either reading or evaluation is continued, depending on the subjective interests that are realized within the reading process. Unlike non-literary reading, PCLC appears to involve systemic instructions for the mental model. This is to say that control processes are necessary components of the conscious evaluation of the mental model (Sinclair 1985). Please note that the only difference between literary and non-literary reading is the degree of activation and allied relevance of evaluative processes as components of the mental model. In summary, this mental model "contains" the following three levels of experience:

- (1) The level of semantic experience with possible, may be fictitious worlds. This level is defined by the set of declarative schemata the reader has at his disposal at the time of reading.
- (2) The level of evaluated textual cues, which is defined by cyclic regulations between the propositional level and the mental model. It is stated by the reader via signs of literariness or formal peculiarities. We can explain this level through the loop "mental model - actual text structure" if

there are conscious regulations (a subroutine for clarifying or solving problems with text elements). In a nutshell, the underlying reading strategy would like this: "there are signs of literariness and peculiar text structures, therefore activate your knowledge of literature and find a reasonable explanation for those peculiarities." As a result of that subroutine the mental model will, in addition, contain textual elements as e.g. intended meaning of the author or intentionally designed poetic devices.

- (3) The level of evaluated meta-processes which is defined by cyclic regulations between the mental model and the control system. Without having an explicit subroutine we may say that

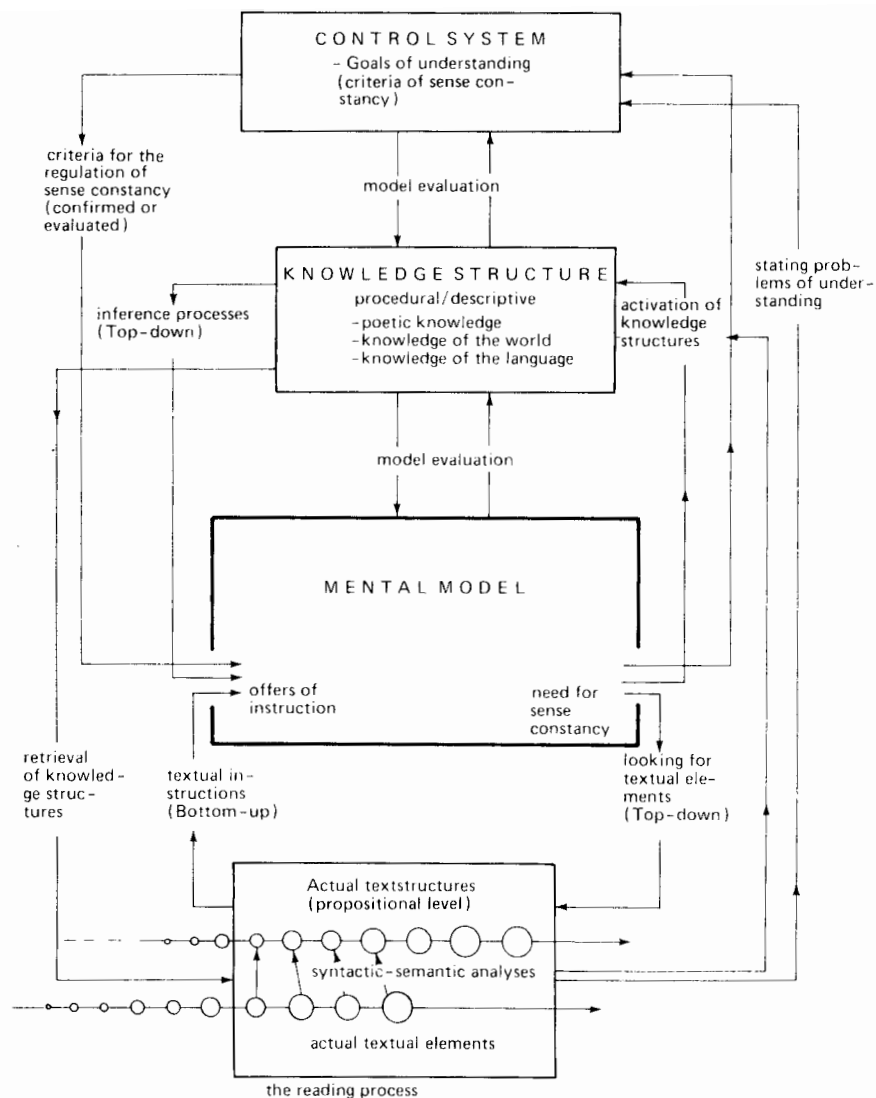
- the evaluation of semantic experience according to poetic knowledge,
- the interaction between semantic experience and textual experience, and
- the evaluation and/or assessment of control processes

are the relevant processes here.

It is important to stress that these additional processes are levels of experience that are considered as dimensions of meaning. In this respect they are part of the mental model.

4.3.3. We have characterized, as you will have noticed, literary understanding as goal-directed regulation of systemic, mental processes. The components of the processes produce a mental model. The principles of circularity and hierarchy demonstrate the interdependence of the three levels of experience. Each level is a possible level of sense for the reader and each level depends on processes at the other levels. The non-literary reading process is structured similarly, but the levels #2 and #3 are not necessary elements of the construction of sense here (Meutsch 1986, 1987). The entire process of communicate construction works in such a way that, hierarchically and sequentially, units are activated, constructed and addressed within "loops". These are reasons why we regard PCC and PCLC as holistic, mental processes.

4.3.4. In a recent experiment Schmidt (1985) has tried to test the above assumption about the necessity of levels #2 and #3 (evaluated textual cues and evaluated meta-processes, that is). As far as we know at the moment, the level #2 and #3 experience is not symbolized as components of textual meaning by readers in non-literary reading processes. Instead of symbolization, these readers realize textual evaluations and normative evaluations as irrelevant noise during the comprehension process.



