DISCOURSE COMPREHENSION

By
Dr. Busmin Gurning, M.Pd

Abstract

Reading comprehension needs the readers to concentrate on the development of linguistics skills and on experiential content. Generally, the process of reading and reading comprehension can be understood as the essence of comprehension is captured in one simple p... iple. Comprehension is building bridges between the new and the know. In this analysis there are three models of discourse comprehension that have come to dominate the field of psycholinguistics, they are : Kintsch and Van Dijk model, Sanford and Garrod's memory-Focus Model, and Gernsbasher;s Structure Building Framework. The three models have their own characteristics which make them different in language processing. In discourse processing, researchers follow standard linguistic theory in assuming representational modularity. There are two criteria to be considered in the process, they are syntactic category information and sense-semantic information. They play a big role in language processes started from sentence comprehension to discourse comprehension. Discourse understanding is a process which anchors the interpretation of the sentence to the representation of the prior text.

Key words: Discourse comprehension and models of comprehension

A. Introduction

This paper deals with discourse comprehension as a complex process involving the integration of textual cues and background knowledge. It is suggested that arguments over whether comprehension is bottom – up or top – down process are ultimately futile because both language and non –language sources are important and interact with each other in the comprehension process. This suggests that reading comprehension needs the readers to concentrate on the development of linguistics skills and on experiential content. Generally, the process of reading and reading comprehension can be understood as the essence of comprehension is captured in one simple principle. Comprehension is building bridges between the new and the know. Beneath this simple metaphor lies a rich and complex set of implications about the process itself and about the process of teaching comprehension. This process is basically psycholinguistic perspective.

Discourse comprehension is about as easy to achieve as it is hard to grasp. Interrupt anyone reading his favourite morning newspaper and ask how he succeeds in understanding what he reads and he will answer something. Most of the time, comprehension, whether of spoken or written discourse, is a transparent activity where we hear or read, not auditory or graphic segments, words, rhythmic groups or sentences but tempting suggestions, vivid descriptions, false denials, funny stories, sad news and/or loose argumentation and we hasten to accept, inquire about, laugh at, console, react in whatever way seems appropriate at the moment. Only rarely does the processing machinery reveal parts of itself to us, for example, when we catch ourselves waiting for the next appearance of a speaker's favourite filler word and the

rest of his utterances turns into a background murmur. Typically enough, this change of mode effectively stops the comprehension, much like staring at the window prevents us from seeing the landscape behind.

Dealing with discourse comprehension, there are three models of text comprehensions offered to the readers as shown in the following.

B. Discourse Comprehension

Comprehension of sentences for many theorists is an active process in which the perceptual system continuously attempts to determine the structure and meaning of a sentence as it is being heard. Others argue that early levels of sentence processing, such as activation of word meaning, may be conducted independently of knowledge potentially available from prior linguistic context. These questions, as well as the role of memory processes in sentences comprehension, remain important question for future research. Comprehension has two common senses, they are narrow sense and broader sense. Narrow sense denotes the mental processes by which listeners or readers take into sounds uttered by a speaker and use them to construct an interpretation of what they think the speaker intended to convey. Broad sense constitutes interpretations they have built to work (Clark and Clark, 1977).

The first major question is of course what we mean by comprehension. This is for some scholars a question of definition, for others an empirical one. Discourse comprehension can thus be taken to mean evaluation of truth conditions, creation of a discourse representation, recognition of the producer's intentions with the discourse and ability to handle the information obtained-the latter definitions presuppose and include the former ones.

Another important issue in discourse processing concerns the input to the comprehension process. This input can be either spoken language or written language, i.e. text. A discourse is the result of the various restrictions and possibilities that language users have at their disposition in producing language, manifested in one product. Discourses are not random aggregations of sentences; they exhibit systematic similarities and differences that can be evaluated, both with respect to each other and to the specific situation in which they were created.

It is therefore natural to turn to the discourse and ask: What is the 'content' of this discourse, i.e. what is it that the processor must comprehend? How is the content presented; what is it that makes a discourse 'hang together'?. As a result, discourse comprehension is regarded as a kind of translation process, where sentences are decoded, parsed and combined and comprehending a discourse is the sum of comprehending each individual sentence by considering syntactic rules (Garnham, 1985).

The basic impenetrability makes investigation of discourse comprehension a constant methodological challenge. In order to wring information out of the unwilling object under investigation all kinds of evidence has to be taken into consideration. Many different techniques have been devised to capture glimpses of the process at work.

