

READING AS INTERFERENCE
FOR
REMEMBERING OF SELF-HELP WORDS

BY

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A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
for the Degree of

MASTER OF ARTS

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Reading as Interference for Remembering of Self-help words

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Stuart Berl Toews

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
of
Master of Arts**

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Abstract

Information in self-help psychology books may affect memories by interfering with accurate recall of past events. These effects were evaluated by investigating the retroactive interference of memory for self-help information on previously learned material. One-hundred-seventy-five women in introductory psychology served in a $2 \times 2 \times 2$ MANOVA design varying book reading (present/absent), amount of learning (processing once or twice), and retention interval (2 or 3 weeks). Participants learned a list of words (half from the book) in Session 1 and in Session 2 evaluated a new list of words to discriminate which words appeared in the first list and which did not. A complex set of significant results appeared in the data. In general, however, there was not strong support for the hypothesis that information in self-help books interferes with previously learned verbal material.

Introduction

Bibliotherapy refers to the use of literary text for the therapeutic treatment of physical, social, or psychological problems (Glasgow & Rosen, 1978). Self-help psychology books, a subset of material used in bibliotherapy, promise to help readers concerned with drug and alcohol addictions (e.g., Mueller & Ketcham, 1987; Rosellini & Worden, 1985), physical and sexual abuse (e.g., Farmer, 1989; Bass & Davis, 1988), family dysfunction (e.g., Bloomfield & Felder, 1983; Bradshaw, 1988), parenting skills (e.g., Glen & Nelsen, 1989; Satir, 1988), relationships and communication (e.g., Beck, 1989; Kraitsberg, 1989), self-worth and assertiveness (e.g., Bramson, 1988; Branden, 1987), managing life crises (e.g., Lauer & Lauer, 1989; LeShan, 1988), sexual issues (e.g., Raley, 1985; Williams, 1988), academic problems (e.g., Ellis, 1986; Hoff, 1988), physical health (e.g., Freedman, 1989, Hirschmann & Munter, 1989), clinical disorders (e.g., Burns, 1980; Powell, 1989), and a variety of other psychological problems.

It has been estimated that over 2,000 self-help books are published each year (Chaplin, 1989) and the numbers of copies printed suggests that self-help books have become a very popular way to address public and personal concerns. For instance, Pulling Your Own Strings (Dyer, 1978) sold 5 million copies, I'm OK, You're OK (Harris, 1967) sold 7

million copies, Codependent No More sold 3 million copies (Beattie, 1987), and Women Who Love Too Much sold 3 million copies (Norwood, 1985). This popularity may be due to the diverse theories in the books, the low cost of the books, the privacy involved in their use, and the many professionals who recommend these books (Quackenbush, 1991; Warner, 1991). Self-help books are available in almost any new or used book store, and the selection includes hundreds of bestsellers and thousands of non-bestsellers published in the past 50 years (Starker, 1986). Despite the large numbers of various self-help books purchased by the public and prescribed by professionals, the books continue to be a poorly understood phenomenon.

Efficacy of Self-help Book Treatments

Several studies have found clinical benefits with the use of self-help books. Two studies using self-help books for panic disorder compared treatment groups with the wait-list controls and obtained clinically significant outcomes (Gould, Clum, & Shapiro, 1993; Lidren, et al., 1994). In another study, four self-help books were compared for their strength in helping people to cope with loss (Ogles, Lambert, & Craig, 1991). The results indicated that all four book groups showed significant improvement for several symptoms and did not significantly differ from each other. A self-help book was used to reduce alcohol consumption; 55%

of the sample reported reduction in levels of drinking at a 12 month assessment (Sanchez-Craig, Davila, & Cooper, 1996).

In contrast to these positive outcomes other studies have shown little or no support for the use of self-help books. When a self-help book was used with clients suffering from orgasmic dysfunction, improvements in some aspects of the clients' sexual lives were reported but no significant changes in orgasmic responses were found (Trudel & Laurin, 1988). Only a modest degree of clinical improvement for depression has been seen with mild to moderately depressed older adults when treated with a self-help book (Scogin, Hamblin, & Beutler, 1987). The variability of success with self-help book treatments for depression has been found to be related to the personality characteristics of the depressed adults who read the self-help books (Mahalik & Kivlighan, 1988). A self-help marital program combined the use of a self-help book with exercises for dealing with communication, problem solving, sexual dysfunction, etc. (Bornstein et al., 1984). Results of the program were variable and generally couples showed little change. For fear of snakes, both systematic desensitization and programmed fantasy techniques produced clinically significant results whereas an informative book about snakes did not (Crowder & Thornton, 1970). Here imaginal exposure techniques were superior to bibliotherapeutic techniques.

Self-help manuals, similar to self-help books but shorter in format, represent a direct translation of a therapist's treatment into a step-by-step approach. Manuals may contain general information, guide-lines, coping strategies, and techniques for dealing with a specific problem and are usually used with some degree of therapist contact. The procedures provided in manuals tend to be more behavior oriented and involve a more structured approach to self-help treatment than self-help books. However, self-help manuals like self-help books have produced mixed results regarding efficacy. Self-help manuals have been found to be moderately effective for weight loss (Knauss, Knauss, & Harowski, 1983; Pezzot-Pearce, Lebow, & Pearce, 1982). Depressed adults showed increases in quality of life and self-efficacy following use of a self-help manual combined with weekly meetings (Grant, Salcedo, Hynan, & Frisch, 1995). Self-help manuals have been found to produce weaker but longer lasting results than nicotine gum for smoking cessation (Harackiewicz, Blair, Sansome, Epstein, & Stuchell, 1988), yet others have found self-help manuals to add nothing to the use of nicotine gum (Lando, Kalb, & McGovern, 1988). A self-help manual based on behavioral self-control principles was found ineffective for reducing alcohol consumption and alcohol related crimes with young male offenders (McMurran, 1992). These findings support Glasgow and Rosen's conclusion

(1978) that the validation of behavior therapy manuals was extremely variable.

In a more general examination of self-help, Marrs (1995) performed a meta-analysis on self-help treatment studies, with 84% of the studies involving the use of self-help books. His conclusions were that self-help treatments were moderately effective and not significantly different from therapist-administered treatments. Problems such as assertion, anxiety, sexual dysfunction, and depression seemed more amenable to change with self-help treatments than weight loss, studying problems, and alcohol or smoking problems. Authors of other meta-analytic reviews (Gould & Clum, 1993; Scogin, Bynum, Stephens, & Calhoon, 1990) have found self-help book treatments typically to be more effective than no treatment and to produce effect sizes that were less than therapist-administered treatments. However, evaluation of the self-help literature, in terms of the sampling, methodology, and outcome variability of self-help book studies generates concerns about the quality of the research in this domain.

Rationale for Inconsistent Findings

The variability in effectiveness that reviewers (Glasgow & Rosen, 1978; Marrs, 1995; Pardeck, 1990) have found seems to be due to at least two major problems. First, self-help books on the market are widely divergent in quality and

author expertise (Forest, 1988; Forest & Risley, 1985; Rosen, 1987). Most self-help books are not experimentally validated (Delin & Delin, 1994; Riordan & Wilson, 1989; Stevens & Pfof, 1982) and often marketed with exaggerated claims, perhaps because authors and publishers are primarily concerned with commercial considerations (Rosen, 1987). Rosen indicates that there is a need to assess the value of self-help treatments systematically and to educate the consumers in the proper use of self-help programs. Glasgow and Rosen (1978) have concluded that most published self-help treatments have been developed without adequate validation and marketed without concern for professional standards or regulations. Many self-help books appear to be unethical according to APA's Ethical Standards of Psychologists (APA, 1977a) which states that psychologists are to provide services maintaining high professional standards and ensure that their services are applied appropriately. The APA Task Force, recognising the importance of monitoring the flow of self-help material, initiated the development of a set of professional standards that should be used to direct the production and marketing of self-help materials. Monitoring the flow of self-help material could ensure that authors validate their claims before the authors present them to the public.

The second major problem related to inconsistent findings

refers to the methods by which self-help books are investigated. Self-help books have been researched under diverse conditions, for many different problems, and with many target populations and treatment combinations. To add to the confusion, self-help book studies do not always employ adequate experimental procedures, nor take steps to ensure compliance by readers, and may fail to distinguish between self-help books, manuals, or other forms of bibliotherapy (Gould & Clum, 1993). It appears that when sound experimental procedures are implemented (e.g., Bornstein, et al., 1984) reading effects are modest at best and self-help book effectiveness is far less than claimed by authors and publishers.

