Dedicated to the memory of my sister,

Doris M. Martin
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THE INTERACTIVE INFLUENCES OF PRIOR KNOWLEDGE AND
METACOMPREHENSION ON THE COMPREHENSION OF
READING DISABLED ADULTS

By

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May 1990

Chairman: Dr. H. Thompson Fillmer
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The purpose of this research was to examine the
influences of prior knowledge and metacomprehension on the
comprehension of reading disabled adults. Specifically, the
study was designed to investigate the extent to which reading
disabled adults apply their prior knowledge in the
comprehension of text and the extent to which these readers
employ metacomprehension strategies actively to integrate
prior knowledge with textual information. To implement the
study, the investigator constructed prior knowledge
inventories, prior knowledge content-specific measures,
comprehension measures, and metacomprehension measures. A
pilot study and evaluation through ratings by a panel of
reading education experts were used to establish the
reliability and validity of the instruments.
The random sample included 60 undergraduate students who were assigned to reading improvement and study skills courses on the basis of their scores on the Nelson-Denny Reading Test. The research instruments were administered to subjects in small-group settings. During the four testing sessions, the subjects read social science stimulus passages and completed the four assessment instruments.

A series of multiple regression, single group t-test, and item response analyses were conducted to test the hypotheses and address the research questions that guided the investigation. The results indicated that levels of prior knowledge and metacomprehension significantly influenced reading disabled adults' comprehension processes (p < .05).

The regression coefficients and tests of significance indicated an inverse relationship between inappropriate schemata and comprehension. Subjects' performances demonstrated that they retained inappropriate schemata which served as a hindrance to comprehension. These readers appeared to maintain activation of inappropriate schemata while proceeding through the social science texts and, therefore, failed to alter their cognitive structures to accommodate the textual information. Neither content-specific prior knowledge nor metacomprehension contributed to the variance in comprehension when subjects retained high levels of inappropriate schemata. There was a direct relationship between subjects' levels of metacomprehension and their comprehension scores. However, findings derived
from item response analyses revealed that subjects did not effectively apply metacomprehension strategies to resolve inconsistencies between their prior knowledge and the information presented in the social science texts.
CHAPTER I
INTRODUCTION AND JUSTIFICATION

Introduction

Reading theorists have indicated that both prior knowledge and metacomprehension processes are requisite to efficient comprehension (Baker & Brown, 1984a; Jones, Palincsar, Ogle, & Carr, 1987; Spiro, 1979; Wagoner, 1983). Researchers have, however, examined comprehension either in term of prior knowledge or metacomprehension, but have not adequately investigated the relationship between both variables concurrently. If, as suggested by Lipson (1984), reading comprehension is an active process involving an interaction between textual knowledge, prior knowledge, and procedural knowledge, then it appears important to approach the study of comprehension processes with a series of converging variables. Because proficient reading comprehension requires a combination of skills and processes, research is needed that not only addresses separate skills and procedural processes, but, in addition, considers reading comprehension as a complex system of interrelated skills and processes. Therefore, the purpose of this investigation was to examine the interactive nature of prior knowledge and
metacomprehension and how this linkage influences the reading comprehension of reading disabled adults.

Statement of the Problem

The purpose of this research was to examine the influences of prior knowledge and metacomprehension on the comprehension of reading disabled adults. Specifically, the study was designed to investigate the extent to which reading disabled adults apply their prior knowledge in the comprehension of text and the extent to which these readers employ metacomprehension strategies actively to integrate prior knowledge with textual information.

Because this investigation represented an initial attempt to explore the interactive nature of prior knowledge and metacomprehension on the comprehension of reading disabled adults, the implementation of the study necessitated the development of (a) prior knowledge inventories, (b) prior knowledge content-specific assessment instruments, and (c) reading comprehension and metacomprehension measures. Establishment of the reliability and validity of the instruments required testing through a pilot study and evaluation through ratings by a panel of reading education experts.

The following research questions were addressed in this study:
1. To what extent do reading disabled adults retain appropriate schemata and inappropriate schemata for experimental reading passages?

2. To what extent do inappropriate schemata regarding a topic serve as a hindrance to the comprehension of reading disabled adults?

3. To what extent does content-specific prior knowledge regarding a topic facilitate the comprehension of reading disabled adults?

4. To what extent is the comprehension of reading disabled adults influenced by their use of metacomprehension strategies?

5. To what extent do reading disabled adults use metacomprehension strategies which are requisite for resolving inconsistencies between their preexisting knowledge and textual information?

Hypotheses

The questions under investigation in this research generated three hypotheses stated in the null form and tested at the .05 level of significance.

Hypothesis I: There is no significant difference between reading disabled adults' levels of appropriate schemata and inappropriate schemata for experimental reading passages (as assessed by prior knowledge inventories).
**Hypothesis II:** There is no significant relationship among reading disabled adults' levels of content-specific prior knowledge, levels of inappropriate schemata, and levels of metacomprehension (as assessed by prior knowledge content-specific measures, prior knowledge inventories, and metacomprehension measures, respectively).

**Hypothesis III:** There is no significant relationship among reading disabled adults' levels of content-specific prior knowledge, levels of inappropriate schemata, levels of metacomprehension, and levels of comprehension (as assessed by prior knowledge content-specific measures, prior knowledge inventories, metacomprehension measures, and comprehension measures, respectively).

**Rationale for the Study**

The justification for this study was based on previous reading research. Literature pertinent to this study is reviewed in depth in Chapter II. Presented here is a summary of investigations establishing the significance of the present study, including an examination of limitations inherent in the traditional study of prior knowledge and metacomprehension.

Historically, researchers have directed their attention exclusively to the impact of either prior knowledge or metacomprehension on the reading comprehension of children. Although some researchers have begun to explore these areas
with adult readers, these studies in all cases have investigated prior knowledge and metacomprehension as distinct entities. Moreover, these investigations, for the most part, have used adult proficient readers. Because all adults, both able and disabled, approach the reading situation with a broad background of world knowledge and cognitive abilities, it is equally important to determine the types of processing strategies that adult disabled readers employ in the comprehension of text. Thus, interest in the present study resulted from the limited amount of information available regarding the comprehension of reading disabled adults.

Research on prior knowledge has generally focused on the quantity of the reader's preexisting knowledge and has supported the notion that one reason both young proficient readers and disabled readers do not comprehend as well as older, more skilled readers is their limited prior knowledge (Langer & Nicolich, 1981; Pearson, Hanson, & Gordon, 1979; Stevens, 1980). Lipson (1984), on the other hand, has posited that the fundamental assumption "behind such advice is that prior knowledge is an either/or proposition--you have it or you don't" (p. 761). This researcher has demonstrated that the problem with this premise is that a reader's existing knowledge structures are seldom so definite. Frequently, the extent of one's prior knowledge regarding a topic varies in degree. In some instances, what one knows is
obscure, poorly defined, or inaccurate. Younger readers, in particular, with their restricted world experience, may have schemata based on fragmented information or misinterpretations. Therefore, because a reader's preexisting knowledge may vary, researchers who have examined only the quantitative aspects of a reader's prior knowledge have not adequately explored its total impact on comprehension processes.

Recent evidence has suggested that the quality of prior knowledge is also an important variable in children's comprehension and acquisition of new information from text (Lipson, 1984; Maria & MacGinitie, 1980, 1987). Qualitative analyses of children's prior knowledge addresses questions unanswered by quantitative analyses of prior knowledge. For example, Lipson (1984) inquired, "When prior knowledge is available, do young readers use it to enhance text comprehension, to integrate and accommodate new information for old? How does the fact that children might possess a distorted or incomplete schema on a topic affect their comprehension?" (p. 760). Questions of this nature have indicated that the study of the quantitative aspect of prior knowledge only does not fully explain how readers use their available knowledge. Moreover, empirical investigation of these questions with children has revealed that the qualitative nature of preexisting knowledge does play an essential role in comprehension. Findings from these studies have shown that some young readers, while possessing adequate
prior knowledge, fail to correct misinformation in their knowledge structures and simply neglect to use their prior knowledge as a framework to learn new information from text (Lipson, 1984; Maria & MacGinitie, 1980). Correspondingly, other researchers (Anderson & Smith, 1984; Gordon & Rennie, 1987; Maria & MacGinitie, 1987) have disclosed that students who possess partial or incorrect information tend to restructure newly encountered information to conform to their preexisting knowledge structures unless teachers institute intervention strategies to assist these students in the reconciliation of new and old information.

Although this line of inquiry has extended reading research by exploring the qualitative ramifications of prior knowledge, a major limitation of these investigations is their failure to determine why readers use their prior knowledge inappropriately and distort text to coincide with their preexisting ideas. A small number of researchers have suggested, but have not empirically investigated, that the resistance or failure to discard inappropriate schemata for relevant schemata among readers may be the result of the inefficient use of metacomprehension skills (Spiro, 1979; Wagoner, 1983). Spiro (1979), for example, has reported that when given equal levels of background knowledge, some younger readers do not know they should consider new textual information in terms of their knowledge. Likewise, Sullivan (1978) has found that disabled readers at the secondary level
experience difficulty relating their prior knowledge to text. In addition, Baker and Brown (1984a) have suggested that readers' inability to activate and deactivate knowledge as it becomes relevant or irrelevant to comprehension may be a lack of metacognitive awareness. More recently, additional support for the interrelationship between prior knowledge and metacomprehension has been reported by Anderson and Smith (1984). These researchers have demonstrated that fifth graders' inability to recognize discrepancies between their background knowledge and science texts are due to students' lack of self-monitoring abilities and lack of sensitivity to dissonance between their schemata and the written text.

Wagoner (1983) similarly theorized a probable interrelationship between prior knowledge and metacomprehension on the comprehension process. When referring to various clause and story levels of text, she wrote that

at any level, problems can occur in terms of the reader's assessment of the internal consistency of the passage content itself. Problems may also occur in terms of the reader's evaluation of its external consistency, that is, its congruence with the reader's knowledge of the world. The reader checks the text against itself for internal consistency and against reality and prior experience for external consistency. Failure to check either constitutes a failure of comprehension monitoring. (Wagoner, 1983, p. 340)

Thus, it appears that the interplay between prior knowledge and metacomprehension may be a critical feature of efficient comprehension because monitoring skills assist the
reader in discerning an appropriate match between existing knowledge and textual information.

As Wagoner (1983), Jones, Palincsar, Ogle, and Carr (1987) acknowledged the interactive influences of prior knowledge and metacomprehension on efficient comprehension. These authors described this reciprocal process as on-line processing. They postulated that, as reading progresses, hypotheses are evaluated against information in the text or prior knowledge. In some instances, hypotheses are rejected because they are not verified, or judgment is withheld because of inadequate information. As new ideas are assimilated or held in abeyance, readers generate new questions that form the basis for new hypotheses and predictions. Thus, learning is characterized as a start/pause process in which readers monitor their comprehension through skills such as self-questioning, rereading information to verify or clarify, skimming ahead to anticipate, selecting and summarizing what is relevant, and comparing new information to prior knowledge. During the comprehension monitoring phase of on-line processing, the reader works actively to integrate incoming information with knowledge structures which have been recently reactivated. Readers organize what they read, and derive meaning as they link individual portions of information to each other and to prior knowledge. The essence of learning, according to Jones and her colleagues, is to relate new information to prior
knowledge. Proficient readers accomplish this by drawing from a repertoire of cognitive and metacognitive strategies (Jones et al., 1987).

Though researchers have indicated that metacomprehension is necessary for the efficient use and integration of prior knowledge, this phenomenon has not been explored with reading disabled adults. Empirical investigations have verified both the facilitative and deleterious effects of prior knowledge on the comprehension process, but these results do not hold true for reading disabled adults. Although much data have been generated regarding the role of prior knowledge on comprehension, this issue, as related to adult disabled readers, has received limited treatment. Therefore, the present study attempted to extend the findings from previous research to a different group of readers.

Significance of the Study

Researchers in the field of adult education have reported that an increasing number of adults are in need of programs designed to develop and enhance their reading abilities (Handel & Goldsmith, 1988; Kirsch & Jungeblut, 1986; Kozol, 1985; Long, 1987). However, little progress has been evidenced in the development of reading diagnosis and remediation for adults. Consequently, traditional reading programs for adults disabled in reading have been based on a child-oriented model, rather than an adult-oriented
(andragogical) model. Such programs have usually operated with less than maximal success because they have failed to address the unique needs and characteristics which distinguish adult disabled readers from preadult disabled readers (Simpson, 1982). Moreover, although reading research has proliferated, research on adult reading is limited. For the most part, existing studies have focused on descriptive characteristics of adult reading programs. As a result, a theoretically based program of adult reading diagnosis and instruction is currently nonexistent. Thus, procedures employed in teaching adults are essentially those used in teaching children with little or no adaptations to meet the specific needs of adult readers.

One major limitation of the elementary diagnostic reading approach as applied to adult reading is that it omits the essential role of preexisting knowledge and background understanding which an adult brings to the reading task. It also "provides only one measure (textual schemata) of the learner's reading performance, an orientation which totally ignores the interactive nature of learning from text" (Simpson, 1982, p. 139). Thus, to gain a comprehensive understanding of the manner in which adults process text, the researcher in this study first attempted to ascertain how preexisting knowledge affects the acquisition of new textual information, including prior knowledge selection, maintenance, change, and combination. The present study was
designed to investigate issues not currently addressed by adult reading comprehension research. The primary purpose of the investigation was to determine whether reading disabled adults (a) organize their past knowledge into a framework which provides slots for anchoring new information, (b) fail to correct misinformation in their knowledge, or (c) simply neglect to use their prior knowledge as a framework for learning new information from text.

A second purpose of the study was to determine whether reading disabled adults demonstrate metacomprehension strategies which are necessary for monitoring their comprehension and resolving contradictions between prior knowledge and text. This investigation, therefore, has the potential for establishing a theoretical foundation for an andragogical diagnostic reading model which will provide an appropriate assessment of adult needs and proficiencies.

The study may also have educational significance for practitioners. First, the findings may assist reading educators in gaining insight into the cognitive strategies of adults. This information could aid teachers in adjusting teaching methods and approaches to meet the needs of adult readers. Second, the instrumentation employed in this research may be replicated by reading teachers to diagnose adults' strengths and deficiencies in prior knowledge and metacomprehension skills. In addition, the study may serve as an impetus or guide for practitioners in the development
of diagnostic and instructional procedures based on adult learning theories.

This study will further contribute to the small body of research pertaining to adult reading. Findings may generate implications regarding instructional strategies which could be subjected to empirical examination in future research. This would make a significant contribution in as much as the literature on adult reading includes few studies providing new knowledge about the nature of the reading process or justifications for the techniques and approaches in current use (Kavale & Lindsey, 1977).

In 1965, Smith, in an evaluation of the status of adult reading, recommended that new materials needed to be developed and new methods discovered to meet the reading needs of adults. Her concluding statement was that "adult reading instruction is now faced with its greatest challenge!" (p. 375). More than ten years later, Newton (1977), in addressing the matter of adult reading, posited the following observation:

Traditional theories of child psychology as well as public school pedagogy are being utilized in substantial numbers of adult education programs, and such methodologies are reported to be seriously unproductive. In spite of the fact that educators have recognized for several decades that a child is not simply a small adult, it has apparently been with greater difficulty that they understand that an adult is not merely a large child. (Newton, 1977, p. 361)

Moreover, Diekhoff (1988) and Pasch and Oakley (1985) have reported that needed changes in adult reading programs
have not been accomplished. Diekhoff (1988) has argued that "these programs have failed to produce the life-changing improvements in reading ability that are often suggested by published evaluations of these programs" (p. 629).

To date, progress in the development of a philosophical and andragogical framework for mature reading has been slow in evolving. As a matter of fact, adult reading is described as "a profession in search of an identity" (Cranney, 1983, p. 418). With the exception of commercial speed reading courses, adult developmental and advanced reading courses in the United States have been neglected (Johnson, 1980). As a result, adult reading presently does not share the status assumed by elementary and secondary reading (Cranney, 1983). Thus, the challenge issued by Smith (1965) regarding adult reading has not been realized. The current status of adult reading again illuminates "the challenge we face in designing a delivery system for adult development. It is a challenge worth meeting, not only for adult education, but for the intergenerational transfer of that education from adults to children" (Sticht, 1980, p. vi).

This study has the potential to assist in meeting the challenge for adult reading by establishing an andragogical philosophy that will help reading educators understand the complex nature of adult reading processes. It may, in addition, provide a theoretical foundation offering insight
into the diagnosis and correction of adult reading comprehension problems.

Assumptions

In this study it was assumed that

1. Subjects possessed the intellectual ability and verbal skills necessary to understand the research tasks and present written verbal protocols.

2. The assessment instruments adequately measured prior knowledge, comprehension, and metacomprehension.

3. The conditions under which the research tasks were administered were uniform across individual sessions to eliminate variation in the research procedures.

Delimitations and Limitations

The sample for the investigation was limited to 60 adults enrolled in reading improvement and study skills courses at a medium-sized southeastern university. The participants were classified as disabled in reading; thus, the results can be generalized only to similar adult populations. In addition, the reading passages employed in the investigation were restricted to expository prose. Therefore, the results and conclusions can be appropriately generalized only to reading situations using expository text. Generalizations to reading tasks involving other types of discourse may be inappropriate.
**Definition of Terms**

For the purposes of this study, **prior knowledge** is synonymous with knowledge structures, scripts, frames, and schemata. Prior knowledge is defined as preexisting information that a reader has stored in memory regarding a particular topic.

**Schemata** are specifically defined as a reader's past experiences which are stored in memory and serve as frameworks for interrelating various elements of information about a topic (Spiro, 1980).

**Schema availability** refers to the presence or absence of background knowledge (Spiro, 1980).

**Schema selection** is defined as decisions on the selection of an appropriate schema to which to fit the textual data (Spiro, 1980).

**Schema maintenance** is defined as maintaining activation of the selected schemata while proceeding through the text (Spiro, 1980).

**Schema change** refers to the decision to bring different schemata to bear at different times, depending on signals from the text (Spiro, 1980).

**Schema combination** is defined as the integration of sets of knowledge across segments of text (Spiro, 1980).

**Inappropriate schemata** are synonymous with incongruent schemata, distorted schemata, incongruent prior knowledge, and distorted prior knowledge. Inappropriate schemata are
defined as preexisting information that a reader has stored in memory regarding a particular topic which is fallacious and incongruent with textual information.

**Metacomprehension**, in this study, is synonymous with comprehension monitoring. Metacomprehension refers to the readers' abilities to accurately determine how well they have comprehended a reading passage and the readers' abilities to use prior knowledge to interpret new information from text (Baker & Brown, 1984a).

**Confidence rating** is a metacomprehension measure, requiring "examinees to place a value on the probability that responses on multiple-choice alternatives are correct" (Johnston, 1983, p. 66).

**Comprehension measure** is an instrument designed to test readers' "understanding of what is read" in the experimental textual passages (Harris & Hodges, 1981, p. 266).

**Prior knowledge content-specific measure** is an instrument designed to assess readers' levels of general background knowledge regarding the experimental textual passages.

**Prior knowledge inventory** is an instrument designed to measure readers' levels of appropriate and inappropriate schemata regarding the experimental textual passages.

**Textually distorted protocol** refers to verbal information that represents inappropriate modifications of
the reading text which include intrusions from one's background that are unrelated to the text.

**Textually specific protocol** refers to verbal information that is organized as a restatement of information semantically represented in the reading text.

**Textually explicit questions** are defined as "items that have both the question information and the answer information stated in a single sentence in the text" (Johnston & Pearson, 1982, p. 10).

**Textually implicit questions** are defined as "items that have the question information and response information stated in different parts of the text, requiring the reader to combine the separate pieces of information in order to produce or recognize an answer" (Johnston & Pearson, 1982, p. 10).

CHAPTER II
REVIEW OF THE LITERATURE

Introduction

Chapter II is a review of the research and literature related to prior knowledge and metacomprension that establishes a theoretical foundation for this investigation. In this chapter an attempt is made to identify schema-theoretic and metacognitive aspects of textual processing and the methodology employed to assess such processes among readers. Because research is limited as it relates to reading disabled adults, pertinent studies regarding both adult and younger readers are presented. The major areas to be considered in this review are organized in four sections. The first section presents the historical development and conceptual background of prior knowledge. An overview of prior knowledge research paradigms comprises section two. Section three includes a discussion of the historical development and conceptual background of metacomprension. The fourth section presents studies pertaining to metacomprension research paradigms.
Prior Knowledge: Conceptual Background

The basis for much of the research regarding the role of prior knowledge in the reading comprehension process is Bartlett's (1932) pioneering work in memory and learning which revealed that recall is a reconstructive process rather than the passive reproduction of stored memories. He postulated that readers employ a mental framework, or schema, in the processing of text. In his classic book, *Remembering*, he described schema as "an active organization of past reactions, or of past experiences, which must always be supposed to be operating in any well adapted organic response" (1932, p. 201).

From Bartlett's notion of schema emerged the present-day schema-theoretic position as elucidated by Anderson (1977a); Minsky (1975); Rumelhart (1981); Rumelhart and Ortony (1977); and Schank and Abelson (1977); and researched by Adams and Collins (1979); Anderson, Reynolds, Schallert, and Goetz (1977); Anderson, Spiro, and Anderson (1978); Bransford and Johnson (1973); and Bransford and McCarrell (1974).

According to this theory, an individual's prior knowledge is systematized into a hierarchical network of related concepts characterized as schemata (Bartlett, 1932; Rumelhart & Ortony, 1977), frames (Minsky, 1975), or scripts (Schank & Abelson, 1977). The structures function not only for storage, but also as a scaffolding (Ausubel, 1968) or framework for assimilating new information into existing
cognitive structures. In other words, the reader uses prior knowledge of the world organized in holistic cognitive structures called schemata to conventionalize what is read in terms of his preexisting world view (Spiro, 1980). Thus comprehension, according to the schema-theoretic view of reading, is contingent on information a reader possesses prior to reading printed material. Reading comprehension, then, comprises more than the extraction of information from text. Instead, it entails the active integration of new textual information with prior knowledge (Adams & Collins, 1979).

Two dimensions of schemata are used to read and recall printed material (Anderson, Pichert, & Shirey, 1979). The first is textual schemata or the "knowledge of the discourse level convention of text," whereas the other content schemata comprise "the reader's existing knowledge of the real and imaginary world" (Anderson et al., 1979, p. 2). Textual schemata, then, include a reader's knowledge of text characteristics. These linguistic features serve as a general outline for text which is read, assisting the reader to anticipate what will follow and to organize incoming information (Bowman, 1981).

Content schemata, as mentioned previously, represent prior world knowledge a reader brings to the text. Each "reader brings an entire life time of experiences, knowledge, and abilities to each reading situation, and each of these
substantially affects comprehension" (Langer & Smith-Burke, 1982, p. vii). An individual's beliefs regarding a topic influence the interpretation of that particular text. As a result, different segments of information are remembered, depending on which segments are significant to the reader's frame of reference. However, if an alternative frame of reference is assumed, the segments of information recalled can change (Bowman, 1981). Thus, a range of meanings may be derived from textual material predicated upon all the personal, environmental, and cognitive influences which act upon the comprehension process.

Anderson and his colleagues (1979) described textual and content schemata as being distinctly different and posited that both are employed by and are instrumental for a reader. At the same time, these researchers argued that "there is good reason to believe that content schemata are more important to reading comprehension than textual schemata" (p. 2). Bowman (1981), in a comparative analysis of textual and content schemata, challenged their contention. Her findings indicated that the more useful schema at any particular time are determined by the context, rather than one schema having precedence over the other. Likewise, Chapman (1984) concurred that "comprehending then can be thought of as a combination of the general knowledge of the world in which we live and the technical text linguistic knowledge" (p. 271).
Moreover, the schema-theoretic perspective of reading has suggested that reading comprehension difficulties extending beyond decoding difficulties may result from one or more of the following conditions (Spiro, 1980): (a) schema unavailability, that is, the absence of background knowledge; (b) schema selection, that is, decisions on the selection of an appropriate schema to which to fit the textual data; (c) schema change, that is, the decision to bring different schemata to bear at different times, depending on signals from the text; and (d) schema maintenance, that is, maintaining activation of the selected schemata while proceeding through the text.

Because adult readers possess a wide range and depth of background experiences, the second, third, and fourth factors (schema selection, schema change, and schema maintenance) were of particular significance in this study. Therefore, this investigation was designed to explore the possibility that reading disabled adults do not assess schema efficiently or appropriately and/or become schema-bound and fail to discard a previously activated schema when textual information indicates an incompatible match with text. Research lending further support to the schema-theoretical position is discussed in the succeeding sections of this chapter.
Prior Knowledge Research Paradigms

Researchers have long acknowledged that the prior knowledge a reader brings to the reading task is an instrumental factor in comprehension (Adams & Bruce, 1980; Adams & Collins, 1979; Anderson et al., 1978; Bartlett, 1932; Horn, 1937; James, 1890; Nelson, 1987; Rumelhart, 1981). Empirical evidence linking the influence of prior knowledge to the comprehension process has evolved from several perspectives. First, one group of investigations has shown that a reader's knowledge of a passage's theme produces efficient comprehension (Bransford & Johnson, 1973; Bransford & McCarrell, 1974; Frase, 1972). In this body of research the investigators attempted to manipulate the availability of preexisting information in order to ascertain subjects' abilities to comprehend text. The findings revealed that nonmeaningful text was memorized more when the passages were preceded by titles and pictures containing appropriate contextual content than when they were not. In related research, Schallert (1976) employed manipulative tasks to examine subjects' abilities to comprehend ambiguous text which was accompanied by biasing titles. Although previous studies have indicated that contextual background can increase the amount of information recalled, Schallert extended these findings to show the biasing influence of context and how it can be manipulated for readers to
comprehend text with two or more semantically different interpretations.

Another paradigm of studies has verified the facilitative effects of prior knowledge related to a particular topic on the comprehension of average readers (Ausubel & Fitzgerald, 1961; Langer & Nicolich, 1981; Ohlhausen & Roller, 1986; Pearson et al., 1979; Stevens, 1980). In these studies the subjects' comprehension of high- and low-knowledge topics was tested. The researchers hypothesized that students who possessed a schema for a given topic prior to reading the text would produce more efficient comprehension. Subjects' performances on multiple-choice product measures and questions tapping explicit and implicit textual information supported this hypothesis. These findings revealed that when readers possessed prior knowledge about a topic, the comprehension process was enhanced. However, according to Holmes, "it is not clear whether the same effect is realized by poor readers" (1983, p. 1).

An additional line of research examined how prior knowledge influenced the perspective a reader assumed in the interpretation of prose (Anderson et al., 1977; Carey, Harste, & Smith, 1981; Pichert & Anderson, 1977; Ribovich, 1979; Steffensen, Joag-Dev, & Anderson, 1979). These investigators examined the notion that a reader's world knowledge can determine the meaning and significance obtained from textual information by analyzing proficient readers'
recall from passages containing two or more interpretations. Findings from this research have shown that the meaning a person obtains from written communication is contingent on the person's knowledge of the world as well as the attributes of the message. More specifically, the high-level schemata that individuals impose upon printed materials induce them to perceive messages in distinct ways. Thus, high-level schemata can lead persons to present one interpretation of a passage without considering other possible interpretations during stages of processing. Moreover, this prior knowledge paradigm has suggested that the schema or perspective that readers select influence the nature and amount of textual recall.

An alternative view, currently investigated by a small number of researchers, has acknowledged the facilitative effects of prior knowledge; however, these investigators explored how an overemphasis on prior knowledge negatively affected comprehension (Anderson & Smith, 1984; Gordon & Rennie, 1987; Lipson, 1984; Maria & MacGinitie, 1980, 1987). Analysis of subjects' recall in these studies has indicated that there are a number of younger readers whose comprehension difficulties are related to an overemphasis on prior knowledge. In fact, their overreliance on prior knowledge may not only interfere with comprehension but also prevent them from learning new information from text. Lipson
(1982), in reference to the role of prior knowledge and the acquisition of new information wrote that

when we say that individuals have good comprehension of textual material, we generally mean that they have successfully integrated the information from text with their existing knowledge and also that they have learned any new information presented. However, the issue of comprehension as the acquisition of new information has been skirted in the literature. (Lipson, 1982, p. 243)

Research to date has indicated a positive relationship between relevant prior knowledge and reading comprehension. Appropriate knowledge about a topic appears to facilitate comprehension by increasing a reader's recognition and recall of textual material. Additional research has revealed that a reader's prior knowledge influences the perspective taken and functions to make otherwise ambiguous texts comprehensible. Results obtained from a smaller number of studies has presented contrasting evidence on the role of prior knowledge and has suggested that some readers employ their world knowledge inappropriately and distort text to coincide with their preexisting ideas. The comprehension problem that these readers experience is thought to reside in schema change and maintenance, rather than schema unavailability. For the purposes of this study, the latter two research paradigms, prior knowledge perspective and prior knowledge overreliance, were of particular significance. Therefore, research supporting these stances is discussed in depth in the following sections of this chapter.
The importance of preexisting knowledge structures, or content schemata, has been well documented in studies illustrating that such schemata function to (a) assimilate textual constituents into meaningful representations (Bransford & Johnson, 1973; Langer & Nicolich, 1981; Ohlhausen & Roller, 1986; Pearson et al., 1979; Stevens, 1980) and (b) allow for textual enrichment through inference and elaboration (Bransford & Franks, 1971; Schweller, Brewer, & Dahl, 1976). However, Anderson, Reynolds, Schallert, and Goetz (1977) were among the first researchers to depart from the traditional quantitative study of prior knowledge. These investigators were primarily concerned with exploring the qualitative nature of prior knowledge.

In an attempt to study the qualitative nature of prior knowledge, Anderson and his colleagues (1977) conducted an investigation to determine whether individuals from varied backgrounds who possessed different systems of knowledge and beliefs regarding the world would interpret identical textual passages in dissimilar ways. Thirty female undergraduate students planning a career in music and 30 male undergraduate students enrolled in a physical education weight-lifting class comprised the experimental sample. Subjects were administered two passages, 145 words in length, which could be assigned at least two distinct interpretations: (a) a prison escape or wrestling match and (b) an evening of card
playing or woodwind ensemble rehearsal session. The experimenters employed disambiguating multiple-choice tests and theme-revealing disambiguations and intrusions in free recalls to assess the relationship between subjects' background and passage interpretation. A paraphrase of an idea unit that clearly reflected the subject's fundamental, underlying interpretation was classified as a disambiguation, whereas a theme-revealing intrusion was a phrase or sentence not directly related to any idea unit in the selection. A debriefing questionnaire was also used to determine whether subjects were aware of the alternative interpretations for each passage and, if so, at what point in the text they had become cognizant of the alternative. Finally, subjects responded to an autobiographical inventory comprised of items intended to measure background related to the interpretations of the passages. For example, questions asked: (a) Do you have a close relative who is a law enforcement officer? (b) Have you ever attended a wrestling match? (c) How much do you enjoy playing cards? (d) What does "forte" mean? and (e) Will your career depend in any way on music?

An analysis of theme-revealing disambiguations and intrusions indicated that more music students than physical education students assigned a prison interpretation to the Prison/Wrestling passage and a music interpretation to the Card/Music passage, whereas more physical education than music students presented recalls indicating a wrestling
interpretation for the Prison/Wrestling passage and a card interpretation for the Card/Music passage. Multiple regression analysis, using questions from the autobiography inventory as the predictors and the multiple-choice score as the criterion variable, supported the notion that the interpretations subjects obtained from the selections were influenced by their backgrounds.