An alternative way of analyzing discourse pursued in this book is dynamic; the product is looked at in the context of the commitments (on the part of the producer) and expectations (on the part of the processor) that are raised as a consequence of the way the discourse is designed. In such an approach, discourses do not have 'content'; rather they are blueprints or recipes that the processor utilizes in the process of imbuing discourse with meaning. Along this line of reasoning, one focuses not only on what is explicitly given in a discourse but also on what is there in a more indirect way; what the producer assumes that the processor already knows or can infer.

The last issue focuses on the very act of processing discourse. The concepts of top-down and bottom-up processing have been used to designate the two possible routes of information flow in discourse processing. In top-down processing the point of departure is global and processor-centered in that activated knowledge and expectations steer the information flow down through the lower levels. In bottom-up processing the point of departure is local and discourse-centered; information is processed step-by-step in successively higher levels (Nunan, 1987). Globally steered influences are for instance the task at hand, decided by either the processor or the producer or both. If a text is to be skimmed for a fact, learnt by heart, evaluated from a certain perspective or acted upon in a certain way, this influences both the type and emphasis of processing in important ways. Here belongs also the processor's knowledge of discourse topic, discourse genre and the representation built up so far come into play at this point.. Locally steered processes take as a point of departure the 'words on the page'; the parsing, decoding and successive incorporation of given discourse segments into larger units is dependent of what is actually in the discourse and, hence, not directly influenced by prior knowledge and expectations.

While most researchers today would agree that there has to be some kind of interaction between top-down and bottom-up driven processing, views as to which of these factors are central and steering in the comprehension process vary. Global aspects are emphasized by those who assume that comprehension involves an evaluation of what is read against a mental 'model' of the discourse. From this perspective reading 'between the lines' is easy to explain: What is not in the discourse might nevertheless be part of the mental model. Local aspects are emphasized by researchers who envisage the comprehension process as a successive integration of content-based units, propositions, in the discourse. In such a theory things that are not explicitly stated constitute a problem. Local processes are also emphasized among those who deal with spoken, rather than written discourse, especially conversations. Free-flowing conversation does not usually exhibit the neat, hierarchically organized structure that is presupposed in the theories outlined above. It may thus be impossible to find a common, global aim for the discourse. Instead, conversational analysts argue, local relations and local coherence are primary.

Whereas many researchers have discussed phenomena that relate to implicitness in texts, nobody has before to my knowledge made implicitness itself the main object of study. Doing so therefore motivates drawing on various sources of information, trying to have a fresh look on basic notions and previous empirical studies as well as contributing new empirical data.

C. Models of Discourse Comprehension

In this analysis there are three models of discourse comprehension that have come to dominate the field of psycholinguistics, they are : Kintsch and Van Dijk model, Sanford and Garrod's memory-Focus Model, and Gernsbasher;s Structure Building Framework. The three models have their own characteristics which make them different in language processing.

1. Kintsch and Dijk Model

One of first attempts at developing a detailed model of discourse comprehension was made by Kintsch and van Dijk (1978). The Kintsch and van Dijk model combined Kintsch's earlier psychology-based work on units of meaning, which were called proposition, with van Dijk's function-based work on the rules of discourse, which were called macro-operation, for transforming proposition (van Dijk, 1978). The resulting model of text comprehension proposed three basic steps:

First, the meaningful elements of the text (the propositions) must be organized into locally coherent whole (*a text base).* Due the constraints of working memory, this is a cyclical process, usually dealing with only one sentence or clause at a time.

Second, processing operations called *macro-operators* transform the propositions of the text base into a set of overarching *macro-propositions* that retain the gist of the text. These operations include deleting irrelevant propositions from the macro-structure (though not necessarily from memory), generalizing across redundancies, and constructing new proposition to fill in logical gaps in the text (i.e. making bridging inferences at a global level). Schemas (structured frameworks representing typical events) retrieved from memory control the application of these macro-operators by determining which propositions are relevant-in other words, by deciding which text elements fit the constraints imposed by a comprehender's expectations about how the discourse should proceed. Macro-operators are also applied in cycles, with the relevance criteria becoming more and more stringent with each cycle.

The third, original model comes into play only when the text needs to be recalled from memory. When the comprehended is asked to recall or summarize the text, a new text base is generated from the memorial consequences of the original comprehension process. Some of the operations used to produce this text base are reproductive, whereas others are constructive. Both types of operations result from the inverse application of the macro-operators. This model demonstrated how these three sets of operations could be used to understand a paragraph from a psychological research report and went on to suggest for testing the model empirically.