Clinical Research

Clinical studies on self-help books are common in the literature. However, there are some dangers in relying on clinical studies and limitations in generalising their outcomes to the public use of self-help books. First, in clinical experiments self-help books are often implemented as adjuncts in larger treatment packages, thereby making it difficult to determine the effects of the book reading (Marx, Gyorky, Royalty, & Stern, 1992; Schrank & Engels, 1981). Effects due to prescribed books alone are unimportant to many clinicians because their interests are primarily in obtaining the greatest improvements possible and secondarily

in determining causes of the cures (Katz & Watt, 1992; Azrin, 1977). Some (Blair, Lewis, & Booth, 1992; Pardeck, 1991) recommend self-help books be utilized only as adjuncts in therapy and not as the primary treatment. More recently, however, studies (e.g., Ghosh & Marks, 1987; Jamison & Scogin, 1995; Lidren, et al., 1994; Sanchez-Craig, Davila, & Cooper, 1996) examining book treatments in combination with minimal therapist contact are becoming more common in the literature.

In addition to the adjunct nature of self-help books in therapy, there is a second problem with relying on clinical research. Even though the majority of therapists report using self-help books (Warner, 1991) and judging them to be highly helpful (Starker, 1988), their clinical reports tend to be based on case studies that are not systematic, lack experimental control, and do not ensure client compliance (Pardeck, 1991; Ellis, 1993). With clinical case studies, applying experimental controls may be considered impractical for clinical or ethical reasons and the conclusions tend to be based on self-report measures employed to save time and effort when treating the clients. Adequate experimental assessment of clients and strict adherence to research protocols may not be practised in conditions where the severe discomfort of the clients is obvious or where there is a danger that the clients may hurt themselves or others.

Thus, therapists depend on fallible self-reports as an indication of whether assigned readings have produced changes in attitudes and cognitions which provide little indication of whether assigned readings changed behavior outside the clinic.

A third problem with clinical studies is that findings about self-help books in therapy may not adequately generalise to the nonclinical setting, where the general population employs the books for self-treatment without any therapist contact. The contingencies that take place in the two environments are considerably different from each other. Readers in therapist-administered treatment may be influenced by therapist diagnosed problems, prescribed readings, compliance techniques, accountability, and expectations. In contrast, in a self-administered treatment situation problems are self-diagnosed, readings are self-selected, treatment is self-applied, progress is self-evaluated, and treatment is self-terminated. Self-help books may tend to be used for serious ailments when used in therapist-administered treatment but only minor adjustment problems for the self-administered approaches (Pardeck, 1991).

Most of what we know about self-help book effects come from their use in clinical experiments or case studies (Gould & Clum, 1993; Katz & Watt, 1992; Marrs, 1995; Marx,

Gyorky, Royalty, & Stern, 1992). According to clinical studies, effect sizes for self-help book treatments tend to fall somewhere between effect sizes of no treatment and the effect sizes of therapist-administered treatments. As described, these reported effects may not be representative of most readers that practice self-administration. From the millions of self-help books that are being purchased regularly, only a minority are prescribed and implemented with any degree of therapist contact.

Research on self-help book usage and effectiveness in the public realm is less common than research on usage and effectiveness in therapy, yet is potentially more important. Some survey research, such as Gallup Polls (1951; 1961; 1971; 1988), suggests that nearly 50 percent of the public have read a book (not necessarily a self-help book) and 20 to 30 percent of the public is currently reading or has recently read a book of any kind. In a 1988 Gallup Poll, women were found more likely to buy a self-help book than men. This type of survey information tends to be vague, based only on self-report, and obtained without strict regard to maintaining tight experimental controls. These surveys do not provide information about the reading material or the reader responses. A more accurate understanding of self-help book efficacy would require a more rigorous experimental investigation. The investigation

should seek to discover the self-help book effects common among the general population rather than the therapeutic population alone.

Experimental investigation of self-help book effects with a sample from the general population would involve addressing the essential components experienced before, during, and after self-help book reading. As with any process, key components need to be present for successful behavioral outcomes to occur. For instance, to acquire new information via reading the text would have to be visually detected, accurately perceived, and comprehended. Further, acquisition is the first of three essential components in the process of remembering self-help information (Gleitman, 1991). Storage of the new information into memory is the second component in remembering and will determine whether the newly acquired information is lost or retained. Information is stored in short-term memory for immediate availability and may or may not become stored in long-term memory for later recall. Retrieval is the third component of remembering which completes the process and confirms that the other components of the process have occurred successfully.

For self-help books to prove beneficial, the text would need to be detected, perceived, and comprehended for acquisition, then stored for long-term memory, and retrieved

at a future time. If the process of remembering self-help information is incomplete it is unlikely that reading will initiate changes in cognitive, emotional, or behavioral functioning. Alternatively, if the process is complete and memory for the newly acquired self-help information has occurred, the newly acquired information has initiated cognitive changes to pre-existing memories. These cognitive changes that occur during acquisition may indicate that some learning has taken place. It is believed that changes in cognitions, emotions, and behaviors are possible if new information is acquired and if it interacts with old information.

The ability to retrieve newly acquired information can be explained in part by the occurrence of interference. According to the interference theory, there are processes that impede storage or retrieval of information (Klimesch, 1994). Interference was first discovered when Jenkins and Dallenbach (1924) found that retention was much greater for students who learned nonsense syllables before bedtime and were tested in the morning than students who did the learning in the morning and were tested later in the day. Increased rates of forgetting were believed to be due to interference from daily activities. Keppel and Underwood (1962) found that an important factor in generating interference was the amount of similarity between items

presented. Items that closely resembled previously learned items tended to make recollection of the previous items more difficult. Two seemingly opposing processes were believed to be at work for poor recollection. As cumulative cognitive load functioned to limit the availability of the most recently presented items, spontaneous recovery functioned to increase the availability of past items presented earlier.

Interference theory has been used to explain two distinctly different types of interference. Acquisition of new ideas may interfere with retrieval of previous or future learned information and there are practical implications in knowing whether it is the former or the latter that occurs. Prior learning that disrupts memory for new information is the process of proactive interference, whereas new information that impairs memory of the past is the process of retroactive interference (Parkin, 1993). Retroactive interference would be the acquisition of new information that produces cognitive change and impairs the accurate retrieval of previously learned information. Retroactive interference is considered most relevant for the present research and has strong implications for clinical practice.

Interference for the retrieval of past memories may help to explain some occurrences of recovered and fabricated memories of abuse (Green, 1992). Some memories could be accurate even though inaccessible for some time, while other

memories could be false because they were reconstructed through the acquisition of new information. There is an ongoing debate (Searleman & Herrmann, 1994) about whether "repressed" memories are truly "recovered" or whether present events are affecting memory of past experiences. Recently, issues of false versus recovered memories have been given much attention by therapists, researchers, and the media. There has been a substantial rise in reported cases of sexual abuse occurring 20, 30, or 40 years earlier and based on the recovery of repressed memories (Loftus, 1993). Families have been disrupted, torn apart, and dragged into lengthy court battles in efforts to uncover the authenticity and accuracy of reported experiences. The flood of alleged reports has led to the development of the False Memory Syndrome Foundation which seeks to better understand the spread of false memory reports, prevent new cases of false memory, and aid both the victims making the allegations and those falsely accused (Searleman & Herrmann, 1994). Authors of self-help books and the therapists who prescribe them, on the other hand, have not remained objective on these issues (Loftus, 1993).

A number of self-help books, such as The Courage To Heal (Bass & Davis, 1988), I Never Told Anyone (Bass & Thornton, 1991), and Secret Survivors (Blume, 1990), are available to assist potential victims in recovering lost or repressed

memories. Some therapists have used these self-help books to aid their clients in recalling memories of sexual or physical abuse. The sudden increase of book and therapist assisted reports of repressed memories has led many memory researchers and therapists to become critical of repressed memories that have been recovered through books such as The Courage To Heal (Bass & Davis, 1988). Wakefield and Underwager (1992) found this book involved in nearly all of several hundred cases of derepressed memories in clients. The positive correlation between the book in question and the large number of cases in which it was found to be used may suggest the book's strong influence on client accuracy of reporting.

Some memory researchers and therapists (Loftus, 1994; Schacter, Curran, & Galluccio, 1996a; Searleman & Herrmann, 1994) believe that patients are being encouraged to reconstruct or fabricate prior instances of abuse or victimisation. Popular writings combined with therapist suggestions seem to be interfering with the memories of actual past experiences and facilitating the construction of new memories. For example, readers are being told that if they "feel" like they have been abused even though they do not remember being abused, then they likely have been (Loftus, 1993). Readings contain suggestive ideas that prompt readers to develop new interpretations of past

events. The newly acquired self-help ideas interfere with the patients' accurate retrieval of old information.

Currently, there has been no research on interference caused by self-help book reading, thus the amount of distortion in memory of the past caused by the books was unknown and this important question was often evaluated more by emotional response than by empirical knowledge. The purpose of the present investigation was to address this question: Do self-help books distort memories for previously learned information? Three major factors were dealt with to answer this question. First and most important was the presence or absence of self-help reading and its effects on retrieval of past memories. Second was the amount of learning that took place prior to testing. Third was the length of time between learning and testing for memories.

Considering what has been shown so far in terms of experimental research supporting theories of retroactive interference and the occurrences of false memories, self-help book reading could have led to retroactive interference and the inaccurate retrieval of memories of the past. In addition, the accuracy of retrieval was thought to be influenced by the extent of prior learning and the length of time the past memories were retained.