The debriefing questionnaire, including averages across the two passages, revealed (a) 62 percent of the subjects reported that an alternative interpretation never occurred to them; (b) 20 percent indicated that they only became aware of another interpretation during the multiple-choice test or when completing the debriefing questionnaire; (c) fewer than 20 percent said that they were cognizant of an alternative interpretation while reading the selection; and (d) when the requirement of providing a coherent statement of the second theme was eliminated, only 23 percent of the subjects were knowledgeable regarding another interpretation during the initial reading. These findings revealed that, although some readers may have considered an alternative meaning during instances in which the first schema applied was not adequate to assimilate the text, some readers, on the other hand, imposed dominant high-level schema, and maintained it even when the textual information was contradictory.

The research of Anderson et al. (1977) served as an impetus for the generation of additional research in this
alternate prior knowledge paradigm. Carey, Harste, and Smith (1981) replicated their study to determine the possible effects of contextual constraints on the findings of the original investigation. This replication grew out of the assumption that contextual constraints operating in each of the experimental situations in the original investigation may have been critical to the interpretation given to the passages. The materials used were identical to those of the initial study. However, the procedure was modified to include 142 subjects who were divided into sub-groups, that is, groups with well-developed schemata for athletics or music who completed reading tasks in either schema-relevant (physical education or music) or neutral (English) contextual situations. It was postulated that subjects sitting in a substantially constrained environment, for example, a physical education class, would more likely describe the Prison/Wrestling passage as a wrestling scene than they would have had they been operating in a situationally less-constrained environment such as an English class.

A comparison of these findings with those of the original investigation by the authors showed that the background knowledge by interaction effect for multiple-choice questions, frequency of theme-revealing disambiguations, and multiple regression analysis were sufficiently similar across the two studies. The investigators concluded that the similarity for these same
effects with either the situationally less-constrained data or the Anderson et al. (1977) data suggested a proportion of the prior knowledge in the first study may have been attributed to context-of-situation. As expected, their results, which extended the original hypothesis, indicated that both background and situational contexts were significant predictors of the interpretative frameworks for comprehending discourse.

In a similar study, Pichert and Anderson (1977) continued the exploration of the reader's perspective on the comprehension process. Their research, however, differed slightly from the earlier investigations of Anderson et al. (1977) and Carey et al. (1981). Pichert and Anderson, instead, extended their research to include an examination of the influence of the reader's perspective on text structure. They hypothesized that structure would not be an invariant attribute of text; rather, it would be dependent upon the perspective assumed by the reader. As a result, when an individual adopted a divergent perspective on a text and imposed different high-level schemata, the relative significance of the textual elements would shift. That is, elements viewed as important in one instance would be perceived as unimportant when another perspective was assumed. The investigators postulated that important elements by definition "fit in" to an organized structure of information and were thereby more learnable. Furthermore,
readers were more likely to pay careful attention to and deeply encode important textual elements.

In order to determine whether one's perspective governed the significance assigned to textual information and ideas, Pichert and Anderson (1977) conducted two experiments. In the first study subjects were administered passages which could be interpreted in terms of two or more high-level schema and were instructed to assume one of the two perspectives. One-third of the subjects read the stories from the perspective of a potential home buyer and eccentric florist, whereas one-third read them from the perspective of a burglar and a shipwrecked person, and one-third, a control group, were assigned no particular perspective. Subjects then rated the story units for each passage. Correlations for the mean ratings of idea units between the two groups within each condition ranged from .91 to .98. The Kendall's tau rank-order correlation revealed a relatively high correlation between the importance of ideas for the shipwrecked and florist conditions; however, the ranking of story ideas was not positively correlated for subjects assuming the burglar and home-buyer perspectives.

Pichert and Anderson (1977) undertook a second experiment in order to answer the following questions: (a) Are the most important idea units in a passage better learned or (b) better remembered than less important idea units? and (c) Does whether an idea unit will be learned depend upon
perspective? The subjects consisted of 113 undergraduates who did not participate in the idea rating experiment. Of these students, 56 and 57 were instructed to read the House and Island passages, respectively, and present written recalls of the story and complete a debriefing questionnaire. A week later, the free recall test was repeated.

The results showed that there was a significant effect of the rating of idea unit importance for both stories and all perspectives assigned the subjects. In addition, idea unit importance had a positive influence on long-term memory. Performance as a function of perspective was highly correlated with importance ratings of story units and the proportion recalled on the immediate test for each passage. That is, the relationship between idea unit rating from the operative perspective rank order and recall was higher than the between ratings for nonoperative perspectives and recall.

This research, like earlier investigations (Bower, 1977; Gomulicki, 1956; Johnson, 1970; Meyer & McConkie, 1973; Newman, 1939), found that subjects learned a larger proportion of significant ideas than unimportant story ideas. In addition, it revealed that the importance assigned to an idea unit was contingent on the readers' perspectives. Pichert and Anderson concluded, "It is inappropriate to speak as though the importance of an idea unit was an invariant structural property" (1977, p. 314.) An idea's significance
in terms of a given perspective was the determining factor in its learnability and recallability.

Using naturalistic prose, Ribovich (1979) analyzed the effect of informational background on reading comprehension. This researcher attempted to ascertain (a) whether two groups of adults, dissimilar in academic background, responded differently to reading material on the same topic and (b) whether adults' reading behaviors changed as they moved from reading in their academic field to content out-of-field. It was postulated that subjects reading in-field material, in contrast to out-of-field material, would exemplify (a) faster reading, (b) greater reading ease, (c) more expectations prior to reading, (d) greater specificity in those expectations, (e) less unexpected information, (f) greater specificity for what was expected, and (g) higher levels of comprehension.

The subjects, 25 education majors and 24 economics majors, were administered two 670-word reading passages representing the two content areas. Prior to reading each selection, students were (a) given the title alone and asked to enumerate no more than six concepts, ideas, or pieces of information they expected to find and (b) directed to read the material at a comfortable speed that would maintain comprehension. Upon completion of the reading, they (a) recorded their finishing time, (b) indicated self-perceived reading ease or difficulty experienced, (c) listed no more
than six statements regarding information encountered of an unexpected nature, and (d) presented free written responses that entailed a maximum of ten sentences and presented a written synthesis of each passage.

Analysis of variance and multiple comparisons of interactions showed that economics majors performed better than education majors when reading the economics passage as demonstrated by their higher self-reported ease of reading, greater specificity of expectations, greater specificity of unexpected information, and higher levels of comprehension. With the exception of presenting a larger number of expectations, the education majors read the in-field material at the same performance level as the economics students. There was change on more variables for the education students as they progressed from the in-field material to the out-of-field material. For these subjects, reading in-field text as opposed to out-of-field text resulted in greater reading ease, more expectations prior to reading, a higher level of specificity, and more proficient comprehension.

A cross-cultural examination of the effect of high-level schemata on textual schemata was reported by Steffensen, Joag-Dev, and Anderson (1979). However, unlike earlier investigations (Anderson et al., 1977; Pichert & Anderson, 1977) in which schemata were manipulated by instructing subjects to assume assigned perspectives about a topic, Steffensen et al. (1979) manipulated schemata by using
subjects with varied cultural backgrounds. Also, the variables assessed in this experiment comprised reading time as well as the amount of recall of text elements, amount of recall of important and unimportant text elements, and modifications, including elaborations, distortions, and intrusions to text.

Subjects comprised two groups of undergraduate students, Americans and Indians (natives of India). Both groups read two passages, one pertaining to a typical Indian wedding and one pertaining to a typical American wedding. Written recall for both passages were then presented following several interference tasks, a 50-item vocabulary test and 5 comprehension questions. In addition, subjects completed a personal data questionnaire designed to assess familiarity with both types of weddings and for matching American and Indian students.

Findings disclosed that subjects read the native passage more rapidly, recalled more information from the native passage, and generated more culturally appropriate elaborations of the native passage, but produced more culturally based distortions of the foreign passage. Steffensen et al. (1979), as in previous research with adults, interpreted these results as illustrating the pervasive influence of schemata embodying knowledge of textual discourse on comprehension and memory.
The Role of Perspective on the Comprehension Processes of Elementary and Junior High School Readers

Following the perspective research paradigm, Reynolds, Taylor, Steffensen, Shirey, and Anderson (1982) explored the relationship between cultural schemata and reading comprehension. Their hypothesis, in its most general form, was that culture affects knowledge, beliefs, and values, and knowledge, beliefs, and values, in turn, affect comprehension processes. One hundred and five eighth-grade students, approximately half drawn from an agricultural community and half from an inter-city community, comprised the sample. Subjects read a letter interpretable as an act of physical aggression or an instance of verbal ritual insult. After the reading task, subjects wrote recalls and reacted to probe statements as being (a) stated in the same words as the letter, (b) not stated in the letter but true, (c) not stated in the letter but possibly true, and (d) not stated or implied in the letter. A questionnaire concerning their attitudes toward the experiment, knowledge of verbal ritual insult, and understanding of the letter was also administered.

Results indicated that students from the inter-city community tended to interpret the letter as an instance of verbal play, whereas students from the agricultural community interpreted it as an instance of physical aggression. Examination of the disambiguations and intrusions in the recall protocols and on the probe task indicated subjects'
perceptions of the letter, as containing either ritual insulting or a fight, were closely related to culturally based knowledge and belief. The data strongly supported the notion that cultural schemata influenced reading comprehension. Moreover, these data yielded similar findings as the earlier experiment conducted by Steffenson et al. (1979).

Lipson (1983) extended these findings in an investigation with above average fourth-, fifth-, and sixth-grade readers. The impact of culturally specific prior knowledge on the reading comprehension of subjects whose religious affiliation was either strongly Catholic or Jewish was the focus of this study. First, subjects read a culturally neutral passage entitled The Ama. Baseline information on the equivalence of the two groups in behavior germane to the target task was obtained from these data. Two additional passages, each specific to one of the two religious groups, were presented in counterbalanced order; one was a passage entitled First Communion, a text designed to provide culturally specific stimulus to the Catholic subjects. The other was entitled Bar Mitzvah, a text considered to be more familiar to Jewish children and designed to activate culturally specific schemata regarding that event.

In order to determine the influence of cultural schemata, subjects were directed to read the three passages
and record their reading time, after which each student completed an interpolated task assigned to control for short-term memory. Free recall and probed recall measures were then taken. A modified version of the Tierney, Bridge, and Cera (1978-1979) system of propositional analysis was applied in coding the recall data.

An analysis of the data in terms of free recall, probed recall, and reading time revealed that prior religious knowledge about a topic was a significant factor in post-reading performance. For the culturally familiar text, each group recalled more text-based propositions and generated more implicit recall. Moreover, subjects made fewer errors in recall and required less time to read the passage containing culturally relevant prose. Furthermore, they were significantly more accurate in responding to the probed recall measure. The results suggested that subjects were more proficient in comprehending text when they possessed a culturally appropriate schema on which to incorporate the new information. The existence of such schemata, in addition, acted to limit subjects' comprehension of unfamiliar text to the extent that accuracy was diminished and distortion was increased.

Summary: The Role of Perspective on the Comprehension Process

The research reviewed here has indicated that schema selection or the prior knowledge perspective assumed by the reader guides the reader's interpretation of data in text.
As a result, a reader's interpretation of a particular text may change if there is a shift in the currently operative schema. These studies also have suggested that readers, when confronted with text having multi-interpretations, use inferences to determine which schema to impose upon text. The activated schema then functions to facilitate the reconstruction of text. The researchers cited here have shown that readers then generate additional inferences on the basis of their operative schemata and portions of the text which are recallable. In instances in which readers are indecisive about the actual existence of textual information, they may infer its existence from their activated or operative schemata. Two implicit findings have emerged from this line of research: First, readers generate inferences compatible with their schemata. Second, readers recall more textual information significant to their schemata.

A limitation of some of the studies cited here has been that schematic importance was manipulated by instructing subjects to assume an assigned perspective (Pichert & Anderson, 1977). Consequently, these instructions may have possibly activated relevant schemata which functioned to direct subjects' attention to specific textual information. Similarly, assigning subjects' particular perspectives may have alerted them to expect certain kinds of information in text. Because subjects were searching the text for specific information to confirm their expectations, schema inducement
could have served to help them process text more rapidly. A second limitation has been that directing readers to adopt perspectives prior to reading is not representative of the typical reading situation experienced by readers. A third limitation has been the use of stimulus material which was experimentally contrived, and therefore, not characteristic of naturally occurring text encountered in readers' academic and nonacademic environments. Moreover, several of the experiments were limited by the use of a single reading passage instead of varied reading material which would have increased the generalizability of the results. A fourth limitation pertains to the assessment of subjects' prior knowledge about a topic. Generally, in the majority of studies cited the investigators assumed the subjects' levels of preexisting knowledge on the basis of academic major or through the manipulation of schemata, by including subjects who were thought to possess different amounts of knowledge regarding a topic or varied cultural backgrounds rather than through the use of more reliable measures. A final limitation has been the inclusion of subjects who were proficient in reading. Hence, the findings cannot be generalized to populations including average or below-average readers.

The present study was designed to address some of the limitations inherent in previous research and extend this research along several lines. First, the research sample was
comprised of reading disabled adults. This allowed the researcher to examine whether the interference effect of prior knowledge for reading disabled adults is similar to findings for adult proficient readers and younger average and above-average readers. Second, in this study the researcher endeavored to explore the interactive nature of prior knowledge and metacomprehension and how this interrelationship affects the comprehension process. Third, the reading conditions and stimulus material implemented in this investigation approximated a natural reading situation, using a variety of naturally occurring expository texts that adults encounter in their daily reading activities. Finally, in order to gain a more precise assessment of the manner and extent to which readers process and comprehend information, (a) subjects' prior knowledge was assessed through the use of both multiple-choice knowledge pretest measures and knowledge domain pretest inventories, and (b) comprehension and metacomprehension were assessed simultaneously, using multiple-choice comprehension tests and metacomprehension confidence rating measures. Although previous research has employed similar procedures, none has combined these measures in a single study to ensure a more rigorous design.

The Interference of Prior Knowledge on the Comprehension Processes of Elementary and Junior High School Readers

Research conducted by Maria and MacGinitie (1980) was one of the earliest attempts to directly investigate prior knowledge as a handicapping condition among elementary school
children. They hypothesized that readers who maintained prior knowledge incongruent with a particular text were likely to allow it to prevail over textual information, thus interfering with the comprehension process. Subjects in the study were fourth and fifth graders who had good verbal intelligence and adequate decoding skills; however, these children were classified as disabled in reading comprehension.

An analysis of the recall protocols of the subjects revealed that the majority of these children, when reading short passages, distorted textual information to conform to their prior knowledge. These readers appeared to use a minimum number of words in the text to activate related prior knowledge, but this knowledge was not constrained by textual information. Once they decided what the passage was about, they adhered to their initial interpretation of the text and failed to attend to salient details which disconfirmed their original hypotheses.

On the basis of these findings, Maria and MacGinitie (1980) concluded that this group of readers, from a Piagetian perspective, assimilated the text to their schemata, but neglected to modify schemata to accommodate new information from text. Thus, these readers were characterized as using a nonaccommodating strategy when reading.

According to the investigators, one reason for the disabled readers' employment of a nonaccommodating strategy
reflecting an overreliance on prior knowledge was its usefulness; that is, when text was compatible with the readers' prior knowledge, use of such a strategy was often beneficial. Also, using such a strategy during text processing might often have resulted in selecting for retention in the short-term memory buffer those propositions that were most useful in relating prior text to new text. Employment of this strategy might have, in addition, compensated for deficiencies, such as limited decoding skills, short-term memory capacity, and lower processing at more basic levels. Therefore, overreliance on prior knowledge possibly served as a retrieval, allowing poor readers to reconstruct what they believed was contained in text when they forgot what was actually stated. Poor readers' responses to an associational task consisting of highly related nouns and verbs provided support regarding their use of prior knowledge as a part of their retrieval strategy.

Maria and MacGinitie (1980) resolved that there was, indeed, a subgroup of disabled readers having good verbal intelligence who overextended a general framework from prior knowledge in processing text. These readers assimilated textual data to their schemata, but were unable to accommodate their schemata to data presented in written language. Consequently, they misinterpreted text that did not conform to their prior knowledge and, therefore,
experienced difficulty in learning current information from text.

Additional support for Maria and MacGinitie's (1980) conclusions on the interference effect of prior knowledge was provided by Lipson (1982). This investigator, however, broadened the scope of her methodological design to include a prior knowledge measure which provided a direct assessment of a reader's level of topical knowledge. Moreover, this research was extended to encompass an examination of the effects of prior knowledge and reading ability on children's inferential comprehension of expository prose. To test this relationship, the researcher assessed the prior knowledge of 28 third-grade students of average and below-average ability. The prior knowledge measure included recognition items which were also used to assess postreading comprehension. Four inference types, attribute inference, goal inference, event inference, and casual inference, based on the Frederiksen (1975) system, were devised to generate recognition items for each of the target passages. Furthermore, comprehension of explicit information was measured by two types of recognition items which paralleled two types of the inference categories: explicit attribute and explicit event. Approximately one week following this task, subjects read eight science and social studies passages, followed by an intervening task that required them to sequence a series of pictures. They then made forced-choice decisions about the material read.
Finally, subjects presented immediate free recall for the passages.

In order to examine subjects' acquisition of new information and abilities to correct old, erroneous information, posttest scores were compared to pretest scores. This analysis revealed that subjects were more likely to respond correctly on the posttest if an item had been indicated on the pretest as unknown rather than as an incorrect answer. These findings suggested that the subjects relied on their prior knowledge instead of textual information. They utilized the text to improve their understanding only when they did not believe that they already knew the answer. If they possessed inaccurate knowledge, it was actually more advantageous for them to know nothing about the passage. Free recall data verified that these students adhered to their prior schemata. They manipulated the text to fit their preexisting knowledge. New information was better learned by both poor and average readers when they did not possess inappropriate ideas which interfered with their knowledge structures.

Lipson's (1982) results supported the earlier research of Maria and MacGinitie (1980). Both studies found that readers who adopted an overemphasis on top-down processing formed hypotheses regarding the reading material, but failed to attend to subsequent text in order to evaluate, modify, or disconfirm them. Using this exclusively knowledge-based
approach resulted in subjects drawing inferences not warranted by the text. These readers failed to read interactively, that is, employ both textual and content schemata to integrate the text and discard irrelevant schemata when appropriate to do so. As a result, this unidirectional bias tended to produce deleterious effects on subjects' comprehension.

Contrasting evidence regarding the interference of prior knowledge on comprehension was presented by Peeck, van den Bosch, and Kreupeling (1982). Peeck et al. examined the effects of activating prior knowledge on the comprehension of text containing incompatible information. Using the error detection paradigm, these researchers embedded anomalous information on a fictional fox in a stimulus passage which was administered to 68 fifth-grade subjects. Prior to the reading task, subjects in the activating group presented written information regarding what they, on the basis of their preexisting knowledge, knew about the topic. Subjects in the nonactivating group completed a similar prereading activity which was unrelated to the experimental passage. Data analysis of recall and multiple-choice measures indicated that activation of inaccurate prior knowledge helped the subjects to learn the new incongruous textual information. However, activation of background knowledge did not significantly affect the retention of congruous textual information.
Smith, Readence, and Alvermann (1984) extended the research of Peeck and his colleagues. Using actual science passages, as opposed to experimentally constructed texts, these investigators examined sixth-grade students' abilities to comprehend either compatible or incompatible text under activation and nonactivation conditions. The 55 subjects, reading at or above grade level as established by standardized test scores and teacher judgment, were randomly assigned to one of four treatment groups: activated-compatible, nonactivated-compatible, activated-incompatible, or nonactivated-incompatible. Written free recall and multiple-choice test results revealed that subjects who activated background knowledge prior to reading compatible text comprehended more information than subjects in the other treatment groups. However, contrary to the results of Peeck and his colleagues (1982), these findings demonstrated that activating prior knowledge did not facilitate learning textual information that was incompatible with the subjects' prior experiences. Rather, these subjects, as those in previous research (Lipson, 1982; Maria & MacGinitie, 1980), allowed their prior knowledge and experience to override textual incompatibilities.

In a second experiment, Alvermann, Smith and Readence (1985) studied the effect of prior knowledge activation on comprehension when 52 sixth-grade students of average reading ability read two naturally occurring science texts. The
subjects either activated or did not activate what they perceived to be relevant background knowledge prior to reading science passages pertaining to rattlesnakes and sunlight by completing prereading activation measures that required them to write what they knew about the topics. Results of the pre-experimental knowledge domain measures indicated that the rattlesnake passage was compatible with the subjects' knowledge base, whereas the sunlight passage was judged incompatible with their knowledge. Subjects then read the passages that were compatible and incompatible with their background knowledge.

Analyses of both free recall measures and multiple-choice tests showed that subjects who activated relevant background prior to reading text containing information that was incompatible with their existing knowledge structures permitted their past knowledge and experiences to prevail over textual information. On the other hand, there was no difference in the performance between activators and non-activators when text was compatible with their schemata. Alvermann et al. (1985) concluded that the subjects rarely used the text to update their previous knowledge, especially when the knowledge conflicted with ideas in the text. These findings were consistent with those of other researchers (Lipson, 1982; Maria & MacGinitie, 1980; Smith et al. 1984) who found that children's prior knowledge served as an
inhibitor of comprehension, rather than a facilitator, when it was incompatible with text.

Anderson and Smith (1984) extended the research on the interference effect of prior knowledge on comprehension further by conducting both descriptive and intervention studies of children's preconceptions of science concepts and science teaching in fifth-grade classrooms. During the first year of this investigation, test data for 200 subjects, narrative records describing instructional procedures, and interviews with 14 teachers were collected. Findings indicated that a significant number of fifth graders possessed schemata for science concepts that were distinctly different from the ones implicit in science textbook passages. The researchers attributed the students' comprehension difficulties of science texts to the existence of schemata that prevented them from interpreting the texts correctly.

Analysis of observational and interview data revealed that the science teachers were generally unaware of students' misconceptions or how they affected the comprehensibility of science passages. Additionally, none of the 14 teachers were particularly successful in inducing conceptual change in their students. As a result of these findings, Anderson and Smith (1984) directed an intervention study designed to train the teachers in procedures for creating and resolving conceptual conflict in fifth graders' schemata so as to help
them assimilate new information into previously held schemata. Comparative analyses of pretest and posttest results from the first year and second year showed that subjects' learning of science material was enhanced to a level that was both statistically and educationally significant.

In more recent research, Gordon and Rennie (1987) conducted an intervention study to determine the extent to which content schemata could be restructured through reading activities. One hundred and seventy-eight fifth-grade students were screened on two types of prior knowledge instruments to identify students who held complete misconceptions regarding "The Reactions of Wild Animals to Man and Other Animals." The 23 subjects, identified as holding total misconceptions on the topic, were randomly assigned to one of three treatment conditions: (a) treatment group I consisted of the experimenter reading the passage while the subjects followed the expository text, (b) treatment group II was comprised of the experimenter reading to the subjects and using a semantic map designed to help the readers organize text and restructure background knowledge, and (c) the control group was directed to read only the passage.

Analysis of posttest data demonstrated that conceptual change occurred in subjects' prior knowledge in both treatment groups. Restructuring was more pronounced in the
treatment groups using oral reading as well as semantic mapping than in the group that only read. The control group exhibited a less distinct pattern of restructuring misconceptions. Therefore, they failed to discard their misconceptions and did not assimilate new textual information. These results suggested that the intervention strategies helped subjects to create new structures for interpreting newly acquired information and for allowing a reorganization of previously held background knowledge. Furthermore, Gordon and Rennie (1987) concluded that the subjects' screening test results confirmed the schema-theoretic notion that prior knowledge about a topic was not an either/or proposition. These children, as those in the Lipson (1982) investigation, possessed bits and pieces of information on the topic.

Continuing this line of inquiry, Maria and MacGinitie (1987) investigated whether alternate text structures would assist good and poor fifth- and sixth-grade readers to understand new information that contradicted their misconceptions. In order to ascertain the misconceptions of individual subjects, the researchers constructed a prior knowledge questionnaire encompassing common misconceptions in science and social studies. Questions on the questionnaire for which subjects held misconceptions were used as a basis for constructing refutation tests designed to correct the subjects' incongruent knowledge by presenting new
contradictory information. The refutation texts included three versions: (a) R1 texts first referred to the misconception and then refuted it, (b) R2 texts presented the new information and then contrasted it with the misconception, and (c) R3 texts stated the new information with no direct reference to the misconception.

Free recall and structured question analyses for the three texts revealed that subjects' comprehension performances were greater on text structures that explicitly contrasted inaccurate prior knowledge with correct information than tests that merely stated the correct information without acknowledgement of the contradiction. Recalls for the good comprehenders indicated a preference for the contrast structure that presented the misconception first, followed by the refutation. These findings were consistent with those of Gordon and Rennie (1987) and Anderson and Smith (1984), who discovered that direct reference to a misconception was an important prerequisite for restructuring and altering children's distorted schemata.

Summary: The Interference of Prior Knowledge on the Comprehension Process

The studies reviewed here generally have suggested that some readers maladaptively rely on prior knowledge to guide textual processing to such an extent that it actually interferes with comprehension. On the other hand, Peeck et al. (1982) presented contrasting evidence regarding the interference effect of background knowledge on the
comprehension process; however, their findings were not supported by the results of a replication study conducted by Smith et al. (1984). Thus, the preponderance of evidence has demonstrated that these readers fail to combine both textual schemata and content schemata adaptively to meet the demands of specific text-processing situations. They either discard schema prematurely or maintain it to the point where it is no longer applicable. Thus, textual representations are insufficiently integrated with content schema. These readers employ prior knowledge in the understanding of text but fail to consider textual prose to update and modify their preexisting knowledge structures. Instead, they tend to alter the text to match their schemata or prior knowledge. In addition, research has shown that for readers having background knowledge which contradicts text, intervention strategies help them to recognize discrepancies between their schemata and text, institute conceptual change, and assimilate the new textual information into their previously held schemata.

The major limitation in these studies has been that all subjects were at the elementary and junior high school levels. Thus, the application of the findings at the secondary school or adult levels are questionable. An additional limitation concerns the determination of why these readers fail to read interactively. None of the investigations examined the interactive influences of the
subjects' prior knowledge and metacomprehension on the comprehension process.

Although the research on prior knowledge as a handicapping condition has contributed significantly to the understanding of children's comprehension, in the present study the investigator attempted to extend this research paradigm along several dimensions. First, the basic paradigm was tested in an adult reading situation. Second, an effort was undertaken to ascertain whether readers possess metacomprehension skills that are requisite for reading interactively, that is, effectively integrating prior knowledge with text. Third, as discussed in Chapter I, this investigation includes implications pertaining to both prior knowledge and metacomprehension diagnostic and instructional procedures. Thus, the next part of this review is concerned with research that provides data on the measurement of metacomprehension strategies.

Metacomprehension in Reading: Conceptual Background

Recently, some authors have endeavored to differentiate between comprehension, the ability to understand, and metacomprehension, the ability to monitor one's understanding (Kletzien & Bednar, 1988; Lindquist-Sandmann, 1987). Investigations of monitoring behavior, as it relates to reading, have their foundations in metacognition research (Flavell & Wellman, 1977), and more specifically in
metacomprehension research (Brown, 1980; Canney & Winograd, 1979). Flavell (1978) has categorized the major factors which affect the ability to monitor comprehension as person, task, and strategy variables. Person variables comprise knowledge regarding one's own attributes that influence learning and performance; task variables include information about the purposes, scope, and requirements of a task; and strategy variables encompass an awareness of the existence of relevant strategies and the need to apply them appropriately. Raphael, Meyers, Tirre, Fritz, and Freebody (1981) have agreed that "by classifying the factors in such a manner, it becomes possible to examine how factors which influence comprehension may interface with those which influence metacomprehension" (p. 326). According to these authors, metacomprehension, rather than concentrating on the text and learner variables as they affect the reading process, examines the reader's awareness of and control over the reading process.

Metacomprehension, specifically, means that the reader is sensitive to comprehension problems and attempts to correct these problems (Gates, 1983). This involves the ability to monitor the quality of one's understanding. Baker and Brown (1984a) have posited that reading for meaning is fundamentally an attempt to comprehend, and any attempt to comprehend must encompass comprehension monitoring. Similarly, earlier researchers have acknowledged that
comprehension monitoring is crucial to proficient reading (Dewey, 1910; Huey, 1908; Thorndike, 1917), and more recent theories of reading also have incorporated monitoring or metacomprehension in their models (Collins, Brown, & Larkin, 1980; Goodman, 1976a; Just & Carpenter, 1980; Ruddell, 1976). These theorists characterize comprehension as an active process involving hypothesis testing or schema building (Baker & Brown, 1984a). Readers form hypotheses regarding the most probable interpretation of text as they are reading and test these hypotheses against the available textual information. The hypotheses are further refined and/or modified as additional information is obtained. Markman (1981) has postulated that if readers are able to confirm or disconfirm their hypotheses, they have developed the potential to gain knowledge about the extent to which they are comprehending the text. Moreover, she has suggested that information regarding one's comprehension is often a by-product of active comprehension itself; thus, the need for continuous interrogation about one's understanding may not be necessary. For some readers, the detection of comprehension failure is no more than the active effort to understand. Goodman (1976a) has asserted that readers must test their hypotheses against textual meaning and grammar by frequently questioning whether the text is understandable. Therefore, a reader must "monitor his choices so he can
recognize his errors and gather more clues when needed" (p. 483).