Some early criticisms of the original the model (e.g. Sanford & Garrod, 1981) focused on its use propositional notation to represent meaning and the ambiguity of exactly how much information can be held in a single proposition. If, as Kintsch and van Dijk (1978) suggest, the proposition that represent nuggets of meaning within the text can be something beyond Kintsch's (1974) word-based notation, it becomes difficult to make any claims about the model processing capacity. Kintsch and van Dijk (1978) had asserted that processing must be done in cycles because the working memory buffer that transforms proposition into a coherent text base can handle only a few proposition at a time. But if proposition comprise knowledge structures other than words, it is unclear what the capacity limits of the model really are.

The weakness of Kintsch and van Dijk's original model (1978) was on the empirical result that suggested that a lot of discourse comprehension is done "on-

line". A model that waits for an entire sentence or clause to be read into the working memory buffer before trying to figure out what that clause or sentence means was inconsistent with new data suggesting that attempts at local coherence are made *before* the ends of clauses are reached. In response to this shortcoming, van Dijk and Kintcsh (1983) revised their model, making it more "strategic", dynamic, and on-line. In other version updated (1983), the model attempts to establish local coherence as soon as possible instead of waiting for clause or sentence boundaries. This process was still conceived of as cyclical, but the length of the cycle had effectively shrunk from the size of a clause or sentence to that of a few words. Along the same lines, macro-operators were replaced by more flexible *macro-strategies*, which allow comprehenders to make inferences about the text and predictions about what will occur next before the entire text has been converted into a propositional text base.

The earlier Kintsch and Dijk model suggested that discourse comprehension is driven by preformulated schemas in a top-down, expectation-based fashion. Kintsch's (1988) construction-integration model proposed that the initial processing is strictly data driven and bottom-up. Such a change was needed to accommodate the late -1970s findings that the initial activation of meanings associated with a word occurs without regard to the context of that word.

2. Sanford and Garrod's Memory Model

Sanford and Garrod's model was developed out of an interest in referential coherence and anaphoric resolution. Kintsch and Dijk model have focused on how information from the text (in the form of propositions) is connected to and completed by information from long term memory, whereas Sanford and Garrod have focused most of their attention on a particular instantiations of that process: anaphoric resolution, or how the various referents in a text become associated with their antecedents in the text.

Sanford and Garrod' (1981) memory focus model has not gone through as many versions as the text comprehension model of Kintsch and van Dijk (1978), but it has been elaborated and updated by their continuing work in the field of anaphoric resolution. The basic goal of their model and of any discourse comprehension model-is to come up with a coherent interpretation of all the text encountered thus far, a process that hinges on first establishing who or what is being talked about in a given text fragment and whether or not that elements has been discussed before. This resolution process is influenced by three factors: (1) the discourse focus, which is whatever elements are the most highly activated at any one time, (2) the linguistic properties of the anaphors (whether the word that may refer back to an antecedent is in the form of a pronoun, common noun, or repeated name): and (3) pragmatic inference constraints, which reflect the need for global coherence.

The main assumption of this model are as follows: First. The discourse focus clearly differentiates between differeht levels of activation in the discourse model. Information that is central to the discourse focus is the 'current topic' and is highly active, while information that is on the periphery of the discourse focus is somewhat less active, but still readily retrievable. To capture this distinction, Garrod and Sanford (1990) propose two partitions of memory; the explicit focus, which focus to the elements, or tokens, currently under discussion; and the implicit focus, which contains the somewhat less active back ground information about the text scenario as it related to the tokens.

3. Gernbacher's Structure Building Model

Gernbacher's Structure Building Framework (1990) is based on the assumption that language comprehension and language production draw on general, cognitive processes and mechanism – processes and mechanism that underlie non-linguistic comprehension. Therefore, the goal of her structure building framework has been to identify these cognitive processes and mechanism. She does so by observing discourse comprehension phenomena and then searching for common cognitive processes and mechanism that enable those discourse comprehension phenomena.

Structural building framework also proposes that the goal of comprehension is to build a coherent, mental representation of comprehension or 'structure' of comprehension being comprehended. According to the structure building framework, building this mental structure involves several component processes. First, comprehenders lay foundations for their mental structures. Next, comprehenders develop their structure by mapping on information when that incoming information coheres or relates to previous information. But when the incoming information is less coherent or related, comprehenders employ a different process; they shift to initiate a new substructure, so most representations comprise several branching substructures.

