INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.
Frequency of Self-Reinforcement Questionnaire: A children’s form

Joshi-Peters, Karuna Laxmiprasad, Ph.D.

University of Hawaii, 1992
FREQUENCY OF SELF-REINFORCEMENT QUESTIONNAIRE:  
A CHILDREN'S FORM

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE  
UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY  
IN  
PSYCHOLOGY  
AUGUST 1992

By  
Karuna L. Joshi-Peters

Dissertation Committee:  
Elaine Heiby, Chairperson  
Irving M. Copi  
James F. Craine  
Daniel D. Blaine  
Ronald C. Johnson
DEDICATION

To

Julian

Adrian

and

Michael
ACKNOWLEDGEMENTS

Sincere thanks to Dr. Loretta Krause for permission to conduct research at the University Laboratory School and for prompt and friendly assistance in the data gathering phase. Thanks to Jim Bucas, Carolyn Towata, Cheryl Harstad and Craig Doyle for their time and cooperation.

Thanks to Michelle Smith of Multihealth Systems (Ontario, Canada) for the release of the Children's Depression Inventory for use in dissertation research.

Sincere thanks to Elly Tepper and Mary Keefe for their help in conducting the pilot study. Sincere thanks to Dr. Ann Peters for her timely assistance. A note of special thanks to Dr. Thomas Jackson for philosophical consultations that were as entertaining as they were enlightening.

Last, but not the least, a warm and cordial thanks to all the children who helped a 'fellow student' by participating in the study.
ABSTRACT

The Frequency of Self-Reinforcement Questionnaire is a self-report instrument for the measurement of individual differences in self-reinforcement skills in adults. The current study presents a developmental extension of the FSRQ, named the Frequency of Self-Reinforcement Questionnaire: Children's Form (FSRQ-CF), to measure individual differences in self-reinforcement skills in children aged 8 - 14 years. The work of Kenfer (1970) and Rehm (1977) is combined into a self-control model to provide a framework for the FSRQ-CF within the larger theoretical context of Paradigmatic Behaviorism (Staats, 1975, 1983). Initial psychometric data for the FSRQ-CF are presented. Reliability is assessed by the internal consistency and test-retest methods. Construct validity is evaluated by using scores on the Children's Depression Inventory, Stanford Achievement Test (Total Math and Reading scores) and Grade Point Averages. Teacher Ratings of children's self-reinforcement skills provide a measure of criterion-related validity. Results from a Factor Analysis are discussed in the light of the theoretical framework. Directions for further development are considered.
TABLE OF CONTENTS

DEDICATION ............................................................... iii
ACKNOWLEDGEMENTS ...................................................... iv
ABSTRACT ...................................................................... v
LIST OF TABLES .............................................................. viii
LIST OF ABBREVIATIONS ................................................ ix

CHAPTER I INTRODUCTION .................................................. 1

CHAPTER II THEORETICAL FRAMEWORK OF THE FSRQ .......... 9
Self-reinforcement .................................................. 9
Self-regulation of Behavior .................................. 11
Paradigmatic Behaviorism .................................. 17

CHAPTER III FREQUENCY OF SELF-REINFORCEMENT QUESTIONNAIRE ........................................... 27

CHAPTER IV FREQUENCY OF SELF-REINFORCEMENT QUESTIONNAIRE: CHILDREN’S FORM ........ 34
Theoretical Constructs for the FSRQ-CF .......... 35
Psychometric considerations for the FSRQ-CF ........ 39
List of Hypotheses and Questions ................ 45

CHAPTER V METHOD ............................................................. 47
Experiment 1: Pre-testing Pilot Study ........ 47
Experiment 2: Evaluating the FSRQ-CF .... 53

CHAPTER VI RESULTS .......................................................... 70
Reliability ............................................................. 73
Validity ............................................................... 77

CHAPTER VII DISCUSSION ................................................... 95

APPENDIX A ATTITUDES QUESTIONNAIRE .................. 109
APPENDIX B FSR ATTITUDES QUESTIONNAIRE (SHORT) .... 111
APPENDIX C FREQUENCY OF SELF-REINFORCEMENT QUESTIONNAIRE-CHILDREN’S FORM (PILOT) .. 112
APPENDIX D  FREQUENCY OF SELF-REINFORCEMENT
QUESTIONNAIRE CHILDREN'S FORM............114

APPENDIX E  CD INVENTORY........................... 117

REFERENCES.............................................. 122
LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>Results of Pilot Study</th>
<th>51</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABLE 2</td>
<td>Summary Statistics for all Subjects</td>
<td>54</td>
</tr>
<tr>
<td>TABLE 3</td>
<td>Classification of Items</td>
<td>62</td>
</tr>
<tr>
<td>TABLE 4</td>
<td>Summary Statistics</td>
<td>72</td>
</tr>
<tr>
<td>TABLE 5</td>
<td>Internal Consistency of FSRQ-CF</td>
<td>74</td>
</tr>
<tr>
<td>TABLE 6</td>
<td>Internal Consistency of FSRQ-FMFR-CF</td>
<td>75</td>
</tr>
<tr>
<td>TABLE 7</td>
<td>Correlation Coefficients for Test-Retest Reliability</td>
<td>76</td>
</tr>
<tr>
<td>TABLE 8</td>
<td>Correlation Coefficients for Test-Retest Reliability Item-Item</td>
<td>76</td>
</tr>
<tr>
<td>TABLE 9</td>
<td>Correlation Coefficients for FSRQ-CF</td>
<td>78</td>
</tr>
<tr>
<td>TABLE 10</td>
<td>Summary of Factor Labels</td>
<td>80</td>
</tr>
<tr>
<td>TABLE 11</td>
<td>Rotated Factor Pattern for FSRQ-CF</td>
<td>81</td>
</tr>
<tr>
<td>TABLE 12</td>
<td>Edited Rotated Factor Pattern for FSRQ-CF</td>
<td>82</td>
</tr>
<tr>
<td>TABLE 13</td>
<td>List of Factors for FSRQ-CF</td>
<td>84</td>
</tr>
<tr>
<td>TABLE 14</td>
<td>Rotated Factor Pattern for FSRQ-FMFR-CF</td>
<td>85</td>
</tr>
<tr>
<td>TABLE 15</td>
<td>Edited Rotated Factor Pattern for FSRQ-FMFR-CF</td>
<td>86</td>
</tr>
<tr>
<td>TABLE 16</td>
<td>List of Factors for FSRQ-FMFR-CF</td>
<td>87</td>
</tr>
<tr>
<td>TABLE 17</td>
<td>&quot;Complex Items&quot;</td>
<td>90</td>
</tr>
<tr>
<td>TABLE 18</td>
<td>Correlation of Teacher Rating with FSRQ-CF Scores</td>
<td>92</td>
</tr>
<tr>
<td>TABLE 19</td>
<td>FSRQ-CF Items of Interest</td>
<td>93</td>
</tr>
<tr>
<td>TABLE 20</td>
<td>CDI Items of Interest: Correlation with FSRQ-CF</td>
<td>93</td>
</tr>
<tr>
<td>TABLE 21</td>
<td>Preliminary Norms</td>
<td>97</td>
</tr>
</tbody>
</table>

viii
**LIST OF ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDI</td>
<td>Children's Depression Inventory</td>
</tr>
<tr>
<td>GPA</td>
<td>Grade Point Average</td>
</tr>
<tr>
<td>FMFR</td>
<td>Family and Friends Construct</td>
</tr>
<tr>
<td>FMFRR</td>
<td>Family and Friends Construct Re-test</td>
</tr>
<tr>
<td>FSRQ</td>
<td>Frequency of Self-Reinforcement Questionnaire</td>
</tr>
<tr>
<td>FSRQ-CF</td>
<td>Frequency of Self-Reinforcement Questionnaire: Children's Form</td>
</tr>
<tr>
<td>FSRQ-CFR</td>
<td>Frequency of Self-Reinforcement Questionnaire: Children's Form Re-test</td>
</tr>
<tr>
<td>FSRQ-FMFR-CF</td>
<td>Frequency of Self-Reinforcement Questionnaire: Family and Friends: Children's Form</td>
</tr>
<tr>
<td>SES</td>
<td>Socioeconomic status</td>
</tr>
<tr>
<td>SATM</td>
<td>Stanford Achievement Test Total Math score</td>
</tr>
<tr>
<td>SATR</td>
<td>Stanford Achievement Test Total Reading score</td>
</tr>
<tr>
<td>TR</td>
<td>Teacher rating</td>
</tr>
</tbody>
</table>
The Frequency of Self-Reinforcement Questionnaire (FSRQ) is a self-report instrument for the measurement of individual differences in self-reinforcement skills (Heiby, 1982, 1986a) in adults. The FSRQ was developed in the context of second generation Behavioral self-control theory and therapy (Kanfer, 1970; Rehm, 1977), but currently is viewed as a measure of a third generation behavioral self-control hypothesis (Heiby & Staats, 1990). The purpose of this dissertation is to present a developmental extension of the self-control hypothesis and the FSRQ as an operational definition of the same.

The principle of reinforcement is one of the few principles in psychology that has enjoyed great consensus in its definition and predictive utility. It can be defined as the process by which certain consequences of a behavior increase the future probability of that behavior under similar circumstances. Positive reinforcement is the process by which the production of targeted behaviors is increased by contingently presenting positive emotional stimuli as consequences, such as, unconditioned food or conditioned praise. Negative reinforcement is the process
of increasing the probability of a behavior by withdrawing or avoiding negative emotional stimuli. The concept of negative reinforcement is often confused with punishment. Broadly speaking, punishment is the process by which contingent aversive consequences decrease the probability of a behavior. Negative reinforcement acts to increase the probability of behavior by ensuring the reduction or absence of an unpleasant event. The effect of environmentally controlled reinforcement and punishment upon the modification of behavior has been firmly established over the decades since the seminal work of Ferster & Skinner (1957).

Consequences of behavior can be overt or covert, environmentally-controlled or self controlled. Self-reinforcement can be defined as the "self-administration of a reinforcement upon the completion of a targeted response" (Heiby, 1980). The question of whether or not a self-administered reinforcement can be classified as a reinforcement or not is noted here and will be discussed subsequently.

Self-reinforcement is believed by many to play an important role in the regulation of human behavior. If the concept of Freud's 'ego-ideal' or the colloquial notion of 'will' or 'self-esteem' were to be operationalized, at least it could be partly in terms of self-reinforcement. "Self-reinforcement is a realistic
recognition of accomplishment" (Watson & Tharp, 1989), not to be confused with the colloquial term "bragging". Self-reinforcement seems to be a skill that involves individual behavioral differences and responds to training in a range of populations (Heiby, 1982; Rehm, 1977; Weiner, 1976). Deficits in self-reinforcement skills could have a number of effects, including reduced performance at specific activities involving delayed environmental reinforcement such as in academic achievement, and some types of depression (Heiby, 1980). Detailed discussion of these issues will be presented in a later section.