This conceptualization of comprehension as an active process dates back to the work of Thorndike (1917) in which he has shown that comprehension difficulties result when a reader "is not treating the ideas produced by the reading as provisional (so as to) inspect and welcome them or reject them as they appear" (p. 330). Thorndike, in his research, found that a significant number of sixth graders did not spontaneously monitor or evaluate the quality of their understanding of text; although they frequently stated they understood, they in actuality did not. This type of behavior on the part of the reader demonstrated inefficient comprehension monitoring. He, moreover, has asserted that "the vice of the poor reader is to say the words to himself without actively making judgment concerning what they reveal" (p. 330). Conversely, good readers use self-interrogation regarding the state of their knowledge to help maximize their understanding of text. Thus, independent readers enlist a type of self-regulated model refinement (Tierney, 1980). According to Tierney, the reader, driven by hypotheses, attempts to develop an interpretation represented by the text. This model refinement encompasses initiating and sustaining simultaneously a number of behaviors, including activating and refining predictions, maintaining and varying focus, interrelating ideas, self-questioning, attending to
important information, dismissing irrelevant information, following topical development, evaluating understandings, considering the value of ideas, deciding what is new information, sensing mood and tone, sometimes visualizing, sometimes adding information, refining, analyzing, editing, and reshuffling ideas. Self-regulation, then, entails recognizing whether or not one knows the nature of what one is understanding, as well as the nature of any difficulties that are incurred. Moreover, it entails knowing and being capable of implementing strategies for coping with incurred problems. Metacomprehension strategies function to maintain a flexible balance between reader-based and text-based processing en route to maintaining an interpretation which is (a) feasible, in terms of what the readers know and the information represented by the text itself and (b) comprehensive, that is, interrelated and coherent (Tierney, 1980). Tierney's conceptualization of the reading process further establishes the interrelated nature of prior knowledge and metacomprehension and supports the stances of other researchers (Baker & Brown, 1984a; Jones, et al., 1987; Lipson, 1983; Spiro, 1979; Wagoner, 1983). Thus, the next section of this review will include a discussion of comprehension monitoring variables that are important to the present study.
Metacomprehension Research Paradigms

The literature on metacomprehension has identified three distinct aspects of comprehension monitoring: evaluation, planning, and regulation (Paris & Meyers, 1981). This study is primarily concerned with the evaluative aspect of metacomprehension which can be studied through the error detection paradigm, the recognition of structural importance paradigm, and the comprehension rating paradigm. For the purpose of this investigation, the recognition of structural importance and the comprehension rating paradigms held significance and, therefore, are discussed in the following sections. Because the literature on the recognition of structural importance examined subjects' levels of metacomprehension in terms of differences in chronological development and reading ability, many of the studies included both young and adult readers. Therefore, the adult and nonadult research are not addressed separately as in the literature review on prior knowledge. Additionally, a comprehensive exploration of the literature on comprehension rating produced only two studies pertaining to adult readers that were germane to this study. Thus, the comprehension rating research cited here also includes those studies conducted at the elementary and junior high school levels which, with appropriate modifications, could be implemented in this research design.
Recognition and Recall of Structural Importance: A Metacomprehension Function

Several researchers have investigated readers' abilities to discriminate between important and unimportant information. For example, Hagen (1972) and Mackworth and Bruner (1970) found that younger children who were less aware of their cognitive processes were less able to differentiate essential task elements. However, Brown and Smiley's (1977) work on how this phenomenon affected young and adult skilled readers' abilities to study and learn from text represented one of the earliest attempts to link reading proficiency to metacognitive awareness. These investigators studied the relationship between students' recalls of prose passages and their abilities to rate the structural importance of linguistic units to the theme of a story. A second purpose of their research was to examine developmental differences among children and adults in their metacognitive awareness. Subjects were third-, fifth-, and seventh-grade students, and college freshmen, all of whom were average or above average in reading ability. Using a procedure devised by Johnson (1970), an independent group of college students parsed and rated the target stories. Experimental subjects listened to a tape recording of the passages and then identified textual elements as important or least important.

In the second phase of the study, subjects' recalls were measured on additional passages. In order to limit problems
caused by differential reading ability, Johnson's recall procedure was slightly modified. Rather than read the selections, the subjects listened to tapes of the stories and then presented written recalls at the seventh-grade and college levels, and oral recalls at the third- and fifth-grades. A mixed analysis of variance by age, story, and structural importance revealed that college and seventh-grade students differentiated structural importance. However, third and fifth graders were unable to distinguish elements in terms of their importance to the text. Adults' recall of information was dominated by their ratings of structured importance. Moreover, the units judged most important determined recall attempts at all levels; hence, the least important units were rarely recalled.

These findings lent support to the notion that metacognitive awareness is directly related to chronological development. College students distinguished each level of significance in textual units, and seventh graders differentiated low, medium, and high levels. Fifth graders isolated only the most important units; whereas, third graders made no reliable distinction between levels of importance. Therefore, it appeared that sensitivity to the importance of textual units developed gradually over the entire age span studied. Brown and Smiley (1977) posited that the failure of younger children to identify the important elements of the text suggested a problem of
metacocomprehension that could be a contributing factor to their inefficient study habits.

Brown and Campione (1977) replicated and extended the earlier study of Brown and Smiley (1977). The purposes of their investigation were to compare good and poor readers' comprehension of oral versus written prose and sensitivity to the importance of structural units in prose. Twenty-one seventh-grade students, reading at or above grade level, and 15 seventh graders, reading two or more years below grade level, constituted the sample. Methodology was identical to Brown and Smiley's procedures; however, theirs included a reading condition in addition to the listening task.

An examination of recall protocols showed that good readers recalled a greater proportion of the passages under both the reading and listening conditions. In addition, their recall of a particular unit was a function of the unit's structural importance. Poor readers, on the other hand, recalled a reduced number of story units, and their recall protocols were unrelated to variations in structural importance. The performances of the good readers were similar to those of the good readers in the Brown and Smiley investigation. Contrastingly, poor readers' performances approximated those of the younger, third-grade readers.
In an investigation with older readers, Eamon (1978-1979) studied differences between better and poorer college readers in their abilities to evaluate statements conveying information about the theme of a passage as compared to statements about nonthematic concepts. To examine these differences, six passages were constructed, followed by statements designed to differentiate among (a) asserted attributive statements directly asserted in the text and attributing a characteristic to the subject concept, (b) asserted transitive statements defining a transitive relation on the subject concept at a higher level than the former category, and (c) inferred transitive statements comprising inferential information. All passages contained information relating the concepts in a similar fashion.

Subjects were tested as a single group. First, they read each paragraph carefully. A final task required subjects to determine how important thematic statements were to the overall passages by assigning ratings on a scale from five, very important, to one, not at all important. Data analysis through a mixed design revealed a significant interaction between reading ability and theme factors. Better readers judged statements about thematic concepts to be more important than statements about nonthematic concepts, while the difference for poor readers was much less. Although both good and poor readers evaluated assertive transitive statements as most important and attributive
statements as less important, better readers observed greater differences existing in these two types of statements than poor readers. As in previous research with younger subjects (Brown & Campione, 1977), these findings furnished additional support for the contention that good readers appear to be more selective in their judgments of information presented in text than poorer readers.

In a second study using a new sample, Eamon (1978-1979) compared proficient and disabled college readers' recall of thematic and nonthematic information. It was hypothesized that good readers would demonstrate greater retention of text including thematic concepts as opposed to nonthematic concepts than would disabled readers. Subjects read target passages containing the same information used in the first experiment and then completed a cued recall task. Results disclosed that substantial distinction between recall of thematic and nonthematic prose was evidenced for better readers, whereas poorer readers recalled slightly more nonthematic concepts than thematic concepts. These findings, in general, confirmed those obtained in experiment one and, again, supported the notion that skilled reading involves the selective processing of information. Proficient readers seemed to have developed this skill to a greater extent than less able readers. At the same time, their reading strategies reflected the ability to identify and utilize
differences in various types of information presented in the texts.

Additional evidence for the correlation of reading ability and age on readers' sensitivity to text structure was advance by Taylor (1980). To test this relationship, sixth-grade good readers, sixth-grade poor readers, fourth-grade good readers, and adults read expository prose silently and later gave recalls, which were transcribed and scored by the investigator for the number of idea units. Statistical treatment of the data revealed age and reading ability were related to reading proficiency in recalling expository text and recognition of text structure. Fifty-nine percent of the good sixth-grade readers followed the high-level structure of the passages, whereas only 18 percent of the poor sixth graders adhered to the text structure. Conversely, good readers' greater sensitivity to text appeared to facilitate the comprehension process.

In another attempt to provide support for individual differences in selective processing strategies, McGee (1981) examined good and poor readers' abilities to distinguish among and recall ideas at various levels of importance. To examine these distinctions, expository passages created by Taylor (1978) were segmented into idea units. Then, using an analysis of discourse procedure based on adaptations from Grimes (1975) and Meyer (1975), the units were ordered in a three-level hierarchy of importance. By randomly selecting
sentences from each level in the hierarchy, two rating statements were designed for each of the three levels of importance: level 1 statements consisted of six sentences at the lowest level of importance; level 2 statements included three sentences at the middle level of importance; and level 3 statements comprised one sentence at the highest level of importance, and a corresponding sentence rewritten in the passive voice. Each statement was followed by circles of graduated sizes, indicating the significance of each sentence to the passage. For example, the most important sentences and the least important sentences were represented by the largest and smallest circles, respectively.

During the testing procedure, the third- and fifth-grade subjects first read a practice passage. Then, students read the experimental passage, completed a distractor addition problem in order to control for short-term memory, and evaluated the sentence statements. Results suggested that fifth-grade good readers were more proficient in distinguishing the importance of information than fifth-grade poor readers or third-grade proficient readers. These findings, however, did not fully support the conclusion that the less able readers were insensitive to textual importance. All subjects in this study made better distinctions among ideas at different levels of significance than readers of similar ages and abilities in previous research (Brown & Smiley, 1977). Variations in McGee's (1981) study and those
of earlier studies may have been the result of methodological design. The third graders in the Brown and Smiley (1977) investigation may not have possessed sufficient listening abilities to comprehend the fifth-grade passage. Likewise, in the Eamon (1978-1979) study, the adult disabled readers possibly did not possess adequate reading abilities to comprehend the college-level material. The superior judgments of students in McGee's study, then, may have been attributed to differences in the experimental material, that is, easier text, shorter passages, and more familiar topics. Specifically, expository passages were written at readability levels comparable to the comprehension levels of the subjects.

McGee (1981), in a second experiment, analyzed the relationship between students' inabilities to rate the importance of idea units and recall of information at various levels of importance. Because fifth-grade good readers made a greater distinction between the most significant ideas and least significant ideas in prose than fifth-grade poor readers, it was postulated that their recalls would contain the most important information. According to the results, fifth-grade good readers were not only better able to distinguish the most important ideas from the least significant ideas, but were also more proficient in recalling those ideas.
Findings from this study reaffirmed those of other researchers (Brown & Campione, 1977; Brown & Smiley, 1977; Eamon, 1978-1979; Johnson, 1970; Taylor, 1980), all of whom found that subjects' abilities to judge the importance of ideas in text were reflected in their recall of those ideas. McGee (1981), in addition, theorized that important ideas were better remembered because they were selected for more thorough processing.

Summary: Recognition and Recall of Structural Importance--A Metacomprehension Function

The research cited in this review has demonstrated similar, though not identical, developmental and proficiency differences among readers in metacomprehension. Nevertheless, the majority of the studies tend to support a relationship between efficient metacomprehension and skilled comprehension. Explicitly, these studies have disclosed an association between recognition of structural importance in prose and both immediate and delayed recall. Recognition of structural importance, in addition, appears to be highly related to reading proficiency and chronological development. At the same time, evidence was provided which has suggested that students' abilities to rate structural significance is a function of metacomprehension or selective processing. For example, differentiated recall of important textual information between good and poor readers is attributed to the selective processing of that information. Proficient readers are thought to recall more important concepts because
they are more selective and thorough in processing text. This finding is in line with the earlier work of Gibson and Levin (1975), Goodman (1976b), and Walker (1975-1976), which has illustrated that proficient readers, in contrast to less able readers, seldom process every letter or word in a text. Rather, they process only information which is most relevant for the comprehension of text. On the other hand, inefficient readers' inabilities to recall more important ideas may reflect a lack of selectivity and a lack of expertise in the processing of ideas. On the basis of findings to date, researchers have demonstrated that the ability to distinguish relevant and irrelevant structural units in prose requires skill in metacomprehension strategies.

The most serious limitation in this series of investigations has been the selection of stimulus material that apparently was incompatible with subjects' reading and listening abilities. As a result, variations of subjects' inability to recognize textual importance across studies can possibly be attributed to an inappropriate match between subjects' listening and reading abilities and the readability levels of the reading passages. Despite this problem, the methodological design applied in this research seems to establish a valid and reliable assessment of metacomprehension through the measurement of subjects' recognition and recall of structural importance. Because
metacomprehension is integral to the efficacious integration of prior knowledge and text for the interpretation of an author's intended message, these findings held significance for this study. Therefore, a modified version of these designs was employed in this investigation. At the same time, the present study used stimulus passages which were compatible with adult subjects' reading abilities, thus eliminating the incompatibility factor evidenced in previous research.

Comprehension Rating: A Metacomprehension Function

In another line of research, investigators examined metacomprehension by studying readers' ability to evaluate their own comprehension. Two initiatory studies on evaluative aspects of metacomprehension were conducted by Markman (1977). The question under investigation was whether elementary students realized when they had not understood. First through third graders were administered listening tasks designed to assess at what point the subjects became aware that the directions were insufficient to perform a designated task.

The researcher enlisted the subjects' participation by requesting that they serve as consultants to assist in determining the appropriateness of directions for children. Incomprehensible instructions for playing a card game and for performing a magic trick were presented individually, followed by a number of probes which were terminated when the
subjects asked questions demonstrating awareness of the inadequate instructions. In a second investigation, Markman verbalized or demonstrated the same tasks to first and second graders assigned to either of these conditions.

Results revealed that first-grade students were unaware that their comprehension of the directions was faulty and inadequate. However, second and third graders recognized the necessity for additional information for completion of the tasks. The younger children appeared to be processing text at a superficial level, not really striving to execute the instructions mentally to determine the relationship between the instructions and goal. Furthermore, these findings confirmed the hypothesis that children's insensitivity to comprehension failure was the result of a relative lack of instructive processing.

In related research, Markman (1979) again examined elementary children's awareness of their comprehension failure when confronted with inconsistent information. The sample consisted of 60 children which included 20 children from third, fifth, and sixth grades. Each subject was assigned to one of two treatment groups in which problematic material was explicitly and implicitly stated in paragraphs. Three essays were administered to both groups in counterbalanced order. Subjects were then instructed to inform the investigator if the essays they read contained omissions, were not clear, or were easy to understand. Each
essay was read twice before the examiner initiated probes. Using the Fisher's exact probability test, it was found that the subjects were unaware of problems when inferences were required to discover inconsistencies in material. As expected, these findings provided additional support for and extended Markman's (1977) first investigation.

Using a different procedure, Davey and Porter (1982) further advanced this line of inquiry. A comprehension rating technique designed to help sixth-grade poor readers focus attention on meaning during silent reading was implemented by these investigators. Diagnostic data in the form of pretraining interviews disclosed that these readers tended to be satisfied with a vague and unclear understanding of what they read, often forming initial hypotheses about meaning rapidly on the basis of familiar words and prior knowledge. They appeared to become schema bound, that is, not elaborating or shifting their initial notions in response to subsequent text.

In the second phase of the experiment, the treatment condition involved a comprehension rating task requiring subjects to read and then indicate their level of understanding based on the following three-point scale: 1, "I understand well"; 2, "I sort of understand"; 3, "I don't understand." Subjects, first in groups and then in individual sessions, received instruction in strategies designed to help them effectively rate or monitor their
comprehension of text. Davey and Porter (1982) concluded that students trained in this procedure were more proficient on posttest comprehension measures which required them to match their perceived comprehension with their demonstrated comprehension.

Support for Davey and Porter's conclusions regarding the metacomprehension of poor readers was provided by Sullivan (1978). An analysis of the strategies employed by sixth- and eighth-grade good and poor readers in judging factual and inconclusive information was the major focus of Sullivan's investigation. After reading a series of passages, students were asked to determine whether factual or conclusive statements were true, false, probably true, probably false, or included not enough facts to form a judgment.

Results showed that good readers demonstrated more proficiency in evaluating factual statements, while poor readers experienced difficulty and were not selective in the evaluative process as good readers. Poor readers, in addition, appeared unable to encapsulate conclusive ideas. Good readers, when making judgments pertaining to conclusive statements, identified supportive textual examples and used matching procedures. In contrast, these poor readers relied on their personal judgment, as did those readers studied by Davey and Porter (1982). Consequently, they tended to predicate comprehension on personal reasons and knowledge.
rather than search the text for confirming examples. Sullivan (1978) concluded that poor readers did not employ active search processes as advanced by Goodman (1976a). Similarly, these findings affirmed those of Maria and MacGinitie (1980) and Spiro (1980), which suggests that poor readers have a propensity to make tentative choices and fail to use various textual clues to confirm initial predictions.

In similar research, Wilson (1979) studied differences between average and below-average readers' processing techniques. The sixth- and seventh-grade subjects read passages and responded to factual and inferential questions classified as prequestions, postquestions, and interspersed questions. Answers to all questions were presented orally and tape recorded. Upon completion of this task, subjects explained how they arrived at their answers. After all questions were answered without the aid of text, the examiner probed for further explanation, allowing subjects to refer to the text in order to justify their answers.

Analysis of oral response data suggested differences in the thought processes among average and below-average readers. Average readers' performances exceeded that of their below-average counterparts. Sensitivity to text structure, the author's organizational style and message, and ability to synthesize and organize information were also demonstrated by these students. In contrast, poor readers'
inabilities to organize existing knowledge depressed their reconstruction of textual materials. Wilson concluded, as did Sullivan (1978) and Davey and Porter (1982), that while below-average readers depend on their personal experience, good readers rely on their actual reading.

Differential ratings of informationally consistent, informationally inconsistent, and modifying word passages was the focus of an investigation conducted by Garner (1981). The hypothesis was that poor readers would attend to within inter-sentence comprehensibility more than intra-sentence comprehensibility. Upon reading an informationally consistent, informationally inconsistent, and a modifying word passage on a third topic, the fifth- and sixth-grade subjects were asked to indicate one of three responses about comprehensibility: (a) the material made sense, it was easy to understand; (b) the material was o.k.; and (c) the material did not make much sense, it was not easy to understand.

As predicted, little difference in poor readers' ratings between consistent and inconsistent passages was found. Both types of passages were rated as comprehensible. A significant difference, however, was evidenced between responses to those two passages and modifying word passages. As expected, subjects evaluated the modifying word passage as less comprehensible. Garner (1981) concluded, as the other researchers cited here, that the poor readers did not
recognize "informational assaults on the comprehensibility of ideas" (p. 162).

Lundeberg (1987) was one of the first researchers to use a confidence rating procedure with adult readers. The purpose of her investigation was to test the theory that law students could be taught to use metacognitive strategies that were employed by lawyers and law professors. In the first phase of this investigation, the researcher conducted a descriptive study of the reading strategies used by lawyers and law professors. She then carried out four different experiments to measure the effects of case analysis guidelines and metacognitive strategy instruction on the comprehension performances of students with no law school experience, students with two weeks of law school experience, students with two months of law school experience, and students with one to two years of law school experience. A total of 122 law students participated in the four experiments.

After strategy training sessions, subjects completed a comprehension measure which had been content-validated by six law professors. For each comprehension item, the subjects rated the degree of confidence that they felt about the accuracy of their responses on a scale from 1 (pure guess) to 5 (very certain). The confidence ratings were used in an examination of students' comprehension errors to gain insight on the breakdowns in their reasoning processes.
Results from the data analysis demonstrated that metacognitive strategy training significantly improved the comprehension, particularly of beginning law students, and of those who received self-control training and practice. The effect of experience in law school, independent of case analysis guidelines, was minimal at two months but substantial at two years. The confidence ratings of law students when their comprehension answers were correct differed little (in most instances, less than 1 scale unit) from when their comprehension answers were incorrect. Generally, the law students appeared very confident about the correctness of their answers even when they were incorrect. When answers were incorrect, the overall mean confidence rating for all students (irrespective for experience or guidelines) was 3.61 (closer to reasonably certain than to mixed feelings of certainty and uncertainty). When answers were correct, the mean was 4.31 (between reasonably certain and very certain). Neither case analysis guidelines nor time in law school enhanced students' abilities to discriminate between when they were correct and incorrect in their answers on the case analysis test. The average difference across questions in points on the five-point scale, 1 (pure guess) to 5 (very certain) was .74 for beginning law students, .53 for first year students in their second month of law school, and .82 for second- and third-year law students. On the basis of these findings, Lundeberg (1987) posited that "even
after they already had one or two years of experience in reading cases, some direct instruction helped law students separate relevant from irrelevant facts--an essential part of the case analysis" (p. 29). Lundeberg, therefore, concluded that it cannot be assumed that students learn strategies without direct instruction, or that they learn essential information and skills through discovery learning.

Additional support for the use of confidence rating procedures as a measure of metacomprehension was provided in research by Pressley and Ghatala (1988). The focus of their investigation was to determine whether adult readers were aware of their performance following multiple-choice reading tests. This issue was examined by having 51 university students, who were enrolled in an introductory psychology course, respond to three types of multiple-choice items: reading comprehension, opposites, and analogies questions. Using a performance awareness scale, subjects then rated the certainty that they had responded correctly to each test item. The performance awareness scale ranged from 20 percent (just a guess) to 100 percent (absolutely certain that I got it right).

An analysis of the data evidenced that subjects' certainty ratings were more consistent with their actual performance for the opposites and analogies items than for the comprehension tests items. Although the adults were
equally confident at about the 70 percent certainty level (one answer seemed better than the others, but not absolutely certain) on all the three tests about their correct responses, they were more confident in their incorrect reading comprehension answers than in their incorrect answers on the opposites and analogies tests. These subjects frequently had the delusion that they had provided a correct answer to the comprehension items when they had not. Subjects' mean certainties were between 40 percent and 50 percent for the incorrect opposites and analogy items (somewhere between being "not sure" and believing that they could narrow the choices to two answers). Conversely, subjects indicated a certainty rating of 70 percent or greater for the majority of the incorrectly answered comprehension items (52.7 percent). The corresponding proportions of certainty ratings provided for the incorrect opposite test items were 18 percent and 21.3 percent for the incorrect analogy test items. These findings, as those of Lundeberg (1987), demonstrated that the most striking problem with adult proficient readers' certainty ratings for the comprehension items was their overconfidence in their incorrect answers. Readers in these studies did not use metacomprehension effectively to monitor all aspects of their comprehension.
Summary: Comprehension Rating--A Metacomprehension Function

This line of research has demonstrated that poor readers fail to access and evaluate relevant information, or their understanding of text, as effectively as good readers. Thus, poor readers appear to lack the evaluative aspect of metacomprehension, which includes checking one's current state of knowledge while reading and providing answers to questions such as "Does this textual information make sense?" and "Does this information coincide with previous information?" Good readers, on the contrary, seem to evaluate and regulate their ongoing comprehension processes. These readers tend to know when they understand text. However, they appear not to have an awareness of when they do not understand the text. Although good readers in these studies monitored their comprehension to a greater extent than poor readers, they did not monitor their overall comprehension processes efficiently. A significant limitation found in this research is its lack of generalizability to populations other than good and poor readers at the elementary and junior high school levels, and proficient adult readers at the college level. Hence, in the present study the researcher extended this line of research to a reading disabled adult population.
CHAPTER III
METHODOLOGY

Introduction

The purposes of this study were to determine whether reading disabled adults apply their prior knowledge in the comprehension of text and to examine the extent to which these readers employ metacomprehension strategies actively to integrate prior knowledge with textual information. A review of the literature revealed that while the relationship between prior knowledge and comprehension has been researched among young good and poor readers, and among proficient adult readers, these same processes have not been explored among adult disabled readers. Therefore, this investigation represented an attempt to advance this line of research and to extend earlier findings to an adult population.

To gain insight into adult disabled readers' information processing strategies, prior knowledge, recall, and metacomprehension variables were measured using four research tasks. The prior knowledge inventories, prior knowledge content-specific measures, comprehension measures, and metacomprehension measures used in this investigation were validated in earlier research and

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included modifications which were appropriate for use with an adult sample. Data collected through these instruments were subjected to quantitative and qualitative analyses.

This chapter specifically includes a description of the standardized instruments employed in the study, independent raters and subjects in the norming studies, the experimental sample, methodology, hypotheses, and qualitative and statistical analyses. Stimulus materials and scoring procedures used in each of the research tasks are also discussed.

The questions investigated in this research addressed the following hypotheses:

Hypothesis I: There is no significant difference between reading disabled adults' levels of appropriate schemata and inappropriate schemata for experimental reading passages (as assessed by prior knowledge inventories).

Hypothesis II: There is no significant relationship among reading disabled adults' levels of content-specific prior knowledge, levels of inappropriate schemata, and levels of metacomprehension (as assessed by prior knowledge content-specific measures, prior knowledge inventories, and metacomprehension measures, respectively).

Hypothesis III: There is no significant relationship among reading disabled adults' levels of content-specific prior knowledge, levels of inappropriate schemata, levels
of metacomprehension, and levels of comprehension (as assessed by prior knowledge content-specific measures, prior knowledge inventories, metacomprehension measures, and comprehension measures, respectively).

Selection of the Research Samples

This study included three phases. The first phase consisted of a pilot study to determine whether reading disabled adults retain incompatible prior knowledge about social science topics. In the next phase of the research, a second pilot study to establish the reliability coefficients for the prior knowledge content-specific, comprehension, and metacomprehension measures was carried out. In the final phase of the research, an investigation was conducted to examine the extent to which reading disabled adults apply their background knowledge in the comprehension of text and to determine whether these same readers use metacomprehension strategies to facilitate the comprehension process.

Prior to the implementation of the study, approval was obtained from the University of Florida's Committee for the Protection of Human Subjects during the fall semester, 1985. During the spring semester, 1986, the researcher selected the stimulus reading passages and developed the prior knowledge inventories and prior knowledge content-specific measures which were used in the first pilot study.
(see Instrumentation). The researcher then gained entry into the research site during the fall semester, 1986. All phases of the research project were conducted at a medium-sized southeastern university. The student population at this institution represented varied racial, ethnic, and socioeconomic backgrounds. The geographic areas represented by the students generally included the northeastern and southeastern portions of the United States.

The 100 subjects who participated in the first pilot study were randomly selected from a group of 134 students who were enrolled in reading and study skills courses. These participants were diagnosed as reading below the 13th-grade level and included students who ranked below the 40th percentile on the Nelson-Denny Reading Test, Form E. The subjects included an equal number of male and female students whose ages ranged from 18 to 29 years.

The second pilot study included 100 subjects who were randomly selected from a heterogenous group of 256 freshmen students. Placement results for the Nelson-Denny Reading Test, Form E, were used to select representative samples of above-average, average, and below-average readers. There were an equal number of both male and female students whose ages ranged from 18 to 31 years.

Subjects used in the final phase of the research project were drawn from a population of freshmen students
enrolled in reading and study skills courses. A sample of 60 disabled readers was randomly selected from a group of 123 students designated as reading disabled. Determination of disabled readers was made on the basis of their scores on the Nelson-Denny Reading Test, Form E, and included students who ranked below the 40th percentile. There were an equal number of both male and female students whose ages ranged from 18 to 27 years.

Instrumentation

The instruments used in this study consisted of a standardized measure of reading comprehension plus measures of prior knowledge, comprehension, and metacomprehension which were designed by the researcher. After an examination of various measures reviewed in *Buros Mental Measurements Yearbooks* (Buros, 1972-1979; Mitchell, 1985), the Nelson-Denny Reading Test (Brown, Bennett, & Hanna, 1981) was selected to identify adult students who were disabled in reading skills. A review of the literature revealed that a suitable instrument did not exist for the simultaneous assessment of reading disabled adults' use of prior knowledge and metacomprehension strategies in the comprehension of text. Therefore, instruments had to be developed by the researcher in order to test the hypotheses under investigation in this study. Descriptions of the Nelson-Denny Reading Test, Form E, prior knowledge
inventories and prior knowledge content-specific, comprehension, and metacomprehension measures are presented in the succeeding sections of this chapter.

**Measure of Reading Ability**

The Nelson-Denny Reading Test, Form E (Brown, Bennett, & Hanna, 1981) was administered to determine the reading levels for each subject in the research project. This instrument assesses skill development in vocabulary development, reading comprehension, and reading rate. Equivalent-forms reliability estimates for the Vocabulary Subtest range from .89 to .95, for the Comprehension Subtest from .75 to .82, and for Reading Rate from .62 to .82. Validity coefficients with the American College Entrance Test and Cooperative English Test range from .73 to .83, and the standard error of measurement is reported as 7.23.

The Vocabulary Subtest consists of 100 items, each in multiple-choice format with five answer choices which require subjects to apply their knowledge of word meanings to select from the five options the choice that best completes the definition of the stimulus word. The Comprehension Subtest, also in multiple-choice format, requires subjects to read eight passages from the humanities, science, and social science and then respond to 36 five-option multiple-choice questions. Assessment of
reading rate was determined by the number of words each subject read the first minute while reading the first passage. Subjects' vocabulary and comprehension subtest scores and the total scores were ascertained by the scoring guidelines and norms as indicated in the Examiner's Manual. Raw scores were interpreted in grade equivalents, percentile ranks, and standard scores.

**Instrument Development**

**Description of the Reading Passages**

To design the prior knowledge inventories, prior knowledge content-specific measures, comprehension measures, and metacomprehension measures for use in this investigation, it was necessary for the researcher first to identify and select four reading passages which were appropriate for the development of these instruments. After an examination of various types of textual materials which adults encounter in their daily reading experiences, four passages (Appendix A) entitled "Capital Punishment" (Kratcoski & Walker, 1978a), "The Role of Women in Police Work" (Kratcoski & Walker, 1978b), "Changes in Traditional Attitudes" (Society for the Advancement of Education, 1982), and "Anger Defused" (Travis, 1982) were selected for instrument development in this study. Following the procedure advanced by Forgan and Mangrum (1976) for "Using Fry's Graph with Articles," it was determined that the
readability levels of the passages ranged from high eighth grade to low ninth grade. Passages ranged from 675 to 710 words. These passages were then used to construct the assessment instruments. The final step in the instrument development process involved establishing the validity and reliability of the instruments. Using techniques similar to those suggested by Mehrens and Lehmann (1978) and Stevens (1980), experts in the field of reading were used to establish the content validity of the instruments. Reliability coefficients for the instruments were established through pilot studies using procedures recommended by Ary, Jacobs, and Razavieh (1979) and Thorndike and Hagen (1977).

Development of the Prior Knowledge Inventories

Prior knowledge instruments (Appendix A) were designed to examine subjects' world knowledge and perceptions relating to the content of the four reading selections used in the research project. For each of the reading passages, seven open-ended questions were constructed to directly assess the subjects' preexisting knowledge and beliefs, and to determine whether this information contradicted prose in the corresponding stimulus passages. In keeping with the suggestion by Alvermann, Smith, and Readence (1985), care was taken to insure that the questions were phrased in a manner to elicit information relevant to each of the topics
without sensitizing the subjects to precise information contained in the passages.

Administration of the instrument consisted of instructing subjects to read the questions and then to answer each question on the basis of their knowledge and beliefs about it. Subjects were directed to indicate a yes or no answer for each question and to explain in the spaces provided why they answered as they did.

**Pilot Testing of the Prior Knowledge Inventories**

To determine whether prior knowledge interfered with the comprehension of textual prose, the prior knowledge inventories were field tested with a population of adult readers with characteristics similar to the participants in this study. The data collected from the pilot study served a dual purpose. First, the data were examined to determine whether reading disabled adults did, in fact, possess inconsistent knowledge which conflicted with the textual passages. Second, a qualitative analysis of the pilot subjects' written responses to the prior knowledge inventory questions served as a guide for designing distractor items on the comprehension tests. The distractor items were selected from pilot subjects' written responses which reflected misconceptions about the topics on the prior knowledge inventories. These distractor items were then included on the comprehension measures in order to determine whether reading disabled adults in the final
study recognized conflicts between their prior knowledge and the reading passages. If the subjects discarded their prior knowledge when it was incompatible with the textual information, then they would select the multiple-choice items that corresponded with information presented in the reading passages. However, if the subjects failed to discern the conflict between their distorted prior knowledge and the textual information, they would select distractor items containing misconceptions about the topics contained in the reading passages.

Having received approval from the University of Florida's Committee for the Protection of Human Subjects and the Research Site for the implementation of this research project, the investigator conducted the first pilot study with 100 subjects enrolled in reading and study skills courses at a medium-sized southeastern university during the fall semester, 1986. As previously stated, the readers were diagnosed as reading disabled on the basis of scores on the Nelson-Denny Reading Test, Form E. They possessed characteristics similar to the subjects who participated in the final phase of the research project. During a period of four consecutive weeks, subjects completed the four prior knowledge inventories based on reading passages from the social sciences. Social science content was selected because it is the type of material that adult readers usually encounter in their daily
reading experiences. In addition, this type of prose often includes topics with which adults are familiar. Based on the data collection, the researcher's premise concerning the adult subjects' familiarity with social science content appeared to be confirmed by the fact that the pilot subjects generated 2,900 written responses for the prior knowledge inventories. A qualitative analysis of this data is present in the following section of this chapter.