The building blocks of these mental structures are what Gernsbasher very loosely refers to as memory nodes. Memory nodes are activated by incoming stimuli. Initial activation forms the foundation of mental structures. Once the foundation is laid, subsequent information is often mapped on to a developing structure because the more the incoming information coheres with the previous information, the more likely it is to activate the same or connected memory nodes. In contrast, the less coherent the incoming information is, the less likely it is to activate memory nodes. In this case, the incoming information might activate a different set of foundation for a new substructure.

According to the Structure and Building Framework as a model of comprehension, once memory nodes are activated, they transmit processing signals. These processing signals either enhance or suppress other nodes' activation and thereby control the structure building process. Presumably memory nodes are enhanced because the information they represent is necessary for further structure building. They are suppresses when the information they represent is no longer as necessary.

Based on Gernsbasher's empirical research, there are three sub processes involved in structure building, namely laying foundation, mapping relevant information onto that foundation, and shifting to initiate a new substructure. She proposes these processes account for many language comprehension phenomena. For example, Gernsbasher and Hargreaves (1988) suggested that the processes of laying a foundation and mapping relevant information onto that foundation accounts for a phenomenon they dubbed, the advantage of first mention. The advantage is this: participants mentioned first in a sentence are more memorable that participants mentioned later. They proved that the advantage First Mention is not due to first-mentioned participant's tendency to be semantics agents; neither is the advantage due to the first – mentioned participants being literally the first words of their stimulus sentences. The advantage maintains even when both the first and second - mentioned participants are syntactic subjects. Gernbasher and Hargreaves (1988) suggest that the advantage of first mention arises because comprehension requires laying a foundation and mapping subsequent information onto that foundation. First mentioned participants are more accessible because they form the foundations for their sentence-

level representations and because it is through them that subsequent information is mapped onto the developing representations.

The Process of Mapping

Another facet of Gernsbacher's research on the structure building frame work has been to investigate the cues in discourse that encourage comprehenders to employ the process of mapping (Gernsbacher, 1996). Gernsbacher and Robertson (1996) discovered that comprehenders use the definite article the as a cue for referential coherence; Deaton and Gernsbacher (1996) discovered that comprehenders use the conjunction because as a cue for causal coherence; Foertch and Gernsbacher (1994) discovered that comprehenders use the explicitness of the referential device (from repeated noun phrases to pronouns) as a cues for referential coherence; Henggi, Gernsbacher, and Bolliger (1993) discovered that comprehenders draw inference about the implied location of protagonist in narrative, and comprehenders use those inference as cues for mapping during discourse comprehension; and Gernsbacher, Goldsmith, and Robertson (1998) discovered that comprehenders draw inference about the implied emotional state of protagonist in narrative, and comprehenders use those inference as cues for mapping during discourse comprehension.

The Process of Shifting

Gernsbacher (1985) claimed that the process of shifting explained why comprehenders rapidly forget recently comprehended information (in particular, information that is typically considered "superficial" or "surface" information). These experiments demonstrated that comprehended information when thy are ders rapidly forget recently comprehended information when they are comprehending non-verbal picture stories; so, the phenomenon is not unique to language. furthermore, the rapid forgetting was most likely to occur when comprehenders encountered a structural boundary, for instance, when they encountered a new clause, a new sentence, or-as in Gernsbacher's (1985) picture story experiment- a new episode. Because the phenomenon occurs with no-verbal picture stories, it is probably not due to the traditional psycholinguistic explanation. Moreover, because the structure of the information, rather than the amount, affects comprehenders memory, the phenomenon is probably not due to the limitations of a short term-memory, Gernsbacher (1985) empirically demonstrated that the phenomenon is not due to another popular explanation, namely, that comprehenders lose access to information-in particular verbatim information-because it is recoded into "gist". Instead, Gernsbacher (1995) empirically demonstrated that comprehenders rapidly forget information because comprehension involves the cognitive process of shifting. Once comprehenders have shifted to initiate a new sub-structure is more difficult to access. Surface information is least likely to remain accessible because it is least likely to be represented in multiple substructures.