The quality or quantity of learning that takes place before the testing of memories is a very important issue in

memory research. First, the quality of learning has been investigated extensively by Craik and Lockhart (1972). According to White (1983, p.426), Craik and Lockhart's (1972) article identifying various levels of processing "undoubtedly has the greatest influence of any single contribution published in the 1970's". Three levels of processing were shown to be associated with the amount of retention (Baddeley & Woodhead, 1982; Craik, 1990; Craik & Lockhart, 1972). Craik and Tulving (1975) demonstrated three levels of encoding when participants were asked to make judgements about a list of words. Shallow, intermediate, and deep processing constituted making judgements about whether the word was in uppercase, a rhyme with another word, or the appropriate fit in a sentence completion, respectively. The three levels of processing were based on the varying amounts of retention. In regards to the deepest level of processing, there was evidence that an elaboration effect may account for semantic performance being superior (Parkin, 1993). That is, semantic text may involve a more richly encoded memory trace and therefore be more readily accessible. In an example of varying levels of processing, Loftus (1980) had participants view a series of landscapes and measured recognition for three conditions: tree counting, pleasantness, and meaning of life. Responses to pleasantness and meaning of life conditions resulted in better

recognition than counting but did not differ from each other.

The second characteristic about learning is quantity. Rehearsal is the natural tendency to repeat information when attempting to remember it (Parkin, 1993). Rundus (1971) showed that recall of word items was highly correlated with the amount of rehearsal each word item received. Rehearsal was found (Flavell, Beach, & Chinsky, 1966) to be a common memory strategy for children of varying ages and became increasingly more common as children got older. Green (1992) showed that adults tend to use rehearsal as an intentional learning strategy to improve recognition performance. Considering the research on the effects of rehearsal, repeated presentations of information was expected to produce more advanced learning. With the impact that quality and quantity of learning might have had on memory performance, learning that involved a semantic form of repeated presentation was expected to produce better memories for all information including self-help concepts.

The third crucial factor for the investigation of memory was the time between the acquisition of information and its subsequent retrieval. As discussed, when new information is acquired, the acquisition may affect accurate retrieval of past information (Healy et al., 1992; Healy, Fendrich & Proctor, 1990; Lubusko & Forest, 1989). This interference of

new information was believed to occur over time in a cumulative fashion. In general, the more time that passes between initial learning and retrieval, the more distortion that takes place. This belief corresponds with "the basic law in memory experiments", often referred to as output interference (Green, 1992, p.15). The more ideas you have to remember at one time the poorer the recall or recognition. Peterson and Peterson (1959) did an extensive investigation with retention intervals in conjunction with distraction and found patterns of rapid forgetting associated with increased intervals. Ellis and Nimmo-Smith's (1993) research on prospective memory suggests that effects of retention intervals on recollection may be specific to the activity. Thus, depending on the task at hand, retention intervals might have been a more or less significant factor.

To summarise, self-help books have become an extremely popular method of dealing with psychological problems, despite their variability in treatment outcomes. Studies involving self-help books are relatively common but tend to include therapist-administered books in combination treatments and fail to implement experimental controls with compliance techniques. Retroactive interference resulting from the acquisition of new self-help ideas from self-help books could be responsible for the construction of false memories. The present study investigated the effect of self-

help book reading on memory for information learned at varying amounts of practice and retained over varied intervals.

Specific problems

1. Does reading a self-help book affect the accuracy in a discrimination test for previously learned self-help words?

2. Does the amount of processing of self-help words affect accuracy of performance in the discrimination test?

3. Does the length of the retention interval affect accuracy of performance in the discrimination test?

If self-help books affect readers, as suggested by past authors, readers, therapists, and researchers, we would expect distortions to occur as a result of reading the self-help material. The new self-help information would interfere with remembering of words from a prior word list. Poorer memory performance would be expected to result from less processing of the original list and longer retention intervals.

Method

Participants

One-hundred-seventy-five introductory psychology students were recruited and given course credit for participation. Participation was limited to women between the ages of 17 and 25, who spoke English as their first language. The gender limitations were incorporated because men and women

differ in verbal ability, interest in self-examination, and attitudes towards use of self-help books (Gold & Gloade, 1988; Schilling & Fuehrer, 1993). Age restrictions were specified to prevent age-related outliers from occurring in the data. Six cases were dropped from the data set because they were found to be either univariate or multivariate outliers.

Materials

The reading material consisted of Chapters 1 to 3 (pp. 1-64) in the self-help book titled Women Who Love Too Much. This was a pocket-size paperback that has been a New York best-seller for over four months and sold over 3 million copies. The original publication date was 1985 and the current edition continued to be sold. The book was targeted at women who have become or were in danger of becoming "obsessed" with men that mistreat them. The author discussed women's love for men who were "emotionally unavailable and addicted to work, alcohol, or other women". The author suggested ways to change the "destructive love" and recover from the damage of being in a poor relationship. The reading material was considered appropriate for both the sample being tested and the clinical concerns regarding false or repressed memories. First, considering the age of the women in the sample, a majority of the women were expected to have dated, currently were dating, or were seeking a partner.

Issues of mate selection, relationship maintenance, or relationship improvement were expected to be significant to the participants. Second, the issues presented by the author dealt with the ongoing mistreatment of women that existed undetected or remained covered up by the victims. These issues may have been susceptible to processes of retroactive interference.

The experimentally established memory consisted of a list of 80 words (see Appendix A); 40 self-help words from the primary self-help book Women Who Love Too Much, and 40 self-help words not in the primary self-help book. Self-help words not in Women Who Love Too Much were obtained from five other self-help books. All self-help words were selected on the basis of their frequencies in the books the words were selected from. Word frequencies were determined with a LISP-based computer program.

Learning List: 80 words

—40 words from book

—40 related words

The test phase list of words consisted of 80 words containing: (a) 20 self-help words presented in the learning phase from Women Who Love Too Much, (b) 20 self-help words from other self-help books presented in the learning phase, (c) 20 self-help words from the Women Who Love Too Much not previously presented, and (d) 20 self-help words from other self-help books not previously presented.

Test List: 80 words

- 20 from primary book, in learning list
- 20 from other books, in learning list
- 20 from primary book, not in learning list
- 20 from other books, not in learning list

To complete both the learning list and the test list, 60 words from the primary self-help book and 60 words from other self-help books were needed; 80 to appear on the learning list and 40 new words for the test list. Each of the 60 words fell into one of three categories: on both learning and test list, on learning list, or on test list. Words were selected from self-help books and appeared in those books with different frequencies. To equate words in

the three categories, the 60 words were grouped into sets of three based on similar frequency rates and then were randomly assigned to appear on both the learning and test list, just the learning list, or just the test list (see Appendix A for frequencies and groupings).

Design and Procedure

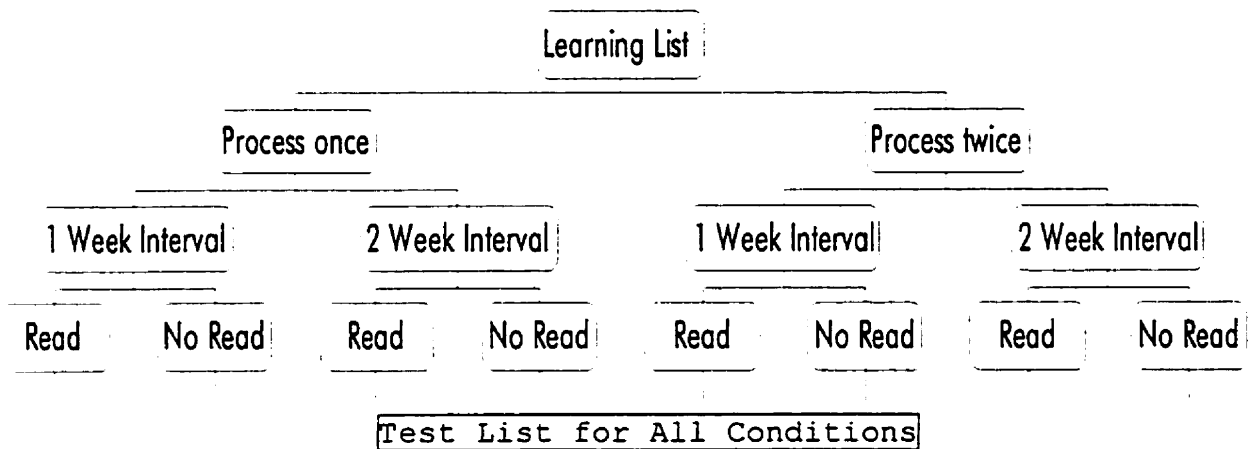
The study consisted of a 2 x 2 x 2 multivariate analysis of variance (MANOVA) design. Participants were assigned to one of eight groups. All participants processed the word list in the learning phase and evaluated the test word list in the test phase to determine the effects of book reading (present or absent), amount of learning (processing once or twice), and length of interval (2 or 3 weeks). All eight groups were presented with an 80-word list during the learning phase. In the first processing condition, half the participants were asked to read each word and rank it on a scale from 1 to 5 how characteristic the word was of themselves. In the second processing condition, the remaining participants made the same judgement and also a second judgement about whether the word was characteristic of their closest friend (see Appendix B for processing list). One half of participants were presented with the word list three weeks before the test phase and the other half were given the word list two weeks before the test phase.