A Qualitative Analysis of Pilot Subjects' Written Protocol Data on the Prior Knowledge Inventories

A qualitative analysis of the pilot study prior knowledge inventory data was based on methodological procedures which were validated in previous research (Flood, 1978; Steffensen et al., 1979). The pilot subjects presented free written responses to four prior knowledge inventories which consisted of seven open-ended questions. The subjects' written reports were transcribed and then analyzed in protocol form as suggested by Afflerbach and Johnston (1984) for the analysis of written discourse. Data analysis consisted of matching subjects' written responses obtained from the prior knowledge inventories with corresponding literal information in the passages. A scoring template based on the literal information for each passage was designed by the investigator prior to the implementation of the pilot study. After a comprehensive
exploration of subjects' responses, a classification scheme for product responses was used for coding the subjects' protocols. Based upon the content analysis of the responses, the protocols were then encoded as textually specific or textually distorted.

Excerpts from the Pilot Subjects' Written Protocols

This section presents representative samples of the subjects' textually specific and textually distorted responses for each of the prior knowledge inventories. A large number of the protocols were semantically similar, although they were stated in different terms. For instance, while many of the subjects held the same misconceptions regarding the topics, their individual writing styles reflected syntactic differences. Therefore, to eliminate the inclusion of numerous semantically congruent responses, only those responses which were semantically different are presented in Appendix B to illustrate the types of facts and misconceptions that the subjects held about the topics. Following are selected samples of subjects' original responses and Tables 1, 2, 3, and 4, which present summaries of the proportion of subjects who indicated textually specific and textually distorted responses.
Passage A: "Anger Defused" Prior Knowledge Inventory

Question One
Does the release of angry feelings help a person get rid of anger and feel better?

Textually Specific Answer
No. People who vent their anger usually become angrier, not less angry.

Textually Specific Response
No. Because a person still may have angry feelings and the problem might still be going on.

Textually Distorted Response
Yes. If you keep it in, it will destroy you. You have to release anger, like a tea pot has to release steam or you'll explode.

Question Three
What do you think will happen if a person does not release hostile or angry feelings?

Textually Specific Answer
The popular belief that suppressed anger can wreak havoc on the body has been inflated out of realistic proportions. Anger will subside with the passage of time.

Textually Specific Response
Maybe the person may forget it and let the angry feeling just go away and just say forget it; it's not really worth it.

Textually Distorted Response
A person will build up too much anger and hostile feelings and become ill. They may have heart trouble or high blood pressure or bad nerves.

Question Four
Do you think that the common practice of counting from 1 to 10 helps one to release or control anger?
Yes. Any emotional arousal will simmer down if you just wait long enough. This is why the classic advice for anger control—count to 10—has survived the centuries.

Yes. While counting some of the anger will be forgotten.

That's a game to make you more upset. That's what doctors say we are supposed to do, but it doesn't work.

A qualitative analysis of the data revealed that the pilot subjects held some misconceptions about the topic "Anger Defused." Table 1 reports the proportion of subjects who presented textually specific and textually distorted responses for each of the prior knowledge inventory questions. As displayed in Table 1, the subjects indicated significantly more textually distorted responses than textually specific responses on all seven questions. For questions one, three, and six, the proportions of subjects reporting textually specific and textually distorted responses were identical. This may be attributed to the fact that these items were interrelated and elicited similar perceptions. This trend also indicated that subjects continued to adhere to their original perceptions regarding the topic as they proceeded through the inventory. Therefore, the "Anger Defused" passage appeared appropriate for use in the final phase of the research project. In the research study, subjects' prior knowledge responses were
examined to ascertain whether they also held misconceptions about the topic. An additional phase of the study attempted to determine whether subjects maintained or discarded their distorted prior knowledge after reading passage information which contradicted their existing knowledge.

Table 1

Proportion of Pilot Subjects Who Presented Textually Specific and Textually Distorted Responses for Passage A: "Anger Defused" Prior Knowledge Inventory

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textually Specific Responses</td>
<td>.07</td>
<td>.02</td>
<td>.07</td>
<td>.15</td>
<td>.05</td>
<td>.07</td>
<td>.16</td>
</tr>
<tr>
<td>Textually Distorted Responses</td>
<td>.93</td>
<td>.98</td>
<td>.93</td>
<td>.85</td>
<td>.95</td>
<td>.93</td>
<td>.84</td>
</tr>
</tbody>
</table>

Passage B: "Capital Punishment" Prior Knowledge Inventory

Question One

Does capital punishment prevent persons from committing crimes such as murder?

Textually Specific Answer

No. There is no direct proof that capital punishment deters crimes.

Textually Specific Response

No. Because some people will always be bold, vicious, mean, and hateful for no reason at all.
An analysis of the "Capital Punishment" prior knowledge inventory data indicated that the subjects possessed inconsistencies in their knowledge regarding this topic. As shown in Table 2, subjects presented significantly more textually distorted responses than textually specific responses. In addition, on questions one, three, four, and
seven the proportion of subjects' distorted responses were the same, which suggests that the subjects did not alter their beliefs regarding the topic as they completed the task. Because subjects' response patterns were similar to those on the "Anger Defused" inventory, this instrument was also selected for inclusion in the study.

Table 2

Proportion of Pilot Subjects Who Presented Textually Specific and Textually Distorted Responses for Passage B: "Capital Punishment" Prior Knowledge Inventory

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textually Specific Responses</td>
<td>.18</td>
<td>.00</td>
<td>.18</td>
<td>.18</td>
<td>.23</td>
<td>.21</td>
<td>.18</td>
</tr>
<tr>
<td>Textually Distorted Responses</td>
<td>.82</td>
<td>1.00</td>
<td>.82</td>
<td>.82</td>
<td>.77</td>
<td>.79</td>
<td>.82</td>
</tr>
</tbody>
</table>

Passage C: "Changes in Traditional Attitudes" Prior Knowledge Inventory

Question One

Who should pay the wedding expenses when a couple marries for the first time?

Textually Specific Answer

Sixty percent of the nation thinks that in the case of young people getting married for the first time, the American tradition of the bride's family paying most of the wedding expenses should be abandoned. They think the
groom's family should pay equally.

Both the bride's and groom's families should pay for the wedding expenses. This is a gift that the parents should give their children.

The bride's family should be responsible for the wedding expenses because it is a part of the wedding tradition.

Does it matter whether a married man wears a wedding band?

No. One-half of the nation thinks that it really doesn't matter whether or not married men wear wedding bands.

No. Because love is in the heart, not in material things.

Yes. It is important because it represents faithfulness and obligation to the wife.

What age group among married couples makes the best marriages (husband is younger than the wife, husband is older than the wife, husband and wife almost the same age, or the age of the husband does not matter)?

The great majority of Americans indicated either the case when husbands are a few years older, or those instances where wives and husbands are almost the same age.

The couple should be in the same age group because they will have the same interests and have a
As reported in Table 3, a comparative analysis of the subjects' written discourse revealed significant proportions of textually distorted responses on the "Changes in Traditional Attitudes" prior knowledge inventory. Questions four and five were the only items that subjects reported more textually specific responses than textually distorted responses. This response trend was expected because the textually specific answers for these questions were ones which are generally supported by American tradition and the majority of persons residing in the United States. Unlike Passages A and B, the proportions of textually distorted responses for Passage C varied across the seven questions because this inventory treated various aspects of traditional attitudes. In contrast, Passages A and B focused only on the major topics of anger and capital punishment, and included interrelated information which was reflected in the inventory questions and the subjects' responses.
Table 3

Proportion of Pilot Subjects Who Presented Textually Specific and Textually Distorted Responses for Passage C: "Changes in Traditional Attitudes" Prior Knowledge Inventory

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6A</th>
<th>6B</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textually Specific Responses</td>
<td>.04</td>
<td>.09</td>
<td>.11</td>
<td>.57</td>
<td>.88</td>
<td>.28</td>
<td>.19</td>
<td>.14</td>
</tr>
<tr>
<td>Textually Distorted Responses</td>
<td>.96</td>
<td>.91</td>
<td>.89</td>
<td>.43</td>
<td>.12</td>
<td>.72</td>
<td>.81</td>
<td>.86</td>
</tr>
</tbody>
</table>

Passage D: "The Role of Women in Police Work" Prior Knowledge Inventory

<table>
<thead>
<tr>
<th>Question One</th>
<th>Should women serve in police departments as police officers?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textually Specific Answer</td>
<td>Yes. Women have been considered integral to police departments for many years.</td>
</tr>
<tr>
<td>Textually Specific Response</td>
<td>Yes. Women should be able to work anywhere. It's America.</td>
</tr>
<tr>
<td>Textually Distorted Response</td>
<td>No. The job is too dangerous. We see how criminals treat males. What do you think they will do to a female?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question Three</th>
<th>Are policewomen as effective as policemen in the performance of police duties?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textually Specific Answer</td>
<td>Effectiveness studies revealed that policewomen are as competent as policemen in the performance of police duties.</td>
</tr>
</tbody>
</table>
Yes. Women must pass the same test of fitness as the male officers do.

No. Women are too emotional and fragile.

How do you think that male officers feel about having female officers as their partners?

Male officers reacted positively to female officers. Male officers thought the female officers were competent and had superior skills in handling some types of cases. Male officers also indicated they tried to impress female officers by presenting such officer images as hardworking, concerned, efficient, brave, and courteous.

It would not bother the male officers to have female partners.

The male officers would feel they had to protect themselves and their female partners, too.

As shown in Table 4, the results obtained from the "Role of Women in Police Work" prior knowledge inventory were similar to those for Passages A, B, and C. Again, subjects presented identical proportions of textually specific and textually distorted responses for those questions (three and six) which were related. The subjects also indicated significantly more textually distorted responses than textually specific responses.
Table 4

Proportion of Pilot Subjects Who Presented Textually Specific and Textually Distorted Responses for Passage D: "The Role of Women in Police Work" Prior Knowledge Inventory

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textually Specific Responses</td>
<td>.43</td>
<td>.26</td>
<td>.29</td>
<td>.24</td>
<td>17</td>
<td>.29</td>
<td>.18</td>
</tr>
<tr>
<td>Textually Distorted Responses</td>
<td>.57</td>
<td>.74</td>
<td>.71</td>
<td>.76</td>
<td>.83</td>
<td>.71</td>
<td>.82</td>
</tr>
</tbody>
</table>

Pilot study results for the four prior knowledge inventories disclosed analogous trends in the subjects' response patterns regarding the topics. Thus, these stimuli materials and procedures were implemented in the final phase of the research project.

Development of the Prior Knowledge Content-Specific Measures

The prior knowledge measure (Appendix A) developed for this study is based on the paradigm developed and validated by Johnston (1984). This instrument consisted of content-specific vocabulary items which were intended to assess the extent of subjects' prior knowledge of the content themes employed in the reading comprehension passages.

A list of fifteen words was selected from each of the stimulus passages to reflect the content hierarchy of the
passages. From this list, ten independent judges who were graduate students enrolled in the school of education at a public university in Florida selected ten key vocabulary terms reflecting the central ideas of the passages. Applying the Pearson product-moment correlation formula, interrater reliabilities were established as .96, .98, .96, and .97, respectively, for Passages A through D. Then, for each of the passage themes, ten multiple-choice questions were developed, each presenting a content word and four possible definitions. The administration instructions directed subjects to select the word or phrase that indicated the best meaning of the content-specific vocabulary term.

**Development of the Comprehension and Metacomprehension Measures**

The comprehension instrument (see Appendix A) consisted of ten multiple-choice questions for each of the reading passages, each including a question stem and four alternative answers. Of the four alternative answers, only one answer was correct. The correct response was either textually explicit or textually implicit and was designed in accordance with the guidelines presented in Pearson and Johnson's (1978) taxonomy of comprehension. This taxonomy appeared germane to this study because "its greatest value is its ability to capture the relationship between information presented in the text and information that has come from a reader's store of prior knowledge (scripts and schema)" (Pearson & Johnson,
1978, p. 157). The distractor items were the distorted responses that the pilot subjects generated on the prior knowledge inventories (Appendix B). Subjects' original distorted responses were modified syntactically, but not semantically. Using textually explicit, textually implicit, and prior knowledge distractor items allowed for the determination of whether subjects modified their existing schemata to accommodate new textual information, or whether they adhered to their preexisting schemata although it contradicted the text. As discussed previously, it was hypothesized that subjects, initially having distorted prior knowledge, who after reading the passages instituted schema change, would therefore select the textually specific multiple-choice items. Conversely, subjects who maintained their distorted schemata would select distractor items that reflected prior misconceptions about the reading passages.

The metacomprehension measure (see Appendix A) used in this research was based on designs devised by Greene (1929), Forrest and Waller (1979), and Johnston and Pearson (1982). This design appeared appropriate because it permitted the assessment of both comprehension and metacomprehension simultaneously. Subjects' understanding of comprehension was assessed by asking them to rate the degree of certainty that they had answered a comprehension question correctly. According to Baker and Brown (1984a),
readers are considered good comprehension monitors if they indicate they are sure their answers are correct when in fact they are, or if they indicate that their answers are wrong when they are incorrect. On the other hand, readers are considered poor comprehension monitors if there is a mismatch between their confidence ratings and the correctness of their answers. (Baker & Brown, 1984a, p.26)

Once the comprehension measure was developed, it was combined with the metacomprehension measure in the following format: The multiple-choice comprehension questions were typed on the left side of 8 x 11" paper. Then, on the right side of the paper, directly adjacent to each question, was typed a confidence rating scale which required subjects to rate each answer they selected in response to the comprehension questions in terms of its probability of being correct. The rating scale was a modified version of the instruments developed by Forrest and Waller (1979) and Johnston and Pearson (1982) and was ranked on a continuum from 1 (very uncertain) to 6 (very certain).

While procedures (Davey & Porter, 1982; Forrest & Waller, 1979; Garner, 1981; Johnston & Pearson, 1982) similar to the comprehension and metacomprehension measures employed in this study were validated in earlier research, additional validation of this particular instrument consisted of implementing procedures designed to established interrater reliability for the comprehension and metacomprehension measures. Raters were five reading educators who were graduate students at a public university in Florida. This
group of independent raters evaluated the comprehension and metacomprehension measures in terms of syntactic and semantic acceptability, consistency of question type, and readability indices across the four tests. Prior to the evaluative task, each rater was given characteristics of the research sample, criteria for determining the suitability of the comprehension items as prescribed by Forgan and Mangrum (1976), and the specifications for designing questions as outlined in Pearson and Johnson's (1978) taxonomy of comprehension.

Using the designated criteria, each rater evaluated the reading passages on a scale ranging from 1 to 15 points. The highest possible score for each area assessed was 5 points, thus resulting in a 15-point total. Pearson product-moment correlations were calculated to determine interrater reliability. Data analysis established interrater reliability at .96. This finding indicated a significant correlation between the judges' ratings on the comprehension and metacomprehension measures.

Mehrens and Lehmann (1978) reported that the development of appropriate test items requires consideration of student characteristics in determining the difficulty level of a test. Moreover, "the validity and reliability of the individual items as well as the test as a whole can only be achieved when each test item is expressed in clear, unambiguous language" (Mehrens & Lehmann, 1978, p. 194). Therefore, while the validation procedures conducted with the
independent raters established that the research instruments developed for this experiment met these criteria, a second phase of the first pilot study was conducted to further determine whether the readability levels of the passages were appropriate for reading disabled adults and to determine whether the test items clearly conveyed to examinees the intent of those questions. Subjects (N=100) were the same as those used in phase one of the pilot study which tested the prior knowledge inventory. Subjects were administered the four prior knowledge content-specific, comprehension, and metacomprension measures for passages A through D. Upon completion of each passage test, subjects completed a test evaluation questionnaire (see Appendix C).

An analysis of the test evaluation questionnaires revealed that the readability levels of the reading passages were appropriate for the subjects. Yet, for each passage subjects listed vocabulary terms with which they were not familiar. These vocabulary terms were used to compile glossaries for each of the passages (see Appendix A). An examination of the questionnaire items pertaining to the prior knowledge content-specific and comprehension measures disclosed that subjects rated these test items as comprehensible. However, a small number of subjects indicated that the combined comprehension and metacomprension measures format was confusing. Subjects may have experienced difficulty with this combined and
simultaneous task because traditional reading comprehension tests have required examinees to complete only a comprehension task. Thus, the format of this particular instrument may not have conformed to students' schemata for a comprehension test and, consequently, was confusing to these subjects. As a result of this finding, the directions for the comprehension and metacomprehension measures were rewritten to eliminate this ambiguity.

The final step in instrumentation development consisted of implementing a second pilot study during the fall of 1987. The purpose of this experiment was to determine the reliability estimates of the research instruments. An internal consistency index was used to estimate the reliability of each instrument because this procedure estimates "reliability through determining how all items on a single test relate to all other items and to the test as a whole without splitting the test while employing correlational procedures" (Ary, Jacobs, & Razavieh, 1979, p. 214).

As indicated previously (see Selection of the Research Samples), subjects (N=100) were randomly selected from a heterogenous group of freshmen students at a medium-sized southeastern university. Data were collected for each subject on the research instruments for experimental reading passages A, B, C, and D. Then, using the Cronbach alpha formula, reliability coefficients were calculated for each of
the measures. The results indicated that the reliability estimates were .80 with a standard error of 2.55 for instrument A, .82 with a standard error of 2.52 for instrument B, .82 with a standard error of 2.54 for instrument C, and .84 with a standard error of 2.51 for instrument D. Findings from the independent judges and the pilot study subjects established the validity and reliability of the research instruments. Therefore, the latter portion of this chapter presents a discussion of the procedures employed in the final phase of this research project.

The Investigation

The final phase of this study was designed to examine the influences of prior knowledge and metacomprehension on the comprehension of reading disabled adults. Specifically, the investigation was conducted to determine whether disabled readers integrate content schemata and textual schemata and to assess the extent to which these readers use metacomprehension strategies to facilitate the comprehension process.

Data Collection

As described earlier, the subjects in this investigation were 60 disabled readers enrolled in reading and study skills courses at a southeastern university. Since the 60 subjects were randomly selected from a total population of 123 students enrolled in intact reading classes, it became
necessary to establish special sessions to implement the study. Thus, four testing groups of 15 students each were formed on the basis of subjects' availability for meeting the sessions during the school day on Tuesday and Thursday. Moreover, the length of the testing instrument and the elimination of a time factor for its completion required administration of the four instruments over several sessions.

During the fall semester, 1988, the subjects met two 70-minute sessions per week for 2 weeks. At each session subjects completed the prior knowledge inventory, prior knowledge content-specific measure, comprehension measure, and metacomprehension measure for each passage. This procedure continued for 2 consecutive weeks, occurring during the same time frame and week day for each of the four groups until all instruments (Passages A, B, C, and D) had been administered.

**Instrumentation**

Reading scores for the subjects were obtained from the Nelson-Denny Reading Test, Form E. The prior knowledge content-specific measures, comprehension measures, and metacomprehension measures (Appendix A) were based on instruments validated in previous research (Alvermann, et al., 1985; Johnston, 1984). Moreover, the tests were subjected to further validation procedures through pilot testing, as reported in the discussion on instrumentation development.
Task 1: Prior knowledge inventories

The prior knowledge inventories were administered to subjects in small-group settings. Participants were instructed to read the prior knowledge inventories and then answer each question on the basis of their prior knowledge and beliefs about it. Subjects were then directed to indicate a yes or no response for each question and then to present a written explanation stating why they answered as they did. In addition, the investigator encouraged respondents to write what they honestly thought about each question. Procedures for scoring the prior knowledge inventories consisted of matching subjects' written responses with corresponding literal information in the experimental reading passages. Using the scoring template employed in the pilot study, subjects' written protocols were categorized as either textually specific protocols or textually distorted protocols.

Task 2: Prior knowledge content-specific measures

Administration of the prior knowledge content-specific measures consisted of directing subjects to read each content word, to read the four definition foils, and finally to select the definition which best depicted the meaning of the underlined stimulus content word. Subjects were also instructed to ask for assistance if they experienced difficulty understanding the task. They were then instructed to proceed at their own pace until all test items were
completed. The tests were scored using a key prepared prior to the study. Each of the test items consisted of only one correct answer. Each correct response was awarded one point.

**Task 3: Comprehension and metacomprehension measures**

In the last phase of this research study, subjects complete comprehension and metacomprehension measures. Administration of these tests occurred in four separate sessions. Subjects were instructed to read the stimulus passage and then answer the questions which followed by circling the letter of the phrase that best answered each question. They then were asked to indicate how certain they were that their answers were correct by circling one of the numbers adjacent to each of the comprehension items. In addition, subjects were encouraged to consult the vocabulary glossary in order to obtain definitions for unknown words during the reading of the passage. Correct responses for the comprehension test were assigned a value of one. Incorrect responses were assigned a zero. Metacomprehension scores were based on the degrees of certainty and uncertainty as related to responses on the comprehension measures (Forrest & Waller, 1979). The metacomprehension score was the sum of a Likert response to the certainty and uncertainty of subjects' comprehension which they rated from (1) very uncertain to (6) very certain. The scale was scored in the opposite direction (that is, (6) very certain) when the comprehension responses were correct.
Data Analysis

The data collected for the prior knowledge inventories which assessed levels of appropriate and inappropriate schemata were subjected to qualitative analyses to determine the proportion of subjects who reported textually specific and textually distorted protocols. A t-test was used to test the first hypothesis regarding reading disabled adults' levels of appropriate schemata and inappropriate schemata for the experimental reading passages. For each of the four stimulus passages, a single-group t-test was used to test whether the means differed from 3.5 or the point on the scale which represented half appropriate and half inappropriate schemata.

The second hypothesis, pertaining to the relationship among reading disabled adults' levels of content-specific prior knowledge, levels of inappropriate schemata, and levels of metacomprehension, was tested using a series of multiple regression analyses. The content-specific prior knowledge and the inappropriate schemata scores were the independent variables, with metacomprehension as the dependent variable. Content-specific prior knowledge scores were based on the subjects' general background of the experimental reading passages. Inappropriate schemata scores were derived by calculating the number of textually specific and textually distorted protocols that subjects reported for the stimulus passages on the prior knowledge inventories.
Metacomprehension scores were based on subjects' confidence ratings regarding their responses to the comprehension measures.

The third hypothesis, regarding the relationship among reading disabled adults' levels of content-specific prior knowledge, levels of inappropriate schemata, levels of metacomprehension, and levels of comprehension was tested using multiple regression procedures. The content-specific prior knowledge scores, inappropriate schemata scores, and metacomprehension scores were the independent variables. Comprehension scores served as the dependent variable.

The results derived from these quantitative analyses are presented in Chapter IV.
CHAPTER IV
RESULTS AND DISCUSSION

The purpose of this study was to investigate the interactive influences of prior knowledge and metacomprehension on the comprehension of reading disabled adults. Specifically, the investigation was conducted to determine the degree to which reading disabled adults apply their prior knowledge in the comprehension of text and the extent to which these readers employ metacomprehension strategies actively to integrate prior knowledge with textual information.

The subjects were 60 freshmen students identified as reading disabled on the basis of scores derived from the Nelson-Denny Reading Test, Form E. Prior knowledge inventory and prior knowledge content-specific, comprehension, and metacomprehension measures for each subject were collected by the researcher. Using the Statistical Analysis System (SAS) computer program, data analysis was conducted through the Northeast Regional Data Center (NERDC) to test the three null hypotheses. Four single-group t-tests were used to test the first hypothesis. A series of multiple regression analyses were performed to test the second and third hypotheses.
Results of the Hypotheses Tests

The findings obtained for the t-test and multiple regression analyses are reported for each hypothesis for experimental reading passages A through D. Intercorrelational statistics are also presented for the independent and dependent variables for each of the experimental reading passages. Descriptive statistics procured for the research sample are included in Appendix D. The results of the statistical analyses are discussed in the final section of this chapter.

Hypothesis I

The first hypothesis was that there would be no significant difference between reading disabled adults’ levels of appropriate schemata and inappropriate schemata for experimental reading passages (as assessed by prior knowledge inventories). To test this hypothesis, a single-group t-test was conducted for each experimental reading passage to determine whether the means differed from 3.5 for appropriate and inappropriate schemata.

Results for the t-test analyses for differences in levels of appropriate and inappropriate schemata are presented in Table 5. As illustrated in the table, the means differed significantly from 3.5 for appropriate and inappropriate schemata at the .05 alpha level. The means for experimental reading passages A, B, C, and D were 4.72,
3.97, 4.05, and 4.13, respectively. There was a significant difference between subjects' appropriate and inappropriate schemata for experimental reading passage A, t (59) = 5.72, experimental reading passage B, t (59) = 2.65, experimental reading passage C, t (59) = 2.97, and experimental reading passage D, t (59) = 3.71, at the .05 level of significance. The findings indicated that subjects retained significantly more inappropriate schemata than appropriate schemata for the experimental reading passages. Therefore, the first null hypothesis was rejected.

Table 5

<table>
<thead>
<tr>
<th>Passage</th>
<th>Mean</th>
<th>Standard Error</th>
<th>t Value**</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.7167</td>
<td>0.2127</td>
<td>5.72*</td>
</tr>
<tr>
<td>B</td>
<td>3.9667</td>
<td>0.1762</td>
<td>2.65*</td>
</tr>
<tr>
<td>C</td>
<td>4.0500</td>
<td>0.1851</td>
<td>2.97*</td>
</tr>
<tr>
<td>D</td>
<td>4.1333</td>
<td>0.1705</td>
<td>3.71*</td>
</tr>
</tbody>
</table>

* p < .05
** Tests of whether the means differ from the midpoint (3.5) on the scale.

Hypothesis II

The second hypothesis was that there would be no significant relationship among reading disabled adults' levels of content-specific prior knowledge, levels of inappropriate schemata, and levels of metacomprehension (as assessed by prior knowledge content-specific measures, prior knowledge inventories, and metacomprehension measures, respectively). A series of four separate multiple regression analyses were applied for experimental reading passages A, B, C, and D to test the second hypothesis. For each stimulus passage, the content-specific prior knowledge and inappropriate schemata scores were the independent variables, with metacomprehension as the dependent variable. In the tables containing the regression analyses results, the descriptors are inappropriate schemata (ISCH) and content-specific prior knowledge (CSPK).

Results for Experimental Reading Passage A

Multiple regression analysis of metacomprehension with levels of inappropriate schemata and content-specific prior knowledge for experimental reading passage A are presented in Table 6. As shown in the table, the F ratio \( (2, 57) = 153.97 \) was significant at the .05 alpha level. The calculated R-Square revealed that approximately 84 percent of the variance in metacomprehension was accounted for by levels of inappropriate schemata and content-specific prior knowledge. Reported in Table 7 are the specific regression
coefficients and tests of significance. As expected, an examination of the $t$ values indicated that inappropriate schemata was negatively related to metacomprehension, and significant, $t = -14.58$, at the .05 alpha level. There was a positive relationship between content-specific prior knowledge and metacomprehension, $t = 2.40$, which was significant at the .05 alpha level.

Table 6

**Multiple Regression Analysis of Metacomprehension with Levels of Inappropriate Schemata and Content-Specific Prior Knowledge for Experimental Reading Passage A**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Passage A</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>2</td>
<td>3873.80</td>
<td>1936.80</td>
<td>153.97*</td>
<td>.84</td>
</tr>
<tr>
<td>Error</td>
<td>57</td>
<td>717.05</td>
<td>12.58</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .05$

Table 7

**Analysis of Independent Variable Regression Coefficients for Metacomprehension for Experimental Reading Passage A**

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>Coefficient</th>
<th>SE</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
<td>1</td>
<td>-4.551</td>
<td>0.3105</td>
<td>-14.58*</td>
</tr>
<tr>
<td>CSPK</td>
<td>1</td>
<td>1.471</td>
<td>0.6138</td>
<td>2.40*</td>
</tr>
</tbody>
</table>

* $p < .05$
Results for Experimental Reading Passage B

As displayed in Table 8, the overall regression analysis was significant at the .05 alpha level for experimental reading passage B, $F(2,57) = 38.67$. The R-Square value indicated that the predictor variables accounted for 58 percent of the variance in metacomprehension. The results of the regression coefficients and tests of significance are listed in Table 9. An inspection of the regression coefficients and the t values evidenced that there was an inverse relationship between inappropriate schemata and metacomprehension, $t = -7.20$, which was statistically significant at the .05 alpha level. Unlike subjects' performances on experimental reading passage A, content-specific prior knowledge was not significantly related to metacomprehension, $t = 1.17$, at the .05 alpha level for experimental reading passage B.

Table 8

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passage B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>2</td>
<td>1772.67</td>
<td>886.34</td>
<td>38.67*</td>
<td>.58</td>
</tr>
<tr>
<td>Error</td>
<td>57</td>
<td>1306.57</td>
<td>22.92</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05
Table 9

Analysis of Independent Variable Regression Coefficients for Metacomprehension for Experimental Reading Passage B

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
<td>1</td>
<td>-3.703</td>
<td>0.5140</td>
<td>-7.20*</td>
</tr>
<tr>
<td>CSPK</td>
<td>1</td>
<td>0.8687</td>
<td>0.7404</td>
<td>1.17</td>
</tr>
</tbody>
</table>

* p < .05

Results for Experimental Reading Passage C

The results derived from the multiple regression analysis of metacomprehension with levels of inappropriate schemata and content-specific prior knowledge for experimental reading passage C are presented in Table 10. As reflected in the table, the explanatory variables contributed significantly to metacomprehension, F (2, 57) = 64.20, at the .05 alpha level. The calculated R-Square value evidenced that 69 percent of the variance in subjects' metacomprehension scores was explained by inappropriate schemata and content-specific prior knowledge. Tests of significance for the regression coefficients are displayed in Table 11. As shown in the table, content-specific prior knowledge was positively related to metacomprehension, t = 2.14, at the .05 alpha level. The results of the regression coefficient test for inappropriate schemata at experimental reading passage C was inversely related to metacomprehension, t = -11.11, and significant at the .05 alpha level.
Table 10

Multiple Regression Analysis of Metacomprehension with Levels of Inappropriate Schemata and Content-Specific Prior Knowledge for Experimental Reading Passage C

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passage C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>2</td>
<td>2534.87</td>
<td>1267.43</td>
<td>64.20*</td>
<td>.69</td>
</tr>
<tr>
<td>Error</td>
<td>57</td>
<td>1125.32</td>
<td>19.74</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

Table 11

Analysis of Independent Variable Regression Coefficients for Metacomprehension for Experimental Reading Passage C

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
<td>1</td>
<td>-4.480</td>
<td>0.403</td>
<td>-11.11*</td>
</tr>
<tr>
<td>CSPK</td>
<td>1</td>
<td>1.593</td>
<td>0.745</td>
<td>2.14*</td>
</tr>
</tbody>
</table>

*p < .05

Results for Experimental Reading Passage D

Shown in Table 12 is the multiple regression analysis of metacomprehension with levels of inappropriate schemata and content-specific prior knowledge, as the predictor variables, for experimental reading passage D. The results in the table indicated that inappropriate schemata and content-specific prior knowledge contributed significantly to
Table 12

Multiple Regression Analysis of Metacomprehension with Levels of Inappropriate Schemata and Content-Specific Prior Knowledge for Experimental Reading Passage D

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passage D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>2</td>
<td>2127.84</td>
<td>1063.92</td>
<td>52.67*</td>
<td>.65</td>
</tr>
<tr>
<td>Error</td>
<td>57</td>
<td>1151.41</td>
<td>20.20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

the variance in metacomprehension, $F(2, 57) = 52.67$, at the .05 alpha level. The R-Square value demonstrated that 65 percent of the variance in metacomprehension was accounted for by the explanatory variables. Enumerated in Table 13 are the regression coefficients and tests of significance for inappropriate schemata and content-specific prior knowledge. The relationship between content-specific prior knowledge and metacomprehension was not significant, $t = .02$, at the .05 alpha level. The t value indicated a negative relationship between inappropriate schemata and metacomprehension, $t = -10.26$, which was significant at the .05 alpha level.
Table 13

Analysis of Independent Variable Regression Coefficients for Metacomprehension for Experimental Reading Passage D

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
<td>1</td>
<td>-4.547</td>
<td>0.4430</td>
<td>-10.26*</td>
</tr>
<tr>
<td>CSPK</td>
<td>1</td>
<td>0.017</td>
<td>0.7054</td>
<td>0.02</td>
</tr>
</tbody>
</table>

* p < .05

Summary of the Results for Hypothesis II

Taken together, the overall results of the multiple regression analyses of metacomprehension with levels of inappropriate schemata and content-specific prior knowledge evidenced a relationship between the dependent variable and predictor variables for experimental reading passages A through D. The R-Square values demonstrated that a significant portion of the variance in metacomprehension was accounted for by inappropriate schemata and content-specific prior knowledge. Generally, tests of significance for the regression coefficients indicated a direct relationship between content-specific prior knowledge and metacomprehension with comparable levels of inappropriate schemata. As anticipated, the results of the regression coefficients and tests of significance revealed an inverse relationship between inappropriate schemata and metacomprehension. Higher levels of inappropriate schemata
tended to lower reading disabled adults' metacomprehension performances. Therefore, the second null hypothesis was rejected.