The Mechanisms of Suppression and Enhancement

According to the structure building framework, mental structure are built of memory nodes; once activated, two cognitive mechanisms control memory node's activation levels: suppression and enhancement. For example, Gernsbacher and Faust (1991b) demonstrated the role of mechanism of suppression plays in how comprehenders understand the contextually appropriate meaning of words that have diverse meanings, multiple meanings are often immediately activated, even though

one meaning is clearly implied by the context. They also discovered that the contextually inappropriate meanings do not become less activated simply because the decay. Inappropriate meanings become less activated through an activation; they are suppressed by signals transmitted by memory nodes representing the semantic, pragmatic and syntactic context.

The role of both mechanisms of suppression and enhancement play in how comprehenders understand anaphoric and cataphoric devices. Through suppression and enhancement, the anaphor's antecedent becomes the most activated concept. The more explicit the anaphor is, the more likely it is to trigger the mechanisms of suppression and enchancement. On the other hand, anaphoric devices mark concepts that are likely to be mentoned again. For example. Two cataphoric devices typically found in spoken English are spoken stress and the indefinite article. Gernbacher and Jescheniak (1995) demonstrated how the mechanisms of suppression and enhancement make the concepts to which cataphoric devices refer to more accessible based on referential cohesion.

According to the structure building framework, may of the cognitive processes and mechanisms underlying language comprehension are general cognitive processes and mechanisms; therefore, some of the bases of individual differences in comprehension skill might not be language specific. According to the structure building framework, all comprehenders lose access to recently comprehended information when they shift from actively building one structure and initiate another. So less-skilled comprehenders might be worse at remembering recently comprehend information because they shift too. Less-skilled comprehenders are less able to suppress inappropriate information, such as the contextually inappropriate meanings of ambiguous words (plying card meaning of spade in the sentence *He dug in the garden with the spade*). Because inappropriate information can not be easily mapped onto an existing substructure, leading to an increased amount of shifting, and poorer access to previously comprehended information.

Discourse information is sometimes only likely in a particularly. Altman and Steedman (1988) argued that *Mary saw the man with the binoculars* is most likely to mean that *Mary used the binoculars if only one man has been mentioned previously*, but that the man had the binoculars if more the one man has been mentions, since the additional information is only necessary if we need to distinguish between different men. The processor appears to be sensitive to this information. Liversedge, Pickering, Branigan, and Van Gompel (1998) argued that other aspect of discourse context can also affect interpretation.

In comprehension, sentence comprehension becomes one point in discourse comprehension. The main debate concerns the status of processing modularity. The central question is whether all potentially relevant sources of information can be employed during initial processing or not. There are categories of information are involved in discourse comprehension, such as syntactic category information and sense- semantic information.

We assume that category information forms part of the lexical entry for each word. For example, the entry for love state that it is a verb and that it is transitive (i.e. it takes both a subject and an object). An important question is whether this constitutes two different sources of information: (major) category (e.g. verb, noun, adjective) and subcategory (e.g. transitive verb, intransitive verb). If so, than the processor might base initial processing decisions on major category information alone (Mitchell, 1987). But if there is no distinction between category and sub category, then this option would not be available to the processor.

Many words are ambiguous as to their category (e.g. eat can be transitive or intransitive). The frequency with which each category or subcategory is used affect processing, and therefore forms part of this source of information. For example, people have less difficulty with a sentence that employs a verb used with a more frequent subcategory than a verb used with a less frequent one (e.g. Mitchell & Holmes, 1985). One important current debate is whether this information affect initial parsing decision (e.g. Trueswell et al, 1993); see below.

Traditionally, syntactic rules perform most of the work of determining possible sentences of a language and their structure (Chomsky, 1965). For instance, a syntactic rules might indicate that a sentences can consist of a noun phrase. In such accounts, a clear distinction is made between syntactic information and lexical category information, as discussed previously. More recent linguistic theories have reduces the syntactic component of the grammar and included more information in lexical entries (Chomsky, 1981). In psycholinguistics, attempts to reduce the distinction between syntax and lexicon are found in constraint-based theories. Another issue is whether the grammar contain a listing of syntactic rules, or whether, as some recent theories assume, the rules arise as a consequence of the interaction of more basic components of the grammar, concerned with anaphora, thematic roles, and so on (Chomsky, 1981). The precise nature of the distinctive between syntactic rules and syntactic category information may affect the organization of the processor and hence its behaviour.

These include person, number, gender, and case. In English, some pronouns, for instance, are marked for case (*she vs her*), gender (*she vs he*), person (*she vs I*) and number (*she vs they*). Grammatical features play a much smaller play a much role in English than in many other languages.