An early attempt to measure self-reinforcement style resulted in the construction of a behavioral task that gives the subject the opportunity to self-reinforce (Rozensky & Bellack, 1974) when he believes he has produced a correct response. The self-reinforcement consists in turning on a light by pushing a button. Self-reinforcement styles assessed by the use of this behavioral task have been found to be related to the ability to exert self-control in weight and smoking control studies (Rozensky & Bellack, 1974, 1976). However, the above method has some clear and significant limitations related to the direct observation of self-reinforcement activity. Single subject administration is required along with the necessity of acquiring the
behavioral task apparatus. Only a limited domain of overt self-reinforcement behavior can be observed. The rich domain of covert self-reinforcement cannot be assessed. Besides, such a methodology is not convenient for the large numbers required for research purposes; nor is it suitable for the detailed information required in a variety of clinical settings. All of the foregoing points to the need and place of a self-report measure of an individual's self-reinforcing skills and style.

Currently, there are few psychological assessment devices designed to measure the self-report of covert experiences in children of ages 9 to 14. The available devices such as the Children's Depression Inventory (CDI) or the Children's Manifest Anxiety Scale (CMAS) focus primarily on negative emotions.

Chapter II addresses the theoretical framework of the FSRQ discussing the self-regulation of behavior and Paradigmatic Behaviorism (Staats, 1975, 1983). The issue of self-control in children in the context of self-regulation of behavior is discussed. It is argued that principles of self-control apply to children of this age range (Bem, 1967; O'Leary & Dubey, 1979; Meichenbaum & Goodman, 1971; Stark, Reynolds & Kaslow, 1987). It is also argued that an assessment of children's self-reinforcement skills would constitute a constructive complement to currently available psychological assessment
devices by measuring a skill that may be determinant of both positive and negative emotional-motivational conditions related to self-control and self-evaluation (self-esteem). A self-report measure of self-reinforcement and related skills in children permits evaluation for intervention because such skills are amenable to training (Bem, 1967; Meichenbaum & Goodman, 1971; O'Leary & Dubey, 1979; Stark et al., 1987). Such a measurement device would facilitate periodic observations of progress, e.g., a decrease in depression or increase in school achievement may be accompanied by an increase in FSRQ scores.

Heiby has developed such a self-report instrument entitled Frequency of Self-Reinforcement Questionnaire (FSRQ) for adults (Heiby, 1982), discussed in greater detail in Chapter III. The adult form of the FSRQ consists of 30 True or False items (See Appendix A). The FSRQ also exists in a convenient Short Form of 10 items (See Appendix B), answered on a 0 to 3 Likert-like scale. The short form is currently under study by Heiby, Compos and Kameoka (In preparation).

There is acceptable psychometric support regarding internal consistency, test-retest reliability and construct validity for the FSRQ with a multi-ethnic U.S. adult population (Heiby, 1988). The theoretical framework of the FSRQ has evolved from an operant model (Heiby,
1980) to a more complex Paradigmatic Behaviorism model (Heiby & Staats, 1990).

It is the intent of this research work to develop a children's form (for ages 8-14 years) of the FSRQ. The structure of FSRQ-CF will be based on the adult FSRQ employing its expanded theoretical framework. Since the FSRQ was developed in the context of depression research (Heiby, 1980, 1982), and is useful in identifying a subtype of depression (Heiby, 1983b, 1983c), the conceptual links with depression have been acceptably indicated. Scores on the FSRQ and scores on the Beck Depression Inventory are negatively correlated (Heiby, 1983b). A similar strategy will be followed in establishing the construct validity of the FSRQ-CF. Although the nature of depression in children has been the topic of argument and discussion among experts, it is now acknowledged that children experience and manifest depression in a manner analogous to adult depression (Stark, 1990). The "idea of reinforcing oneself is quite foreign to depressed children" (Stark, 1990, p 153). Thus scores on the Children's Depression Inventory will be used to evaluate construct validity of the proposed FSRQ-CF.

Self-reinforcement has been found to be related to a positive self-concept (Felker & Thomas, 1971; Phillips, 1984) in young children. Positive self-concept (or self-esteem) has also been found to be positively linked with
academic achievement (Purkey, 1970). Reserving for the moment the distinction between 'self-concept' and 'self-esteem', there appears to be support in the psychological literature for a linkage between self-reinforcement skills and academic performance in children. Therefore, two indices of academic performance, Stanford Achievement Test scores and Grade Point Average scores will be used in this study, to further evaluate construct validity of the FSRQ-CF.

The influence of the family on the child and his self-esteem is widely accepted, and established in several large studies (Behrens, 1954; Coopersmith, 1967; Stott, 1939). Therefore, a family and friends subscale has been developed for the current study to investigate the relationship between the modeling influences of the 'family and friends' system and self-reinforcement, or 'self-ARD' in the language of Paradigmatic Behaviorism (Heiby & Staats 1990). This expanded theoretical framework of the FSRQ will be discussed in detail in Chapter II. In the event of the presence of a strong relationship, it is proposed that the family and friends subscale be included in the Children's Form. It would constitute a special feature of the children's form, as the adult version does not separately examine the role of family and friends.
As a measure of criterion related validity, ratings of self-reinforcement (self-ARD) skills will be obtained from the teachers. Children spend a good fraction of their waking time in school, giving teachers an unique observational opportunity.

Lastly, this study will explore the stability and usefulness of the tripartite division of the process of self-regulation of behavior, as expressed in a model obtained by combining the work of Kanfer (1970) and Rehm (1977). The work of Kanfer and Rehm is discussed in Chapter II, and the tripartite division of the process of self-regulation is reflected in the items of the FSRQ-CF. An analysis of the interconnections between the Kanfer-Rehm model and elements from the Paradigmatic Behaviorism (Staats, 1983) extension of the earlier FSRQ will also be attempted. This analysis will provide an evaluation of the conceptual extension.

The following three chapters discuss the aforementioned topics. The chapter entitled 'Method' describes the evolution and evaluation of the FSRQ-CF. The outcome of the statistical analyses of the FSRQ-CF are described in the 'Results' chapter. The final chapter, entitled 'Discussion', contains conclusions, inferences and directions for future work in the development of the FSRQ-CF.
CHAPTER II
THEORETICAL FRAMEWORK OF THE FSRQ

Self-reinforcement

The controlling power of external reinforcers has been minutely detailed (Ferster & Skinner, 1957) in the context of "infrahuman learning" (Bandura & Whalen, 1973, p. 138). In the same article, Bandura and Whalen point out a salient difference between human subjects and animal subjects. "Unlike human subjects, rats or chimpanzees are disinclined to pat themselves on the back for commendable performances, or berate themselves for getting lost in cul-de-sacs." (p. 138). Human subjects, on the other hand, are capable of observing their own performance, attaching value judgments to the quality of their performance and administering rewards or punishments to themselves. This self-awareness in humans allows the possibility of modification (and maintenance) of behavior through self-reinforcement. Heiby (1980) defines self-reinforcement to be the covert or overt self-administration of a reward contingent upon the completion of a target behavior.

Goldiamond (1976) does not agree with the concept of self-reinforcement, arguing that to be procedurally
accurate, reinforcement contingencies must be controlled by an **external** agent. This seems to be a definitional dispute rather than a substantive disagreement as to the existence of a particular phenomenon, namely, that human beings do control and modify their own behavior through contingency management. Besides, there are a number of studies (Bandura & Perloff, 1967; Felixbrod & O'Leary, 1973; Glynn, 1970; Lovitt & Curtiss, 1969; Marston & Kanfer, 1967) that investigate the relative efficacy of external reinforcement and self-reinforcement and report that self-reinforcement is at least equal to external reinforcement in maintaining certain types of behavior and both are superior to no reinforcement. One study by Marston (1967) found external reinforcement to be slightly less effective than self-reinforcement.

Self-reinforcement responses are amenable to direct conditioning (Kanfer & Marston, 1963a), meaning thereby that the frequency of their production can be affected through the employment of conditioning principles, by manipulating the contingencies of consequences.

Investigation of patterns of self-reinforcement by Kanfer and his associates (Kanfer & Marston, 1963a, 1963b; Kanfer & Duerfeldt, 1967) has often taken the form of directly training subjects externally with experimenter controlled reinforcement and then requiring the subject to administer their own rewards when they perceived
themselves as having made a correct response. The experimental tasks chosen have often been ambiguous perceptual or verbal learning tasks where the correctness of response is not easy to ascertain. This ambiguity allows for the emergence of the self-reinforcement style of a given subject. Self-reinforcement responses can be also learned through observing a model (Bandura & Whalen, 1973; Weiner, 1976).

The studies referred to so far have been concerned with overt, tangible self-reinforcement, e.g., the self-administration of M & Ms or similar concrete rewards. It is maintained that a similar pattern of results holds for covert self-reinforcement, e.g., thinking or imagining desirable events as consequences (Watson & Tharp, 1989). What appears to be a covert characteristic can be explained as a behavior learned in accordance with the same laws of learning that apply to environmentally controlled behavior (Bandura 1971; Homme, 1965; Kanfer & Marston, 1963a; Marston 1964; Skinner, 1953; Watson & Tharp, 1989).

Self-regulation of Behavior

Kanfer views the self-regulation of behavior as a complex process consisting of three components:
self-monitoring, self-evaluation and self-reinforcement. (Kanfer & Duerfeldt, 1967; Kanfer & Goldstein, 1986; Mahoney & Thoresen, 1974). Self-evaluation can be seen as a mediating link between "previous socially regulated experiences and a person’s tendency to administer SR (sic)" (SR = self-reinforcement) (Kanfer & Duerfeldt, 1967, p. 167).

In an experiment designed to explore this relationship, using an ambiguous task and a random pattern of reinforcement and noxious stimuli, Kanfer and Duerfeldt (1967) found that changes in a person’s self-evaluative statements as a function of verbal feedback did not necessarily result in a corresponding change in rate of self-reinforcement. The relationship between self-evaluation and self-reinforcement was linked to both the verbal feedback from the experimenter and his reinforcing operations.

In the discussion of this result Kanfer and Duerfeldt remark that the ambiguous nature of the task may have prevented the subjects from adopting internal standards of performance and may have rendered them more dependent on experimenter feedback. However, they go on to comment, in many social situations there exist no guidelines to behavior other than the views of members of one’s community. The study suggests that the rate of self-reinforcement is related to a person’s reinforcement
history. The question of contingent versus 'non-contingent' self-reinforcement is not raised here, but will be addressed subsequently.

Concluding the discussion, Kanfer and Duerfeldt comment that "... the present findings do suggest the importance of further examination of the relationship between a person's appraisal of such performances implicit in the immediate administration of self-reward or self-punishment following the critical behavior." (Kanfer & Duerfeldt, 1967, p 167). The above suggestion can be reframed as a suggestion to study the self-evaluation and self-reinforcement components of the self-regulation process.

Self-regulation of behavior has clear and significant implications for therapy. It would seem that at least a partial goal of therapy is to put the individual (back) in control of directing his own life. Rehm, Kornblith, O'Hara, Lamparski, Romano & Volkin (1981) have evaluated a self-control therapy program for depression. This particular self-control program consists of components that closely parallel the three stages in self-regulation of behavior as set forth by Kanfer. The full treatment package consists of self-monitoring, self-evaluation and self-reinforcement. The goal of the treatment is accomplished by the teaching of the following components (a) establishing response criteria for reinforcement,
(b) discriminating the response when it occurs and (c)
administering the self-reinforcement on a contingent
basis, either overtly or covertly.