**Fig. 3: THE "HYPOTHESES-TEST-VARIATION-PROCESS"
DURING LITERARY READING AND UNDERSTANDING**

4.4. Some annotations on the multiple levels of PCLC

The above outlined frame for a model of communicate construction as a holistic, mental process might have been rather abstract, architectural considerations on a phenomenon that appears to be running so smooth and ordinary in everyday life that one may ask if all those units, loops, bottom-up and top-down operations really make sense when confronted with real reading. As our model is certainly not yet complete, not empirically tested in every respect, we have to expose ourselves, for the purpose of illustrating our model, to the danger of naivety when talking about the reader or even about the normal reader in the following example. The example, however, cannot be a substitute for empirical research nor does it claim to depict the complexity of one's own reading experience.

4.4.1. According to Kintsch (1977) there are at least six levels of cognitive operations involved while reading a text. Provisionally we accept these levels as levels of sub-ordinated cognitive steps in the process of constructing coherent meaning and sense. At each level readers can be drawn away from their genuine goal by contradictory perceptions and associations. Contradictory experience can also be phrased as "deviation from expectation" and should be thought of as coercing the reader into assimilating the situation, into onward steps of cognition, into rearranging or modifying action plans and goals, and so on.

However, the often quoted normal reader, who quite normally too is not expected to be much experienced in modern avant-garde literature, might be rather shocked by finding himself confronted with e.g. a Dada-like poem. This reader is prepared to receive texts by assigning lexical meaning to the "words" and combining those words into meaningful sentences. In view of the Dada-like poem he might even be unable to perceive anything else than black marks on white. So the reader must cope with an unexpected problem and must decide on how to proceed, that is, either to interrupt the reading process, or to change his general expectations on textual formation. But the higher ranked and preceding units in the hierarchical process are strictly reserved for internalized literary expectations. If the reader is not successful in understanding the textual material on a higher level -linguistic identification (according to Kintsch 1977)- then the probability of achieving the main goal decreases steadily. But more often the flexibility and plasticity of the hierarchical-sequential procedures prevent people from interrupting or destructing the process of understanding. The next higher level may be entered for mastering situations and events of a more complex and, of course, more abstract structure. Coping with the problems concerning these higher operations is, however, easy for the reader because he now has a lot more possibilities of pursuing his genuine plan. The higher the level of cognitive operations, the less concrete are the possible ways of solutions. That means, in consequence, that the more the process of understanding approximates the top-level, the more the degree of freedom for mastering unexpected problems increases.

We suppose that only an extremely and rather "unbalanced" reader will interrupt the comprehension of a literary text as soon as he fails to understand it at a low level (for example at the level of lexical meaning or syntactic structure). Climbing the next level of cognitive operations, the reader is given the chance to reduce the extent of misunderstanding or confusion. Accumulated world knowledge, which is independent of the text being read at the moment, is applied in order to overcome problems of understanding. Poetic knowledge, that is activated in pursuing the main goal of reading the text as a literary text, opens even further possibilities of solving problems of understanding and of performing the act of reading successfully. However, if the reader is merely interested in literature as light entertainment, he will quite certainly stop reading as soon as he is confronted with a problem of literary understanding. He will not be motivated to take any pain for attaining upper levels of cognitive operations. He might close the book and murmur something like "nonsense".

4.4.2. So far, our discussion has been largely restricted to the cognitive psychological aspects of the process of reading and understanding. But obviously, cognitive psychology alone cannot be the only answer to the development of a theory that ought to account for the action role of literary reception. The question is, how to cope with the variety of dimensions (social, psychic, emotional, mental) of actions (which are all included in the object of our interest theoretically).

4.5. Psychology of action as supplement to the model of PCC

In our view there is a substantial reason to answer this question with the help of the psychology of action, especially in the Empirical Science of Literature because the general starting point of the ESL is bound to a theory of the subject's action rather than to a theory of society. And such an approach is likely to neglect societal conditions of action because the relationship between an increasingly sophisticated model of individual action and a model of social interaction has not yet been clarified (cf. Habermas 1981). Consequently, one ought to suggest an implementation of the psychology of action in the ESL since this branch of psychology is primarily directed towards an explication of the forces of social and sociopsychological conditions. The psychology of action might be quite productive in this respect because of the systematic consideration any action of a subject within the frame of a model of society (cf. Leontjev 1971, 1979).

4.5.1. Reviewing today's main streams in the psychology of action

Volpert concludes that (literary) text-processing is built up by higher cognitive operations, i.e. mainly by operations at the level of perceptive-conceptual and intellectual frames (cf. Volpert 1980; Hacker 1978). Volpert accentuates this conclusion as follows. Operating at different levels of action means to operate in different social areas and to cope with different social environments. Text reception as a highly complex confi-

guration of social actions (and usually performed by subjects that have been socialized within special "literary" institutions (cf. Viehoff 1982)) cannot be explained sufficiently on the basis of physiological or biological approaches which, in the ESL, are suggested as grounding theories for the theory of action. In research into those activities, which may distinguish literary actions from non-literary ones, one therefore has to climb the ladder from individual to social constraints and from neurophysiological ones to constraints on consciousness as well.

Following this step towards societal matters, one can see that all the important activities of literary understanding and comprehension are situated in the field of highly developed, socially regulated interactions as much as they are located on the level of highly sophisticated cognitive (and mostly conscious) operations. Stressing this point from a methodological perspective, we would be obliged to increase the complexity of our model even further by integrating components that would have to account for the development of cognitive strategies and meta-strategies, and for the regulation of those strategies with respect to given social values. These, however, are issues that need to be dealt with in another article.

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