In the reading phase, one week before the test phase,

four groups were given a reading task and four groups did not receive the reading task. The reading took place one and two weeks after learning the self-help word list. Groups met in a reading room and were assigned 3 chapters of a self-help psychology book to be read within a two hour reading time. Readers were expected to complete the reading before departure. Readers were told that a memory test for the reading material would follow the reading task and would not be a difficult test if the reading assignment was completed.

In the test phase, one week after the reading assignment, all eight groups received the altered list of words. Accuracy of identifying the words from the learning list was measured using Sternberg's (1975) procedure of discriminating between "old" and "new" items (i.e., also called Single Item Probe Technique or Study Test Procedure). This technique has been commonly used to test memory performance by measuring accuracy in discriminating previously learned information from newly presented information and measuring the latency to respond. Although response latency was considered a sensitive measure of performance, it was not appropriate for assessment of self-help book effects. We were concerned with comparing effects related to accuracy that were more like real-life situations than comparing effects related to seconds and milliseconds

of time required to respond. Participants were given the test list in paper-and-pencil form. Accuracy was determined by the number of correct "old" and "new" judgements made on the words in the test list (see Appendix B).



Analysis

A three-way multivariate analysis of variance with two-tailed tests was used to compare memory scores of groups across reading, amount of processing, and retention interval. Scores were based on a percent of correct responses in discriminating the words presented in the second list that did or did not appear in the first list.

A multivariate analysis allowed for independent assessment of several dependent variables. There were eight ways participants could respond to test words: (a) correctly or incorrectly identifying "old" words obtained from the

primary self-help book that were in the original list, (b) correctly or incorrectly identifying "new" words obtained from the primary self-help book but were not presented in the original list, (c) correctly or incorrectly identifying "old" words obtained from other self-help books that were in the learning list, and (d) correctly or incorrectly identifying "new" words from other self-help books but were not presented in the learning list. The analysis of responses were based on the number of correct responses.

If the designated book reading affected the prior learning, readers, participants with less processing, and participants with longer retention intervals were expected to be less accurate in their judgements than non-readers, participants with more processing, and participants with shorter retention intervals, respectively. Using Cohen's (1969) f value of .25 to represent size of a medium effect in the behavioral and social sciences, the power was estimated at .89 for the main effects, .61 for the two-way interactions, and .34 for the three-way interactions.

Results

Tables 1-4 display the means and standard deviations for each of the dependent variables: (a) "old" words "in the book", (b) "old" words "not in the book", (c) "new" words "in the book", and (d) "new" words "not in the book". Each table displays the results for a specific dependent variable

across the eight experimental conditions created by crossing the three independent variables: (a) reading, (b) learning, and (c) retention interval.

In order to determine if any of the dependent variables were redundant, a Pearson Correlation Coefficient was calculated between all pairs of dependent variables. These coefficients are presented in Table 5. The six correlation scores are significantly different from zero but none are sufficiently high to suggest that any of the variables are redundant. The scores for "old" words "in the book" are positively correlated with the scores for "old" words "not in the book". Similarly, the scores for "new" words "in the book" are positively correlated with scores for "new" words "not in the book". The highest of the six correlations was between "new" words "in the book" and "new" words "not in the book"

In contrast to these positively correlated scores, the scores of the "old" words "in the book" are negatively correlated with both the "new" words "in the book" and the "new" words "not in the book" and the scores of the "old" words "not in the book" are negatively correlated with both the "new" words "in the book" and the "new" words "not in the book". This suggests that there are two groups of scores, scores for "old" words and scores for "new" words. Within each group performance is positively correlated but

Table 1

Mean of Recognition Scores for "Old" Words "in the Book"

N = 169	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	15.72	14.90	15.73	16.29
<u>SD</u>	2.56	2.55	2.19	2.65
<u>n</u>	18	20	22	21
Nonread				
<u>M</u>	15.52	16.15	15.74	16.00
<u>SD</u>	3.10	2.66	2.60	2.34
<u>n</u>	23	26	19	20

Table 2

Mean of Recognition Scores for "Old" Words "Not in the Book"

N = 169	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	14.56	15.55	15.68	15.62
<u>SD</u>	2.23	1.67	2.21	2.22
<u>n</u>	18	20	22	21
Nonread				
<u>M</u>	14.70	15.08	15.42	15.70
<u>SD</u>	2.44	2.45	3.84	2.20
<u>n</u>	23	26	19	20

Table 3

Mean of Recognition Scores for "New" Words "in the Book"

N = 169	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	10.06	10.90	10.64	9.71
<u>SD</u>	2.96	2.27	1.73	3.00
<u>n</u>	18	20	22	21
Nonread				
<u>M</u>	11.52	10.96	10.11	10.60
<u>SD</u>	3.12	2.88	3.26	2.60
<u>n</u>	23	26	19	20

Table 4

Mean of Recognition Scores for "New" Words "Not in the Book"

N = 169	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	11.17	12.40	11.41	10.91
<u>SD</u>	3.13	2.42	3.19	3.27
<u>n</u>	18	20	22	21
Nonread				
<u>M</u>	12.52	12.31	10.81	12.75
<u>SD</u>	2.87	3.19	4.42	3.88
<u>n</u>	23	26	19	20

Table 5

Intercorrelations Between Recognition Scores of Words

N = 169	1	2	3	4
1. "Old" Words "in the Book"	---	.455*	-.523*	-.323*
2. "Old" Words "Not in Book"		---	-.394*	-.252*
3. "New" Words "in the Book"			---	.593*
4. "New" Words "Not in the Book"				---

Note. * $p < .01$.

between the two groups performance is negatively correlated.

The first step in the inferential analysis of this data was to test the effects of the independent variables on all dependent variables at the same time. To accomplish this, a Multivariate Analysis of Variance (MANOVA) test was conducted on the data. This test uses the independent variables to predict a linear combination of the dependent variable scores. Prior to running the MANOVA test, the five assumptions underlying this procedure were examined to determine if the data met required MANOVA standards. These assumptions about the data are: (a) normality, (b) linearity, (c) homoscedasticity, (d) multicollinearity, and (e) singularity.

The first assumption tested was the normality of distributions. When the variables are normally distributed, the residuals of the analysis are also normally distributed. To test this, the distributions of each variable were tested for symmetry around a mean value of zero. Analysis of graphed distributions indicated no significant deviations. Each condition contained twenty or more degrees of freedom and, according to Tabachnick and Fidell (1989, p. 441), should achieve multivariate normality of the sampling distribution even with slightly uneven sample sizes. In addition, skewness and kurtosis scores were calculated for

each dependent variable distribution, and they revealed no significant distortions ($\alpha = .001$). The skewness scores were similar across different dependent measures.

Distributions of scores on each of the dependent variables were symmetrical for the eight conditions. Even if modest violations of normality of the distributions had occurred, it is believed the MANOVA analysis is robust to such distortion (Mardia, 1971, p. 378).

The assumption of linearity requires that any two variables tested maintain a straight-line relationship. To test this, bivariate scatterplots were created to assess the linearity of each dependent variable. Dependent variables appeared to be linearly related, as no significant variations or distortions from the required oval shape were found among the scatterplots.

The assumption of homoscedasticity is that the variability of scores for one variable is similar to the variability of scores for all other variables. Homoscedasticity was evaluated using the bivariate scatterplots and standard deviations for each distribution; no significant deviations were found.

Finally, the assumption of multicollinearity is that dependent variables are not highly correlated (.90 or higher) and thus each provides unique information to the

outcome. Singularity would be a case of perfect correlation between one or more variables. For tests of multicollinearity, each dependent variable was regressed against all other dependent variables to determine how well that variable was predicted from the other variables. The regression test indicated low to moderately low correlations between any of the dependent variables indicating no problems with multicollinearity. Furthermore, no dependent variable was found to be a linear combination of other dependent variables, thus also satisfying the assumption of singularity.

The next step after the assumptions were tested was to search the data for outliers. If extreme scores exist in a data set, they can significantly alter means, standard deviations, and the results of inferential statistics. In the assessment of univariate outliers on a single dependent variable, four scores were found to be three standard deviations away from the means of their respective groups and thus considered to be univariate outliers. They were removed from the data set.

In contrast to univariate outliers, multivariate outliers are cases with a combination of two or more extreme scores. For assessment of the multivariate outliers, the Statistical Package for the Social Sciences (SPSS) REGRESSION was used to determine the Mahalanobis distance

with the degrees of freedom equal to the number of variables and a conservative probability estimate of $p < .001$. The critical cut-off was found to be $\chi^2(4) = 18.47$. Three of the four cases found to be univariate outliers were also multivariate outliers. Cook's distance analysis for locating multivariate outliers, in the General Linear Model (GLM) of SPSS, confirmed these findings. The four outliers were removed and regression analysis was conducted again to detect any additional outliers. Two more outliers were detected and removed from the data set. A final regression test for multivariate outliers indicated there were no remaining outliers in the data set.