In a text like Tom was going to meet his uncle. He was slightly nervous. Tom is the focused character (or thematic subject), not the uncle. Hence, the pronoun he preferentially refers to Tom. It may be that the process in parsing, though its impact has perhaps been most clearly demonstrated in the resolution of anaphora (Garrod et al., 1994).

In written language, punctuation plat something of the same role, In while the plane flew the man watched, a comma can be placed before the man. No comma would be placed there if the man were the object of flew. I do not consider the effects of prosody in this chapter.

Some analyses are plausible, some implausible. This kind of semantic information may be useful to the process of syntactic ambiguity resolution. The earlier example, While the plane flew the man watched contains a local ambiguity: flew can be intransitive (as it turn out to be) or transitive. However, the transitive analysis is implausible: *A plane is unlikely to be the agent of an act of flying*. The parser might use this plausibility information to determine that flew is probably intransitive. It might come to a different conclusion if the sentence began while the man flew. One type of sense-semantic information is due to "*selection restriction*": Certain verbs normally require arguments of a particular semantic type (animate subjects) to be felicitous. This information might conceivably be independent of general knowledge; but this cannot be the case for other aspects if sense-semantic information.

Another way of looking at sense-semantic information in this term of thematic relation. Thematic relations are broad semantic categories, usually thought to include agent, patient (or theme), goal instrument, location, etc. Thus, the active verb killed takes an agent and a patient; it is only felicitous with an animate patient, thought it

can have an animate or an inanimate agent (*Mary killed John* or *The avalanche killed John*).

D. Conclusion

The three models are quiet different in process language comprehension. The cognitive process of laying a foundation proposed by Gernsbacher's Structure Building Framework is akin to the process by which tokens are used 'an anchor for attacking information" in Garrod and Sanford's memory Focus model. Similarly, the general, cognitive process of mapping proposed by Gernsbacher's Structure Building Framework resembles the following phenomenon in Garrod and Stanford's memory focus. If a referent that attaches to the token in the explicit focus is found, it takes another step attach that referent.

The general cognitive mechanism of suppression found in Gernsbacher's Structure building Framework resembles the process of integration found in Kintsch's construction-integration model. There are two processes build mental representation during language comprehension. The process of construction builds a proposition network and the process of integration edits that network. Like the structure building framework's mechanism of enhancement, Kinstsch' process of integration increases the activation of contextually relevant information. The structure building framework's mechanism of enhancement, Kintsch's process of integration operates after concepts have been initially activated.

In discourse processing, researchers follow standard linguistic theory in assuming representational modularity. There are two criteria to be considered in the process, they are syntactic category information and sense-semantic information. They play a big role in language processes started from sentence comprehension to discourse comprehension. Discourse understanding is a process which anchors the interpretation of the sentence to the representation of the prior text.

References

Clark H.H. and Clark E.V. (1977). *Psychology and Language: An Introduction to Psycholinguistics.* Harcourt Brace Javanovich: New York.

Garrod, S.C.et al (1994). *Resolving Sentences in a Discourse Context: How Discourse Representation Affects Language Understanding.* San Diego, CA: Academic Press.

Garrod S. and Pickering M. (Eds) (1999). *Language Processing.* Psychology Press: Lodon.

Gernbacher, M.A. (1990). Language Comprehension as Structure Building. Hillsdale, NJ: Lawrence Erlbaum Associates.

Gleason J.B. and Ratner, N.B. (Eds) (1998). *Psycholinguistics.* Second Edition. Harcout Brace College Publishers: New York.

Granham, A. (1985). *Psycholinguistics: Central Topics.* Routledge: London.

Kinstch, W., (1988). The Role of Knowledge in Discourse Comprehension: A Construction Integration Model. *Psychological Review*, 95, 163-182.

Nunan, David, (1987). *Developing Discourse Comprehension: Theory and Practice.* Occasional Paper no. 43. SEAMEO-RELC: Singapore.

Sanford, AJ., Moar, K., & Garrod, S.C., (1988). Proper Names as Controllers of Discourse Focus, *Language and Speech*, 31, 43-56.

Van Dijk, T.A., (1978). Semantic Macro-Structures and Knowledge Frames in Discourse Comprenhension. In Jus. & P. Carpenter (Eds.) *Cognitive Processes in Comprehension* (pp.3-32). Hillsale, Nj. Lawrence Erlbaum Associate.

Van Dijk, T.A., & Kinstsch, W., (1983). *Strategies of Discourse Comprehension.* New York: Academic Press.