Rehm et al's 1981 research design followed a
'dismantling' procedure in order to assess the relative
contributions of specific components of the full therapy
package. There were five conditions (1) self-monitoring
only, (2) self-monitoring and self-evaluation, (3) self­
monitoring and self-reinforcement and (4) self-monitoring,
self-evaluation and self-reinforcement and (5) waiting
list controls. The duration of the treatment evaluated in
the study was seven weeks. The overall efficacy of the
therapy package was demonstrated by significant differ­
ences in outcome measures between treatment groups and
waiting list controls.

However, the study failed to show significant
differences among the therapy conditions. The detailed
analysis of the possible reasons of this failure is beyond
the range of interest for present purposes. The result of
interest is that self-evaluation was found to be the
least stable of the components. In some cases self­
evaluation even produced negative effects. Some of the
largest effects were seen in the self-monitoring only
condition. The authors speculate that the self-monitoring
condition "may carry the full weight of treatment change
in the therapy package" (Rehm et al, 1981, p 486). It
seems reasonable to infer from the above evidence that self-monitoring is not a simple component and that it may be difficult to separate the three stages in the self-reinforcement process.

In order to apply the Kanfer-Rehm model of the self-regulation of behavior to children, it must first be established that it is possible to teach self-control strategies to children.

The development of self-control in children seems to go through a sequence of locus of control (Harter, 1983). The three major stages are: control by parents or caregivers, overt verbal control by the children, and finally covert self-control. Adults control the child's behavior proactively by arranging the physical environment, for example 'baby-proofing' a house; and reactively by rewards and punishment in the form of objects or words. The growing child often 'talks' to himself and uses vocalized language to guide his behavior. As the child grows older the use of language becomes subvocal. Now the child is said to have self-control as it appears in adults.

The use of private speech, or talking to oneself appears to be effective. Meichenbaum and Goodman (1971) successfully developed a self-control procedure to train 'impulsive' children to control their behavior. Stark et

Weiner's 1976 study on self-reinforcement in the elderly underscores the effectiveness of modeling in the transmission of patterns of self-reinforcement. Non-contingent verbal feedback was not a significant method of increasing frequency of self-reinforcement. This result has may have implications for the modification of a child's reinforcing skills. It may not be enough to say "You are special! You are a star! Take care of yourself. Be gentle with yourself"; it may be necessary to model such exhortations and provide contingent feedback.

The effectiveness of modeling as a means of teaching new behavior to children has been studied and established, (Bandura & Kupers, 1964; Bandura, Ross & Ross, 1961, 1963a, 1963b; Herbert, Gelfand & Hartmann, 1969). The phenomenon of transmission of patterns of self-reinforcement through modeling, in children was investigated by Bandura and Whalen (1964). It was found that children closely matched the self-reinforcement pattern of the model they observed. Adult models were more powerful modeling stimuli than peers. Other studies also underscore the role and importance of modeling in the acquisition of self-reinforcement styles (Mischel & Liebert, 1966; Liebert & Allen, 1967; McMain & Liebert,
The preceding discussion strengthens the argument for the development of a Children's Form of the FSRQ, by pointing out the feasibility of self-regulation of behavior in children.

Paradigmatic Behaviorism

The basic principles of classical and instrumental conditioning, solidly grounded in biological phenomena studied in the animal laboratory, form the bases of classical behaviorism. Learning theorists, faced with the problem of relating the two types of conditioning, have frequently taken the easy way out of preferring one to the neglect of the other. Skinner, for example, gives central importance to instrumental conditioning of behavior, relegating classical conditioning to an uninteresting if not ineffectual position (Skinner, 1938). Hull, on the other hand, did not differentiate between the basic principles of classical and instrumental conditioning (Staats, 1968). The operant model that Kanfer (1970) and Rehm (1977) worked with also did not address
the issue of the classical conditioning of emotions and the effects on 'non-contingent' reinforcement.

It has been well established that behavior therapy and behavior modification are fairly successful extensions of these conditioning principles to humans (Watson & Tharp, 1989). These applications to human behavior may be successful because principles of conditioning are universally valid and applicable. The complexity of human behavior, with language and covert emotional levels of experience, limits these extensions when only directly observed sensory-motor behaviors are considered. What is required is an elaboration of the elementary principles to accommodate complex human behavior, particularly the language-emotional repertoire.

Paradigmatic Behaviorism (Staats, 1983, previously called Social Behaviorism, Staats, 1975) integrates the classical conditioning of emotions and instrumental conditioning of behavior in a three function conception of conditioning. This allows for a richer basic level of theory that can be elaborated upon to explain complex human behavior within a cumulative hierarchical structure. The integration is effected as follows: the unconditioned stimuli of classical conditioning and the reinforcing stimuli of instrumental conditioning are drawn from the same stimulus set, e.g., food. The property of a stimulus that enables it to function as an unconditioned stimulus
in a classical conditioning context also enables it to act as a reinforcing stimulus in an instrumental conditioning context, namely, its emotion-eliciting property. When a new stimulus is given emotional (attitudinal) value through classical conditioning it also becomes a reinforcing and directive stimulus. Humans and animals learn approach and avoidance behaviors to stimuli that elicit positive or negative emotions. This is the discriminative or directive function of the stimulus. Thus, the same stimulus may exhibit three different stimulus properties. It may elicit emotion, it may have reinforcing value and it may control approach/avoidance behavior. This is the three function Attitudinal-Reinforcing-Directive (A-R-D) analysis of conditioning that effects the integration of classical and instrumental conditioning. It also acts as the basic building block for the higher levels of explanation required of a theory purporting to explain complex human behavior including self-reinforcement, or in line with Paradigmatic Behaviorism terminology, self-ARD, as will be indicated further below.

**Personality Level of Theory**

According to Staats (1975), the unifying approach of Paradigmatic Behaviorism continues at the personality
level of theory as well. Conflicting views exist in psychology regarding the concept of personality. The traditional conception envisages personality as a stable structure or process within the individual that generates the particular and precise pattern of his behavior. There is a measure of simplistic reification in this conception. Prediction and control are reduced to the ability to isolate and measure the structure or process in question. Personality is seen in a causative role.

Classical behaviorism, on the other hand, defines personality as the sum total of a person's actions. These actions in turn are a function of the behavioral contingencies in which an individual may find himself. No need is seen to posit an internal process. The traditional concept of personality is perceived as intellectual excess baggage wielding no explanatory power. Personality is reduced to a set of effects (Staats, 1975).

It is transparent that simplification is involved in both conceptions. An individual's personality is a complex function of himself and the environment in which he is placed (Staats, 1975). In the Paradigmatic Behaviorism conception, personality is analyzed into a set of Basic Behavior Repertoires (BBRs) that the human child, qua learning animal, begins to acquire very early in life. These BBRs are simple in the beginning, and subsequently build up to the complex and richly varied BBRs of the
adult in a principled, cumulative-hierarchical manner. The earlier simpler units are not only related to but are necessary to the acquisition of later complex BBRs. At every stage there is an interaction with biological factors as well as with the environment (Heiby & Staats, 1990). What kind of a BBR a child can develop does depend to some extent on his environment. At the same time, the biological characteristics and the BBRs that a child brings to a situation (environment) determine his responses and the nature of the learning that can occur. This positive feedback loop involving biological, situational and BBR characteristics produces the cumulative-hierarchical evolutionary learning patterns that in turn produce the diversity of human personalities.

Human basic behavior repertoires are divided into three heuristic organizational systems: the sensory-motor, the language-cognitive and the emotional-motivational. There is some interrelatedness and overlap at the very detailed level, but the categorization works quite efficiently in choice of assessment and intervention strategies. (Staats, 1975). A brief description of the three repertoires will facilitate the elucidation of some subsequent distinctions.

The sensory-motor repertoire consists of the person's sensory-motor development and instrumental abilities. Individual differences in sensory-motor skills are
considered to be personality differences. Given varying sensory-motor abilities different individuals will experience as well as respond differentially to the same environmental conditions. Differential responding will set up different causative chains in the development of the individual's BBRs.

The language-cognitive repertoire consists of a person's linguistic and covert cognitive skills. Cognitive skills are considered to be language related. Relevant to the acquisition of the language-cognitive repertoire would be the language learning history of the individual. Intelligence tests are seen to primarily measure language repertoires; and as such the linguistic ability assumes a central place in higher cognitive functioning affecting a person's life experience significantly.

The emotional-motivational repertoire consists of the positive and negative emotional responses acquired through the agency of a varied and complex conditioning history. These positive and negative emotional stimuli control the individual's behavior via the acquired attitudinal-reinforcing-directive function. The motivational system of personality is shaped through positive and negative emotional conditioning. It should be noted here that the cumulative-hierarchical structure of abilities and learning histories applies to the emotional-motivational
system also. Given different conditioning histories, two individuals with an equivalent absolute strength of emotional response may or may not be motivated to a similar course of action. The relative place of the particular stimulus in the individual's emotional hierarchy has an important if not decisive effect on the resulting course of action. It is important to note here that the language repertoire along with an emotional-motivational sub-repertoire are extremely relevant to what is primarily measured by the FSRQ.

Paradigmatic Behaviorism's analysis of personality as consisting of three basic behavior repertoires allows for a flexible concept of abnormal personality that allows for multivariate predictors of psychopathology. Psychopathology, in any degree of severity, is produced as a result of an interaction between the environment, biological conditions and the individual's own BBRs. This interaction could generate pathology for a number of reasons; there could be biological conditions, deficits or inappropriatenesses in the environment and/or in one or more of the individual's BBRs. This complex matrix has great heuristic value. It accommodates easily the perplexing cases of differential responses to the same precipitating event. It also has equally powerful implications for treatment. A detailed analysis of
person-environment interactive causality allows for highly individualized and specific treatment.

Self-concept in Paradigmatic Behaviorism

Many theories of personality refer to the construct of self or self-concept as a "determining personal process" (Staats, 1975, p. 155). In Paradigmatic Behaviorism, such a concept can be analyzed into its constituent complex constellations, derived from an individual's basic behavioral repertoires, particularly the language and emotional-motivational sub-repertoire.

A child learns to label objects and social events in his environment. He also learns to self-label his body parts and behaviors. Over a period of time, through numerous learning trials, some of these labels will acquire emotional valences. In the language of Paradigmatic Behaviorism, many components of the child's labeling language repertoire will acquire A-R-D features. "They produce a complex of interrelated behaviors, of a heavily verbal nature and with strong emotional characteristics, called the self-concept." (Staats, 1975, p. 156).

Hence, an individual can use a certain linguistic stimuli towards himself and self-elicit an emotional response. This is the mechanism for self-reinforcement
in the Paradigmatic Behaviorism framework. Since an individual’s self-concept is in effect a self-ARD system, it is easy to see that such self-stimuli can also serve to evoke a mood or attitude and to direct behavior.

The individual is a very complex stimulus; bodily characteristics, sensory motor capacities, language, cognitions, emotions, overt behaviors and so on. With his language-cognitive repertoire the individual learns to label (describe) himself. This labelling repertoire constitutes a person’s self-concept. The emotional valence of the labels an individual has learned to apply to himself determines the valence of his self-esteem.