A MANOVA test was performed to statistically evaluate the three independent variables (reading, amount of learning, and retention interval) on the four dependent variables. The SPSS GLM procedure found no significant main effects, two-way interactions, or three-way interaction for any of the four dependent variables. Table 6 contains the results of this analysis. The scores were obtained using the Wilks' Lambda multivariate test, which was consistent with scores by Pillai's Trace, Hotelling's Trace, and Roy's Largest Root. According to the results of the MANOVA test, the dependent variable differences between treatment condition were not significant. Reading, amount of learning,

Table 6

Multivariate Analysis of Variance for Book

Source	<u>df</u>	F Score			
		"Old" Words "in the Book"	"Old" Words "Not in the Book"	"New" Words "in the Book"	"New" Words "Not in the Book"
Reading (R)	1	0.233	0.129	1.209	1.489
Processing (P)	1	0.812	3.174	1.937	1.504
Interval (I)	1	0.154	1.243	0.007	1.425
R x P	1	0.681	0.012	0.470	0.000
R x I	1	0.517	0.036	0.000	0.235
P x I	1	0.394	0.659	0.173	0.041
R x P x I	1	1.179	0.447	2.716	3.581
error	161				

Note. None of the F scores were significant.

and length of retention interval did not affect the accuracy in discriminating "new" from "old", previously learned self-help words. These results are inconsistent with the experimental hypotheses and are surprising, especially for the variables amount of learning and retention interval, given that these are typically significant in learning and memory studies.

Because the MANOVA examines a linear combination of the dependent variables and not each variable by itself, it is also necessary to investigate the data with the univariate Analysis of Variances (ANOVA) as well. Tables 7-10 provide the means and standard deviations for each dependent variable for these new analyses. The data in these tables are slightly different than that used in the MANOVA because multivariate outliers were removed there but not in the following tables. The SPSS GLM was used to conduct the ANOVA analysis, evaluating each variable in a 2 x 2 x 2 design with unequal sample scores. To begin, the four univariate outliers that were previously discovered, were removed before conducting the traditional ANOVA on each dependent variable. Results indicated no significant scores for main effects or two-way interactions. The analysis did show a significant three-way interaction for one of four dependent variables, "new" words "not in the book" (refer to Table 11

Table 7

Descriptive Analysis of Recognition Scores for "Old" Words
"in the Book"

N = 171	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	15.75	14.90	15.73	16.29
<u>SD</u>	2.75	2.55	2.19	2.65
<u>n</u>	20	20	22	21
Nonread				
<u>M</u>	15.52	16.15	15.74	16.00
<u>SD</u>	3.10	2.66	2.60	2.34
<u>n</u>	23	26	19	20

Table 8

Descriptive Analysis of Recognition Scores for "Old" Words
"Not in the Book"

N = 171	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	14.30	15.55	15.68	15.62
<u>SD</u>	2.98	1.67	2.21	2.22
<u>n</u>	20	20	22	21
Nonread				
<u>M</u>	14.70	15.08	15.42	15.70
<u>SD</u>	2.44	2.45	3.84	2.20
<u>n</u>	23	26	19	20

Table 9

Descriptive Analysis of Recognition Scores for "New" Words
"in the Book"

N = 171	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	9.70	10.90	10.64	9.71
<u>SD</u>	3.34	2.27	1.73	3.00
<u>n</u>	20	20	22	21
Nonread				
<u>M</u>	11.52	10.96	10.11	10.60
<u>SD</u>	3.12	2.88	3.26	2.60
<u>n</u>	23	26	19	20

Table 10

Descriptive Analysis of Recognition Scores for "New" Words
"Not in the Book"

N = 171	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	10.75	12.40	11.41	10.91
<u>SD</u>	3.48	2.42	3.19	3.27
<u>n</u>	20	20	22	21
Nonread				
<u>M</u>	12.52	12.31	10.81	12.75
<u>SD</u>	2.87	3.19	4.42	3.88
<u>n</u>	23	26	19	20

Table 11

Analysis of Variance for the Effects of Book

Source	<u>df</u>	F Score			
		"Old" Words "in the Book"	"Old" Words "Not in the Book"	"New" Words "in the Book"	"New" Words "Not in the Book"
Reading (R)	1	0.216	0.030	1.670	2.009
Processing (P)	1	0.780	3.597	1.370	1.040
Interval (I)	1	0.140	1.566	0.015	1.934
R x P	1	0.651	0.005	0.779	0.044
R x I	1	0.541	0.127	0.039	0.079
P x I	1	0.415	0.919	0.380	0.000
R x P x I	1	1.214	0.972	3.365	4.354*
error	163				

Note. *p < .05.

for the univariate analysis). The results obtained from running four univariate ANOVAs support the finding obtained from running the MANOVA test. Reading, amount of learning, and retention interval did not affect the accuracy of discriminating "old" from "new" self-help words.

At this point the results have failed to support any of the hypotheses using traditionally accepted methods of analysis. None of the independent variables predicted the dependent variable means.

In 1998, Wilcox proposed that there were significant dangers regarding the use of traditional methods of analysing data. Traditional statistical procedures may lead to suspect interpretations, if the data is not managed appropriately. He suggested that simply removing outliers from a data set may generate misleading results, even if one assumes normal or nearly normal distributions. It could be that distributions appear normal, yet maintain inflated tails. Extreme scores can exist in the tails of the distribution undetected, greatly affecting the means and standard deviations. According to Wilcox, there are more accurate and powerful statistical methods available for analysis and he proposed that a desirable statistical technique for preventing inflated tails from influencing results is to trim the means. The recommended trim is to remove 20% off the highest and 20% off the lowest scores in

the data set to ensure all extreme scores are removed.

To see if our research conclusions would be altered if Wilcoxon's method were used, the data from the experiment was subjected to 20% trimming. To conduct an ANOVA with 20% trimmed data required that eight to ten extreme scores be removed from each dependent variable in each condition. Tables 12-15 give the means and standard deviations for the trimmed data.

A 2 x 2 x 2 General Linear Model ANOVA with trimmed data was performed on each dependent variable to correct for possible inflated tails in the distributions, thus increasing the power to detect the effects of the independent variables. The ANOVA test found significant effects of the reading variable for "new" words "in the book" and "new" words "not in the book". Significant results were found with the processing variable for "old" words "not in the book". Significant results were also found with the interval variable for "new" words "not in the book". A Significant three-way interaction was found for each dependent variable except "old" words "not in the book" (refer to Table 16 for univariate analysis on the trimmed data for each dependent variable). Analysis of the trimmed data yielded results that are

Table 12

Descriptive Analysis of Recognition Scores for "Old" Words
"in the Book" with 20% Trimmed Means

N = 109	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	15.92	15.33	15.73	16.62
<u>SD</u>	0.79	1.23	1.34	1.04
<u>N</u>	12	12	15	13
Nonread				
<u>M</u>	15.73	16.56	15.92	16.14
<u>SD</u>	1.91	1.55	1.31	1.17
<u>N</u>	15	16	12	14

Table 13

Descriptive Analysis of Recognition Scores for "Old" Words
"Not in the Book" with 20% Trimmed Means

N = 109	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	14.67	15.83	15.60	15.69
<u>SD</u>	1.07	1.03	1.55	1.38
<u>N</u>	12	12	15	13
Nonread				
<u>M</u>	14.80	15.06	15.42	15.57
<u>SD</u>	1.32	1.06	1.17	1.40
<u>N</u>	15	16	12	14

Table 14

Descriptive Analysis of Recognition Scores for "New" Words
"in the Book" with 20% Trimmed Means

N = 109	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	9.67	10.92	10.60	9.77
<u>SD</u>	1.72	1.24	1.06	1.79
<u>n</u>	12	12	15	13
Nonread				
<u>M</u>	11.53	11.00	10.17	10.86
<u>SD</u>	1.92	1.55	1.34	1.29
<u>n</u>	15	16	12	14

Table 15

Descriptive Analysis of Recognition Scores for "New" Words
"Not in the Book" with 20% Trimmed Means

N = 109	Process Once		Process Twice	
	2 Week	3 Week	2 Week	3 Week
	Interval	Interval	Interval	Interval
Read				
<u>M</u>	10.83	12.17	11.60	11.08
<u>SD</u>	1.53	1.34	2.06	1.19
<u>n</u>	12	12	15	13
Nonread				
<u>M</u>	12.60	12.75	11.17	13.07
<u>SD</u>	2.06	1.34	2.69	2.53
<u>n</u>	15	16	12	14

Table 16

Analysis of Variance for the Effects of Book with 20%Trimmed Means

Source	<u>Df</u>	F Score			
		"Old" Words "in the Book"	"Old" Words "Not in the Book"	"New" Words "in the Book"	"New" Words "Not in the Book"
Reading (R)	1	0.526	0.928	4.957*	7.008**
Processing (P)	1	0.683	3.850*	2.171	0.943
Interval (I)	1	1.684	2.941	0.243	3.760*
R x P	1	1.637	0.116	1.226	0.285
R x I	1	0.526	0.742	0.050	0.710
P x I	1	0.683	1.463	0.537	0.005
R x P x I	1	3.929*	0.978	7.980**	5.974*
error	163				

Note. *p < .05. **p < .01.

more consistent with the expected results than those obtained using the MANOVA test and traditional ANOVA test. For two of the four dependent variables, reading affected the accuracy of the readers' performance on the recognition test. For one of the dependent variables, the amount of processing affected the accuracy of performance on the recognition test. For one of the dependent variables, the length of the retention interval affected performance on the recognition test. Interestingly, however, most of the expected effects were not evident; (a) for two of the dependent variables the readers did not perform significantly different than the nonreaders, (b) for three of the dependent variables, those that processed the list twice did not perform significantly different from those that processed the list once, and (c) for three of the four dependent variables, those that experienced a two-week retention interval did not perform significantly different from those that had a three-week retention interval. Unfortunately, the overall results are only partly consistent with what was hypothesised, making any definitive conclusions difficult to generate.