**Hypothesis III**

The third hypothesis was that there would be no significant relationship among reading disabled adults' levels of content-specific prior knowledge, levels of inappropriate schemata, levels of metacomprehension, and levels of comprehension (as assessed by prior knowledge content-specific measures, prior knowledge inventories, metacomprehension measures, and comprehension measures, respectively). To test this hypothesis, a series of four separate multiple regression procedures were conducted for experimental reading passages A, B, C, and D. Comprehension scores were the dependent variable. Content-specific prior knowledge scores, inappropriate schemata scores, and metacomprehension scores served as the independent variables. In the tables displaying the regression analyses results, the descriptors are content-specific prior knowledge (CSPK), inappropriate schemata (ISCH), and metacomprehension (META).

**Results for Experimental Reading Passage A**

Reported in Table 14 is the multiple regression analysis of comprehension with levels of inappropriate schemata, content-specific prior knowledge, and metacomprehension for
Table 14

Multiple Regression Analysis of Comprehension with Levels of Inappropriate Schemata, Content-Specific Prior Knowledge, and Metacomprehension for Experimental Reading Passage A

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passage A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>3</td>
<td>188.46</td>
<td>62.82</td>
<td>314.45*</td>
<td>.94</td>
</tr>
<tr>
<td>Error</td>
<td>56</td>
<td>11.19</td>
<td>0.20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

experimental reading passage A. As can be seen from the table, there was a significant relationship between the dependent and independent variables, $F(3, 56) = 314.45$, at the .05 alpha level. The calculated R-Square indicated that approximately 94 percent of the variation in comprehension could be explained by the predictor variables. The specific regression coefficients and tests of significance are displayed in Table 15. An examination of the t values revealed that metacomprehension and comprehension were significantly related, $t = 10.07$, at the .05 alpha level. The negative t value for the inappropriate schemata regression coefficient, $t = -2.30$, indicated an inverse relationship with comprehension, which was significant at the .05 alpha level. Content-specific prior knowledge was not significantly related to comprehension, $t = 0.14$, at the .05 alpha level.
Table 15

Analysis of Independent Variable Regression Coefficients for Comprehension for Experimental Reading Passage A

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
<td>1</td>
<td>-.1965</td>
<td>0.0855</td>
<td>-2.30*</td>
</tr>
<tr>
<td>CSPK</td>
<td>1</td>
<td>.0116</td>
<td>0.0816</td>
<td>0.14</td>
</tr>
<tr>
<td>META</td>
<td>1</td>
<td>.1681</td>
<td>0.1670</td>
<td>10.07*</td>
</tr>
</tbody>
</table>

* p < .05

Results for Experimental Reading Passage B

For experimental reading passage B, the multiple regression analysis of comprehension with levels of inappropriate schemata, content-specific prior knowledge, and metacomprehension, as illustrated in Table 16, was significant at the .05 alpha level, F (3, 56) = 128.36. The R-Square value disclosed that the independent variables accounted for approximately 87 percent of the variance in the total comprehension score. Presented in Table 17 are the regression coefficients and tests of significance for the explanatory variables. The results evidenced that there was a positive relationship between metacomprehension and comprehension, t = 10.49, which was significant at the .05 alpha level. Conversely, inappropriate schemata was negatively related to comprehension, t = -2.35, and significant at the .05 alpha level. Again, content-specific prior knowledge was not a
Table 16

**Multiple Regression Analysis of Comprehension with Levels of Inappropriate Schemata, Content-Specific Prior Knowledge, and Metacomprehension for Experimental Reading Passage B**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passage B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>3</td>
<td>135.96</td>
<td>45.32</td>
<td>128.36*</td>
<td>.87</td>
</tr>
<tr>
<td>Error</td>
<td>56</td>
<td>19.77</td>
<td>0.35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

Table 17

**Analysis of Independent Variable Regression Coefficients for Comprehension for Experimental Reading Passage B**

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
<td>1</td>
<td>-0.2071</td>
<td>0.0882</td>
<td>-2.35*</td>
</tr>
<tr>
<td>CSPK</td>
<td>1</td>
<td>0.1037</td>
<td>0.0930</td>
<td>1.12</td>
</tr>
<tr>
<td>META</td>
<td>1</td>
<td>0.1725</td>
<td>0.0164</td>
<td>10.49*</td>
</tr>
</tbody>
</table>

*p < .05

significant predictor of comprehension, *t* = 1.12, at the .05 alpha level.

**Results for Experimental Reading Passage C**

Evidence obtained from the multiple regression analysis of comprehension with levels of inappropriate schemata, content-specific prior knowledge, and metacomprehension for experimental reading passage C are summarized in Table 18.
As shown in the table, there was a significant relationship between comprehension and the explanatory variables, $F (3, 56) = 315.88$, at the .05 alpha level. The R-Square value for the regression model demonstrated that 94 percent of the variance in comprehension was explained by the explanatory variables. From a review of Table 19, it can be seen that the test of the metacomprehension coefficient was significant, $t = 15.62$, at the .05 alpha level. An examination of the $t$ value revealed that the inappropriate schemata coefficient was not statistically significant, $t = -1.59$, at the .05 alpha level. The content-specific prior knowledge coefficient was not significant, $t = 1.47$, at the .05 alpha level.

**Results for Experimental Reading Passage D**

Presented in Table 20 are the results of the multiple regression analysis of comprehension with levels of inappropriate schemata, content-specific prior knowledge, and metacomprehension for experimental reading passage D. The results illustrated that the predictor variables were significantly related to comprehension, $F (3, 56) = 192.91$ at the .05 alpha level. The calculated R-Square indicated that 91 percent of the variance in comprehension was accounted for by the independent variables. Reported in Table 21 are the regression coefficients and tests of significance. An inspection of the $t$ values evidenced that there was a positive relationship between metacomprehension
and comprehension, \( t = 11.03 \), which was significant at the .05 alpha level. Inappropriate schemata was inversely related to comprehension, \( t = -3.77 \), and significant at the .05 alpha level. The coefficient test for content-specific prior knowledge, \( t = 0.20 \), was not statistically significant at the .05 alpha level.

**Table 18**

*Multiple Regression Analysis of Comprehension with Levels of Inappropriate Schemata, Content-Specific Prior Knowledge, and Metacomprehension for Experimental Reading Passage C*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passage C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>3</td>
<td>136.28</td>
<td>45.43</td>
<td>315.88*</td>
<td>.94</td>
</tr>
<tr>
<td>Error</td>
<td>56</td>
<td>8.05</td>
<td>0.14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* \( p < .05 \)

**Table 19**

*Analysis of Independent Variable Regression Coefficients for Comprehension for Experimental Reading Passage C*

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
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<td>-0.0972</td>
<td>0.0612</td>
<td>-1.59</td>
</tr>
<tr>
<td>CSPK</td>
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<td>0.0971</td>
<td>0.0661</td>
<td>1.47</td>
</tr>
<tr>
<td>META</td>
<td>1</td>
<td>0.1765</td>
<td>0.0113</td>
<td>15.62*</td>
</tr>
</tbody>
</table>

* \( p < .05 \)
Table 20

**Multiple Regression Analysis of Comprehension with Levels of Inappropriate Schemata, Content-Specific Prior Knowledge, and Metacomprehension for Experimental Reading Passage D**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passage D</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>3</td>
<td>149.29</td>
<td>49.76</td>
<td>192.91*</td>
<td>.91</td>
</tr>
<tr>
<td>Error</td>
<td>56</td>
<td>14.45</td>
<td>0.26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

Table 21

**Analysis of Independent Variable Regression Coefficients for Comprehension for Experimental Reading Passage D**

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
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<td>-0.3186</td>
<td>0.0845</td>
<td>-3.77*</td>
</tr>
<tr>
<td>CSPK</td>
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<td>0.0162</td>
<td>0.0797</td>
<td>0.20</td>
</tr>
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<td>META</td>
<td>1</td>
<td>0.1652</td>
<td>0.0150</td>
<td>11.03*</td>
</tr>
</tbody>
</table>

* p < .05

**Summary of the Results for Hypothesis III**

The overall results of the multiple regression analyses of comprehension with levels of inappropriate schemata, content-specific prior knowledge, and metacomprehension for experimental reading passages A through D, taken together, demonstrated that the variance in comprehension was
explained by the independent variables. The R-Square values evidenced that a significant portion of the variance in comprehension was explained by inappropriate schemata and metacomprehension. As expected, content-specific prior knowledge did not contribute to comprehension when reading disabled adults possessed high levels of inappropriate schemata. Tests of significance for the regression coefficients illustrated a negative relationship between inappropriate schemata and comprehension. For every unit change in inappropriate schemata, subjects' levels of comprehension declined. As anticipated, there was a positive relationship between reading disabled adults' metacomprehension and comprehension performances. Therefore, the third null hypothesis was rejected.

**Intercorrelational Statistics**

**Results for Experimental Reading Passage A**

As illustrated in Table 22, the Pearson product-moment correlation coefficients for inappropriate schemata for experimental reading passage A were inversely related to the other variables. The correlation coefficients of inappropriate schemata were -.43 for content-specific prior knowledge, -.91 for comprehension, and -.91 for metacomprehension. The correlation coefficients of content-specific prior knowledge were .49 for comprehension and .51 for metacomprehension.
Table 22

**Pearson Product-Moment Correlational Matrix of the Variables for Experimental Reading Passage A**

<table>
<thead>
<tr>
<th>Variable</th>
<th>ISCH</th>
<th>CSPK</th>
<th>COMP</th>
<th>META</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
<td>1.00</td>
<td>-0.43</td>
<td>-0.91</td>
<td>-0.91</td>
</tr>
<tr>
<td>CSPK</td>
<td>1.00</td>
<td>0.49</td>
<td>0.97</td>
<td></td>
</tr>
<tr>
<td>COMP</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>META</td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

Comprehension and metacomprehension were significantly related, with a coefficient of .97.

**Results for Experimental Reading Passage B**

Again, the intercorrelation between inappropriate schemata and the dependent and independent variables were negatively related for experimental reading passage B. As can be seen in Table 23, the correlation coefficients of inappropriate schemata and content-specific prior knowledge, comprehension, and metacomprehension were -0.46, -0.78, and -0.75, respectively. There was a positive relationship between content-specific prior knowledge and comprehension, with a coefficient of .47. The correlation coefficient of content-specific prior knowledge and metacomprehension was .44. Comprehension and metacomprehension were strongly correlated, with a coefficient of .92.
Table 23

Pearson Product-Moment Correlational Matrix of the Variables for Experimental Reading Passage B

<table>
<thead>
<tr>
<th></th>
<th>ISCH</th>
<th>CSPK</th>
<th>COMP</th>
<th>META</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
<td>1.00</td>
<td>- .46</td>
<td>- .78</td>
<td>- .75</td>
</tr>
<tr>
<td>CSPK</td>
<td>1.00</td>
<td>.47</td>
<td>.92</td>
<td>1.00</td>
</tr>
<tr>
<td>COMP</td>
<td>1.00</td>
<td>.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>META</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results for Experimental Reading Passage C

Pearson product-moment correlation coefficients of inappropriate schemata for experimental reading passage C are reported in Table 24. As shown in the table, the correlation coefficients of inappropriate schemata were -.82 for comprehension and -.82 for metacomprehension. The relationship between comprehension and metacomprehension was positive, with a coefficient of .97. Content-specific prior knowledge showed weak relationships with inappropriate schemata, comprehension, and metacomprehension, with correlation coefficients of, .01, .19, and .16, respectively.

Results for Experimental Reading Passage D

As can be seen in Table 25, inappropriate schemata was negatively related to comprehension with a coefficient of -.85. An inverse relationship was also evidenced between inappropriate schemata and metacomprehension, with a coefficient of -.81. The correlation coefficient of
comprehension and metacomprehension was .94. The respective content-specific prior knowledge correlation coefficients of inappropriate schemata, comprehension, and metacomprehension were all small at .01, .15, and .01, respectively.

Table 24

Pearson Product-Moment Correlational Matrix of the Variables for Experimental Reading Passage C

<table>
<thead>
<tr>
<th>Variable</th>
<th>ISCH</th>
<th>CSPK</th>
<th>COMP</th>
<th>META</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
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<td>.01</td>
<td>-.82</td>
<td>-.82</td>
</tr>
<tr>
<td>CSPK</td>
<td>1.00</td>
<td>.19</td>
<td>.16</td>
<td>.16</td>
</tr>
<tr>
<td>COMP</td>
<td>1.00</td>
<td>.97</td>
<td></td>
<td>.97</td>
</tr>
<tr>
<td>META</td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

Table 25

Pearson Product-Moment Correlational Matrix of the Variables for Experimental Reading Passage D

<table>
<thead>
<tr>
<th>Variable</th>
<th>ISCH</th>
<th>CSPK</th>
<th>COMP</th>
<th>META</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
<td>1.00</td>
<td>.01</td>
<td>-.85</td>
<td>-.81</td>
</tr>
<tr>
<td>CSPK</td>
<td>1.00</td>
<td>.15</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>COMP</td>
<td>1.00</td>
<td>.94</td>
<td></td>
<td>.94</td>
</tr>
<tr>
<td>META</td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>
Summary of the Intercorrelational Statistics

As anticipated, the overall analyses of the Pearson product-moment correlation coefficients of inappropriate schemata and comprehension evidenced an inverse relationship between the two variables for experimental reading passages A through D. Similarly, there was a negative correlation between inappropriate schemata and metacomprehension. As subjects' inappropriate schemata increased, it appeared that their comprehension and metacomprehension performances decreased. Moreover, as expected, the findings demonstrated that there was a positive relationship between comprehension and metacomprehension. Generally, there were no systematic relationships among content-specific prior knowledge and comprehension, metacomprehension, and inappropriate schemata. Although subjects' scores on the content-specific prior knowledge measures were related to their scores on the comprehension and metacomprehension measures for experimental reading passages C and D, the low correlational coefficients demonstrated that only a small percent of variation in content-specific prior knowledge was associated with the variance in comprehension and metacomprehension. There was an inverse correlation between content-specific prior knowledge and inappropriate schemata. Thus, these findings suggested that content-specific prior knowledge did not significantly influence either comprehension or metacomprehension when the subjects retained inappropriate
schemata. The comprehensive results of the statistical analyses of this investigation are discussed in the succeeding section of this chapter.

**Discussion of the Results**

The results of the statistical analyses were interpreted to answer the five research questions that guided this investigation.

**Question I:** To what extent do reading disabled adults retain appropriate schemata and inappropriate schemata for experimental reading passages?

An examination of differences in levels of appropriate and inappropriate schemata for experimental reading passages A through D indicated that there were significant differences between subjects' levels of schemata for each of the stimulus reading passages (see Table 5). Subjects possessed significantly more inappropriate schemata than appropriate schemata for the reading passages. As anticipated, reading disabled adults held misconceptions about the topics on anger, capital punishment, traditional attitudes, and the role of women in police work. These results, like earlier findings, (Anderson & Smith, 1984; Gordon & Rennie, 1987; Lipson, 1984; Maria & MacGinitie, 1980, 1987) indicate that some readers possess qualitative levels of prior knowledge that are contradictory to textual information.
In this study, the reading disabled adults' preexisting knowledge regarding the topics varied in degree and quality. They held varying amounts of schemata that were based on inaccurate information and perceptions. This research finding provides additional support for Lipson's (1984) contention that readers' knowledge structures are not always definite. That is, they may be obscure, narrowly defined, or incorrect. This result, taken with the findings of previous research, demonstrates that the exclusive study of quantitative aspects of prior knowledge does not fully explain its total influence on comprehension processes.

**Question II:** To what extent do inappropriate schemata regarding a topic serve as a hindrance to the comprehension of reading disabled adults?

Results obtained from the multiple regression coefficient analyses (see Tables 15, 17, 19, and 21) demonstrated that subjects' inappropriate schemata were negatively related to comprehension. As expected, even after reading stimulus passages that were inconsistent with their schemata, the reading disabled adults adhered to their previously activated schemata and failed to institute a shift in schemata to accommodate the new textual information. Consequently, as illustrated by the regression analyses, for each unit increase in inappropriate schemata, subjects' reading comprehension scores decreased. Moreover, the Pearson product-moment correlations between inappropriate
schemata and comprehension (see Tables 22, 23, 24, 25) ranged from -.43 to -.91 and indicated an inverse relationship between reading disabled adults' inappropriate schemata and reading comprehension.

To gain insight into the extent to which reading disabled adults retained inappropriate schemata or discarded inappropriate schemata when reading the contradictory social science text, a content analysis procedure similar to the one used by Alvermann, Smith and Readence (1985) was applied to the data. The content analysis consisted of an examination of subjects' comprehension responses to ascertain whether the adult readers selected multiple-choice comprehension items that corresponded with passage information, or distractor items that reflected prevalent misconceptions about the passage topics. Because the comprehension alternative-choice responses for each comprehension item included only one correct answer reflecting textually specific information and three distractor items based on commonly held misconceptions about the topics, the researcher postulated that if subjects altered their prior knowledge when it was incompatible with text, they would select the multiple-choice item that corresponded with information presented in the reading passages. On the other hand, if the subjects failed to discern inconsistencies between their distorted prior knowledge and the passage information, they would choose distractor items containing misconceptions about the topics.
contained in the reading passages (see Development of the Comprehension and Metacomprehension Measures).

The results obtained from the content analysis disclosed that the proportions of comprehension responses reflecting textual congruence selected by the subjects were 44 percent, 51 percent, 48 percent, and 53 percent for experimental reading passages A, B, C, and D, respectively. The respective proportions of comprehension responses that were distractor items reflecting textual incongruence were 57 percent, 49 percent, 52 percent, and 47 percent for experimental reading passages A, B, C, and D. Taken as a whole, these results evidenced that adult readers selected corresponding proportions of textually congruent and textually incongruent distractor items on the comprehension measures. These subjects, as those in previous research (Alvermann et al., 1985; Lipson, 1984), appeared to be rather inflexible about modifying their knowledge store to accommodate contradictory information they encountered in the textual passages. This resulted in inefficient comprehension, as indicated by the group means for the comprehension measures. The respective group means were 4.35, 5.07, 4.83, and 5.27 for experimental reading passages A, B, C, and D. Since the total raw score for each of the comprehension measures was 10 points, it was determined that subjects' rates of accuracy for the comprehension measures were 44 percent, 51 percent, 48 percent, and 53 percent for
experimental reading passages A, B, C, and D, respectively. These findings demonstrated that subjects' comprehension performances did not meet the minimum criteria for comprehension adequacy as indicated by Harris and Sipay (1980). These authors reported a 60 percent minimum adequacy rate for comprehension at the instructional level. The reading disabled adults did not accomplish this standard for any of the experimental reading passages.

The finding that inappropriate schemata regarding a topic serve as a hindrance to the comprehension of reading disabled adults was expected considering the fact that earlier research (Anderson et al., 1977; Carey et al., 1981; Pichert & Anderson, 1977; Ribovich, 1979; Steffensen et al., 1979) on the use of ambiguous and culturally sensitive passages suggests that even proficient adult readers' interpretation of text is predicated upon their prior knowledge. That is, the dominant level schemata that these readers impose upon text induce them to perceive text in distinct ways. Moreover, the evidence gathered from this study provides additional support for the interference of prior knowledge research paradigm that has been conducted with elementary and junior high school readers (Anderson & Smith, 1984; Gordon & Rennie, 1987; Lipson, 1982; Maria & MacGinitie, 1980; and Smith et al., 1984), which has demonstrated that readers who retain schemata incongruent
with textual information are likely to allow it to prevail over text and interfere with the comprehension process. Perhaps the reading disabled adults in this investigation, as the younger readers in Lipson's (1982) study, simply reject textual information when they believe they already know the correct interpretation. Lipson has demonstrated that readers are more likely to assimilate new information from text when they are absolutely naive about the topic than they are to correct preexisting knowledge that is inaccurate. Lipson has contended that even good readers experience difficulties when the text either contradicts their factual knowledge or opposes their deeply held beliefs. Similarly, Anderson et al. (1977), in their research with proficient adult readers, have drawn the conclusion that the schemata by which readers attempt to assimilate text vary according to their age, subculture, experience, education, interests, and their belief system. These authors have argued that mere exposure to a new set of propositions does not necessarily change readers' high-level schemata. Therefore, apparent inconsistencies and counterexamples often are readily assimilated into the schemata a person values. As Anderson and his colleagues (1977), Wyer (1977) has posited that it is "likely that the implications of new information will be resisted if its acceptance would require a change in a large number of other logically related beliefs in order to maintain consistency among them" (p. 264). Thus,
possibly the reading disabled adults in this investigation failed to abandon their inappropriate schemata because the social science text seriously violated their convictions and belief systems.

The schemata inflexibility evidenced by the reading disabled adults may be related to a personality factor identified by Frankel-Brunswick (1949). She has demonstrated that some individuals tend to rigidly adhere to perceived judgments. Moreover, Holmes (1983) has postulated that poor readers who originally gain information through first-hand experiences, non-print media, and conversations with significant persons in their lives, rather than from reading books, may have more confidence in these sources than in printed material. Hence, the reading disabled adults in this study, as the readers in Holmes' (1983) and Lipson's (1982) investigations, may not have altered their inappropriate schemata because they thought they knew the social science content, and therefore, did not need to read the text carefully.

**Question III:** To what extent does content-specific prior knowledge regarding a topic facilitate the comprehension of reading disabled adults?

In contrast to the previously cited research on qualitative dimensions of prior knowledge, this study incorporated a content-specific measure to ascertain subjects' levels of general background and conceptual
knowledge. Predominantly, researchers have assumed subjects' levels of preexisting knowledge on the basis of academic major, or through the manipulation of schemata by including subjects who were thought to possess different amounts of knowledge about a topic or varied cultural background, rather than through the use of more reliable measures. In this study, the researcher was also concerned with establishing the function of content-specific knowledge in the comprehension process in instances where readers possessed distorted schemata.

Subjects' performances on the content-specific prior knowledge measures demonstrated high levels of general knowledge regarding the four experimental reading passages. The group means were 9.18, 8.98, 9.20, and 9.30 for reading passages A, B, C, and D, respectively. However, the regression analyses and Pearson-product moment correlation coefficients evidenced that general background knowledge was not significantly related to subjects' comprehension. This overall trend of low intercorrelations between content-specific prior knowledge and comprehension may be attributed to the restriction of the range of subjects' performances on the content-specific measures. The results also implied that content-domain knowledge did not influence subjects' comprehension when they possessed inappropriate schemata. The negative correlation coefficients of general prior knowledge and inappropriate schemata suggested that subjects'
allowed their distorted schemata, rather than their general prior knowledge, to govern the comprehension process.

These findings lend additional support to Lipson's (1984) contention that "more" prior knowledge is not necessarily better in instances where readers' preexisting knowledge is obscure, poorly delineated, or inaccurate. She has demonstrated that it is actually an advantage for readers to have no prior knowledge about text if the alternative is inaccurate knowledge. Readers in her study "learned new textual information better when they did not have 'wrong ideas' cluttering up their knowledge structures" (p. 761, 1984). Thus, Lipson has concluded that it is clearly advantageous for readers to have a great deal of knowledge about the content of their texts, but they also need a good match between preexisting knowledge and textual information.

The fact that general background knowledge does not appear to enhance reading disabled adults' comprehension provides additional evidence for Lipson's (1984) argument that the qualitative study of prior knowledge supplies answers to questions that have not been addressed by the quantitative prior knowledge research paradigm. As was previously noted, research on the qualitative nature of prior knowledge has advanced that inefficient comprehension is the result of limited background knowledge. Findings from this study do not support this conclusion. Evidence obtained from the performances of reading disabled adults illuminates the
importance of studying both the quantitative and qualitative aspects of prior knowledge and their impact on the comprehension process.

**Question IV:** To what extent is the comprehension of reading disabled adults influenced by their use of metacomprehension strategies?

Results by Dewitz, Carr & Patberg (1987), Lundeberg (1987) and Zabrucky and Ratner (1989) and performances by the adult readers in this study affirmed a positive relationship between metacomprehension and comprehension (see Hypothesis III). Metacomprehension significantly contributed to comprehension on all the experimental reading passages as indicated by tests of the regression coefficients. Similarly, Pearson product-moment correlation coefficients (see Tables 22-25) of .97, .92, .97, and .94 for reading passages A, B, C, and D, respectively, verified that metacomprehension greatly influenced subjects' comprehension. Although group means for the comprehension measures revealed that subjects' comprehension scores were relatively low, levels of metacomprehension made a significant contribution to the correct scores.

The correlation between reading disabled adults' comprehension and metacomprehension was expected since this relationship has been well documented in previous research (Baker & Brown, 1984a; Davey & Porter, 1982; Mier, 1984; Markman, 1977, 1979; Tregaskes & Daines, 1989) which has
shown that readers who comprehend well appear to consistently use metacomprehension strategies. Proficient readers have been found to constantly monitor, revise, observe, and assess their understanding of the text being read. These readers evaluate ongoing comprehension processes while reading through the text, recognize comprehension failure, and allow extra processing in order to resolve comprehension obstacles. Additional support for the relationship between comprehension and metacomprehension has been provided by Palincsar and Brown (1983), who have found that even minimum training in comprehension monitoring techniques significantly increases remedial reading students' performances on standardized comprehension reading tests.

Standiford (1984) has advanced that readers with high metacomprehension are either those who know they understand when they do, or those who know they do not understand when they do not. "Their awareness of their understanding accurately reflects their comprehension" (p. 10). Conversely, readers have low metacomprehension if they do not know that they do not understand textual material. In this study, reading disabled adults' confidence ratings of comprehension suggested that they were aware of their levels of understanding for the correctly answered comprehension items; however, they were unaware of their levels of understanding for the incorrectly answered comprehension items. Thus, although the data analyses illustrated a
positive relationship between metacomprehension and comprehension, this cannot be interpreted to mean that these readers exhibited high levels of metacomprehension on all the comprehension measures. Subjects' performance awareness for incorrectly answered comprehension questions will be addressed in the discussion of the fifth research question.

**Question V**: To what extent do reading disabled adults use metacomprehension strategies which are requisite for resolving inconsistencies between their preexisting knowledge and textual information?

Statistical analysis procedures used in this investigation have established a significant linear trend between subjects' correctly answered comprehension items and metacomprehension scores. However, determining subjects' metacomprehension performances on correct comprehension responses did not fully explain their performance awareness for incorrectly answered comprehension items or establish the readers' overall use of metacomprehension strategies.

Because subjects' total scores on the metacomprehension measures did not clarify their performance awareness for both correct and incorrect comprehension items, the researcher applied an item response procedure to the data to determine subjects' overall use of metacomprehension strategies. Support for the use of an item response analysis has been provided in research by Miller (1982, 1986). Although the scope and statistical applications employed in Miller's
research differ from those of the present investigation, his findings have illustrated the value of examining student patterns of item responses on achievement tests. From the Sato caution index analysis of patterns of item responses, this researcher has shown that patterns of correct and incorrect item responses vary as a function of class membership and differences in instruction. On the basis of these results, Miller has contended that a group level analysis of item data reveals important group differences which are often masked by a total test score. Additional support for the use of an item response analysis has been extended in research by Pressley and Ghatala (1988). These researchers have demonstrated that an item response analysis of subjects' actual confidence ratings permits a better understanding of differences in readers' performance awareness of correct and incorrect comprehension items. Thus, an item response analysis of the subjects' confidence ratings about the accuracy of their responses to correct and incorrect comprehension items on a scale from 1 (very uncertain) to 6 (very certain) was conducted by the researcher in this study. These data were used to ascertain the extent to which reading disabled adults monitor their comprehension. As has been previously noted in Chapter III, readers are thought to monitor their comprehension if they indicate they are certain that their answers are correct when
in fact they are correct, or if they indicate that their answers are wrong when they are in fact wrong.

Since subjects' scores for the correct and incorrect comprehension items were not equivalent, statistical procedures which have been used in previous research were inappropriate for application to this data. Therefore, subjects' mean confidence ratings are reported to illustrate their performance awareness of their correct and incorrect responses to the comprehension items. The subjects' mean confidence ratings for stimulus passage A were 5.22 for correct responses and 5.45 for incorrect responses. For stimulus passage B, the mean confidence ratings were 5.39 for correct responses and 5.37 for incorrect responses. Readers' mean confidence ratings for stimulus passage C were 5.33 for correct responses and 5.48 for incorrect responses. For passage C, subjects' mean confidence ratings were 5.34 for correct responses and 5.51 for incorrect responses. The findings for stimulus passages A, C, and D indicated that the subjects' confidence ratings were higher for incorrect comprehension responses than for correct comprehension responses. Subjects appeared more confident that the incorrect distractor responses reflecting incongruent schemata were the correct comprehension answers. Conversely, subjects were less confident that the correct textually congruent responses were the appropriate answers. The reading disabled adults' confidence ratings for stimulus
passage B were 5.39 for their correct answers and 5.37 for their incorrect answers. This data illustrated that subjects' confidence ratings of their felt understanding varied little for the correct and incorrect item responses for stimulus passage B.

Generally, the reading disabled adults seemed very confident about the correctness of their comprehension even when they were incorrect. Taken together, the mean confidence ratings for experimental reading passages A through D ranged from 5.22 to 5.39, somewhere between "almost certain" to "very certain," for the correctly answered comprehension questions. Similarly, mean confidence ratings for the incorrectly answered comprehension items ranged from 5.37 to 5.51, somewhere between "almost certain" to "very certain." The overall results evidenced that reading disabled adults did not use metacomprehension strategies which are requisite for resolving inconsistencies between their prior knowledge and textual information to a great extent. Subjects' ratings of comprehension were closer to "almost certain" rather than to varied feelings of "certainty and uncertainty."