The self-ARD system of an individual is involved in all three of the basic behavior repertoires. The labelling activity emanates from the language-cognitive repertoire. The emotional response to the verbal labels applied results in emotions that affect mood and approach or avoidance behaviors of an individual; this constitutes his emotional-motivational system. When the individual does approach or avoid a goal, he does so by engaging his sensory-motor systems.

Many of the individual’s self-labeling responses are not contingent on any target behavior and thus in a strict radical behaviorist framework cannot act as reinforcers (Goldiamond, 1976). However, the radical behaviorism position has yet to explain how self-language, response
contingent or otherwise, does elicit emotional responses in the individual, and direct behavior. Hence, the theoretical basis for the construct validation of the FSRQ has been widened to include the measurement of all self-ARD stimuli (response-contingent and non-contingent), not just response-contingent self-reinforcement stimuli.

Two distinct theoretical frameworks, Kanfer and Rehm's three fold analysis of self-regulation of behavior, and Staats' Paradigmatic Behaviorism analysis of BBRs come together in a complementary fashion in the development of the FSRQ-CF. The structure of the FSRQ-CF will reflect the three components of self-monitoring, self-evaluation and self-reinforcement. These components can also be viewed as expressive of specific BBRs. The special contribution of the analysis from a Paradigmatic Behaviorism point of view is the inclusion of non-contingent self-ARD utterances that do influence behavior and are part of one's self-concept and self-reinforcement system.
CHAPTER III

FREQUENCY OF SELF-REINFORCEMENT QUESTIONNAIRE

The Frequency of Self-Reinforcement Questionnaire (FSRQ) was initially developed in the context of research on depression. Many behavioral theorists posit that a low frequency of self-reinforcement is a "response defined, individual difference variable" (Heiby, 1982) that can result in depression for the individual exhibiting it (Bandura, 1971, Mathews, 1977, Rehm, 1977). It would be useful to be able to identify such depression prone individuals. The FSRQ was developed as a 30 item self-report measure to fulfill such a need. Self-reinforcement was defined to be the covert or overt self-administration of a reward contingent upon a target behavior (Heiby, 1980) in accordance with Kanfer's (1970) theoretical analysis and Rehm's (1977) clinical approach. Subsequently, a content analysis led to the suggestion that the FSRQ measures the administration of non-contingent self-"reinforcement" (self-ARD) as well (Heiby & Staats, In Press) extending the theoretical framework of the FSRQ.
Some psychometric support exists for the FSRQ (Heiby, 1982; 1986a; 1988). It has been validated in the context of simple experimental behavior and by using self-monitoring and recording of contingent or non-contingent self-praise in a naturalistic setting (Heiby, 1982). Concurrent validity was evaluated by using experimenter ratings of the judged tendency to engage in self-reinforcement (Heiby, 1982). The FSRQ was also used in an initial attempt to distinguish among differential onset depressions (Heiby, 1983b;). It was found that the mood of individuals with a low frequency of self-reinforcement (LFSR) was more a function of environmental reinforcement than the mood of persons with a high FSR. The relation between low self-reinforcement and a subtype of depression was further investigated (Heiby, 1983c). The conclusions of the two studies were in agreement.

In 1983, Heiby reported preliminary reliability and validity data for the FSRQ (Heiby, 1983a). Test-retest reliability over eight weeks was found to be .92 (p < .001; df = 98). Split-half reliability was found to be .87 (Spearman-Brown; p < .001; df = 98). Validity was evaluated by investigating the relationship between self-praise on the experimental task and questionnaire scores. The correlation was .69 (p < .001; df = 198). In a separate study, using college students, the effect of
ethnicity on varying rates of frequency of self-reinforcement was explored. No ethnic differences were reported (Heiby & Pacheco, 1982).

After it was established that self-reinforcement is a generalized response pattern measurable by a self-report questionnaire (Heiby, 1983a), a further study was undertaken to investigate the effects of training on self-reinforcement and reward (Heiby, Ozaki & Campos, 1984). It was found that training resulted in greater skill in administering rewards and self-reinforcement. The teachability of the skill of self-reinforcement has implications for treatment of a subtype of depression. In an elegant cross-over design the implications for the treatment of a subtype of depression was investigated (Heiby, 1986b). Four 25-40 year old females with unipolar depression, two exhibiting social skills deficits and two exhibiting deficits in self-reinforcement skills, were studied. Subjects were given 12 one hour sessions of social skills training and self-reinforcement training. The treatment matched and did not match the deficit, sequentially. It was found that matched treatment was more effective than unmatched treatment in alleviating depression and the skills deficit.

Further construct validity of the FSRQ was provided by a study of motivational factors affecting adherence to an exercise regimen (Heiby, Onorato & Sato, 1987).
Dishman & Ickes (1981) define self-motivation as the ability to engage in a behavior regardless of environmental reinforcement and suggest that self-reinforcement skills contribute to the characteristic of self-motivation (Dishman, 1981). In the Heiby, Onorato & Sato study of runners from the Honolulu Marathon Clinic, the predicted positive correlation between Self-Motivation Inventory and FSRQ scores was observed. The value of the correlation was .38 (p<.05) (Heiby et al., 1987).

The FSRQ was also employed in a study of clinical depression and dexamethasone suppression (Heiby, Campos, Remick & Keller, 1987). The complex pattern of results supports the conclusion that in cases of depression with normal neuroendocrine functioning a deficit in self-reinforcement could be related to depression.

Situation-specific items adapted from the FSRQ were also used in a study of the situational and behavioral correlates of compliance to an entire medical regimen (Heiby, Gafarian & McCann, 1989). Compliance was positively related to self-reinforcement by the subjects when they adhered to a strict regimen of diet, exercise and medication schedules that were subcomponents of the regimen prescribed for diabetic patients.

Factor analytic studies and an evaluation of the reliability and validity of the FSRQ in multicultural young adult and elderly populations are currently being...
analyzed (Kameoka, Heiby & Campos, In Preparation; Dubanoski, Heiby & Kameoka, In preparation). Another factor analytic study of the FSRQ reports 5 factors with Factor 1 (Self-evaluation) contributing the largest proportion of the variance (Wagner, Holden & Jannrone, 1988) in the FSRQ Total Score.

The five factors are listed below with information regarding gender and percentage of variance in the FSRQ Total Score explained by each factor.

1. Self-evaluation
   (Male Factor 1, 40%)
   (Female Factor 1, 47%)

2. Self-reinforcement & Self-reward
   (Male Factor 2, 23%)
   (Female Factor 3, 14%)

3. Don’t Self-praise
   (Male Factor 3, 17%)
   (Female Factor 2, 21%)

4. Be Self-critical
   (Male Factor 4, 11%)
   (Female Factor 5, 10%)

5. Responding emotionally to criticism and self-evaluation.
   (Male Factor 5, 10%)
   (Female Factor 4, 11%)

31
Wagner et al (1988) proceed to examine the factor structure of the FSRQ in the light of Rehm's three component of self-reinforcement (corresponding to Kanfer's tripartite analysis of self-monitoring, self-evaluation and self-reinforcement). A factor corresponding to the self-evaluation component is present in the FSRQ. This self-evaluation factor explains most of the variance in FSRQ total scores for both males and females.

They commend Heiby for making a specific contribution to the measurement of self-reinforcement namely, the self-reinforcement and self-reward factor including setting criteria for self-reward or self-reinforcement; but are disappointed that there is no measurement of the 'self-monitoring' factor (discriminating the response when it occurs).

Self-evaluation as a primary factor is consistent with the reformulation of the instrument as a measure of both contingent and non-contingent positive self-directed stimuli within the framework of Paradigmatic Behaviorism.

The FSRQ also exists in a convenient Short Form of 10 items (see Appendix B), answered on a Likert-like scale taking values from 0 to 3. The short form is currently under study by Kameoka, Heiby and Campos. Test-retest reliability of the short form is reported to be .73 and
Coefficient Alpha = .65 (Kameoka, Heiby & Campos, In preparation).
CHAPTER IV
FREQUENCY OF SELF-REINFORCEMENT QUESTIONNAIRE:
CHILDREN’S FORM

Little Jack Horner, sat in a corner,
Eating his Christmas pie.
He put in his thumb, and pulled out a plum,
And said "What a good boy am I!"
- Mother Goose

The above quoted nursery rhyme may well be one of the first references to a child's self-reinforcement skills! Not much is known of what became of Little Jack Horner after his adventure with the Christmas pie; one hopes for the best.

The following chapter describes part of the rationale for developing the Frequency of Self-Reinforcement: Children’s Form (FSRQ-CF) and discusses related concepts and measures that will be employed to evaluate validity. Issues regarding reliability will also be addressed.
Theoretical Constructs for the FSRQ-CF

Self-reinforcement and self-concept

Exploring the question of the relationship between self-initiated verbal reinforcement (a variety of self-reinforcement), and positive self-concept, a study of fourth grade students found a significant relationship between self-initiated verbal reinforcement and positive self-concept (Felker & Thomas, 1971). Positive self-concept was also correlated with verbal fluency, suggesting the explanation that increased use of verbal self-reinforcement could be a function of a large vocabulary or an ease with the vocabulary the child already possessed. In Paradigmatic Behaviorism terms the same conclusion could be couched in terms of a child's level of skill with his language sub-repertoire.

Positive self-concept and academic achievement

The question of the relation between positive self-concept or self-esteem and academic achievement is a truly difficult and tangled one. Given the involvement of many basic behavior repertoires and sub-repertoires in a positive feedback loop fashion in the accomplishment of school achievement and self-concept, this state of affairs
is not at all surprising. It is unclear whether level of self-esteem is the cause or effect of academic achievement, or serves both functions as Paradigmatic Behaviorism would suggest. However, the two have been often reported to be positively correlated (Brookover, Patterson & Thomas, 1965; Purkey, 1970). This relationship is reported to hold across racial boundaries (Caplin, 1966). When a distinction is drawn between level and stability of self esteem, and ethnic differences are controlled for, it appears that only stability of self-esteem is related to academic achievement (Kugle, Clements & Powell, 1983). There were no significant differences along gender lines in any of the dependent variables.

Interestingly enough, in the Kugle et al. study, level and stability of self-esteem as measured using the Piers-Harris Self-concept Scale were not interrelated. They were found to be orthogonal. Instability of self-esteem was related to overestimation of ability, and accurate perception of one's ability was found to be related to stability of self-esteem. Level of self-esteem is related to academic achievement, as suggested by the literature, when ethnicity is not controlled for. However, stability of self-esteem was related to academic achievement over and above ethnicity.

To explore the implications from this interesting result, it may be useful to employ the distinction between
self-concept and self-esteem as drawn by Pope, McHale and Craighead (1988). Self-concept is defined to be an aggregate of one’s descriptions of oneself; whereas self-esteem is defined as an aggregate of one’s evaluations of one’s self. Errors in accuracy can occur in description or evaluation. Given this conceptual matrix of ‘description / evaluation’ and ‘error / accuracy’, it becomes possible to tease apart level of ‘self-esteem’ from stability of ‘self-esteem’. Level of self-esteem is, perhaps related to the level of one’s evaluations of oneself; however the stability of self-esteem is possibly related to the accuracy of one’s description of oneself.