In an attempt to understand the results, a post hoc analysis was performed on the data. Table 5 shows that performance for "old" words "in the book" was positively correlated with performance for "old" words "not in the

book" and performance for "new" words "in the book" was positively correlated with performance for "new words "not in the book. In contrast, performance for "old" words" "in the book" and "not in the book" was negatively correlated with performance for "new" words "in the book" and "not in the book". These systematic differences in performance led me to investigate the frequency and accuracy of the "old" and "new" response categories. Tables 1-4 indicate that participants performed better in their responses to "old" words than to "new" words. The mean accuracy rate was 15.53 for responses to "old" words and 11.17 for responses to "new" words.

There were several steps taken to examine the systematic differences in performance for responses to "old" and "new" words. First, it was necessary to determine whether the number of correct responses to "old" words was the result of a higher frequency of "old" judgements made by participants. If it was the case that participants judged words to be "old" more often than "new", then participants would also be expected to make more correct judgements to "old" words than to "new" words. Further analysis might explain whether the difference in performance for "old" and "new" words could be accounted for by the difference in frequency of "old" and "new" judgements.

To measure frequency of "old" and "new" judgements, the

data was changed from the number of correct judgements in each of the four categories into the total number of "old" judgements. To determine the total frequency of "old" judgements, the number of correct "old" judgements for each participant was added to the number of incorrect "old" judgements for the participant. A mean frequency value was then calculated for all "old" judgements. To determine the total frequency of "new" judgements, the frequencies of "old" judgements were subtracted from the total number of responses. The mean frequency value was then calculated for all "new" judgements. The mean frequency of "old" judgements was found to be 48.15 and the mean frequency of "new" judgements was 31.85. These results show that participants made more frequent "old" judgements to the test questions than "new" judgements. A t -test for dependent means was conducted on the data set to determine whether the difference in frequency was statistically significant. A t -test for dependent means, like a repeated measures design, calculates the means from the differences between pairs of scores obtained from each individual. The Paired Sample t -test comparing "old" with "new" judgements showed a significant difference in frequency of responding, at $t(170) = -13.37$, $p < .001$. The frequency of "old" judgements made by the participants was significantly higher than the

frequency of "new" judgements. In addition, a One Sample t -test showed that the frequency of "old" and "new" judgements was significantly different from the theoretically expected chance level of 50%, or 40 out of 80 judgements, $t(170) = 13.37$, $p < .001$.

Participants made significantly more "old" judgements to the test words than "new" judgements and significantly more than would theoretically be expected by chance. This finding is consistent with the results indicating that participants in every condition tended to obtain higher accuracy scores on "old" words than they did on "new" words. The next step in determining whether frequency could account for the difference in performance on "old" and "new" words was to determine whether the rate of correct judgements was significantly different than would be expected by the empirical level of chance. This analysis involved calculating the empirically expected performance on "old" and "new" words and comparing it with the observed performance. The empirical level of chance was a value based on the observed frequency of "old" and "new" judgements. To determine the empirically expected performance for "old" and "new" words, two probability scores were generated: (a) one for responses to "old" words and (b) one for responses to "new" words. These biased probabilities were different than

the traditional unbiased probabilities of 0.5 for 2 choices. The biased probability scores were computed by dividing the mean frequency value for "old" judgements by the number of possible judgements (i.e., $48.15/80$), and dividing the mean frequency value for "new" judgements by the number of possible judgements (i.e., $31.85/80$). Then, the biased probability of making an "old" judgement was multiplied by the total number of "old" words in the test list (i.e., $.602 \times 40$), and the biased probability of making a "new" judgement was multiplied by the total number of "new" words in the test list (i.e., $.398 \times 40$). Based on these calculations, the empirically expected mean scores for correct responses to "old" words would be 24.08 out of 40, and for correct responses to "new" words would be 15.92 out of 40. In contrast, the observed mean performance for "old" words was 31.06 out of 40 and for "new" words was 22.34 out of 40. A One Sample t -test reveals a significant difference between the empirically expected mean scores and the observed mean scores for "old" words at $t(170) = 21.15$, $p < .001$ and for "new" words at $t(170) = 14.99$, $p < .001$. Based on the participants' frequency of "old" and "new" judgements, the participants performed better for "old" and "new" words than would be empirically expected by chance.

In general, participants were making more correct

judgements to "old" words than to "new" words. Furthermore, the percentage of correct responses to "new" words was near the theoretical chance level. However, based on these responses, the comparison between the empirically expected performance and the observed performance indicates participants were making more correct judgements to "old" and to "new" words than would be expected by chance. The tendency to make more frequent "old" judgements explains, in part, the better performance on "old" words over "new".

Discussion

Generally, the results of this study do not support the idea that the specific book used in this experiment affected readers' recognition of "old" and "new" words. The MANOVA did not detect any of the hypothesized effects, nor did any of the traditional ANOVAs. Readers did not perform significantly different than nonreaders. In addition, performance was not significantly better for those participants who processed the word list twice compared to those who processed the list once, nor for those who experienced a two-week retention interval compared to those with a three-week interval. If Women Who Love Too Much was affecting its readers, we would expect distortions to occur in the readers' remembering of prior learned self-help information. These distortions would then be reflected in the accuracy of the readers' performance.

Further investigation of the data using a modern statistical procedure of trimming the means by 20%, led to slightly different results and adjusted interpretations. One difference in the results, using trimmed data instead of untrimmed data, was that readers performed significantly worse than nonreaders for two of the four dependent variables. Interestingly, the difference between readers and nonreaders is only evident for the "new" words (not learned in Session 1) "in the book" (obtained from the experimental self-help book) and "new" words "not in the book" (obtained from other self-help books). A general conclusion from this finding is that nonreaders were more accurate in detecting "new" words than readers, and there was no difference in performance between nonreaders and readers for "old" words (learned in Session 1).

Referring to the differences in performance, readers showed less accuracy for "new" words than nonreaders. When readers were presented with a word that was not learned in Session 1 they showed a bias to evaluate that word to be "old". Thus, "new" words were incorrectly called "old" words. This might be attributed to the reading task that interfered with the accuracy of the evaluations made in the Test Session. Over the course of the experimental process the readers were exposed to more self-help information than nonreaders and when tested had more difficulty

discriminating the "new" words from the old self-help information.

A second difference in the results for the trimmed data over the untrimmed data was found with the processing variable. Participants who processed the self-help words once performed significantly worse than participants who processed the words twice, for one of the four dependent variables. As hypothesized, participants with less learning did not discriminate between "old" and "new" words as accurately as those with more learning. Interestingly, the difference between participants with less and more learning was only evident for the "old" words "not in the book". The process of learning the words seemed to have the expected effect on one dependent variable, but because it was only evident on the single variable, it is difficult to make any conclusive comments about the processing effects.

A third difference in the results for the trimmed data over the untrimmed data was found with the retention interval variable. Participants who were tested three weeks after learning the self-help words performed significantly worse than participants who were tested two weeks after learning the words, for one of the four dependent variables. It was expected that participants with a longer retention interval would not discriminate between "old" and "new" words as accurately as those with a shorter retention

interval. However, the difference between participants with a longer and shorter retention interval was only evident for the "new" words "not in the book". General conclusions regarding the effects of the retention interval are not possible because the effects were evident with only a single dependent variable.

A final difference in results occurred in the three-way interaction. Interestingly, a significant three-way interaction was found for three of the four dependent variables. The three significant variables were: (a) "old" words "in the book", (b) "new" words "in the book", and (c) "new" words "not in the book". Three-way interactions are notoriously difficult to interpret and only add to the ambiguous nature of the results.

The analysis of the trimmed data has yielded some support for all three hypotheses. Four of the twelve main effects were found to be significant. Three of the sixteen interaction effects were significant. In total there were seven significant findings. Interestingly, five of the seven were found for "new" words and only two of the seven were found for "old" words.