These findings correspond with the results of Pressley and Ghatala (1988) and Lundeberg (1987), who have demonstrated that the most compelling problem with proficient adults' certainty ratings for comprehension is their overconfidence in their incorrect answers. Proficient adult
readers in Pressley and Ghatala's study provided a mean certainty rating of 70 percent or greater (one answer seemed better than the other, but not absolutely certain) for the majority of incorrect comprehension items. These readers appeared quite confident that their incorrect answers were correct. Likewise, Lundeberg (1987) found that the confidence ratings of law students when they were correct differed little from when they were incorrect. When the comprehension answers were incorrect, the overall mean confidence rating for these readers was closer to "reasonably certain." When the comprehension answers were incorrect, the readers' mean confidence ratings ranged between "reasonably certain" and "very certain." Lundeberg, like Pressley and Ghatala, concluded that proficient adult readers in her study appeared very confident about their comprehension performances even when it was inefficient.

In this study, the reading disabled adults indicated higher certainty ratings for the incorrect comprehension items than the proficient readers in Lundeberg's (1987) and Pressley and Ghatala's (1988) investigations. Subjects in this study presented 92 percent certainty ratings and 8 percent uncertainty ratings for correct comprehension item responses. Similarly, subjects provided 94 percent certainty ratings and 6 percent uncertainty ratings for the incorrect comprehension items responses. The latter results illustrated that subjects were not adept in predicting the
accuracy of their comprehension. Subjects' performances on the confidence rating measures demonstrated that they exhibited more confidence in the correctness of the incorrect textually incongruent distractor items than the correct textually congruent items. These results indicate, once again, that reading disabled adults seem to adhere to inappropriate schemata and do not employ metacomprehension strategies which are essential for recognizing discrepancies between their prior knowledge and the text, and for restructuring their schemata to accommodate the new textual information.

Findings by Lundeberg (1987), Pressley and Ghatala (1988), and those from this investigation suggest that metacognitive awareness does not necessarily evolve in a developmental sequence for all readers. Likewise, Baker (1979b), citing evidence that the metacomprehension strategies of poor secondary readers manifest weaknesses typical of younger readers, has asserted that "comprehension monitoring is not an ability that automatically develops with maturity but is, instead, highly dependent on knowledge and expertise" (p. 26). Mier (1984) has posited that proponents of monitoring training have acknowledged the developmental nature of comprehension monitoring, yet they have recommended that metacomprehension skills can be, and in some instances can only be, improved through direct training. On the basis of her research findings, Mier has contended that
comprehension monitoring, a developmental skill which generally emerges fully only with adolescence, can be strengthened and enhanced through judicious classroom training. Hence, reading disabled adults' inabilities to apply metacomprehension strategies effectively while reading the stimulus passages may have been the result of inadequate training at the elementary and secondary school levels. In summary, the preponderance of evidence obtained from the statistical analyses demonstrates that prior knowledge and metacomprehension function interactively to influence the comprehension of reading disabled adults. This investigation was in agreement with previous research which suggests that reading comprehension is an active process involving an interaction between textual knowledge, prior knowledge, and procedural knowledge.
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

In the first section of this chapter, a summary which includes the purpose, research questions, hypotheses, procedures, and findings of the investigation are presented. Conclusions that can be drawn from the study are discussed in the second section. Recommendations for educators and researchers are included in the final section of the chapter.

Summary of the Investigation

The purpose of this research was to investigate the interactive influences of prior knowledge and metacomprehension on the comprehension of reading disabled adults. Specifically, the study was designed to examine the extent to which reading disabled adults apply their prior knowledge in the comprehension of text and the extent to which these readers employ metacomprehension strategies actively to integrate prior knowledge with textual information. The following research questions guided this investigation:

1. To what extent do reading disabled adults retain appropriate schemata and

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inappropriate schemata for experimental reading passages?

2. To what extent do inappropriate schemata regarding a topic serve as a hindrance to the comprehension of reading disabled adults?

3. To what extent does content-specific prior knowledge regarding a topic facilitate the comprehension of reading disabled adults?

4. To what extent is the comprehension of reading disabled adults influenced by their use of metacomprehension strategies?

5. To what extent do reading disabled adults use metacomprehension strategies which are requisite for resolving inconsistencies between their preexisting knowledge and textual information?

The implementation of this investigation and the testing of the hypotheses to address the research questions necessitated the development of the research instruments. Four reading passages were selected from social science texts to design the prior knowledge inventories, prior-knowledge content-specific measures, comprehension measures, and metacomprehension measures that were employed in this study. The prior knowledge inventories were field tested with 100 subjects to identify the types of misconceptions that reading disabled adults held about the social science topics. The protocol data collected from these pilot subjects were used to develop distractor items for the comprehension tests.

A second pilot study and evaluation through ratings by a panel of reading experts were used to establish the
reliability and validity of the instruments. Findings from the independent judges and the 100 pilot subjects established the validity and reliability of the research instruments. The final phase of the study was conducted to address the research questions and to test the hypotheses. In the final phase of the research, an investigation was carried out to examine the extent to which reading disabled adults apply their background knowledge in the comprehension of text and to determine whether these same readers use metacomprehension strategies to facilitate the comprehension process.

Subjects used in the final phase of the research project were drawn from a population of freshmen students enrolled in reading improvement and study skills courses at a medium-sized southeastern university. A sample of 60 disabled readers were randomly selected from a group of 123 students designated as reading disabled on the basis of their performances on the Nelson-Denny Reading Test, Form E.

Four testing groups of 15 students each were formed to implement the investigation. The four instruments were administered during two 70-minute sessions per week for 2 weeks. At each session subjects completed the prior knowledge inventory, prior knowledge content-specific measure, comprehension measure, and metacomprehension measure for each of the experimental reading passages.
This procedure was continued for 2 consecutive weeks, occurring during the same time frame and week day for each of the four groups, until all instruments had been administered.

The questions in this study generated three hypotheses stated in the null form and tested at the .05 level of significance.

Hypothesis I stated that there would be no significant difference between reading disabled adults' levels of appropriate schemata and inappropriate schemata for experimental reading passages (as assessed by prior knowledge inventories). A single-group t-test was conducted for each of the stimulus reading passages to test for differences between appropriate schemata and inappropriate schemata. The results indicated that there were significant differences between reading disabled adults' levels of appropriate and inappropriate schemata for experimental reading passages A, B, C, and D. Thus, Hypothesis I was rejected.

Hypothesis II stated that there would be no significant relationship among reading disabled adults' levels of content-specific prior knowledge, levels of inappropriate schemata, and levels of metacomprehension (as assessed by prior knowledge content-specific measures, prior knowledge inventories, and metacomprehension measures, respectively). To test this hypothesis, a series
of four separate multiple regression analyses were applied for the four experimental reading passages. Results of the regression coefficients revealed that content-specific prior knowledge was positively related to metacommeprenshion. Inappropriate schemata was inversely related to metacommeprenshion. As reading disabled adults' levels of inappropriate schemata increased, their metacommeprenshion scores decreased. Thus, Hypothesis II was rejected.

Hypothesis III stated that there would be no significant relationship among reading disabled adults' levels of content-specific prior knowledge, levels of inappropriate schemata, levels of metacommeprenshion, and levels of comprehension (as assessed by prior knowledge content-specific measures, prior knowledge inventories, metacommeprenshion measures, and comprehension measures, respectively). A series of four separate regression procedures were conducted for experimental reading passages A through D to test the relationship between the dependent variable and the three predictor variables. Results of the regression analyses demonstrated that content-specific prior knowledge did not significantly contribute to comprehension. There was a negative relationship between inappropriate schemata and comprehension. Reading disabled adults' levels of comprehension declined as their levels of inappropriate schemata increased. There was a positive
relationship between comprehension and metacomprehension. Subjects' metacomprehension scores were highly correlated with their comprehension scores. Thus, Hypothesis III was rejected.

The next section of this chapter includes a discussion of the conclusions that can be drawn from the data analyses and the research questions that guided this investigation.

Conclusions

The data analyses generated five conclusions regarding the interactive influences of prior knowledge and metacomprehension on the comprehension of reading disabled adults. On the basis of information derived from the research questions, specific conclusions were drawn concerning the effects of inappropriate schemata, prior knowledge, and metacomprehension on readers' comprehension processes.

Evidence obtained in the present study indicates that reading disabled adults hold misconceptions about social science topics. The data suggest that these readers retain significantly more inappropriate schemata than appropriate schemata for social science reading passages. Thus, the data support the conclusion that reading disabled adults' preexisting knowledge appears to be distorted and, therefore, incongruent with social science topics on anger, capital punishment, traditional attitudes, and the role of
women in police work. This finding is consistent with results from studies of students' concepts in the natural sciences (Hashweh, 1988) which have demonstrated that student populations ranging from lower-level elementary students to university graduate students possess prior knowledge that, in many instances, is in marked contrast with scientific conceptions.

Results derived from tests of Hypothesis III lead to the conclusion that inappropriate schemata regarding social science topics serve as a hindrance to the comprehension of reading disabled adults. As noted previously, subjects' performances on the comprehension measures demonstrated an inverse relationship between inappropriate schemata and comprehension. Incremental changes in subjects' inappropriate schemata resulted in a decline in levels of comprehension. As anticipated, this finding suggests that these readers do not assess their dominant-level schemata appropriately or efficiently. They seem to become schemata-bound and fail to discard their previously activated schemata even when the textual information indicates an incompatible match with social science texts. These readers fail to restructure their cognitive structures to accommodate the textual information. Thus, readers' propensity to maintain activation of inappropriate schemata while proceeding through social science texts has deleterious effects on comprehension.
This study, as other research studies (Anderson & Smith, 1984; Driver & Easley, 1969; Hashweh, 1988), suggests that readers' perceptions and beliefs influence the interpretations that they assign to content area texts. In investigations with gifted high school physics students, Driver and Easley (1969) have observed that in a large number of cases, students acquire many concepts from their experiences with the physical world, which influence their understanding of new evidence and arguments. Similarly, Hashweh (1988) has concluded that because some students' perceptions seem to be resistant to change, their prior knowledge hinders the acquisition of science concepts. Evidence gathered from this study demonstrates similar findings with social science texts.

A third conclusion drawn from this research is that content-specific prior knowledge regarding social science topics does not appear to facilitate the comprehension of reading disabled adults. Although subjects' averaged a 92 percent accuracy rate for the four content-specific prior knowledge measures, results from the regression analyses and Pearson product-moment correlations evidenced that general prior knowledge did not significantly contribute to their comprehension scores. This finding, like the results of other researchers (Holmes, 1983; Lipson, 1984), suggests that readers who possess a rich fund of general background knowledge, as well as inappropriate schemata, fail to use
it to facilitate their comprehension. Holmes (1983) has advanced that "it may be that even when poor readers have levels of general prior knowledge similar to good readers, poor readers have an inferior strategy for using this information to answer comprehension questions" (p. 2). Thus, an explanation for why reading disabled adults' general background knowledge does not influence their comprehension is that they fail to activate it and use it as an aid to comprehending textual material. It seems that these readers, instead, select inappropriate schemata and impose it on the textual data. Thus, they allow inappropriate schemata to assume a more dominant role than general background knowledge in the comprehension process.

The findings from this study also indicate that there is a positive relationship between reading disabled adults' comprehension and metacomprehension skills. These results are consistent with earlier research by educational psychologists (Dewey, 1910; Huey, 1908; Thorndike, 1917) which has shown that reading comprehension involves reasoning skills that are currently known as metacomprehension strategy variables. Similarly, recent investigations by reading researchers (Baker & Brown, 1984a; Lundeberg, 1987; Markman, 1977, 1979; Tierney, 1980; Wade & Reynolds, 1989) have established that metacomprehension is requisite for efficient comprehension. Baker and Brown (1984b) have posited that "reading for
meaning is essentially an attempt to comprehend, and any attempt to comprehend must involve comprehension monitoring," which entails having an awareness of when comprehension has or has not occurred, and instituting corrective action to alleviate comprehension failure when necessary (p. 355).

Reading disabled adults' performances on the confidence rating measures and comprehension measures reflected a high degree of interrelationship between comprehension and metacomprehension. However, this result cannot be interpreted to mean that these readers demonstrated adequate levels of metacomprehension or comprehension. On the contrary, group means for both metacomprehension and comprehension were relatively low. Nevertheless, for the correctly answered comprehension items, metacomprehension accounted for a significant portion of the variance in reading disabled adults' total comprehension scores. Likewise, a significant relationship between metacomprehension and comprehension was evidenced in the results of the Pearson product-moment correlation coefficients for experimental reading passages A through D. These findings further illustrate the dominant role that metacomprehension exerts on the comprehension process.

A final conclusion drawn from this study is that reading disabled adults do not adequately use metacomprehension strategies which are essential for
resolving inconsistencies between their preexisting knowledge and textual information. Although subjects indicated that they were certain that their answers were correct when in fact they were for 49 percent of the correctly answered comprehension questions, they also appeared very confident about the correctness of their incorrectly answered comprehension questions. For 51 percent of the incorrectly answered questions, subjects indicated that they were certain that their answers were correct when in fact they were not. Reading disabled adults demonstrated more confidence in the incorrect multiple-choice answers which reflected the textually incongruent information than in the correct multiple-choice answers which reflected textually congruent information. Subjects' overconfidence in the accuracy of their textually incongruent comprehension responses suggested that they maintained activation of their inappropriate schemata while proceeding through the textual passages. These readers failed to make shifts in their schemata when signals from the text indicated they should and, therefore, did not alter their cognitive structures to accommodate the textual information. Subjects' inflexibilities in shifting their schemata resulted in low metacomprehension scores.

Baker and Brown (1984b) have postulated that metacomprehension failure occurs when the reader finds a consistent interpretation of the text, but not the one
intended by the author. In other words, the reader understands the textual information, but misunderstands the message that the author is attempting to convey. "Readers who understand incorrectly have much the same feelings as readers who understand correctly. Hence, they can hardly be expected to take remedial action when comprehension fails, since they don't realize that comprehension has failed" (p. 356). Similarly, as previously noted, Wagoner (1983) has advanced that readers' failure to check either the "text against itself for internal consistency and against reality and prior experience for external consistency" constitutes a failure in comprehension monitoring (p. 340). The data from this study indicate that reading disabled adults do not accomplish Wagoner's latter condition for comprehension monitoring. Thus, the preponderance of evidence gathered from this study suggests that reading disabled adults do not effectively evaluate textual information against their prior knowledge for external consistency.

This research with reading disabled adults, like that of Lundeberg (1987) and Pressley and Ghatala (1988) with proficient readers, demonstrates that the most pronounced problem with these readers is their overconfidence in incorrect comprehension answers. Generally, these readers do not differentiate their confidence ratings for correct and incorrect comprehension test item responses. This
finding indicates that metacomprehension is not a skill that automatically develops with maturity. Additional support for this conclusion has been provided by Baker and Brown (1984b) in their research on metacognition and comprehension monitoring. These researchers have asserted that "it is unfortunate that there is not more research activity in the area of adult metacognition. Anyone who has ever taught a group of college students must know that their metacognitive skills in a variety of domains could stand considerable enhancing" (p. 380). Likewise, reading disabled adults' performances in this study accentuate the importance of including metacomprehension instruction at the postsecondary school level.

**Recommendations for Further Research**

There are five implications that can be drawn from this investigation for future research. First, because this study suggests that adult disabled readers fail to alter their existing knowledge structures to accommodate new textual information, this line of research needs to be extended to include intervention studies that are designed to train readers in techniques for restructuring their schemata when it contradicts text. This type of research holds significance for adult reading inasmuch as no empirical investigations using treatment conditions have been conducted with reading disabled adults. Results from
such studies may possibly help teachers gain insight into the kinds of restructuring methods that facilitate conceptual changes in adult readers' distorted schemata.

Second, this investigation should be replicated utilizing stimulus materials based on text from the natural sciences and the humanities. Using these content materials will allow researchers to ascertain whether adult disabled readers possess misconceptions about these disciplines, and to assess the extent to which these readers use quantitative and qualitative aspects of prior knowledge and metacomprehension skills in the comprehension process. Determining adult readers' information processing strategies while reading the natural sciences and the humanities is important since these disciplines represent core components of the postsecondary school curriculum.

Third, empirical studies need to be conducted that incorporate a performance measure such as the one used in this study and also a verbalization measure of metacomprehension to obtain a more precise assessment of readers' comprehension monitoring processes. This twofold assessment procedure will provide data on readers' metacomprehension through their abilities to predict the accuracy of their comprehension. Moreover, it will allow researchers to determine how, when, or whether these readers use prior knowledge and metacomprehension
strategies, and how their processing strategies change as they proceed through textual materials.

Fourth, research should be undertaken to compare the prior knowledge usage and metacomprehension strategies of adult disabled, average, and proficient readers using procedures similar to those employed in this study. This area of exploration will provide valuable information regarding processing differences among adult readers and how they influence reading comprehension. Examining how expert readers effectively use metacomprehension to integrate prior knowledge with text can be useful in designing corrective techniques that will help disabled readers to read interactively. In addition, data collected from adult average and proficient readers can be examined to determine whether these readers adhere to dominant-level schemata while reading naturally occurring text, as the adult subjects in previous cultural schemata and schemata perspective research studies.

Fifth, empirical and naturalistic studies need to be designed to measure adult reading teachers' awareness of discrepancies between readers' knowledge structures and text, and to determine the diagnostic and instructional procedures they use for assessing prior knowledge and for restructuring contradictory schemata. Findings from this research will reveal adult reading educators' levels of expertise in reading methodology. Furthermore, the data
can serve as a guide for developing a needs assessment for the development of inservice education and graduate-level reading courses.

**Recommendations for Educators**

This section of Chapter V includes recommendations to educators which are based on the findings and conclusions of this investigation. As has been previously noted in Chapter I, Smith (1965) issued a challenge for reading educators to develop new materials and to discover new methods to meet the reading needs of adults. Similarly, research on the current status of adult reading has demonstrated the need for the development of a diagnostic-prescriptive model of adult reading (Cranney, 1983; Diekhoff, 1988; Pasch & Oakley, 1985). Therefore, the following recommendations are suggested to assist reading educators in the development and implementation of an adult reading model. As a result of the limited research on adult reading, traditionally, procedures employed in teaching adults have been essentially those used in teaching children with little or no adaptations to meet the specific needs of adults (Cranney, 1983; Kavale & Lindsey; 1977; Simpson, 1982). Thus, for some of the recommendations, the researcher attempts to illustrate how effective methods used for teaching children can be
modified for implementation into the adult reading program.

Findings from this study, as those of other researchers (Lipson, 1982; Maria & MacGinitie, 1980; Smith, Readence & Alvermann, 1984), have indicated that both the quantity and quality of readers' prior knowledge are important factors in the comprehension and the learning of new textual information. Much research has been generated supporting the beneficial effects of the quantitative aspects of prior knowledge. Hence, reading educators have traditionally incorporated quantitative prior knowledge measures in their diagnostic reading models. Gordon and Rennie (1987) have posited that the quantitative prior knowledge research paradigm has been concerned with situations in which readers are presumed to spontaneously assimilate new textual information into previously held schemata. Because the results from this investigation support the notion that adult disabled readers do not always alter existing schemata to accommodate new textual information, diagnostic models of adult reading need to be extended to include qualitative prior knowledge measures.

Evidence from this study demonstrates that both the content-specific prior knowledge measure and structured prior knowledge inventory are effective instruments for assessing the quantity and quality of readers' pre-existing knowledge. Therefore, adult reading educators are
encouraged to include these prior knowledge measures in their diagnostic procedures. Moreover, teacher questioning strategies such as those which have been recommended by Hoover (1986) for use in elementary language arts instruction can be modified for adoption into the adult reading diagnostic model. This author has advanced that "students discover what they already know through teacher questions" (p. 12). Thus, reading educators can incorporate questioning strategies in their instructional plans to help adults become aware of their preexisting knowledge and to help them to clarify misconceptions in their schemata. Questioning strategies can also be employed as a diagnostic tool for gaining information on readers' levels of qualitative and quantitative prior knowledge. Hoover has contended that the "more a teacher knows about her individual students, the better she can support their writing processes" (p. 12). It is requisite that reading educators adopt this educational stance when working with adult readers. If adult reading is to meet the challenges that have been issued by previous researchers, adult reading educators must become knowledgeable about adult readers' strengths and weaknesses in order to develop and enhance their reading processes.

Word association (Zakaluk, Samuels, & Taylor, 1986), free recall, and unstructured discussions (Holmes & Rosner, 1987) are additional instruments that are efficient
measures of students' prior knowledge and merit inclusion in the adult reading diagnostic model. Such a comprehensive assessment model will enable reading teachers to ascertain whether readers possess accurate information or misconceptions about content-area reading materials, and will assist them in making informed decisions about instructional procedures designed to aid adult disabled readers in the development of efficient comprehension.

In an examination of prevalent conceptions of reading comprehension based on the work of numerous researchers, and directly related to the interactive model developed by Rumelhart (1977), Wilson (1983) has found that the reader's prior knowledge is at the core of the reading comprehension model. Hence, if reading educators are to operate from a theoretically based model of reading, it is imperative that both the quantitative and qualitative dimensions of prior knowledge become integral components of the diagnostic-prescriptive process in adult reading courses.

A second implication drawn from the results of this investigation is the need for adult educators to encompass metacomprehension in reading comprehension diagnostic procedures. The importance of diagnosing adult readers' metacomprehension strategies becomes evident when considering the fact that Baker (1979a) has shown that although proficient adult readers are capable of comprehension monitoring, they do not always do it on their
own initiative. Baker has asserted that often in academic settings understanding is frequently monitored by external agents rather than by the learners themselves.

Additional support for diagnosing metacomprehension has been evidenced in findings by Wertsch (1978) and Schallert and Kleiman (1979), who have advanced that in elementary schools teachers assume much of the responsibility of cognitive monitoring for students, consistently assessing what they know and understand, and thus guiding them through the attainment of instructional goals. Moreover, according to Baker (1979a), instructional techniques such as computer-managed instruction and programmed-instruction textbooks have eliminated the need for self-questioning by systematically guiding students step-by-step through the learning process. Although these modes of instruction ensure that students understand the textual content by carefully monitoring their understanding and supplying appropriate measures for clarifying comprehension failures, they may promote passive reading and study habits: "Why should students make the effort of checking their understanding when someone else will do it for them? Consequently, even when students reach high school and college, the need for comprehension monitoring is sometimes absent" (Baker, 1979a, p. 372). Thus, there is reason for reading educators to incorporate the assessment of metacomprehension into the existing scheme of
the adult diagnostic reading model to adequately address
the specific needs of adult learners.

On the basis of findings from this study and those
generated from the schema-theoretic perspective of reading
comprehension, a third implication is indicated for reading
teachers regarding the need to expand the reading
diagnostic model to comprise process measures as well as
product measures of reading comprehension. According to
Johnston (1983), most current approaches to reading
comprehension assessment are based on the premise that
reading comprehension is a product of the reader's
interaction with textual information. He has argued that
the product approach to assessment is less of a theoretical
than a pragmatic attempt to determine how this interaction
influences the reader's knowledge. As a result, less
emphasis is given to the processes involved in arriving at
comprehension than the final product.

Because the preponderance of evidence suggests that
reading comprehension is a strategic, meaning-acquiring
process requiring the reader's control of complex reasoning
processes, it appears important to examine both the process
of comprehension, that is, the conditions by which a change
in the state of the reader's knowledge comes about, and the
product, that is, a change in the reader's state of
knowledge that occurs through reading the text (Johnston,
1983). Accordingly, the adult reading diagnostic model
should include process measures of reading comprehension such as confidence rating tasks, think aloud protocol analyses, error detection tasks, cloze techniques, and interview techniques to determine adults' abilities to a) establish the purposes for reading; b) modify reading rates and strategies in accordance with various purposes; c) identify important elements in text; d) recognize the logical structure of text; e) use prior knowledge to interpret new information; f) show sensitivity to contextual constraints; g) evaluate the text for clarity, competence, and consistency; h) manage failures to comprehend; and i) select appropriate standards for evaluating levels of comprehension (Baker & Brown, 1984a).

A fourth implication of this study is based on the finding that adult disabled readers rarely use textual information to update their knowledge when it contradicts their preexisting knowledge. The tendency of these readers to allow their distorted prior knowledge to override text has a negative effect on the comprehension process. Since the ultimate goal of any reading program is to help students to read at their maximal capacity, it is essential that adult reading programs include instructional strategies designed to help students recognize discrepancies in their schemata and text, and to help them to restructure their knowledge structures to accommodate new textual information. While assimilation in reading
requires that the reader interpret text using an existing schema, answering questions such as: "How does this add to what I already know?", "accommodation implies the possibility that the reader's schemata may shift" (McNeil, 1984, p. 58). Restructuring of schemata demands that the reader suspend judgement or withhold interpretation of text until he answers such questions as: "What is the author's perspective?" "What evidence does the author offer for the new propositions?" "Do the propositions address my fundamental concerns better than my present way of thinking and acting?" (McNeil, 1984, p. 58). Therefore, teaching adult readers paraphrasing skills similar to those used in research by Haynes and Fillmer (1984) appear to be promising for helping these readers to recognize conflicts in content schemata and textual schemata. In an investigation which examined the relationship between skill at paraphrasing and reading comprehension, and compared the effectiveness of three paraphrasing methods with 400 elementary students, these researchers found that proficiency in paraphrasing skills assisted readers in their recovery of deep structure and facilitated their comprehension. Moreover, Haynes and Fillmer concluded that "the most discriminating of the paraphrasing techniques presented pupils with a sentence and then required them to paraphrase the sentence so that it had a different surface structure, but the same deep structure" (p. 76).
The paraphrase method can be implemented in the adult reading model by starting at the sentence level as Haynes and Fillmer (1984) did with elementary students. When adult readers become proficient in applying paraphrasing skills at the sentence level, they should apply these skills at the paragraph level. Applying the paraphrase method helps students to attend to the deep structure of textual information. In addition, by examining students' paraphrases of text, adult reading teachers can determine whether students are recovering the deep structure of texts, or including intrusions and distortions from their prior knowledge. Adult readers can also be taught to compare their paraphrased text with the actual text in order to determine whether their interpretations are consistent with that text. Once adults gain facility in the paraphrasing technique, they will be able to independently evaluate textual material for internal consistency and their prior knowledge against that text for external consistency.

Anderson (1977a) has advanced that conceptual change is more likely when readers perceive disagreement in opposing schemata and become aware of alternative schemata that resolve this conflict. He has suggested that teachers use Socratic teaching techniques to induce cognitive dissonance and restructure readers' schemata. Likewise, The Pre-Reading Plan (Langer, 1982), Directed Reading
Thinking Activity (Stauffer, 1969), Dialectical Model (Collins, 1977), Semantic Webbing (Freedman & Reynolds, 1980), and Self-Interrogation Strategy (Palincsar, 1981) are additional techniques that adult educators are advised to consider when attempting to instruct students in the recognition and resolution of contradictions between their preexisting knowledge and textual information.

In addition to building a repertoire of specific metacognitive instructional methods, adult reading teachers can also help students develop skills that promote interactive reading by adopting strategic teaching in the total reading curriculum. Strategic teaching, as described by Jones and her colleagues (1987), focuses primarily on the teacher as a model and mediator. The role of the strategic teacher, as a model when adapted to the adult reading program, would consist of demonstrating processes for thinking through reading tasks, illustrating procedures for applying appropriate learning strategies, and indicating the action to be taken when the reader does not know what to do. Moreover, the strategic reading teacher, as a mediator, would intervene between the reader and the reading task to assist the reader to anticipate problems incurred in the reading process, plan solutions to resolve them, and ultimately guide the reader in a manner so as to develop independence and proficiency in reading comprehension. When readers themselves become strategic,
they will be able to monitor their comprehension processes, recognize when their prior knowledge is incongruent with text, institute restructuring strategies when necessary, discern when comprehension has failed, apply corrective techniques to alleviate comprehension obstacles, and understand how the interactive nature of prior knowledge and metacomprehension skills enhance the comprehension process.

A final recommendation based on the findings from the literature review and results of this study is the necessity for reading educators to become cognizant of reading theory and research. Gordon and Flippo (1983) have reported that teachers involved with adult reading improvement place little emphasis on the research or theory that supports instructional methods and materials. Furthermore, Fargo and Collins (1989) have asserted that adult reading educators need to develop an awareness of reading research in order to broaden their understanding of students' learning processes and instructional practices. This evidence suggests that these teachers seem to select instructional methods and materials on the basis of their personal preferences rather than on reading theory and research. Therefore, it appears that adult reading educators need to adopt a set of principles such as those that have been recommended by Greenwood and Parkay (1989), which will provide them guidance in relating theory and
research with their personal preferences. These authors have posited that teachers can learn how to integrate research and theory if they

1. examine and state their own system of beliefs under the direction of their instructor;

2. examine the various psychological theories, principles, and concepts that seem to have relevance to teaching, noting the strengths, weaknesses, and focuses of each;

3. determine which psychological theory or theories seem to be closest to their own;

4. compare and contrast their own with others, making any necessary revisions in their own theory while reserving the right to be eclectic; and

5. test their revised or reintegrated theory in the classroom. Testing can be done through their own "action research" as well as by reading about and participating in the research of others. (Greenwood & Parkay, 1989, pp. 5-6)

Reading educators should apply these principles in order to develop a credible model of adult reading in which instructional decisions are predicated on both reading theory and research.

Although the major responsibility for providing adequate instruction to adult readers resides with the reading teacher, findings from this study, taken with research on the status of adult reading programs, suggest important implications for professionals who administer these programs. For example, Gordon and Flippo (1983) have found that reading teachers devote minimal effort to professional development, and lack support from
administrators for conferences and professional memberships which can enhance their professional growth and development. Gordon and Flippo (1983) have contended that "sacrificing professional growth and development is at best dangerous, for in the end teaching can only be adversely affected" (p. 162).

The current status of adult reading (Diekhoff, 1988; Gordon & Flippo, 1983; Pasch & Oakley, 1985) illustrates the need for creating an awareness among adult reading educators about recent schema-theoretic research and relevant findings such as those from this investigation. If reading teachers are to design and implement a theoretically based diagnostic-prescriptive adult reading model, administrators must actively promote professional development through inservice training, conference attendance, and organizational memberships. Involvement in these types of activities will help reading teachers become cognizant of reading research and will assist them in bridging the gap between current theoretical perspectives and instructional applications. Reading administrators can ensure reading program effectiveness by recognizing the reciprocal relationship between classroom instruction and professional growth and development, and by providing opportunities for teachers to update their knowledge in the field of reading. Such an administrative stance will enable reading teachers to evolve an adult reading
diagnostic-prescriptive model and to continuously evaluate and refine it on the basis of current reading theory and research.
APPENDIX A
RESEARCH INSTRUMENTS
Prior Knowledge Inventory

"Anger Defused"
Passage A

Directions: Read each of the following questions. Then answer yes or no for each question on the basis of your prior knowledge and beliefs about it. After you have indicated your answer, explain why you answered as you did in the spaces provided. There are no right or wrong answers; therefore, write what you honestly think about each question.

1. Does the release of angry feelings help a person get rid of anger and feel better?

Answer:________________________________________

Why?________________________________________

2. Should people discuss their hurt or angry feelings with friends or other persons?

Answer:________________________________________

Why?________________________________________
3. What do you think will happen if a person does not release hostile or angry feelings?