To put it in the language of Paradigmatic Behaviorism, both level and stability of self-esteem are part of one’s self-ARD, with level of self-esteem relating to aspects of the emotional-motivational repertoire, and stability of self-esteem being a function of one’s language-cognitive repertoire. The phenomenon of conditioning an emotional response to language has been experimentally studied and established (Staats, 1975). It is also a universal human experience that words evoke emotions fairly reliably, e.g., political speeches and love poetry.

There appears to be a gender linked difference in the strength of the relationship between self-concept and academic achievement; the relationship appears to be stronger for boys than for girls (Campbell, 1965; Bledsoe,
Male underachievers tend to have a more negative self-concept than female underachievers. Girls reported a higher self-concept than boys in both the high and low achievers categories (Baum et al. reported in Purkey, 1970).

Achievers are characterized by self-confidence, self-acceptance and a positive self-concept (Gowan, 1960). They do not need many favorable evaluations from others (Dittes, 1959). These characteristics assembled together may suggest the picture of a child who is able to self-monitor, self-evaluate and self-reinforce.

The underachiever has been observed to display the expected negative self-concept (Goldberg, 1960; Shaw, 1961; Bruck & Bodwin 1962). The gender linked difference is evidenced here as well. The male underachiever exhibited a more negative self-concept than the male achiever. The female underachiever had an ambivalent self-concept (Shaw & Alves, 1963).

The literature in this area appears to use the terms 'self-esteem' and 'self-concept' in a closely connected, though never clearly specified, fashion. If different constructs are being measured, it is not made clear because of an assumed commonality of understanding. The current writer favors the distinction drawn by Pope et al (1988), as of great heuristic value.
There appears to be a consistency of results regarding the connection of positive regard towards the self and academic achievement (Purkey, 1970).

Psychometric considerations for the FSRQ-CF

Reliability

In psychological literature reliability refers to the ability of a psychometric instrument to measure with accuracy. If the construct is expected to be stable, the most frequently employed method of evaluating reliability is the test-retest method. The measure under evaluation is administered at one time, then re-administered at a later time, to the same set of individuals. The two sets of scores are correlated to yield an index of test-retest reliability. A high positive correlation signals a high index of reliability for the measure under consideration.

Test-retest reliability for the FSRQ over an 8 week interval was reported to be .92 (p< .001; df =98) on a sample of 100 undergraduates (Heiby, 1983a). Test-retest reliability of the FSRQ-CF is evaluated by administering the FSRQ-CF to the same children after an interval of 2
weeks. Self-reinforcement skills in children are expected to be stable.

Another method of evaluating reliability is the internal consistency method which examines the nature and extent of the interrelations of the items that make up a questionnaire. The FSRQ exhibited internal consistency (the results supported homogeneity) as evaluated by the split-half method as indicated in an earlier section (Heiby, 1983a). Internal consistency of the FSRQ-CF is evaluated statistically yielding a Cronbach alpha and separate item-total reliability indices. It is expected that the analysis will suggest a fairly homogenous construct as expressed in the FSRQ-CF.

Validity

In psychological literature validity refers to the ability of a psychometric instrument to measure what it purports to measure. Face validity of an instrument is often rationally established by consensus among experts. The face validity of the FSRQ-CF has been established by examination of the experimenter generated proposed items by professors in diverse fields. Only items that reach a very high level of ranking (at least 4 on a Likert-like scale of 1 to 5), and a very high level of agreement (80% to 100%) among the raters were included.
Construct validity of new psychometric measures is also evaluated by examining the correlation of scores on the new measure with scores from a psychometrically well established measure of theoretical relevance. If the constructs measured are conceptually or behaviorally related in a predicted fashion, the two sets of scores are expected to correlate, positively or negatively, thus yielding an estimate of convergent validity. If the constructs measured are not conceptually related, the scores on the two instruments are not expected to correlate, positively or negatively; this would yield an estimate of divergent validity. In the present study the divergent validity of the FSRQ-CF will not be evaluated.

The convergent validity of the FSRQ-CF will be evaluated using achievement scores, teacher rating scores and the specially developed 'Family and Friends' construct.

The relationship of achievement scores to self-esteem has been mentioned above. Achievement scores in the form of Total Math and Total Reading scores from the Stanford Achievement Test will be used to provide a measure of construct validity for the FSRQ-CF. Current Grade Point Averages will be used as another measure of academic achievement. Positive correlations with FSRQ-CF scores are expected in both instances.
Teachers were asked to provide ratings of the children's tendency to engage in self-ARD, (defined as self-evaluation, self-monitoring and self-reinforcement) on a 7 point Likert-like scale. The correlation between the teacher ratings and the obtained FSRQ-CF scores was expected to provide a measure of concurrent criterion related validity. This also constitutes an added dimension to the study. It will allow the evaluation of the relationship, if any, between teachers' estimates of their students' level of self-esteem and self-reinforcement skills (self-ARD) with the children's scores on the FSRQ-CF.

The importance of the family in a child's world cannot be underestimated. Several large studies support the connection between family environment and self-esteem (Behrens, 1954; Coopersmith, 1967; Stott, 1939). Viewed in Paradigmatic Behaviorism terms, the family provides first the infant, then the child, with opportunities to develop his BBRs. Due to the cumulative-hierarchical nature of learning (Staats, 1975), the BBRs that are put into place earlier have an enormous impact on subsequent acquisition of more complex repertoires.

It is in accordance with a similar line of reasoning, that 'friends' are seen as an influential source of behavior acquisition. Modeling has been shown to be effective in the acquisition of new behavior (Kanfer &
Goldstein, 1986; Watson & Tharp, 1989; Weiner, 1976). Children are increasingly exposed to behaviors modeled by friends as they grow older. Peers as behavior change agents have proven to be very effective (Wilson, Franks, Brownell & Kendall, 1984).

The combination of the aforementioned influences, results in the 'family and friends' construct that is expected to provide some measure of convergent construct validity for the FSRQ-CF.

The convergent validity of the FSRQ-CF will also be evaluated through correlations with CDI scores; a negative correlation is predicted. There exists evidence of divergence of scores on the FSRQ and scores on the Beck Depression Inventory (Heiby, 1982). A similar divergence is expected between FSRQ-CF scores and CDI scores, providing a yet another measure of convergent validity for the FSRQ-CF.

Yet another measure of construct validity will be provided by a Factor Analysis of the FSRQ-CF into component subscales. The component subscales were formulated to reflect the Kanfer-Rehm tripartite categorization of self-regulation of behavior into self-monitoring, self-evaluation and self-reinforcement. It needs to be mentioned that the subscales were not developed with precise Paradigmatic Behaviorism analyses in mind. Yet it is possible to analyze the subscales of
the FSRQ-CF from a Paradigmatic Behaviorism point of view in terms of the basic behavioral repertoires involved, namely, sensory-motor, language-cognitive and emotional-motivational. The twin theoretical bases of the FSRQ-CF operate at different levels of analysis.

Norms

The data for this study are gathered at the University Laboratory School and are expected to provide preliminary norms that can subsequently be refined on a larger sample. The population of students at the University Lab School is designed to be isomorphic with the demographic composition of the State of Hawaii. Hence it is expected that a larger study with the same population (that is, in Hawaii) will provide results consistent with the norms generated at the Lab School.

Since the number of subjects in each grade is quite small at the Lab School the norms are considered preliminary. It would be very useful to be able to gather norms on a substantially large scale.
List of Hypotheses and Questions

Regarding Reliability

1. Internal consistency of the FSRQ-CF evaluated by the statistical analysis yielding Cronbach’s alpha value is expected to be supported.

2. FSRQ-CF test-retest reliability is expected to be supported by the correlation of test-retest FSRQ-CF total scores.

Regarding Validity

Construct Validity

3. Negative correlation of FSRQ-CF scores with CDI scores is expected.

4. Positive correlation of FSRQ-CF scores with SAT scores is expected.

5. Positive correlation of FSRQ-CF scores with GPA scores is expected.

6. Positive correlation of FSRQ-CF scores with scores on the Family and Friends construct is expected.

7. It is expected that Factor Analysis will support the
analysis of components of self-regulation into the Kanfer-Rehm schema:

1. Self-monitoring component (5 items).
2. Self-evaluation component (5 items).
3. Self-reinforcement component (5 items).

Criterion-related Validity

8. Positive correlation of FSRQ-CF scores with Teacher Ratings is expected.

Regarding Gender linked differences

9. Positive correlation of SAT and GPA scores to FSRQ-CF scores is expected for male subjects but not for female subjects.
10. Gender effects on the accuracy of teacher ratings will be explored.
CHAPTER V

METHOD

Experiment 1: Pre-testing Pilot Study

Method

The existence of a psychometrically sound adult FSRQ provided a framework for item generation. The first stage in the construction of the FSRQ-CF was the generation of items for inclusion in the proposed test. A total of 40 items were rationally derived by the present investigator, keeping in mind the relevance of differential item-content and level of language from adults to children. Some of the items are linguistically simplified versions of items taken from the adult form. Some new items were created by the investigator when original items needed conceptual modification to be developmentally more relevant.

Subjects

Three independent judges, an Associate Professor of Psychology, a Professor of Linguistics and a Professor of Physics rated the items generated by the investigator.
Twenty nine fourth grade children, from a rural north Oahu elementary school took part in the pre-testing pilot study. There were 11 female and 18 male subjects.

Since this was a pilot study to evaluate only the feasibility of a self-report instrument with young children, no demographic or identifying information was collected.

Materials

The 40 items generated by the investigator constituted the material that three independent judges evaluated. More details regarding the evaluative process are described below in the Procedure section. The final product of this judging of items was the 15 item pilot FSRQ-CF. See Appendix C.

The teacher was asked to assign a self-reinforcement rating to each of the children on a scale of 1 to 7. This Teacher Rating constituted part of the materials used in the Pilot study.

Procedure

The three independent judges were provided with a definition of self-reinforcement with its component processes of self-monitoring, self-evaluation and
self-reinforcement (i.e., self-ARD) and asked to rate the items as expressions of the concept on a scale of 1 to 5. Items with a minimum ranking of 4, and a high inter-rater agreement (80% to 100%) among judges were included in the FSRQ-CF.

The FSRQ-CF was limited to 15 items so as to allow young children to complete it without strain or boredom. The FSRQ-CF is a paper and pencil test consisting of sentences that may be descriptive of a person, that express a feeling or a thought related to the self-reinforcement process (self-monitoring involving the language-cognitive repertoire, self-evaluation involving the language-cognitive and the emotional-motivational repertoire, and self-reinforcement involving possibly all three BBRs).

The children were expected to choose a number from a table, included along with the instructions, specifying a range of values from 1 to 3, in order of increasing frequency of the occurrence of the 'thought' or 'feeling', (1 = hardly ever true, 2 = sometimes true, and 3 = true most of the time) and write the number in the blank provided at the end of the sentence under consideration. The 3 point scale was preferred over a 5 point scale (that would have included 'never true' and 'always true') in order to be possibly developmentally more appropriate by limiting the range of choices. This suggestion came from
a fourth grade teacher with more than 20 years of teaching experience (Personal Communication, Elly Tepper, January 1991). The 3 point scale used in the FSRQ-CF also avoids the extreme of absolutism.