In addition to the findings for the trimmed data, post hoc analysis of all the data indicated that participants classified "old" words more accurately than "new" words. Performance was better across all groups of participants for

responses to "old" words. However, higher performance on "old" did not lead to poorer performance on "new" words. Despite the tendency to make fewer "new" judgments, participants consistently scored above their biased chance level for "new" words. Therefore, the higher frequency of "old" judgments did not fully explain the higher accuracy on "old" words or the lower accuracy on "new" words.

The apparent bias towards making "old" judgments may be explained in part by Reder's (1982) work on plausible retrieval. Reder compared the participant reaction times for exact versus plausible recognition judgments. According to the research, people were quicker at making exact judgments of facts than making plausible judgments, when tested immediately after studying the material. However, participants made plausible judgments much faster than exact judgments after a two-day retention interval. It may be that participants responded quickly on exact recognition tasks, when tested immediately after studying the material, because no significant amount of forgetting had begun. After two days had passed, more forgetting had occurred impeding the accuracy of retrieval and the participants needed more time to make exact recognition judgments. In contrast, the reaction time for making plausible recognition judgment was longer than exact judgments when tested immediately after studying the material and shorter than exact judgments when

tested two days later. As time passed and forgetting increased, participants were faster at making plausible judgments than exact judgments. As participants got faster at making plausible judgments than their inefficient exact judgments, they tended to rely on making plausible judgments for their responses.

In the present study on self-help books, participants were presented with self-help material, but were tested for exact recognition. The two- or three-week retention interval likely led to a significant amount of forgetting. Participants were then tested for their recognition of a set of highly related self-help words. It is plausible that any words presented in the test list could also be in the learning list. After the forgetting occurred and the participants experienced the inability to make exact judgments, participants attempted to make plausible judgments about self-help words. By making more plausible judgments rather than exact judgments, the participants exercised the bias towards making more "old" judgments than "new".

The apparent bias towards "old" judgments accounts for some of the differences in the frequency and accuracy between "old" and "new" judgments, but it does not account for the fact that the independent variables were found to be statistically non-significant in the traditional analyses.

Rather, there are methodological issues that may be related to the inconsistencies of the results. First, there may be a methodological difficulty regarding the reading task.

Although, a number of students indicated their interest in the reading material, others may not have seen the book as relevant to their interests or needs. This book was selected and assigned, by the researcher, for the student population. Unlike book shoppers who select a book and are motivated to read it and learn from it, the students were given the book for course credits. It may be that some students were not motivated and failed to concentrate on the material.

Second, there is a methodological concern regarding the processing of the self-help information. In the pretest learning task, two levels of learning were created, by asking participants to make either one or two judgments about the words presented. Participants were asked, "how characteristic is this word of you or your life situation?" and "how characteristic is this word of your closest companion or his/her life situation?". A potential problem with this form of processing is that the questions participants were asked may not have generated enough cognitive activity to establish a firm memory trace. It may be that the participants perceived the questions to be simple and could be answered with very little cognitive effort. Moreover, the same questions were repeated for every

self-help word presented, creating the possibility that participants failed to think deeply about every question. Constant repetition of the required judgments over 80 words may have led to lack of attention and hence lack of cognitive processing on later words. Poor cognitive processing might result in insufficient levels of learning to make recognition of the "old" words possible. A more elaborate and dynamic learning process may clarify the differences between group performance by improving their recognition.

The third methodological concern has to do with the length of the retention interval. Presumably, self-help information has been learned, but cannot be retained to a detectable degree, for a two- or three-week time span. Rather, it may be that the majority of the learned information is forgotten by the second week and the detectable differences between the two- and three-week interval are small. This suggests that the study ought to be repeated with shorter retention intervals to determine the point where forgetting starts to influence performance on the recognition task.

The identification of various methodological concerns reveals a need to conduct further research that addresses the effects of reading, processing, and retention intervals on memory for information in self-help psychology text. The

research should be similar in design, but make modest alterations to the materials employed in the study and the procedures carried out. First, a new study might include an alternate self-help book that clearly targets the student participants. It may be necessary to have students read the entire book over several sessions, rather than three chapters in one session. Second, the quality of processing information may be improved by requiring participants to learn the self-help material using some other procedure. For instance, instead of being asked to judge, "how characteristic is this word of you or your life situation?", the participants might be asked to "provide the meaning of the word" in a short answer format. Third, the length of retention interval could be adjusted. Weak effects in two- and three-week retention intervals may be stronger in five- and seven-day intervals. Further research with self-help psychology books is needed and by adopting slight modifications to the present research, in areas of methodological concern, one may generate clearer results and more definitive conclusions.

Self-help psychology books continue to be published and purchased in large numbers, yet their value and effects are for the most part debated by individuals who are philosophically for or against them. Such debates solve little because they do not measure the actual changes

produced in readers by these books. Although the present experiment failed to find significant empirical predictors of reading, which is a disappointment, its failure raises questions about the ability of social commentators to speculate accurately about the behavioral effects of self-help psychology books on groups and individuals in our society.

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Learning List

Test List

40 Words from "Women Who Love Too Much"	hostile 1 overprotective 1 miserable 1 violent 2 endure 3 anxiety 4 fulfilment 4 guilt 5 trust 6 communication 6 agape 7 comfortable 7 tension 8 stable 8 angry 10 understand 11 control 12 happy 13 sexual 14 passion 15	20 "Old" Words in Learning List from "Women Who Love Too Much"	hostile 1 overprotective 1 miserable 1 violent 2 endure 3 anxiety 4 fulfilment 4 guilt 5 trust 6 communication 6 agape 7 comfortable 7 tension 8 stable 8 angry 10 understand 11 control 12 happy 13 sexual 14 passion 15
	<i>deprived 1</i> <i>workaholism 1</i> <i>overwhelmed 2</i> <i>destructive 3</i> <i>companionship 3</i> <i>conflict 4</i> <i>compulsive 5</i> <i>desperate 5</i> <i>needy 6</i> <i>unavailable 7</i> <i>nurturing 7</i> <i>frustration 7</i> <i>inability 8</i> <i>commitment 8</i> <i>intimate 10</i> <i>struggle 11</i> <i>avoid 12</i> <i>healthy 14</i> <i>depression 15</i> <i>addiction 17</i>	20 "New" Words from "Women Who Love Too Much"	<u>euphoria 1</u> <u>vulnerability 1</u> <u>self-defeating 2</u> <u>devotion 3</u> <u>conviction 4</u> <u>mutual 4</u> <u>perceptions 5</u> <u>chaotic 5</u> <u>obsession 6</u> <u>abandonment 7</u> <u>therapy 7</u> <u>eros 7</u> <u>security 8</u> <u>contribute 8</u> <u>suffering 11</u> <u>afraid 12</u> <u>alcoholic 13</u> <u>experience 14</u> <u>dysfunctional 15</u> <u>emotional 23</u>

Note: Frequencies provided for each word were used to select and group words. Bold, italicised, and underlined words represent different lists. Learning and test lists have random orders.

Learning List (continued)

Test List (continued)

40 Words from Five Other Self- help Books	aggressive 1	20 "Old" Words in Learning List from Five Other Books	aggressive 1
	coping 1		coping 1
	forgiveness 1		forgiveness 1
	irrational 1		irrational 1
	oppressed 1		oppressed 1
	suppressed 1		suppressed 1
	assertive 2		assertive 2
	excessive 2		excessive 2
	loyal 2		loyal 2
	compromise 3		compromise 3
	greedy 3		greedy 3
	psychological 3		psychological 3
	torture 3		torture 3
	implement 4		implement 4
	solitude 4		solitude 4
	frightened 5		frightened 5
	intimidated 5		intimidated 5
	consequences 6		consequences 6
	sensitive 7		sensitive 7
	perfectionist 10		perfectionist 10
	<i>ambivalent 1</i>	20 "New" Words from Five Other Self-help Books	<u>assault 1</u>
	<i>envious 1</i>		<u>fairness 1</u>
	<i>humiliated 1</i>		<u>hysterical 1</u>
	<i>neglected 1</i>		<u>open-minded 1</u>
	<i>optimism 1</i>		<u>persistence 1</u>
	<i>tenderness 1</i>		<u>alleviating 2</u>
	<i>confessed 2</i>		<u>deceptive 2</u>
	<i>freedom 2</i>		<u>immoral 2</u>
	<i>ignorance 2</i>		<u>authentic 3</u>
	<i>self-confidence 2</i>		<u>negotiation 3</u>
	<i>conventional 3</i>		<u>meaningful 3</u>
	<i>impulsive 3</i>		<u>regret 3</u>
	<i>punishment 3</i>		<u>dominate 4</u>
	<i>trivial 3</i>		<u>misfortunes 4</u>
	<i>inhibitions 4</i>		<u>empathic 5</u>
	<i>chronic 5</i>		<u>forever 6</u>
	<i>furious 5</i>		<u>authoritative 6</u>
	<i>standards 5</i>		<u>complain 7</u>
	<i>strategy 6</i>		<u>sorrow 9</u>
	<i>spontaneous 7</i>		<u>discipline 24</u>

Note: Frequencies provided for each word were used to select and group words. Bold, italicised, and underlined words represent different lists. Learning and test lists have random orders.