Answer: 

Why?

4. Do you think that the common practice of counting from 1 to 10 helps one to release or control anger?

Answer: 

Why?

5. Do you think that anger can be released through such actions as shouting, screaming, or kicking an object?

Answer: 

Why?

6. Can unreleased angry tensions cause illnesses such as heart disease or high blood pressure?

Answer: 

Why?
7. What do you do when you are angry with another person or some situation?

Answer: ____________________________________________________________

_________________________________________________________________

Why?

_________________________________________________________________

_________________________________________________________________
Directions: In each group below select the lettered word or phrase which identifies the best meaning of the underlined word(s). Indicate your choice by circling the letter of the best answer.

1. **ventilation of anger**
   1. pushing hostile feelings into the subconscious mind
   2. maintaining hostile feelings by talking about them
   3. releasing hostile feelings by talking about them
   4. forgetting hostile feelings by bringing them to the conscious mind

2. **ventilation theory**
   1. the belief that individuals should be helped to release hostile feelings
   2. the belief that individuals should suppress hostile feelings
   3. the belief that the causes of physical illness should be determined
   4. the belief that the cause of mental illness can be determined

3. **aggressiveness**
   1. active protection
   2. strong defense
   3. hostile assertiveness
   4. blind violence

4. **hypertension**
   1. low level of stress
   2. high level of stress
   3. moderate level of stress
   4. average level of stress

5. **therapy**
   1. treatment of illness or disability
   2. treatment of societal problems
   3. treatment of energy problems
   4. treatment of economic problems

6. **suppressed anger**
   1. remove hostility
   2. mobilize hostility
   3. bring forth hostility
   4. hold back hostility
7. **popular belief**
   1. something believed by an average number of people
   2. something believed by several people
   3. something believed by a large number of people
   4. something believed by a small number of people

8. **emotional definition**
   1. an explanation based on scientific evidence
   2. an explanation based on people's feelings
   3. an explanation based on psychological proof
   4. an explanation based on people's objective opinions

9. **anger control**
   1. to hold hostile feelings in check
   2. to direct hostile feelings toward individuals who caused such feeling
   3. to direct hostile feelings toward objects or things
   4. to show hostile feelings in the form of verbal arguments

10. **psychological conflict**
    1. disturbance among friends
    2. disturbance in the atmosphere
    3. disturbance among governments
    4. disturbance in the mind
Vocabulary

"Anger Defused"
Passage A

The vocabulary terms below are contained in the passage that you will read. Knowing the definitions of these words may help you understand the passage. Therefore, you may refer to these definitions at any time as you read the passage.

1. prevalent--widely accepted or practiced
2. ventilation--to bring forth for examination or decision
3. assumptions--something thought to be true without proof
4. psychotherapies--psychological treatments of mental or emotional disorders
5. lauded--to express praise for something
6. recipient--one who receives
7. precipitating--to cause to happen
8. cathartic--a technique used to relieve tension by bringing suppressed feelings to a person's conscious mind
9. origins--the beginnings or source of a thing
10. bioenergetics--study of human energy transformation or usage
One of the assumptions most prevalent in the anger business is that the physical or verbal ventilation of anger is basically healthy, and suppressed hostility medically dangerous. "There is a widespread belief that if a person can be convinced, allowed, or helped to express his feelings, he will in some way benefit from it," writes psychiatrist John R. Marshall. "This conviction exists at all levels of psychological sophistication. Present in one or another form, it occupies a position of central importance in almost all psychotherapies. . . . The belief that to discharge one's feelings is beneficial is also popular among the general public. Friends are encouraged to "get it off their chests," helped to "blow off steam," or encouraged to "let it all hang out." Sports or strenuous physical activities are lauded as means of "working off" feelings, particularly hostility, and it is accepted that there is some value in hitting, biting, or breaking something when frustrated.

But is there? It seems to me that the major effect of the ventilationist approach has been to raise the general noise level of our lives, not to lessen our problems. I notice that the people who are most prone to give vent to their rage get angrier, not less angry. I observe a lot of
hurt feelings among the recipients of rage. And I can plot
the stages in a typical "ventilating" marital argument:
precipitating event, angry outburst, screaming or crying, the
furious peak (sometimes accompanied by physical assault),
exhaustion, sullen apology, or just sullenness. This cycle
is replayed the next day or next week. What in this is
"cathartic"? Screaming? Throwing a pot? Does either action
cause the anger to vanish or the angry spouse to feel better?
Not that I can see.

Most ventilationist theories today concentrate on what a
person should do to control angry arousal, to reduce tension.
But it is true of the body as of arrows: What goes up must
come down. Any emotional arousal will simmer down if you
just wait long enough, although some people, particularly
hypertensives, must wait longer than others. This is why the
classic advice for anger control--count to 10--has survived
for centuries.

Some ventilationists, however, believe that counting
isn't enough. They maintain that certain actions, particu-
larly aggressive ones, will bring arousal back to normal
faster than waiting indeed, will get rid of the anger;
further, that without aggressive release, angry energy will
create personality disorders, do internal damage, or produce
diseases such as high blood-pressure and heart disease.

The popular belief that suppressed anger can wreak havoc
on the body has been inflated out of realistic proportions.
I am not saying that constant, excessive feelings of
rage are good for you either. Nor am I arguing that there is no such thing as psychosomatic illness—symptoms that have psychological conflict as their primary origin. But the key is conflict: Several emotions are usually involved in these problems, not suppressed anger, and it is impossible to track down their origins without knowing the social context that creates them.

Some schools of therapy, such as Alexander Lowen's bioenergetics, recommend any form of aggressive anger release that comes to mind, or foot: shouting, biting, howling, kicking, or slapping (anything short of assault and battery). Such aggression is supposed to get us "in touch" with our feelings. But aggression frequently has precisely the opposite effect of catharsis: Instead of exorcising the anger, it can inflame it.

Like most people I know, I have always been a firm believer in the talk-it-out strategy. Talking things over makes you feel better. That's what friends are for. That's what bartenders are for. But that's not what the research shows. Talking out an emotion doesn't reduce it, it rehearses it.

Emotions are social constructions: The psychological arousal that we feel depends on cues from the environment to provide a label for justification. Talking to friends is one way to find that label—to decide, for example, that you feel angry instead of hurt, or more sad than jealous.
Sympathetic friends who agree with your self-diagnosis, or provide a diagnosis for you, are aiding that process of emotional definition.
Comprehension and Metacomprehension Measures

"Anger Defused"

Passage A

Directions: Answer the following questions using information from the article you just read. Answer questions about the article by circling the letter of the phrase that best answers each question. Then indicate how sure you are that your answer is correct by circling one of the numbers on the right side of the page.

How certain are you that the answer is correct?

very uncertain    almost uncertain    fairly uncertain    fairly certain    almost certain    very certain

1. According to the article, ventilation of anger
   1. releases hostile feelings
   2. allows one to relax
   3. allows one to develop healthy personalities
   4. increases hostile feelings

2. According to the article, talking about one's hurt or angry feelings with a friend can cause one to
   1. feel better about the situation
   2. rehearse the hurt or anger
   3. reduce the anger or hurt
   4. feel that someone understands the problem
### Question 3

The author feels that when one suppresses hostility it is
1. not necessarily unhealthy
2. basically healthy
3. medically dangerous
4. basically frustrating

### Question 4

Based on the article, when a couple ventilates through a marital argument, they
1. lessen the problem by finding out how each spouse feels
2. usually increase their problems by getting angrier
3. help the angry spouse's anger to decrease and help the angry spouse feel better about the situation
4. increase the possibility of a divorce

### Question 5

According to the article, discussing one's angry emotions with others may result in all of the following except
1. elimination of anger
2. rehearsal of anger
3. justification of anger
4. reinforcement of anger
6. If emotional arousal is not dealt with at all, it tends to
   1. increase rapidly with the passage of time
   2. increase to an uncontrollable level with the passage of time
   3. decrease with the passage of time
   4. increase slowly with the passage of time

   How certain are you that the answer is correct?
   
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7. The main idea of this article is
   1. healthy ways to release angry emotions
   2. anger is a misunderstood emotion
   3. anger can be controlled through ventilation
   4. learning how to release and control angry emotions

   How certain are you that the answer is correct?
   
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<td>8. Ventilationists claim that unreleased anger will create personality disorders and produce heart disease are</td>
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<td>9. This article indicates that aggressive anger released through such actions as shouting, screaming, or kicking an object when frustrated</td>
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<td>1. helps an individual get in touch with his feelings</td>
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<td>2. helps one get rid of angry feelings in a healthy manner</td>
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<td>3. helps one to develop good attitudes and better health</td>
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<td>4. helps one's angry feelings to grow or increase</td>
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<td>10. Psychosomatic illness, symptoms that have psychological conflict are caused by</td>
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<td>1. several emotional problems</td>
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<td>2. suppressed anger</td>
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<td>3. aggressive behavior</td>
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<td>4. physical problems</td>
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Directions: Read each of the following questions. Then answer yes or no for each question on the basis of your prior knowledge and beliefs about it. After you have indicated your answer, explain why you answered as you did in the spaces provided. There are no right or wrong answers; therefore, write what you honestly think about each question.

1. Does capital punishment prevent persons from committing crimes such as murder?

   Answer: ____________________________

   Why? ________________________________

2. Who in your opinion should decide whether the death penalty is a just and effective punishment for murder?

   Answer: ____________________________

   Why? ________________________________

3. Is life imprisonment an adequate punishment for murder?

   Answer: ____________________________

   Why? ________________________________
4. In your opinion, does the death penalty violate a murderer's constitutional right to life?

Answer: 

Why? 

5. Does the "eye for an eye and a tooth for a tooth" philosophy justify the use of the death penalty?

Answer: 

Why? 

6. Does the use of capital punishment upgrade society and help all citizens act responsible and civilized?

Answer: 

Why? 

7. Should our society attempt to find other forms of punishment for the crime of murder other than the death penalty?

Answer: 

Why?
Prior Knowledge Content-Specific Measure

"Capital Punishment"
Passage B

Directions: In each group below select the lettered word or phrase which identifies the best meaning of the underlined word(s). Indicate your choice by circling the letter of the best answer.

1. capital punishment
   1. use of solitary confinement as a sentence for the conviction of certain crimes
   2. use of life imprisonment as a sentence for the conviction of certain crimes
   3. use of the death penalty as a sentence for the conviction of certain crimes
   4. use of the performance of community service work as a sentence for the conviction of certain crimes

2. unconstitutional
   1. not in accord with the laws established by a country or government
   2. laws that describe the functions and limitations of a government
   3. not abiding by unestablished laws and rules
   4. laws governing the rights of citizens

3. life imprisonment
   1. serving the better part of one's life in jail for committing a crime
   2. serving part-time in jail and part-time living in the community for commission of a crime
   3. serving a number of years in a correctional institution for commission of a crime
   4. serving many years in a correctional institution for the commission of a crime with the possibility for parole

4. death row
   1. cell block where violent criminals are housed in order to protect other prisoners
   2. cell block where criminals facing the death penalty are housed
   3. cell block where prisoners are held in solitary confinement
   4. a slang term used to describe all cell blocks in a correctional institution
5. **abolitionist**
   1. one who favors ending or changing a policy or law
   2. one who favors maintaining or keeping a policy or law
   3. one who establishes a policy or law
   4. one who is impartial toward a policy or law

6. **advocate**
   1. one who plans a law or policy
   2. one who attacks a law or policy
   3. one who supports a law or policy
   4. one who reviews a law or policy

7. **Supreme Court**
   1. court which hears cases dealing with petty theft and family disputes
   2. correctional facility which is without visible security measures
   3. official record of trial proceedings
   4. court of the last resort which investigates whether constitutional issues are legal

8. **moral principle**
   1. standards which are wrong and unfair
   2. standards which are right and just
   3. standards which are everlasting
   4. standards which are unreasonable

9. **opponent**
   1. one who takes advantage of a law
   2. one who violates a law
   3. one who is against a law
   4. one who agrees with a law

10. **constitutional right**
    1. rights and privileges which one is entitled to by law
    2. rights and privileges which one is not entitled to by law
    3. rights and privileges given only to members of congress
    4. rights and privileges given only to members of state governments
Vocabulary

"Capital Punishment"
Passage B

The vocabulary terms below are contained in the passage that you will read. Knowing the definitions of these words may help you understand the passage. Therefore, you may refer to these definitions at any time as you read the passage.

1. prominence—noticeable or well known
2. abolish—to do away with
3. constitute—elements that make up a thing
4. capriciously—done unwisely or irrationally
5. mandatory—something that is required
6. deterrent—consequence that prevents a person from performing an act because of fear
7. ethical—pertaining to good or right behavior
8. appellate—power or ability to change court decisions
On January 17, 1977, the State of Utah executed Gary Mark Gilmore by firing squad. This was the first execution in the United States in ten years. Its effect was to once again bring the issue of capital punishment to a place of prominence among issues facing the administration of justice.

Attempts to abolish the death penalty began nearly two centuries ago, in the 1780s. Until the 1960s abolitionists' efforts focused on the legislative process, with the idea of abolishing state death penalty laws and reducing the number of crimes for which the death penalty was applicable. By the end of the 1960s, only nine states had abolished the death penalty. Abolitionists then began to work for court intervention, contending that the death penalty constituted cruel and unusual punishment. In 1972 the Supreme Court ruled in Furman v. Georgia that the death penalty as then applied constituted cruel and unusual punishment because courts had virtually unlimited discretion in sentencing and, as a result, were applying the death penalty unevenly, capriciously, and irregularly. The result of the Furman decision was to overturn existing capital punishment laws in most states.
But the victory of the abolitionists was short-lived, for the Court did not rule that capital punishment was, in and of itself, unconstitutional. The ruling opened the door for legislative revisions of existing laws, and between 1972 and 1976 most states had reintroduced the death penalty. Some of the new laws made death sentences mandatory for certain offenses; others involved a two-stage trial in which the sentence was imposed after a finding of guilt, following guidelines regarding aggravating circumstances. The populations of Death Rows increased steadily.

On July 2, 1976, the Supreme Court released its rulings on five capital punishment cases then under review. The rulings paved the way for executions in Georgia, Florida, and Texas, as well as the execution of Gilmore in Utah. Two of these cases are very significant. In Gregg v. Georgia, the Court ruled that the death penalty does not violate a prisoner's constitutional right to life. And in Woodson v. North Carolina, the Supreme Court struck down a law providing for the imposition of the death penalty.

Two arguments are used to justify capital punishment—that it is a deterrent to violent crime and that it is proper punishment for the act of murder. The Supreme Court did not address these issues in the Gregg and Woodson cases. After years of social science research on the deterrent effect of capital punishment, it seems—but has not been proven—that the death penalty has little real value as a
deterrent to crime. One of the disappointments of the recent rulings is that the Supreme Court took no notice of social science research on the subject. Instead, the court looked to the national polls and surveys that indicate that the majority of Americans favor the use of capital punishment. In upholding the death penalty in the Gregg case, the Court appeared to accept the death penalty as a fitting and just penalty for the crime of murder; but in the Woodson ruling, the Court added that life imprisonment is also a fitting and just penalty. The decision between death or life imprisonment is thus left to the people of several states. From this point of view, it seems that the people could choose on moral grounds to reject the death penalty as punishment and to invoke a less severe penalty.

Just as advocates (persons for capital punishment) have argued that capital punishment acts to prevent crime, opponents (persons against capital punishment) have argued that it does not. The deterrent argument is difficult to prove through research, for each side can present only indirect evidence. It seems logical that some people refrain from committing murder because it might cost them their lives—but the question of how many and under what circumstances is unanswerable. The continued application of the death penalty in order to realize the goal of deterrence seems to be a rather high price to pay in a supposedly civilized world. In this connection, it is interesting to note that both Canada and England have abolished capital punishment.
On ethical grounds, opponents of capital punishment argue that the "eye for an eye, and a tooth for a tooth" philosophy is not consistent with the highest moral principles, which place value on all human life—including the life of a convicted murderer. Murder, whether by an individual or by the state, brutalizes and degrades the whole society and ought to be rejected. Life imprisonment, they say, is punishment enough for the offender and offers adequate protection for society.
Comprehension and Metacomprehension Measures

"Capital Punishment"
Passage B

Directions: Answer the following questions using information from the article you just read. Answer questions about the article by circling the letter of the phrase that best answers each question. Then indicate how sure you are that your answer is correct by circling one of the numbers on the right side of the page.

How certain are you that the answer is correct?

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1. Social science research indicates that capital punishment has
   1. stopped some people from committing murder because it might cost them their lives
   2. no effect on crime
   3. prevented crime
   4. increased crime
How certain are you that the answer is correct?

very uncertain  almost uncertain  fairly uncertain  fairly certain  almost certain  very certain

2. Which source should be used to determine whether the death penalty is an effective punishment?
   1. national polls and surveys based on citizens' opinions
   2. social science research
   3. votes from members of congress
   4. votes from justices serving on the United States Supreme Court

3. Which of the following arguments do the authors present?
   1. the application of capital punishment is necessary in order to maintain a civilized world
   2. the application of capital punishment is more just than life imprisonment
   3. the application of capital punishment not only prevents adult crimes, but prevents younger people from choosing lives of crime
   4. the application of capital punishment is unjustified in a civilized world
How certain are you that the answer is correct?

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4. On the basis of moral grounds, citizens should
1. reject the death penalty
2. support the death penalty
3. use the "eye for an eye and a tooth for a tooth" philosophy to guide their decisions
4. abide by the laws passed by the Supreme Court

5. Based on the article, one can conclude that
1. persons for capital punishment have proved that the death penalty prevents persons from committing murder
2. persons against capital punishment proved that the death penalty does not prevent persons from committing murder
3. persons against capital punishment argue that the death penalty is a small price to pay in order to maintain a civilized world
4. both persons for and against capital punishment have presented only indirect proof for their arguments for and against capital punishment
How certain are you that the answer is correct?

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This article implies that some foreign countries have abolished capital punishment
1. on the basis of an "eye for an eye and a tooth for a tooth" philosophy
2. on the basis of moral grounds
3. on the basis of the uneven application of justice
4. on the basis of court rulings

7. The authors feel that the decision to use capital punishment as a sentence should be based on
1. decisions made by jurors
2. passage of laws by state legislatures
3. all citizens' opinions for or against capital punishment
4. information provided by social scientists

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8. The purpose of this article is to show that
1. capital punishment seems to be an ineffective method for crime prevention and other forms of punishment need to be considered
2. capital punishment is an adequate punishment for murder and protects society from evil persons who would probably commit the same crime again
3. life imprisonment is enough punishment for murder and offers adequate protection for society
4. capital punishment is just punishment because it is supported by biblical teachings.
9. The authors argue that the "eye for an eye and tooth for a tooth" philosophy
1. upholds the highest moral principles
2. brutalizes and degrades society
3. is based on moral principles that protect criminals
4. should be interpreted as "a life for a life" which means that if one takes another person's life, that individual should give his life in return for the life he has taken

10. Based on this article, one can conclude that the authors
1. support the death penalty for criminal offenses
2. support life imprisonment
3. feel that the death penalty prevents criminal offenses
4. feel that the capital punishment system is based in its administration of justice
Prior Knowledge Inventory

"Changes in Traditional Attitudes"

Passage C

Directions: Read each of the following questions. Then answer yes or no for each question on the basis of your prior knowledge and beliefs about it. After you have indicated your answer, explain why you answered as you did in the spaces provided. There are no right or wrong answers; therefore, write what you honestly think about each question.

1. Who should pay the wedding expenses when a couple marries for the first time?

Answer: ________________________________

Why? ________________________________

2. Does it matter whether a married man wears a wedding band?

Answer: ________________________________

Why? ________________________________

3. Which of the following groups do you believe would favor married men wearing wedding bands more (men in general, women in general, both older men and women, or both younger men and women)?

Answer: ________________________________

Why? ________________________________
4. What age group among married couples makes the best marriages (husband is younger than the wife, husband is older than the wife, husband and wife are almost the same age, or age of husband and wife does not matter)?

Answer: ___________________________________________

Why? ____________________________________________

5. Once a woman marries what last name should she take or use?

Answer: __________________________________________

Why? ____________________________________________

6a. Should married couples ever take separate vacations?

Answer: __________________________________________

Why? ____________________________________________

6b. Do you believe that younger couples would favor separate vacations more than older couples?

Answer: __________________________________________

Why? ____________________________________________
7. Among married couples, it is more likely for the husband or the wife to have an extramarital affair?

Answer: ______________________________________

Why? ______________________________________

____________________________________________
"Changes in Traditional Attitudes"
Passage C

Directions: In each group below select the lettered word or phrase which identifies the best meaning of the underlined word(s). Indicate your choice by circling the letter of the best answer.

1. **traditional attitudes**
   1. customary points of view or opinions
   2. unusual points of view or opinions
   3. new points of view or opinions
   4. personal points of view or opinions

2. **marriage**
   1. a promise of betrothal
   2. termination of wedlock by law
   3. a ring symbolizing matrimony
   4. legal union of a man and woman as husband and wife

3. **maiden name**
   1. a woman's last name prior to marriage
   2. a woman's first name and her husband's last name
   3. a woman's last name after marriage
   4. a woman's first name, middle name, and her husband's last name

4. **overwhelming majority**
   1. characteristics of a group of people
   2. large proportion of a group of people
   3. moderate number of people
   4. smaller number of people

5. **wedding band**
   1. a ring which symbolizes an engagement
   2. a ring which symbolizes a marriage
   3. a ring which symbolizes a friendship
   4. a ring which symbolizes a partnership

6. **bride**
   1. a woman who is recently married
   2. a woman who attends the bride at a wedding
   3. a young girl who carries flowers in a wedding procession
   4. a procession of men and women who escort members of the wedding party
7. **vacation**
   1. period of time devoted to pleasure and relaxation
   2. period of time devoted to work
   3. period of time devoted to school
   4. period of time devoted to child rearing

8. **bride groom**
   1. a man who attends the groom at a wedding
   2. a person who performs the marriage ceremony
   3. a man who is recently married
   4. a young boy who carries the rings in a wedding procession

9. **extramarital**
   1. devotion to marriage vows
   2. violation of marital vows
   3. faithfulness to marital vows
   4. clarification of marital vows

10. **public opinion survey**
    1. an instrument used to measure land
    2. an instrument used to investigate past activities of Central Intelligence Agency employees
    3. a report of the measurements of land surveyed
    4. an instrument which obtains information about people's beliefs on certain matters and issues
The vocabulary terms below are contained in the passage that you will read. Knowing the definitions of these words may help you understand the passage. Therefore, you may refer to these definitions at any time as you read the passage.

1. traditional—a way of thinking or behavior which is passed on from generation to generation

2. abandoned—to give up

3. majority—the larger part of a group

4. virtually—almost all of something

5. symbolic—something which represents an idea, concept, or object

6. extramarital—adulterous behavior

7. projectable—capable of being extended

8. hyphen—a punctuation mark (−) used to join two words
On issues surrounding marriage, many Americans cling to tradition, while others favor leaving the past behind. An overwhelming majority of Americans believe that wives should continue to take their husbands' last names. However, despite tradition, a large majority say the groom's family should share equally in the cost of a wedding. These are among the findings of The Merit Report: A Public Opinion Survey, conducted under the supervision of Audits & Surveys, Inc. Some 1,200 adult Americans living in telephone households were randomly selected to participate in this scientific, nationally projectable survey.

An overwhelming majority (74%) of Americans think that, when a couple marries, the wife should take her husband's last name. Fourteen percent feel that the wife should add her husband's last name to hers with a hyphen. Only 1% suggest that the wife keep her maiden name as her last name. Men and women respond almost identically on this issue. Younger people (18-34 years old) show more support for women adding their husbands' last name to theirs with a hyphen than those over 50.

Many young women's families will be glad to hear that 61% of the nation thinks that in the case of young people getting married for the first time, the American tradition
of the bride's family paying most of the cost of the wedding
should be abandoned. They think that the "groom's family
should pay equally." However, 23% still feel that the
"bride's family should pay the most." Only 3% think that the
"groom's family should pay the most."

When asked what age relationships produce the best
marriages, the great majority of Americans pick either the
case where husbands are "a few years older," or those
instances where wives and husbands "are almost the same age."
Only 6% think that best marriages occur when the wife is "a
few years older." Virtually no one recommends that the wife
be "a good deal older." Very few think that a marriage made
in heaven is most likely when the husband is "a good deal
older."

Over half of the nation think that it "really doesn't
matter" whether or not married men wear a wedding band.
However, 42% say that men should wear the symbolic ring. A
few more men than women say that men should wear a wedding
band. There are also differences on this issue by age.
Younger people between the ages of 18-34 years old are split
on whether men should wear wedding bands, or whether it
doesn't matter. However, among those over 50 years old, 59%
say that it doesn't really matter, while 36% favor the rings
for married men.

Sixty-six percent feel that the likelihood of having an
extramarital affair is the "same for both" men and women in
America. Nineteen percent feel that it is "less likely"
that a woman will have an affair while she is married. Conversely, 4% think it is "more likely." Men and women respond almost identically to this question.

When Americans are asked how they feel about separate vacations for husbands and wives, 49% say "none should be separate." However, perhaps under the impression that absence makes the heart grow fonder, almost as many (43%) say that "some should be separate." Almost no one thinks that "all should be separate." Older people (50 years and older), as compared to younger people (19-34 years old), are more against separate vacations, with 56% saying none should be separate and 33% saying some should be. The younger groups split almost evenly between some separate and no separate vacations. A similar difference is found by income. Among those earning under $15,000, 55% feel no vacations should be separate and 36% say some should be separate. However, those earning $25,000 are split, with 48% favoring some separate vacations and 46% against any vacations being separate.
Comprehension and Metacomprehension Measures

"Changes in Traditional Attitudes"
Passage C

Directions: Answer the following questions using information from the article you just read. Answer questions about the article by circling the letter of the phrase that best answers each question. Then indicate how sure you are that your answer is correct by circling one of the numbers on the right side of the page.

1. According to the article, which age group among husbands and wives makes the best marriages?
   1. the ages of the husband and wife do not influence whether the marriage is good or bad
   2. marriages in which the husband is a few years older
   3. marriages in which the wife is a few years older because wives tend to live longer than their husbands
   4. marriages in which the husband is a great deal older than the wife because the husband's experiences can strengthen the marriage

How certain are you that the answer is correct?

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2 3
2. A large group of older Americans indicated
   1. it is important for younger men to wear wedding bands
   2. it is important for older men to wear wedding bands
   3. it is not important for married men to wear wedding bands
   4. it is important for all married men to wear wedding bands

3. The majority of Americans think that when a couple marries
   1. the wife should add her husband's last name to her maiden name with a hyphen
   2. the wife should keep her maiden name as her last name
   3. the wife should take her husband's last name
   4. the wife should add her maiden name to her husband's last name with a hyphen
How certain are you that the answer is correct?

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4. Among younger Americans
   1. a small percentage indicated that men do not need to wear the traditional wedding band
   2. a large percentage indicated that young men should wear wedding bands
   3. a moderate percentage indicated that it is not important for older men to wear wedding bands
   4. an equal percentage indicated that men should wear wedding bands and an equal percentage indicated that men need not wear wedding bands

5. Most American people are of the opinion that having an extramarital affair is
   1. less likely for married women
   2. the same for both married men and women
   3. more likely for married women
   4. more likely for married men
How certain are you that the answer is correct?

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6. A large number of people think that when young people marry for the first time
1. the bride's family should pay most of the wedding expenses
2. both the bride's and groom's families should share the wedding expenses equally
3. the bride's family should pay all of the wedding expenses
4. the bride and groom should pay the expenses for the wedding and not burden their families

7. Which of the following groups contains a larger percentage of individuals who think that men should wear wedding bands?
1. men
2. women
3. college students
4. men and women
How certain are you that the answer is correct?

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8. Which of the following statements is true regarding people's opinions of vacations for married couples?
   1. younger people are more against separate vacations
   2. younger people tend to favor joint vacations because it helps establish closer relationships between young married couples
   3. older people are more against separate vacations
   4. older people are almost evenly divided on some separate vacations and no separate vacations

9. Most people think that
   1. married men should wear a wedding band
   2. married men need not wear a wedding band
   3. married women need not wear a wedding band
   4. both married men and women should wear a wedding band to show their love and respect for one another
10. When asked how they feel about separate vacations for husbands and wives, most people responded that

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1. no vacations should be separate
2. some vacations should be separate
3. all vacations should be separate
4. vacations should be taken together, except when husbands and wives are visiting their parents and other relatives
Prior Knowledge Inventory

"Role of Women in Police Work"

Passage D

Directions: Read each of the following questions. Then answer yes or no for each question on the basis of your prior knowledge and beliefs about it. After you have indicated your answer, explain why you answered as you did in the spaces provided. There are no right or wrong answers; therefore, write what you honestly think about each question.

1. Should women serve in police departments as police officers?
   Answer: ________________________________
   Why? ________________________________

2. If policewomen are employed by police departments, what kind of work should they be assigned?
   Answer: ________________________________
   Why? ________________________________

3. Are policewomen as effective as policemen in the performance of police duties?
   Answer: ________________________________
   Why? ________________________________
4. How do you think that policewomen react when confronted with violent situations?

Answer: __________________________________________

Why? ____________________________________________

5. How do you think that male police officers feel about having female officers as partners?

Answer: __________________________________________

Why? ____________________________________________

6. Should women police officers be assigned the same duties and responsibilities as male police officers?

Answer: __________________________________________

Why? ____________________________________________

7. Do you think that the general public would agree that policewomen should perform the same duties as policemen?

Answer: __________________________________________

Why? ____________________________________________
Directions: In each group below select the lettered word or phrase which identifies the best meaning of the underlined word(s). Indicate your choice by circling the letter of the best answer.

1. **criminal justice system**
   1. a system for governing school
   2. a system for preventing unlawful activities
   3. a system for governing religious activities
   4. a system for preventing charitable activities

2. **policewoman**
   1. a female who is a member of a group which makes laws
   2. a female who is authorized to maintain law and order
   3. a female who presides over trials and administers the law
   4. a female who is authorized to oversee the activities of persons on parole

3. **policeman**
   1. a male who is authorized to check the activities of persons on parole
   2. a male who presides over trials and administers the law
   3. a male who is a member of a group which makes laws
   4. a male who is authorized to maintain law and order

4. **felony arrests**
   1. holding a person in custody for a serious crime
   2. holding a person in custody for a minor crime
   3. releasing a person from a correctional institution for the purpose of performing community service
   4. allowing a defendant to secure release from custody prior to trial

5. **discrimination**
   1. action based on fairness
   2. action based on open-mindedness
   3. action based on prejudice
   4. action based on impartiality
6. **patrol duty**
   1. to observe carefully in order to commit a crime
   2. an obligation involving the observation of an area for the purpose of security
   3. to move from house to house in order to obtain subscriptions or votes
   4. a public procession for a special occasion

7. **violence**
   1. damaging action
   2. peaceful action
   3. cooperative action
   4. neutral action

8. **veteran officers**
   1. one in a position of authority who is unqualified
   2. one in a position of authority who is a newcomer
   3. one in a position of authority who has little experience
   4. one in a position of authority who has knowledge gained through long experience

9. **police inspector**
   1. an official who reviews policy for law enforcement officers
   2. an official who reviews safety regulations for city buildings
   3. an official who reviews health regulations for restaurants
   4. an official who reviews the effectiveness of traffic control

10. **rookie partner**
    1. an associate who is an experienced recruit
    2. an associate who is an untrained recruit
    3. an associate who is skilled in his field
    4. an associate who is an expert in his field
Vocabulary

"The Role of Women in Police Work"
Passage D

The vocabulary terms below are contained in the passage that you will read. Knowing the definitions of these words may help you understand the passage. Therefore, you may refer to these definitions at any time as you read the passage.