Directions are printed on the test form as well as verbally repeated at the time of administration. The items were read aloud to the children by the teacher. The children followed along on their copies of the Form and completed the items one by one. It was emphasized to the children that their honest answers were going to be helpful to the goals of research and to other children that may subsequently be assessed by the questionnaire under development.

Results

A correlational analysis was run on item-total correlations to test the internal consistency of the pilot FSRQ-CF. Cronbach's alpha of the pilot FSRQ-CF was reported to be .67. Individual item-total correlations ranged from -.05 to .56. The distribution was not bimodal. For detailed listing see Table 1. Two items, 7 and 12, showed correlations with the total score that were consistent with zero (-.05, .01).

The obtained range of scores for the FSRQ-CF was from 19 to 38, with a mean of 31.93, a standard deviation of
4.76 and a median of 32. The possible range of scores was 15 to 45.

<table>
<thead>
<tr>
<th>Item</th>
<th>Correlation with Total</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.48</td>
<td>.63</td>
</tr>
<tr>
<td>2</td>
<td>.26</td>
<td>.65</td>
</tr>
<tr>
<td>3</td>
<td>.21</td>
<td>.66</td>
</tr>
<tr>
<td>4</td>
<td>.40</td>
<td>.64</td>
</tr>
<tr>
<td>5</td>
<td>.11</td>
<td>.68</td>
</tr>
<tr>
<td>6</td>
<td>.33</td>
<td>.65</td>
</tr>
<tr>
<td>7</td>
<td>-.05</td>
<td>.70</td>
</tr>
<tr>
<td>8</td>
<td>.21</td>
<td>.66</td>
</tr>
<tr>
<td>9</td>
<td>.14</td>
<td>.67</td>
</tr>
<tr>
<td>10</td>
<td>.39</td>
<td>.64</td>
</tr>
<tr>
<td>11</td>
<td>.27</td>
<td>.65</td>
</tr>
<tr>
<td>12</td>
<td>.01</td>
<td>.69</td>
</tr>
<tr>
<td>13</td>
<td>.45</td>
<td>.63</td>
</tr>
<tr>
<td>14</td>
<td>.56</td>
<td>.61</td>
</tr>
<tr>
<td>15</td>
<td>.53</td>
<td>.61</td>
</tr>
</tbody>
</table>

A second correlation analysis was run in order to evaluate the relationship between teacher ratings of students and total FSRQ-CF scores. It resulted in a non-significant coefficient of .26 with p<.16. For boys the value of the correlation coefficient was .17 (n.s.). For girls the value of the correlation coefficient was .32 (n.s.).
Discussion

The results obtained in the pilot study suggest that the FSRQ-CF possesses an acceptable level of internal consistency. The FSRQ-CF appears to tap a behavioral repertoire with measurable individual differences.

Teacher ratings were not significant in the pilot sample, contrary to expectations. This may be due to the small size of the sample. The teacher-student gender linked analysis, though not statistically significant, is suggestive of a possible gender linked differences in the reliability of teacher ratings. It would be useful to study this possible gender related effect in a larger sample which might allow the effect, if any, to be detected.

The item-total correlations suggest that the internal consistency of the FSRQ-CF may be increased by deleting the two zero correlation items. However, an examination of the two items indicated a similarity of content. Both items were concerned with 'long boring jobs' and an individual's capacity to deal with them. A suggestion was entertained that the capacity to deal with boredom may have developmental relevance. Items relating to 'boredom' may be unrelated to total FSRQ scores at the fourth grade level, but may become relevant at higher grades as the children matured. Therefore, it was decided to leave in
one of the items pertaining to a 'long boring job' in the final FSRQ-CF. The selection of the item for inclusion was made on the basis of perceived simplicity of linguistic structure.

Experiment 2: Evaluating the FSRQ-CF

Subjects

Subjects were drawn from the University Laboratory School associated with the College of Education of the University of Hawaii. The rationale behind this choice is that the composition of the student body at the Lab School is designed to reflect the demographic composition of the State of Hawaii. The school uses the Statistical Abstract from the State of Hawaii Data Book (published by the Department of Business and Economic Development) as a guide in its student enrollment process. The ethnic representation in the research sample corresponds proportionately to the population of the state (Summary statistics by ethnicity are listed in Table 2). The total number of subjects was 108, 54 males and 54 females (Summary statistics, by grade and gender are listed in Table 2). It should be pointed out here that grades 3, 4, and 5 are treated as one grade in the statistical
TABLE 2

Summary Statistics for all Subjects

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>N</th>
<th>MEAN</th>
<th>STD</th>
<th>MIN</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>SES</td>
<td>107</td>
<td>3.25</td>
<td>1.09</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>SATM</td>
<td>106</td>
<td>6.73</td>
<td>1.89</td>
<td>2.00</td>
<td>9.00</td>
</tr>
<tr>
<td>SATR</td>
<td>106</td>
<td>5.83</td>
<td>1.69</td>
<td>2.00</td>
<td>9.00</td>
</tr>
<tr>
<td>GPA</td>
<td>79</td>
<td>3.09</td>
<td>0.64</td>
<td>1.33</td>
<td>4.00</td>
</tr>
<tr>
<td>TR</td>
<td>107</td>
<td>4.16</td>
<td>1.89</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>CDI</td>
<td>108</td>
<td>9.71</td>
<td>6.12</td>
<td>0.00</td>
<td>37.00</td>
</tr>
<tr>
<td>FSRQ-CF</td>
<td>108</td>
<td>32.37</td>
<td>4.07</td>
<td>19.00</td>
<td>43.00</td>
</tr>
<tr>
<td>FSRQ-CFR</td>
<td>105</td>
<td>32.59</td>
<td>5.11</td>
<td>18.00</td>
<td>44.00</td>
</tr>
<tr>
<td>FMFR</td>
<td>108</td>
<td>15.00</td>
<td>2.10</td>
<td>8.00</td>
<td>18.00</td>
</tr>
<tr>
<td>FMFRR</td>
<td>105</td>
<td>14.85</td>
<td>3.31</td>
<td>8.00</td>
<td>18.00</td>
</tr>
</tbody>
</table>

Ethnicity

Black 3
Caucasian 14
Chinese 5
Filipino 9
Hawaiian 22
Japanese 13
Korean 5
Mixed 36
Other (Tonga) 1

Note: "Hawaiian" includes part Hawaiian.

Subject Distribution by grade and gender

<table>
<thead>
<tr>
<th>Grade</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>14</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>7</td>
<td>13</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>8</td>
<td>14</td>
<td>12</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>54</td>
<td>108</td>
</tr>
</tbody>
</table>

54
analyses. This is due to the small number of students in each grade level as well as the fact that they share a common classroom and teacher.

Not all data points were available for all subjects. No Teacher Rating or Grade Point Average scores are available for a subject who had just begun to attend the school. His SAT scores had yet not been forwarded from his old school. However, he was invited to participate in the study, because not to do so would have hampered his adjustment to a new school. There exist FSRQ-CF and CDI scores for him. Some subjects were absent on one of the two administrations of the FSRQ-CF. Hence the number of subjects was variable for different indices. Missing data resulted in a given subject’s being excluded from any analysis that required that particular score. Only three subjects were lost in the test-retest analysis.

Parents of all children attending the University Laboratory School sign a prior release form, allowing their children to participate in psychoeducational research conducted at the University Lab School. Hence there was no specific consent obtained from the parents for the conduct of the present research. Permission was obtained from the Dean of the College of Education and the Principal of the University Laboratory School.
Measures

Stanford Achievement Test

Stanford Achievement Test (SAT) scores were obtained from school files. The origins of the SAT can be traced as far back as 1920s (Subkoviak & Farley, 1982). The test has enjoyed widespread usage and continued revision. The psychometric properties of the SAT, as reported in the technical Manual are considered satisfactory in terms of reliability.

The SAT scores obtained for the purposes of the current study, were in the form of Total Math and Total Reading national stanines. The SAT scores were obtained for all except two students; a foreign student and a new student. A few students had transferred from private schools to the University Lab School. However, when National Stanines are computed for the SAT, they are expressed in relation to the whole population taking the Achievement Test, as well as in reference to the special private school group. This allows comparisons and between school transfers. The Stanines recorded in the school files are those computed in relation to the whole population (Loretta Krause, Principal of Lab School, Personal Communication, April 1991) and have been treated as such in the statistical analysis.
Grade Point Average

Grade Point Averages were obtained from current semester report cards for almost all students in grades 6-8. The only exception was the new student who had not been at the school long enough. GPAs were not available for grades 3, 4 and 5 because the younger children are not evaluated on a letter grade system. The system of evaluating the younger children is completely individualized. Each child is evaluated on the basis of how he meets his teacher's individualized expectations, either he does not meet them (N), or he meets them (M) or he exceeds them (E). This system of rating young children is commendable from the point of view of attempting to encourage growth at an individualized pace and acknowledging the variability in individual rates of development in the early years, but such ipsative data do not allow for meaningful rankings or comparisons. Hence, no effort has been expended on attempting to quantify the existing system of ranking. Consequently, for grades 3, 4 and 5, FSRQ-CF scores have not been correlated with GPA scores.

Teacher Ratings

The teachers were given an explanation of self-reinforcement analogous to the definition provided to the judges rating the items for the FSRQ-CF, pointing out the self-monitoring, self-evaluative and self-reinforcement
components of the self-ARD concept expressed in the FSRQ-CF. The investigator also tried to convey the sense that no precise judgment was involved; the teachers' 'sense' of how well the child encourages himself would be acceptable.

One teacher had no difficulty in providing teacher ratings. Two other teachers had considerable difficulties with the process and there were several conversations with the investigator on the subject. They did not feel 'competent' to judge the children on as complex a dimension as self-reinforcement skills. In the end the investigator communicated her appreciation of the teachers' sense of responsibility and the difficulty involved in the rating. She would be grateful if they could provide ratings but would understand if they decided not to do so. In the end, the teachers kindly cooperated. Teacher ratings exist for all but one male child who had just moved to the school only four days earlier.

The reluctance of some teachers to provide ratings of self-ARD skills of the students suggests that they did not perceive themselves as expert judges. This may have resulted in teacher ratings of suspect reliability and validity. Thus the teacher ratings may not be an adequate criterion for concurrent validity in the current study.
Frequency of Self-reinforcement: Children’s Form

A total of 40 items were rationally derived by the investigator. Some of the items were simpler linguistic formulations items from the adult FSRQ; and some were created by the present investigator to be more conceptually and developmentally more relevant. These were the same pool of items that were employed in the construction of the Pilot FSRQ-CF. Five independent judges (a Professor and Associate Professor of Psychology, a Professor of Linguistics, a Professor of Physics and an Assistant Professor of Philosophy), as different from the three judges for the pilot FSRQ-CF, were provided with a definition of self-ARD and three component processes of self-monitoring, self-evaluation and self-reinforcement, and were asked to rate the items as expressions of the concepts on a scale of 1-5. Items with a minimum ranking of 4 and a high inter-rater agreement (80% to 100%) were considered adequate for inclusion in the FSRQ-CF.

Three elementary school teachers from different schools in the State were asked to read the FSRQ-CF for clarity of language and relevance of content. This evaluation by five expert judges and three elementary school teachers is assumed to initially establish some face validity of the FSRQ-CF.