Self-help Word List Booklet

Instructions:

There are 80 words in this booklet. Address each word in a similar fashion. Read the word, read the question, and make your judgement on a 0 - 5 point scale by circling your best answer.

It may be that some words do not provide a direct connection with the question, so you may need to use the word in a sentence to answer the question.

Example:

Word 1						
Internal						
How characteristic is this word of you or your situation?						
Not at all	1	2	3	4	5	Very much
(circle one)						
How characteristic is this word of your closest companion or his/her life situation?						
Not at all	1	2	3	4	5	Very much

The word "Internal" may not be directly characteristic of you. In this case, you may imagine the word in a sentence such as "My hurt is internal" to answer the first question and "My companion cares about the internal part of me" to answer the second question.

Answer every question, make a judgement for every word, and do not leave any blank. If you have any questions, feel free to ask for assistance. You have one hour to complete the booklet, so there is no need to rush.

(One Hour)

Word 1**Neglected**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 2**Understand**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 3**Torture**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 4**Nurturing**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 5**Passion**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 6**Happy**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 7**Sensitive**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 8**Strategy**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 9**Ignorance**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 10**Inability**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 11**Psychological**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 12**Tension**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 13**Sexual**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 14**Violent**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 15**Stable**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 16**Anxiety**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 17**Unavailable**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 18**Companionship**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 19**Healthy**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 20**Addiction**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 21

Irrational

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 22

Intimate

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 23

Compulsive

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 24

Excessive

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 25

Greedy

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 26

Assertive

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 27

Control

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 28

Destructive

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 29

Commitment

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 30

Deprived

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 31**Self-confidence**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 32**Frightened**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 33**Envious**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 34**Endure**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 35**Impulsive**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 36**Needy**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 37**Conflict**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 38**Desperate**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 39**Angry**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 40**Ambivalent**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 41**Humiliated**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much

(circle one)

How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 42**Workaholism**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much

(circle one)

How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 43**Struggle**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much

(circle one)

How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 44**Guilt**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much

(circle one)

How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 45**Consequences**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much

(circle one)

How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 46**Coping**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much

(circle one)

How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 47**Spontaneous**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much

(circle one)

How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 48**Implement**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much

(circle one)

How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 49**Frustration**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much

(circle one)

How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 50**Intimidated**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much

(circle one)

How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 51**Perfectionist**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 52**Comfortable**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 53**Optimism**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 54**Suppressed**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 55**Aggressive**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 56**Confessed**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 57**Tenderness**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 58**Compromise**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 59**Overprotective**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 60**Loyal**

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 61

Oppressed

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 62

Trivial

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 63

Agape

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 64

Hostile

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 65

Fulfilment

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 66

Chronic

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 67

Avoid

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 68

Trust

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 69

Standards

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 70

Solitude

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 71

Miserable

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 72

Punishment

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 73

Conventional

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 74

Depression

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 75

Forgiveness

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 76

Inhibitions

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 77

Overwhelmed

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 78

Freedom

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 79

Communication

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Word 80

Furious

How characteristic is this word of you or your life situation?

Not at all 1 2 3 4 5 Very much
(circle one)How characteristic is this word of your
closest companion or his/her life situation?

Not at all 1 2 3 4 5 Very much

Self-help Word List Test Booklet

Instructions:

There are 80 words in this booklet. Address each word in a similar fashion. Read the word and take a moment to decide whether the word was presented in the word list you were given 2 or 3 weeks ago (Old) or was not in the word list you were given 2 or 3 weeks ago (New).

Example:

Word 1
Expectations
Old _____ New _____
(Check one)

If the word "Expectations" was in the first booklet of 80 words presented to you, check "Old". If the word "Expectations" was not in the first booklet of 80 words presented to you, check "New".

Answer every question, make a judgement for every word, and do not leave any blank. If you have any questions, feel free to ask for assistance. You have one hour to complete the booklet, so there is no need to rush.

(One Hour)

Word 1

Hostile

Old _____ New _____

(Check one)

Word 2

Conviction

Old _____ New _____

(Check one)

Word 3

Vulnerability

Old _____ New _____

(Check one)

Word 4

Anxiety

Old _____ New _____

(Check one)

Word 5

Agape

Old _____ New _____

(Check one)

Word 6

Frightened

Old _____ New _____

(Check one)

Word 7

Endure

Old _____ New _____

(Check one)

Word 8

Hysterical

Old _____ New _____

(Check one)

Word 9

Torture

Old _____ New _____

(Check one)

Word 10

Excessive

Old _____ New _____

(Check one)

Word 11

Psychological

Old _____ New _____

(Check one)

Word 12

Meaningful

Old _____ New _____

(Check one)

Word 13

Greedy

Old _____ New _____

(Check one)

Word 14

Security

Old _____ New _____

(Check one)

Word 15

Suppressed

Old _____ New _____

(Check one)

Word 16

Chaotic

Old _____ New _____

(Check one)

Word 17

Violent

Old _____ New _____

(Check one)

Word 18

Immoral

Old _____ New _____

(Check one)

Word 19

Dysfunctional

Old _____ New _____

(Check one)

Word 20

Open-minded

Old _____ New _____

(Check one)

Word 21

Fairness

Old _____ New _____

(Check one)

Word 22

Obsession

Old _____ New _____

(Check one)

Word 23

Dominate

Old _____ New _____

(Check one)

Word 24

Perceptions

Old _____ New _____

(Check one)

Word 25

Happy

Old _____ New _____

(Check one)

Word 26

Suffering

Old _____ New _____

(Check one)

Word 27

Therapy

Old _____ New _____

(Check one)

Word 28

Passion

Old _____ New _____

(Check one)

Word 29

Abandonment

Old _____ New _____

(Check one)

Word 30

Forever

Old _____ New _____

(Check one)

Word 31

Fulfilment

Old _____ New _____

(Check one)

Word 32

Control

Old _____ New _____

(Check one)

Word 33

Negotiation

Old _____ New _____

(Check one)

Word 34

Loyal

Old _____ New _____

(Check one)

Word 35

Authoritative

Old _____ New _____

(Check one)

Word 36

Self-defeating

Old _____ New _____

(Check one)

Word 37

Coping

Old _____ New _____

(Check one)

Word 38

Trust

Old _____ New _____

(Check one)

Word 39

Assertive

Old _____ New _____

(Check one)

Word 40

Tension

Old _____ New _____

(Check one)

Word 41

Consequences

Old _____ New _____

(Check one)

Word 42

Sexual

Old _____ New _____

(Check one)

Word 43

Devotion

Old _____ New _____

(Check one)

Word 44

Irrational

Old _____ New _____

(Check one)

Word 45

Mutual

Old _____ New _____

(Check one)

Word 46

Deceptive

Old _____ New _____

(Check one)

Word 47

Overprotective

Old _____ New _____

(Check one)

Word 48

Contribute

Old _____ New _____

(Check one)

Word 49

Persistence

Old _____ New _____

(Check one)

Word 50

Stable

Old _____ New _____

(Check one)

Word 51

Assault

Old _____ New _____

(Check one)

Word 52

Communication

Old _____ New _____

(Check one)

Word 53

Authentic

Old _____ New _____

(Check one)

Word 54

Angry

Old _____ New _____

(Check one)

Word 55

Perfectionist

Old _____ New _____

(Check one)

Word 56

Intimidated

Old _____ New _____

(Check one)

Word 57

Experience

Old _____ New _____

(Check one)

Word 58

Afraid

Old _____ New _____

(Check one)

Word 59

Solitude

Old _____ New _____

(Check one)

Word 60

Oppressed

Old _____ New _____

(Check one)

Word 61

Alleviating

Old _____ New _____

(Check one)

Word 62

Eros

Old _____ New _____

(Check one)

Word 63

Alcoholic

Old _____ New _____

(Check one)

Word 64

Misfortunes

Old _____ New _____

(Check one)

Word 65

Compromise

Old _____ New _____

(Check one)

Word 66

Sensitive

Old _____ New _____

(Check one)

Word 67

Guilt

Old _____ New _____

(Check one)

Word 68

Emotional

Old _____ New _____

(Check one)

Word 69

Discipline

Old _____ New _____

(Check one)

Word 70

Euphoria

Old _____ New _____

(Check one)

Word 71

Understand

Old _____ New _____

(Check one)

Word 72

Comfortable

Old _____ New _____

(Check one)

Word 73

Empathic

Old _____ New _____

(Check one)

Word 74

Forgiveness

Old _____ New _____

(Check one)

Word 75

Aggressive

Old _____ New _____

(Check one)

Word 76

Sorrow

Old _____ New _____

(Check one)

Word 77

Complain

Old _____ New _____

(Check one)

Word 78

Miserable

Old _____ New _____

(Check one)

Word 79

Regret

Old _____ New _____

(Check one)

Word 80

Implement

Old _____ New _____

(Check one)