1. integral—something which is necessary for completion
2. resolution—a law or decision
3. essential—necessary or required
4. prohibited—forbidden or prevented by law
5. advisability—deserving to be suggested or recommended
6. effectiveness—the level of power or strength
7. counterpart—something that is similar to another person, object, or thing
8. compassionate—showing pity or understanding
Women have been employed in the criminal justice system since the late-nineteenth century, when women were hired to serve as matrons in the jails. The first female police officer was appointed in 1893 in Chicago. During the early twentieth century women were occasionally hired by police forces to work with delinquents and runaways and to patrol such places of entertainment as dance halls and roller-skating rinks. New York and most other large cities divided female police officers into two groups: matrons, who were custodians of female prisoners, and policewomen, who were youth and clerical specialists. Not until 1937 did the New York City department give all female officers the title of policewomen.

Women have been considered integral to police departments for many years. In 1922, for example, the International Association of Chiefs of Police passed a resolution stating that policewomen were essential to a modern police department. But for the most part, female officers have been given work involving children, other women, and clerical duties. It was not until the passage of the Equal Opportunity Act of 1975, which prohibited discrimination in public employment on the basis of race, creed, color, sex, or national origins, that departments began seriously to
consider women for extensive patrol work and promotion to higher ranks.

Despite such advances, women interested in police work face many problems. Discrimination by police administrators and male officers is not a thing of the past, and many departments are reluctant to hire women for jobs considered "men's work." A major issue involves the advisability and effectiveness of female patrol officers. Arguments against employing women as patrol officers include opinions that women do not drive as well as men, and that the safety of the male officer in a male-female patrol team is jeopardized, since the male must protect the female partner as well as respond to the situation at hand.

To explore the issue of the effectiveness of female patrol officers, a study involving 80 new policewomen was conducted during a 4-month period in 1973. New male recruits were matched with a sample of new female recruits. Each of the new male and female officers was assigned to patrol duty with an experienced male officer. All the new officers had the same amount of training and patrol experience when the study began. The study found that policewomen were not as likely as policemen to make felony arrests, but that those female officers who did make felony arrests made about the same number as did their male counterparts. Female officers were less likely than male officers to take charge during an arrest incident; and they were less likely to be involved in a violent or potentially violent
situation. When violence occurred there was no noticeable difference in the performance of female and male officers. The male officers involved in this program stated that they expected female officers to be less competent on patrol than the men. Male officers also felt that policewomen had superior skills in handling domestic disputes and rape cases and that they were more understanding and compassionate than male officers. Finally, the study showed that citizens believed that women should have equal opportunities to perform in the same police capacities as men.

One researcher found positive effects on veteran officers who worked with female rookie partners. The veterans tried hard to impress the females by presenting the officer image they thought the women expected: hardworking, concerned, efficient, brave, and courteous. In the process they renewed some of their own lost enthusiasm for police work and communicated it to their new female partners.

Citizen response to female patrol officers have generally been positive. For example, in a study that asked a representative sample of citizens if they approved of having women perform the same police duties as men, the majority felt that women should have the same opportunities as men. A policeman-policewoman team was rated as having a slight advantage over an all-male team in handling a street-corner fight or a riot. Citizens also felt that policewomen showed slightly more respect for citizens and received slightly more respect from them in return.
A police inspector from the Washington, D.C., department—the first department to use women extensively in patrol—summed up his impression this way: "Generally, to me, a woman is just another body; I use them like the men. Some of 'em are real good, some are mediocre. If they don't cut the mustard, I fire 'em. The first year, they're on probation, it's easy."
### Comprehension and Metacomprehension Measures

"The Role of Women in Police Work"

Passage D

Directions: Answer the following questions using information from the article you just read. Answer questions about the article by circling the letter of the phrase that best answers each question. Then indicate how sure you are that your answer is correct by circling one of the numbers on the right side of the page.

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<thead>
<tr>
<th>How certain are you that the answer is correct?</th>
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<td>very uncertain</td>
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1. According to the article, female officers are
   1. less competent on patrol than men
   2. usually placed on probation after the first year of service
   3. weaker and more emotional than male officers
   4. as competent as male officers

| 1 | 2 | 3 | 4 | 5 | 6 |

2. Which of the following team does the public think is the most effective?
   1. female-male police team
   2. male-male police team
   3. female-female police team
   4. rookie partner-veteran police team
How certain are you that the answer is correct?

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<tr>
<th>1. very uncertain</th>
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<th>3. fairly uncertain</th>
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3. When confronted with violent situations
1. male officers' performance was superior to female officers'  
2. female officers' performance was superior to male officers'  
3. female officers' performance was not as good as male officers'  
4. male and female officers' performance was the same

4. The public thinks female officers should be assigned
1. cases dealing with domestic disputes  
2. cases dealing with all aspects of police work  
3. cases dealing with juvenile delinquents  
4. cases dealing with clerical duties
How certain are you that the answer is correct?

very      almost      fairly      fairly      almost      very
uncertain  uncertain   uncertain   certain    certain    certain

5. It was found that veteran officers who worked with female rookie partners
1. lost interest in police work
2. became more interested in police work
3. became concerned about their safety since the male must protect the female officer as well as deal with the crime under investigation
4. experienced more tension because female officers do not drive or control the police vehicle as well as male officers

6. The public rated a police-man-policewoman team as having a slight advantage over an all male team in handling
1. street corner fights or riots
2. domestic disputes
3. female prisoners and female suspects
4. clerical duties
How certain are you that the answer is correct?

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<td>Female officers' effectiveness studies showed that</td>
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<td>1. female officers lost their nerve when faced with a violent situation</td>
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<td>2. female officers were not as brave and in control as the male officers</td>
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<td>3. female officers were mediocre</td>
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<td>4. female officers were more respected by the public</td>
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<td>On the basis of this article, one can conclude that</td>
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<td>1. women are employed by police departments because of the Equal Opportunity Act of 1975</td>
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<td>2. women play a major role in police departments</td>
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<td>3. women are not essential in order for modern police departments to function</td>
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<td>4. women play a minor role in police departments</td>
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9. A study of the effectiveness of female patrol officers showed:
1. policewomen made less felony arrests than policemen.
2. policewomen and policemen made the same number of felony arrests.
3. policewomen made more felony arrests than policemen.
4. policewomen made more misdemeanor arrests than policemen.

10. The article showed that:
1. most policewomen can't "cut" the mustard and are relieved from duty after the first year.
2. most policewomen do not drive police vehicles as well as policemen.
3. most policewomen use emotional responses rather than logical reasoning when responding to violent situations.
4. most policewomen offer the same type of protection and support to their policemen partners as do male police partners.
APPENDIX B
A SAMPLE OF THE PILOT SUBJECTS' WRITTEN PROTOCOLS
Passage A: "Anger Defused" Prior Knowledge Inventory

<table>
<thead>
<tr>
<th>Question One</th>
<th>Textually Specific Answer</th>
<th>Textually Specific Responses</th>
<th>Textually Distorted Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the release of angry feelings help a person get rid of anger and feel better?</td>
<td>No. People who vent their anger usually become angrier, not less angry.</td>
<td>No. Because the release of anger will do nothing but hurt you and a friend.</td>
<td>No. You may still be upset.</td>
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<td>No. Because a person still may have angry feelings and the problem might still be going on.</td>
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<td>No. Because a person could hurt another person's feelings by saying things out of anger.</td>
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<td></td>
<td>Yes. Keeping things inside can cause physical and mental disorders.</td>
<td>Yes. Releasing anger eases the tension and makes you feel better.</td>
<td>Yes. By bottling up emotions, it can lead to make one uneasy and upset.</td>
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<tr>
<td></td>
<td>Yes. If you keep it in, it will destroy you. You have to release anger like a tea pot has to release steam, or you'll explode.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

246
<table>
<thead>
<tr>
<th>Question Two</th>
<th>Should people discuss their hurt or angry feelings with friends or other persons?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textually Specific Answer</td>
<td>No. Talking about angry feelings with friends or other persons does not release or reduce it; it rehearses it.</td>
</tr>
<tr>
<td>Textually Specific Responses</td>
<td>No. People should stay away from people when they are angry or hurt so they can calm down.</td>
</tr>
<tr>
<td></td>
<td>No. It does not help by talking to another person about it.</td>
</tr>
<tr>
<td>Textually Distorted Responses</td>
<td>Yes. Makes the angry feelings go away and helps the person feel a little less uptight about the situation.</td>
</tr>
<tr>
<td></td>
<td>Yes. It helps to relax your mind.</td>
</tr>
<tr>
<td></td>
<td>Yes. Helps a person think and act more clearly.</td>
</tr>
<tr>
<td></td>
<td>Yes. Releases frustration and gets rid of anger.</td>
</tr>
<tr>
<td></td>
<td>Yes. Talking to friends or relatives can ease the pain. It helps to release tension when someone else knows.</td>
</tr>
<tr>
<td></td>
<td>Yes. It helps people face why they are angry and solve the problem.</td>
</tr>
</tbody>
</table>
Yes. It helps to cheer you up and console you because others understand your problems.

Question Three

What do you think will happen if a person does not release hostile or angry feelings?

Textually Specific Answer

The popular belief that suppressed anger can wreak havoc on the body has been inflated out of realistic proportions. Anger will subside with the passage of time.

Textually Specific Responses

Maybe the person may forget it and let the angry feeling just go away and just say forget it; it's not really worth it.

I would overlook what caused me to be angry and continue to live a peaceful life.

Textually Distorted Responses

A person will build up too much anger and hostile feelings and become ill. They may have heart trouble or high blood pressure or bad nerves.

It would cause them to become worried and will lead to more serious things like ulcers and upset stomach.

Person will break down. Too much stress on the brain will cause the person to have a heart attack, stroke, or just faint.

If a person does not release his hostile feelings he or she will only get more hostile.
That person may do something drastic; something stupid, like commit suicide.

The person will get angry every time he thinks about it and take it out on others.

If someone holds angry feelings in too long, they will not be able to function properly. The person will become annoyed and frustrated at others.

Do you think that the common practice of counting from 1 to 10 helps one to release or control anger?

Yes. Any emotional arousal will simmer down if you just wait long enough. This is why the classic advice for anger control--count to 10--has survived for centuries.

Yes. Because counting from 1 to 10 helps you to calm down.

Yes. It gives you time to gather your thoughts.

Yes. It helps you to forget about the problem.

Yes. Counting from 1 to 10 helps some people release or control anger.

While counting, some of the anger will have died down.

It cools you down. It gives you time to think and lets your pressure out.

No. It's just a superstition to keep you from releasing anger.
<table>
<thead>
<tr>
<th>Question Five</th>
<th>Textually Specific Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think that anger can be released through such actions as shouting,</td>
<td>No. Such actions frequently have precisely the opposite effect of catharsis: Instead of</td>
</tr>
<tr>
<td>screaming, or kicking an object?</td>
<td>exorcising the anger, it can inflame it.</td>
</tr>
<tr>
<td>Textually Specific Responses</td>
<td>No. Screaming and shouting doesn't do anything but make you more angry.</td>
</tr>
<tr>
<td></td>
<td>Such actions will only hurt you and make the problem worse.</td>
</tr>
<tr>
<td>Textually Distorted Responses</td>
<td>Yes. Because it lets out stress and the person takes out most of the anger on an object</td>
</tr>
<tr>
<td></td>
<td>Yes. It gets nervous energy out of your system and helps you feel better.</td>
</tr>
<tr>
<td></td>
<td>Yes. Releases all anger in your actions.</td>
</tr>
<tr>
<td>Question Six</td>
<td>Textually Specific Answer</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Can unreleased angry tensions cause illnesses such as heart disease or high blood pressure?</td>
<td>Yes. It helps you to calm down. Lets out frustrations.</td>
</tr>
<tr>
<td>No. The popular belief that suppressed anger can wreak havoc on the body has been inflated out of realistic proportions. Several emotions are usually involved in these problems, not suppressed anger.</td>
<td>No. I do not know of any cases in which this is true.</td>
</tr>
<tr>
<td>Yes. When you are angry your heart doesn't beat normally and causes problems.</td>
<td>Yes. It causes the pressure to go up and causes a bad effect on the heart.</td>
</tr>
<tr>
<td>Yes. It causes the pressure to go up and causes a bad effect on the heart.</td>
<td>Yes. Holding anger back can cause hypertension and this can cause heart disease or high blood pressure.</td>
</tr>
<tr>
<td>What do you do when you are angry with another person or some situation in order to control angry arousal?</td>
<td></td>
</tr>
<tr>
<td>Textually Specific Answer</td>
<td>It is true of the body as of arrows: What goes up must come down. Any emotional arousal will simmer down if you just wait long enough.</td>
</tr>
<tr>
<td>Textually Specific Responses</td>
<td>I go to a quiet place and calm myself down.</td>
</tr>
<tr>
<td></td>
<td>I have learned to control my feelings and have a positive mind.</td>
</tr>
<tr>
<td></td>
<td>I try to overlook the situation.</td>
</tr>
<tr>
<td>Textually Distorted Responses</td>
<td>Talk a lot about the situation</td>
</tr>
<tr>
<td></td>
<td>Express myself. It helps me to get a clear understanding of the problem.</td>
</tr>
<tr>
<td></td>
<td>I slam doors, count, or beat objects.</td>
</tr>
<tr>
<td></td>
<td>I scream a little, cry, or hit something.</td>
</tr>
</tbody>
</table>
Passage B: "Capital Punishment" Prior Knowledge Inventory

Question One
Does capital punishment prevent persons from committing crimes such as murder?

Textually Specific Answer
No. There is no direct proof that capital punishment deters crimes.

Textually Specific Responses
No. Capital punishment does not stop people from stealing, robbing, or killing.

Textually Distorted Responses
No. Because some people will always be bold, vicious, mean, and hateful for no reason at all.

Textually Distorted Responses
No. Persons are bold enough to try luck. They feel they will never get caught.

Yes. It helps to teach a lesson and not have criminals hurt others.

Yes. Keeping criminals in prison does not help; when they get out they continue to commit crimes.

Yes. Persons should get the stiffest punishment.

Yes. Persons will think twice before committing crimes.

Question Two
Who in your opinion should decide whether the death penalty is a just and effective punishment for murder?
The author contends that social science research should be used in deciding whether capital punishment is an effective deterrent of crime.

No one should decide. Capital punishment should not be used. God... He's the only one who can give or take life.

The general public, we the people, the masses, society, citizens should decide whether capital punishment is just.

Elected officials, judges, governors of the states, attorney generals, lower courts, and supreme courts should decide whether capital punishment is just punishment.

Is life imprisonment an adequate punishment for murder?

Yes. It seems that the people could choose on moral grounds to reject the death penalty as punishment and to invoke a less severe penalty.

Yes. Most normal people don't want to see others killed.

Yes. Many people believe in religious teachings; thou shall not kill.

No. People want to get rid of murderers to stop them from killing more.

No. People are trying to protect their families from crime.
Question Four

In your opinion, does the death penalty violate a murderer's constitutional right to life?

Textually Specific Answer Yes.

All human life should be valued, including that of a murderer.

Textually Specific Responses

Yes. No one has the right to take another person's life.

Yes. The Bible says thou shall not play God.

Yes. To take a life makes us as criminal as the people who committed the crime.

Yes. When you execute someone you become a murderer. It's not right. It's a disgrace to mankind to kill anyone.

Textually Distorted Responses

No. If you kill someone, you should get the punishment you inflicted.

No. It is necessary to let the criminal know that his life could be snuffed out.

No. If you have the heart to kill, then you should be put to death.

Question Five

Does the "eye for an eye and tooth for a tooth" philosophy justify the use of the death penalty?

Textually Specific Answer

No. Murder whether by an individual or by the state brutalizes and degrades the whole society and ought to be rejected.
Textually Specific Responses

No. This philosophy is immature.

No. It's absurd to act out of spite.

No. You should not lower yourself to the level of criminals.

No. Two wrongs don't make a right.

No. The Bible says live with your brother.

Textually Distorted Responses

Yes. If a person takes a life his life should be taken.

Yes. Do unto others as you would have them do unto you.

Yes. This philosophy is stated in the Bible.

Yes. Persons should be punished for their wrong doings.

Question Six

Does the use of capital punishment upgrade society and help all citizens act responsible and civilized?

Textually Specific Answer

No. It brutalizes and degrades the entire society. It is a high price to pay in a supposedly civilized world.

Textually Specific Responses

No. Capital punishment lowers society to the same level as the criminal.

No. People should learn to forgive others.

No. No one has the right to take another person's life.
<table>
<thead>
<tr>
<th>Question Seven</th>
<th>Textually Distorted Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Should our society attempt to find other forms of punishment for the crime of murder?</td>
<td>Yes. It makes people obey the law because they are scared of the punishment.</td>
</tr>
<tr>
<td></td>
<td>Yes. It helps people act responsible.</td>
</tr>
<tr>
<td></td>
<td>Yes. Prevents severe crimes.</td>
</tr>
<tr>
<td></td>
<td>Yes. Makes criminals think twice before committing crimes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Textually Specific Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes. It seems that society would invoke a less severe penalty such as life imprisonment, rather than the death penalty.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Textually Specific Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes. A life sentence will make the murderer suffer and think about what he has done.</td>
</tr>
<tr>
<td>Yes. Life imprisonment without parole should be used rather than the death penalty.</td>
</tr>
<tr>
<td>Yes. Life imprisonment. They should make the murderer suffer by working him hard and not feeding him well.</td>
</tr>
<tr>
<td>Yes. Life imprisonment because it's like a slow death.</td>
</tr>
<tr>
<td>Yes. Life in prison because the electric chair is just a quick shock and it's over with. I think they should suffer if they took someone's life.</td>
</tr>
</tbody>
</table>
Yes. Life imprisonment with solitary confinement.

No. The death penalty should be used because if someone takes another person's life, I think the murderer's life should be taken.

No. The death penalty because I believe in an "eye for an eye and a tooth for a tooth" philosophy.

No. The chair because if someone takes someone else's life, they don't deserve to live either.

No. Capital punishment because murder is a serious crime. It's totally different from robbery. Murder should be punished to the highest extent.
Question One

Who should pay the wedding expenses when a couple marries for the first time?

Textually Specific Answer

Sixty percent of the nation thinks that in the case of young people getting married for the first time, the American tradition of the bride's family paying most of the cost of the wedding should be abandoned. They think that the groom's family should pay equally. However, 23% still feel that the bride's family should pay the most.

Textually Specific Responses

Four percent of the subjects responded that when a couple marries for the first time, the groom's family should pay most of the wedding expenses.

Textually Distorted Responses

Fifteen percent of the subjects responded that both the bride's and groom's families should be responsible for the wedding expenses.

Two percent of the subjects indicated that the couple should be responsible for the wedding expenses.

Seventy-nine percent of the subjects responded that the bride's family should be responsible for all of the wedding expenses.

Question Two

Does it matter whether a married man wears a wedding band?
<table>
<thead>
<tr>
<th>Textually Specific Answer</th>
<th>One-half of the nation thinks that it really does not matter whether or not married men wear wedding bands. Forty-two percent stated that men should wear the symbolic ring.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textually Specific Responses</td>
<td>No. Because love is in the heart, not material things.</td>
</tr>
<tr>
<td></td>
<td>No. Wearing a ring does not mean the marriage will succeed.</td>
</tr>
<tr>
<td></td>
<td>No. It doesn't matter if he really loves the wife.</td>
</tr>
<tr>
<td></td>
<td>No. It doesn't matter as long as they have a marriage certificate.</td>
</tr>
<tr>
<td>Textually Distorted Responses</td>
<td>Yes. It shows the love of two people.</td>
</tr>
<tr>
<td></td>
<td>Yes. It's part of the wedding tradition.</td>
</tr>
<tr>
<td></td>
<td>Yes. Shows the husband is proud of being married.</td>
</tr>
<tr>
<td></td>
<td>Yes. It shows unity with the wife and lets others know that he is unavailable.</td>
</tr>
<tr>
<td></td>
<td>Yes. It is important because it represents faithfulness and obligation to his wife.</td>
</tr>
<tr>
<td>Question Three</td>
<td>Which of the following groups do you believe would favor married men wearing wedding bands more (men in general, women in general, both older men and women, or both younger men and women)?</td>
</tr>
</tbody>
</table>
| Textually Specific Answer | A few more men than women say that men should wear a wedding band. Younger people between the ages of
18 through 34 years old are split on whether men should wear wedding bands or whether it doesn't matter. Among those over 50 years old, 59% say that it does not really matter, while 36% favor the ring for married men.

Textually Specific Responses

Younger men and women would probably favor married men wearing the wedding bands more because it's a part of the wedding tradition.

Textually Distorted Responses

Women in general would favor men wearing wedding bands because they are more sentimental.

Older men and women because they are more traditional.

Question Four

What age group among married couples makes the best marriages (husband is younger than the wife, husband and wife almost the same age, or age of the husband does not matter)?

Textually Specific Answer

The great majority of Americans indicated either the case when husbands are a few years older or those instances where wives and husbands are almost the same age.

Textually Specific Responses

The husband should be older because he is mature and can teach his wife.

The couple should be in the same age group because they will have the same interests and have a better understanding of each other.
Age does not matter. It has nothing to do with love.

Age doesn't matter if the couple is mature.

The wife should be older because women live longer than men.

What matters in a marriage is love, common interest not age.

Once a woman marries what last name should she take or use?

An overwhelming majority (74%) think that, when a couple marries, the wife should take her husband's last name.

The wife should take the husband's last name because it is a custom.

It shows dignity and pride for the wife to take the husband's last name.

It's up to the individual to decide which name she should use.

The wife should use her maiden name and the groom's last name.

Should married couples ever take separate vacations?

Forty-nine percent of Americans indicated that no vacations should be separate. Almost 43% say that some vacations should be separate.
Textually Specific Responses

Married couples should not take separate vacations because they need to spend much time together in order to maintain a good marriage.

Married couples need to have fun together.

Married couples need to share everything together.

Textually Distorted Responses

Married couples should take separate vacations because even married people need independent time.

Married couples should take separate vacations so that the husband and wife will look more attractive when they return.

Married couples need to get away from one another so that they won't tire of one another.

Question Six B

Do you believe that younger couples would favor separate vacations more than older couples?

Textually Specific Answer

Older people, 50 years and older, as compared to younger people, 18 through 34 years old, are more against separate vacations.

Textually Specific Responses

Older couples are probably against separate vacations more because of custom and they like being together all the time.

Textually Distorted Responses

Older people would probably be more trusting and agree to separate vacations more than younger people.
Younger people would probably want to be together more than older people.

Time apart may be necessary for the well-being of older people.

Younger people are less trusting than older people and may think the other one is cheating if they take separate vacations.

Question Seven

Among married couples, is it more likely for the husband or the wife to have an extramarital affair?

Textually Specific Answer

Sixty-six percent of Americans feel that the likelihood of having an extramarital affair is the same for both men and women.

Textually Specific Responses

Both men and women. Humans are never satisfied.
Men and women have the same drives.
Men and women are not that different about some things.

Textually Distorted Responses

Men usually have affairs.
Men like playing the field.
Most men are unfaithful.
Husbands because of double standards; men can get away with more than women.
Husbands get tired of married life more than wives.
Most women are faithful.
Passage D: "The Role of Women in Police Work" Prior Knowledge Inventory

Question One

Should women serve in police departments as police officers?

Textually Specific Answer

Yes. Women have been considered integral to police departments for many years.

Textually Specific Responses

Yes. Women should be able to work anywhere. It's America.

Yes. They serve in the military; why not police departments.

Yes. There's no such thing as a man's job anymore.

Textually Distorted Responses

No. The job is too dangerous. We see how criminals treat males. What do you think they will do to a female?

No. This is a man's job; women should have jobs working in the office on a typewriter.

No. Physically women are not as strong as men and are more likely to be hurt or killed while on duty.

Question Two

If police women are employed by police departments, what kind of work should they be assigned?

Textually Specific Answer

Women should be assigned the same type of work as their male counterparts.

Textually Specific Responses

Women police officers should be treated the same as men.
Your sex shouldn't make any difference on the type of job that you have.

Policewomen should be assigned work that they are best qualified for.

A policewoman should be assigned work in which her life is not at high risk.

Women should be assigned secretarial work and giving out summons or tickets.

Policewomen should be given work as traffic control or school crossing guards.

Policewomen should be assigned lab work, fingerprinting, clerical work, meter maid instead of chasing criminals.

Are policewomen as effective as policemen in the performance of police duties?

Yes. Effectiveness studies revealed that policewomen are as competent as policemen in the performance of police duties.

Yes. Women have the same training as men.

Yes. Some women may be better at their jobs than men.

Yes. Women must pass the same tests of fitness as the male officers do.

No. Women can't handle situations as well as men. They are not aggressive enough.
Question Four

Textually Specific Answer

According to effectiveness studies, there was no noticeable difference in the performance of female and male officers when violence occurred.

Textually Specific Responses

Policewomen act the same as men officers. They will do what is necessary to handle the situation.

Policewomen act with confidence because they are taught to act that way.

Textually Distorted Responses

Policewomen would be more frightened than a man, shaky and scared.

Women would panic with terror.

Policewomen are soft hearted and tend to be more nervous than men.

Women get overly excited, very tense, unsure.

Question Five

How do you think that male police officers feel about having female officers as their partners?
Male officers reacted positively to female officers. Male officers felt the female officers were competent and had superior skills in handling some types of cases. Male officers also indicated they tried to impress female officers by presenting such officer images as hard-working, concerned, efficient, brave, and courteous.

Wouldn't bother the male officers to have a female partner.

Treat the female the same way they would a male partner.

They would probably enjoy having a female partner.

Men get along better with the opposite sex. It wouldn't be a problem.

The male officers would feel they had to protect themselves and the women too.

The men would feel offended, uneasy, uncomfortable, mad, worried, and not secure working with a woman.

They would not be happy about it because women bring problems to work, attitudes, and moods.

Males don't think the females are qualified.

Policemen don't like female partners, I'm sure.
<table>
<thead>
<tr>
<th>Question Six</th>
<th>Should women police officers be assigned the same duties and responsibilities as male police officers?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textually Specific Answer</td>
<td>Yes. Effectiveness studies have indicated that women officers are as competent in performing the same duties as male officers.</td>
</tr>
<tr>
<td>Textually Specific Responses</td>
<td>Yes. Females are as competent as male officers.</td>
</tr>
<tr>
<td></td>
<td>Yes. Women are as dedicated to the job as men.</td>
</tr>
<tr>
<td></td>
<td>Yes. Women are as equal as men.</td>
</tr>
<tr>
<td></td>
<td>Yes. Women have the right to do anything they want.</td>
</tr>
<tr>
<td>Textually Distorted Responses</td>
<td>No. Women are not skilled enough.</td>
</tr>
<tr>
<td></td>
<td>No. Women police officers can't handle certain tasks.</td>
</tr>
<tr>
<td></td>
<td>No. Police departments should not place females in positions that are hostile or strenuous.</td>
</tr>
<tr>
<td>Question Seven</td>
<td>Do you think that the general public would agree that policewomen should perform the same duties as policemen?</td>
</tr>
<tr>
<td>Textually Specific Answer</td>
<td>Yes. Citizens' responses to female patrol officers have generally been positive. The majority of citizens felt that women should have the same opportunities as men.</td>
</tr>
<tr>
<td>Textually Specific Responses</td>
<td>Yes. Because they know that policewomen protect the public like policemen.</td>
</tr>
</tbody>
</table>
Yes. Because they have to pass the same requirements that policemen do.

Yes. Because the public knows that some women work as hard as men and sometimes harder.

No. The public feels safer with policemen protecting them than with policewomen protecting them.

No. Because the public thinks women are weaker than men and cannot handle violent situations.

No. Most people would probably agree to have women work in police departments as secretaries.

No. The public feels policemen can deal better with criminals than policewomen can.
APPENDIX C
TEST EVALUATION QUESTIONNAIRE
TEST EVALUATION QUESTIONNAIRE

1. Did you have any difficulty understanding the reading passage? If your response is yes, describe the kinds of problems that you experienced.

2. Are there any vocabulary terms in the reading passage that you do not know? If your response is yes, list all of these words.

3. Did you have any problems understanding the directions for the prior knowledge content-specific test? If your response is yes, what kind of problems did you have with the directions?

4. Did you have any problems understanding the prior knowledge content-specific test? If your response is yes, what items were not clearly stated?

5. Did you have any problems understanding the directions for the comprehension test? If your response is yes, what kind of problems did you have with the directions?

6. Did you have any problems understanding the comprehension test? If your response is yes, what items were not clearly stated?

7. Did you experience any difficulty with the metacomprehension test directions? If your response is yes, what kind of problems did you have?

8. Did you have any problems understanding how to indicate your metacomprehension answers? If your response is yes, what kind of problems did you have?
APPENDIX D

DESCRIPTIVE STATISTICS FOR THE
EXPERIMENTAL READING PASSAGES
Table 26

Means and Standard Deviations for Experimental Reading Passages A, B, C, and D

<table>
<thead>
<tr>
<th>Passage</th>
<th>ISCH</th>
<th></th>
<th>CSPK</th>
<th></th>
<th>COMP</th>
<th></th>
<th>META</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{X}$</td>
<td>SD</td>
<td>$\bar{X}$</td>
<td>SD</td>
<td>$\bar{X}$</td>
<td>SD</td>
<td>$\bar{X}$</td>
<td>SD</td>
</tr>
<tr>
<td>A</td>
<td>4.72</td>
<td>1.65</td>
<td>9.18</td>
<td>0.83</td>
<td>4.35</td>
<td>1.84</td>
<td>21.45</td>
<td>.82</td>
</tr>
<tr>
<td>B</td>
<td>3.96</td>
<td>1.37</td>
<td>8.98</td>
<td>0.95</td>
<td>5.07</td>
<td>1.62</td>
<td>24.75</td>
<td>7.22</td>
</tr>
<tr>
<td>C</td>
<td>4.05</td>
<td>1.43</td>
<td>9.20</td>
<td>0.78</td>
<td>4.83</td>
<td>1.56</td>
<td>22.88</td>
<td>7.88</td>
</tr>
<tr>
<td>D</td>
<td>4.13</td>
<td>1.32</td>
<td>9.30</td>
<td>0.83</td>
<td>5.27</td>
<td>1.67</td>
<td>25.25</td>
<td>7.45</td>
</tr>
</tbody>
</table>

Note: ISCH = Inappropriate Schemata; CSPK = Content-Specific Prior Knowledge; COMP = Comprehension; META = Metacomprehension.
Table 27

Mean Certainty of Correctness for Correct and Incorrect Multiple-Choice Items on the Comprehension Measures for Experimental Reading Passages A, B, C, and D

<table>
<thead>
<tr>
<th>Passage</th>
<th>Correct Items</th>
<th>Incorrect Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5.22</td>
<td>5.45</td>
</tr>
<tr>
<td>B</td>
<td>5.39</td>
<td>5.37</td>
</tr>
<tr>
<td>C</td>
<td>5.33</td>
<td>5.48</td>
</tr>
<tr>
<td>D</td>
<td>5.34</td>
<td>5.51</td>
</tr>
</tbody>
</table>

Note: Confidence ratings ranged on a scale from (1) very uncertain to (6) very certain.
REFERENCES


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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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