As a consequence of the pilot study changes were made in the FSRQ-CF. Two items involving the idea of
a "long boring job" were found to be uncorrelated with the total score, as remarked earlier. It was argued that perhaps young children did not relate to the idea of 'long boring jobs' and so the items should be dropped from the subsequent FSRQ-CF. One of the two 'long boring job' items was retained in the experimental FSRQ-CF administered to the children at the University Lab School in order to test the possibility that the item may become relevant with older children and show a grade related developmental change. The item was selected on the basis of perceived linguistic simplicity as compared to the other item involving a 'long boring job'.

The other change in the FSRQ-CF pertains to its conceptual framework. It was implemented as a consequence of the item-total correlation pattern which suggested that the FSRQ-CF (pilot form) appeared to be expressive of a complex concept. The suggestion was made that the tripartite conceptual schema of self-monitoring, self-evaluation and self-reinforcement could be empirically tested by the deliberate inclusion of items pertaining to the different components.

The Director of Philosophy in Schools Project, an Assistant Professor of Philosophy categorized the items into three groups as specifically expressive of self-monitoring, self-evaluation or self-reinforcement (representative of the Kanfer-Rehm schema). Five items
relating to each component were chosen from the 'philosopher's categorization' (a total of 15). Only items that received a ranking of at least 4 and a high inter-rater agreement (80% to 100%) among the five expert judges as to its inclusion in the FSRQ-CF were chosen. Table 3 lists the three components and the items that belong under each concept as analyzed by the Assistant Professor in Philosophy.

Items from the pilot form were dropped from the experimental FSRQ-CF on the basis of item-total correlation. A total of three items showing the lowest item-total correlations were replaced.

The investigator noticed that no items involving family and friends had met the stringent rating and inter-rater agreement criteria. Family and friends are a significant part of a child's environment, and can exert considerable influence on self-ARD skills through modeling of self-control. Modeling processes were acknowledged as being more effective than verbal feedback (Weiner, 1976). Therefore, a group of six items representing the 'family and friends' construct was added to the previous 15 FSRQ-CF items. The expectation was that FSRQ-CF scores would correlate positively with 'family and friends' (FMFR) scores.

The experimental FSRQ-CF with the additional FMFR construct was the instrument administered to the children
### TABLE 3

Classification of Items
by Philosopher using the Kanfer-Rehm Tripartite Conceptual Framework

#### Self-monitoring

13. If I make a mistake it does not get me down.
10. When I make a mistake I get mad at myself.
  7. I can do a long boring job by myself without someone making me stick to it.
  9. When I am alone I still have fun, doing things that I like to do by myself.
  3. I want to do things so well that sometimes I have a hard time being happy with my work.

#### Self-evaluation

  2. I think it is my fault when something goes wrong.
  12. Sometimes I think bad things about myself.
  5. When people put me down I believe them.
  14. Sometimes people are hard on me, but I am harder on myself.
  1. Even when I can’t do something right, I still like myself.

#### Self-reinforcement

  6. When I feel sad I cheer myself up by thinking good things about myself.
  4. I find that I feel better when I think nice things about myself.
  8. When I do something right I feel happy and take time to enjoy the feeling.
  11. When I am having a hard time with my work, I help myself finish it by planning to do something fun afterwards.
  15. Even when other people don’t say nice things to me, I say nice things to myself.
at the University Laboratory School. A copy of the experimental FSRQ-CF with the additional FMFR construct is appended in Appendix D. The scoring system for the FSRQ-CF is simple. Some of the items are scored by the value of the number chosen by the child; the rest are scored in reverse. Items 1, 4, 6, 7, 8, 9, 11, 13 and 15 are scored directly. Items 2, 3, 5, 10, 12 and 14 are scored in reverse. This admixture of direct and reverse items was employed in order to control a possible response set. The same scoring strategy applies to items in the FMFR construct. Items 16, 17, 20 and 21 are scored directly; items 18 and 19 are scored in reverse. A high score would translate into good self-ARD skills.

Children's Depression Inventory

Multihealth Systems (Canada), currently in the process of publishing the Children's Depression Inventory (CDI), was kind enough to release a copy of the form and a scoring template to the investigator for dissertation research purposes. A copy of the CDI is appended in Appendix E.

The CDI was modeled on the Beck Depression Inventory (Kovacs & Beck, 1977). It is a 27 item self-report inventory designed to measure depressive symptomatology in children aged 8 to 17 years. The administration procedures for the CDI allow for individual or group
administration. The items are to be read aloud under both circumstances. Items are directed at specific depressive symptoms. Each item is expressed in three levels of severity and the child chooses the sentence that best describes how he has felt in the past two weeks. The order of severity of depressive affect in each item is randomized so as to control for possible response set. The responses are scored on a 0 to 2 scale where 2 represents a severe form of the symptom and a 0 represents an absence of the particular symptom. A high score on the CDI is associated with depressive affect.

Kovacs (1980/1981) reported a mean score of 9 in nonreferred children. She recommended that a cutoff score of 19 (90th percentile in normals) be used for diagnosing clinical depression. Using this cut off score Mullins, Siegel and Hodges (1985) found that 13% of nonreferred grade school children were misclassified as depressed.

On the other hand, Kazdin, French, Unis and Esveldt-Dawson (1983) report a mean of 15 in children hospitalized for depression. Preliminary data from Kovacs (1983) report a mean of 14 for children who meet DSM-III criteria for Major Depressive episode. It is clear that caution and clinical judgment are called for when applying cutoff scores for making a diagnosis. For purposes of this study no formal diagnosis will be made. CDI scores are used only in a correlational analysis.

64
The CDI is internally consistent, as suggested by a coefficient alpha of .86 in a psychiatric population (Kovacs, 1983). Other studies reported alpha coefficients range from .71 to .94 (Kazdin, French & Unis, 1983; Saylor, Finch, Spirito and Bennett, 1984) for grade school children.

The values of test-retest reliability of the CDI range from a reliability coefficient of .82 over a one month interval in a small sample of diabetic children (Kovacs, 1983) to a reliability coefficient of only .38 over a one week interval in grade school children (Saylor, Finch, Spirito & Bennett, 1984). The same investigators also found different test-retest reliabilities for a psychiatric population; the one week test-retest reliability was .87 dropping to .59 at six weeks.

These differing values may point to some property of the instrument, or they may point to some difficulty with assessing test-retest reliability with children's inventories. The authors do not point to any specific properties of the instrument or any specific difficulties with assessment of children.

Kovacs (1983) reports a study of psychiatrically referred children where scores on the CDI were correlated with scores on a measure of self-esteem (Coopersmith Self-Esteem Inventory) and a measure of anxiety (Revised Children's Manifest Anxiety Scale). There was a
significant negative correlation between self-esteem scores and CDI scores \((r = -0.59)\); there was also a significant positive correlation with anxiety scores \((r = 0.65)\).

The CDI is the most widely used self-report measure of depression (Stark, 1990; Siegel, 1986). Therefore, it appeared to be an excellent choice for use in evaluating the convergent validity of the FSRQ-CF.

**Procedure**

The investigator arranged to visit a classroom at a time convenient to the teacher and students. All administrations were scheduled in the same week. Make up administrations for students who were absent on the day of the first administration were also scheduled as early as possible so as to keep the time of data collection as close as possible for all subjects.

On the issue of confidentiality and assigning code numbers to the students, the teachers were of the opinion that the University Lab School children were familiar with research protocols and habituated to investigators visiting classrooms with novel testing material so that the assigning of code numbers would create a situation that could be perceived as extraordinary. The teachers and the investigator were in complete agreement over the
fact that in order to insure the most veridical responses
it would be helpful to maintain a familiar routine. The
teachers were quite confident that the question of
confidentiality was not a central one for the children.
However, confidentiality was assured and maintained with
one notable exception which is subsequently discussed at
length.

The investigator briefly explained the project to the
children thus:

"My name is Karuna Joshi-Peters. I am a student
like you, only I study at the University across the
street. I need your help in making up a list of sentences
that will help teachers and counsellors find out how
people feel about themselves. You can help me in this
project by filling out two forms. One of these is
somebody else's form and the other is one I am putting
together. The idea behind the list of sentences that I am
putting together is to find out how people feel about
themselves.

This is not a test with right or wrong answers or
grades. Only you can say how you feel. The directions
are printed on the forms. You will get one form at a
time. I will read the items aloud to you and you can read
along. After each item is read, please mark your choice
in the place provided. Please raise your hand if there
are any questions. I will be happy to answer them. Thank you very much for your help."

At this time the questionnaires were passed out. The rating scale for the FSRQ-CF was written on the blackboard as well as printed on each page of the questionnaire. In all the classes the CDI was administered before the FSRQ-CF. Both the CDI and FSRQ-CF were read aloud to the children by the investigator in all administrations. Thus mode of delivery was held constant across questionnaires and classes. The FSRQ-CF alone was readministered after an interval of approximately two to three weeks in exactly the same manner as the earlier administrations.

The oral administration of the form accommodates a comment made by an experienced elementary school teacher (Elly Tepper, Personal Communication, January 1991). A written form is of necessity dependent on reading skills. It is the child with reading difficulties that is at risk for low self esteem (Wattenberg & Clifford, 1964; Zimmerman & Allebrand, 1965) and may have a deficit in self reinforcing skills.

This investigator conducted all the administrations and hence had the opportunity to make behavioral observations of the children's responses to the questionnaires. In all classes many of the children responded with laughter to items 9 and 14 in the CDI. These items
refer to risk of suicide and acceptance of one's physical appearance. The investigator decided to separately examine the relationship of these items to the FSRQ-CF scores as their reliability may have been compromised by peer pressure, social desirability or demand characteristics.

To return to the single case of breach of confidentiality mentioned earlier, one of the male respondents in grade 7 indicated suicidal ideation on his CDI form. The investigator has reason to believe that the child may know her. It could have been a teenager's prank, but in the judgment of the investigator, which was confirmed by a consultation with her supervisor, the response on the CDI had to be taken seriously. A risk assessment was indicated. It was under this extreme circumstance that the investigator decided to inform the Principal of the identity of the child. The Principal was out of town and the matter was handled by the Assistant Principal and the school counsellor. The school counsellor subsequently informed the investigator that a risk assessment had been made and that the child was viewed as in no real danger.
CHAPTER VI
RESULTS

Summary statistics for all subjects on ethnicity and socio-economic status (SES) are detailed in Table 2. Since ethnicity was not previously found to be correlated with frequency of self-reinforcement (Heiby & Pacheco, 1982) and there are no theoretically related predictions for ethnic differences, it has been left out of the analyses. Ethnicity was coded according to State of Hawaii procedures.

SES was coded on the basis of information on parental occupation. When the index of the parental occupation between mother and father varied, the higher level was chosen. Most of the SES figures were taken from school files. For some subjects, SES was assessed by the investigator on the basis of the following guide explained to her by Dr. Loretta Krause, Principal of the University Laboratory School.

This general guideline has been in use in the University Laboratory School prior to Dr. Krause’s assuming Principalship; therefore she was not able to give the current investigator any information as to its origins. However, it has been employed in the
classification of the entire sample. Furthermore, only a
descriptive use has been made of it. No conclusions or
inferences in the current study relate to the SES index.

1 = On welfare, unemployed, low fixed income,
children living with grandparents.
2 = Unskilled blue collar, eg., dishwashers, maids,
ditch diggers, bell captain helpers.
3 = Secretary, clerical, sales and service.
4 = Teachers, mid level management, owner of small
business.
5 = Engineers, Doctors, Lawyers, Professors,
Dentists, Owners of large businesses and other
professionals.

Table 2 details summary statistics for the total
sample (N, mean, standard deviations, minimum and maximum
value) for all measures including two formulations of the
FSRQ-CF. The first formulation labeled FSRQ-CF refers to
the experimental FSRQ-CF consisting of items 1-15. The
second formulation labeled FSRQ-FMFR-CF refers to the
experimental FSRQ-CF plus Family and Friends items (16-21)
bringing the total to 21 items. Subject distribution by
grade and gender is also listed in Table 2. Summary
statistics for all measures for male and female subjects
are detailed separately in Table 4.
### TABLE 4

**Summary Statistics for Female Subjects**

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>N</th>
<th>MEAN</th>
<th>STD</th>
<th>MIN VAL</th>
<th>MAX VAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SES</td>
<td>53</td>
<td>3.24</td>
<td>1.07</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>SATM</td>
<td>53</td>
<td>6.77</td>
<td>1.95</td>
<td>2.00</td>
<td>9.00</td>
</tr>
<tr>
<td>SATR</td>
<td>53</td>
<td>6.02</td>
<td>1.81</td>
<td>3.00</td>
<td>9.00</td>
</tr>
<tr>
<td>GPA</td>
<td>41</td>
<td>3.24</td>
<td>.60</td>
<td>1.33</td>
<td>4.00</td>
</tr>
<tr>
<td>TR</td>
<td>54</td>
<td>4.42</td>
<td>1.99</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>CDI</td>
<td>54</td>
<td>9.79</td>
<td>5.67</td>
<td>0.00</td>
<td>25.00</td>
</tr>
<tr>
<td>FSRQ-CF</td>
<td>54</td>
<td>32.28</td>
<td>4.02</td>
<td>19.00</td>
<td>40.00</td>
</tr>
<tr>
<td>FMFR</td>
<td>54</td>
<td>14.89</td>
<td>2.17</td>
<td>8.00</td>
<td>18.00</td>
</tr>
</tbody>
</table>

**Summary Statistics for Male Subjects**

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>N</th>
<th>MEAN</th>
<th>STD</th>
<th>MIN VAL</th>
<th>MAX VAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SES</td>
<td>54</td>
<td>3.26</td>
<td>1.12</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>SATM</td>
<td>53</td>
<td>6.70</td>
<td>1.87</td>
<td>3.00</td>
<td>9.00</td>
</tr>
<tr>
<td>SATR</td>
<td>53</td>
<td>5.66</td>
<td>1.56</td>
<td>2.00</td>
<td>9.00</td>
</tr>
<tr>
<td>GPA</td>
<td>38</td>
<td>2.93</td>
<td>.66</td>
<td>1.43</td>
<td>4.00</td>
</tr>
<tr>
<td>TR</td>
<td>53</td>
<td>3.88</td>
<td>1.77</td>
<td>1.00</td>
<td>7.00</td>
</tr>
<tr>
<td>CDI</td>
<td>54</td>
<td>9.63</td>
<td>6.59</td>
<td>1.00</td>
<td>37.00</td>
</tr>
<tr>
<td>FSRQ-CF</td>
<td>54</td>
<td>32.48</td>
<td>4.17</td>
<td>24.00</td>
<td>43.00</td>
</tr>
<tr>
<td>FMFR</td>
<td>54</td>
<td>15.11</td>
<td>2.05</td>
<td>8.00</td>
<td>18.00</td>
</tr>
</tbody>
</table>

72
The reporting of statistical results in this section follows the list of hypotheses and questions to be found on pages 45-46.

Reliability

Cronbach Alpha

The reliability of FSRQ-CF was evaluated using the internal consistency method which yields the Cronbach alpha, a measure which indicates the degree to which test items measure the same general construct. The Cronbach alpha for the FSRQ-CF was found to be .62 (Table 5); with the addition of FMFR the Cronbach alpha increased to .72 (Table 6). Item-total correlations for the two forms are detailed in Tables 5 and 6.

Test-retest

The reliability of the FSRQ-CF was also evaluated using the test-retest method (Table 7). The Pearson correlation coefficient for the test-retest for the Total score for the FSRQ-CF (15 items) was found to be .71. A test-retest reliability score was also computed for the FMFR construct; it was found to be .71. When FMFR was added to FSRQ-CF the test-retest reliability increased to .76.
### TABLE 5

Internal Consistency of FSRQ–CF
Cronbach Coefficient Alpha

Overall Alpha = .62

<table>
<thead>
<tr>
<th>Item deleted</th>
<th>Correlation with total</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.32</td>
<td>.60</td>
</tr>
<tr>
<td>2</td>
<td>.30</td>
<td>.60</td>
</tr>
<tr>
<td>3</td>
<td>.22</td>
<td>.61</td>
</tr>
<tr>
<td>4</td>
<td>.36</td>
<td>.59</td>
</tr>
<tr>
<td>5</td>
<td>.27</td>
<td>.60</td>
</tr>
<tr>
<td>6</td>
<td>.19</td>
<td>.62</td>
</tr>
<tr>
<td>7</td>
<td>.01</td>
<td>.64</td>
</tr>
<tr>
<td>8</td>
<td>.18</td>
<td>.62</td>
</tr>
<tr>
<td>9</td>
<td>-.01</td>
<td>.64</td>
</tr>
<tr>
<td>10</td>
<td>.36</td>
<td>.59</td>
</tr>
<tr>
<td>11</td>
<td>.12</td>
<td>.63</td>
</tr>
<tr>
<td>12</td>
<td>.43</td>
<td>.58</td>
</tr>
<tr>
<td>13</td>
<td>.44</td>
<td>.58</td>
</tr>
<tr>
<td>14</td>
<td>.34</td>
<td>.59</td>
</tr>
<tr>
<td>15</td>
<td>.24</td>
<td>.60</td>
</tr>
</tbody>
</table>

(N = 108)
### TABLE 6

Internal Consistency of FSRQ-FMFR-CF
Cronbach Coefficient Alpha

Overall Alpha = .72

<table>
<thead>
<tr>
<th>Item deleted</th>
<th>Correlation with Total</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.37</td>
<td>.70</td>
</tr>
<tr>
<td>2</td>
<td>.30</td>
<td>.70</td>
</tr>
<tr>
<td>3</td>
<td>.22</td>
<td>.71</td>
</tr>
<tr>
<td>4</td>
<td>.40</td>
<td>.69</td>
</tr>
<tr>
<td>5</td>
<td>.36</td>
<td>.70</td>
</tr>
<tr>
<td>6</td>
<td>.19</td>
<td>.77</td>
</tr>
<tr>
<td>7</td>
<td>.01</td>
<td>.73</td>
</tr>
<tr>
<td>8</td>
<td>.27</td>
<td>.70</td>
</tr>
<tr>
<td>9</td>
<td>-.01</td>
<td>.73</td>
</tr>
<tr>
<td>10</td>
<td>.33</td>
<td>.70</td>
</tr>
<tr>
<td>11</td>
<td>.15</td>
<td>.72</td>
</tr>
<tr>
<td>12</td>
<td>.41</td>
<td>.70</td>
</tr>
<tr>
<td>13</td>
<td>.49</td>
<td>.69</td>
</tr>
<tr>
<td>14</td>
<td>.25</td>
<td>.71</td>
</tr>
<tr>
<td>15</td>
<td>.24</td>
<td>.71</td>
</tr>
<tr>
<td>16</td>
<td>.46</td>
<td>.69</td>
</tr>
<tr>
<td>17</td>
<td>.29</td>
<td>.71</td>
</tr>
<tr>
<td>18</td>
<td>.36</td>
<td>.70</td>
</tr>
<tr>
<td>19</td>
<td>.38</td>
<td>.70</td>
</tr>
<tr>
<td>20</td>
<td>.25</td>
<td>.71</td>
</tr>
<tr>
<td>21</td>
<td>.26</td>
<td>.71</td>
</tr>
</tbody>
</table>

(N = 108)
TABLE 7

Pearson Correlation Coefficients for Test-Retest Reliability

Total Score

<table>
<thead>
<tr>
<th></th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSRQ-CF</td>
<td>.71</td>
</tr>
<tr>
<td>FMFR</td>
<td>.71</td>
</tr>
<tr>
<td>FSRQ-FMFR-CF</td>
<td>.76</td>
</tr>
</tbody>
</table>

(N = 105)

TABLE 8

Pearson Correlation Coefficients for Test-Retest Reliability

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.39</td>
</tr>
<tr>
<td>2</td>
<td>.35</td>
</tr>
<tr>
<td>3</td>
<td>.50</td>
</tr>
<tr>
<td>4</td>
<td>.40</td>
</tr>
<tr>
<td>5</td>
<td>.69</td>
</tr>
<tr>
<td>6</td>
<td>.35</td>
</tr>
<tr>
<td>7</td>
<td>.38</td>
</tr>
<tr>
<td>8</td>
<td>.44</td>
</tr>
<tr>
<td>9</td>
<td>.28</td>
</tr>
<tr>
<td>10</td>
<td>.47</td>
</tr>
<tr>
<td>11</td>
<td>.43</td>
</tr>
<tr>
<td>12</td>
<td>.33</td>
</tr>
<tr>
<td>13</td>
<td>.38</td>
</tr>
<tr>
<td>14</td>
<td>.42</td>
</tr>
<tr>
<td>15</td>
<td>.48</td>
</tr>
<tr>
<td>16</td>
<td>.68</td>
</tr>
<tr>
<td>17</td>
<td>.43</td>
</tr>
<tr>
<td>18</td>
<td>.44</td>
</tr>
<tr>
<td>19</td>
<td>.52</td>
</tr>
<tr>
<td>20</td>
<td>.57</td>
</tr>
<tr>
<td>21</td>
<td>.40</td>
</tr>
</tbody>
</table>
A listing of test-retest reliability coefficients for item-item correlation appears in Table 8.

Validity

Construct Validity

Children's Depression Inventory.

The hypothesis of a negative correlation between FSRQ-CF and CDI scores was strongly supported for the combined sample, that is to say that the correlation was negative and significant. See Table 9 for coefficient values. Of the variance in FSRQ-CF, 36% was found to be associated with CDI.

Stanford Achievement Test Scores and Grade Point Averages.

The hypothesis of a positive correlation between FSRQ-CF and achievement scores was supported for the combined sample; that is to say that the correlations were positive and significant (Table 9). Not surprisingly, the achievement measures were positively intercorrelated. For Total Math SAT score & GPA the coefficient was reported to be .64 (p < .0001), yielding a
TABLE 9

Pearson Correlation Coefficients for FSRQ-CF

<table>
<thead>
<tr>
<th>SES</th>
<th>SATM</th>
<th>SATR</th>
<th>GPA</th>
<th>TR</th>
<th>CDI</th>
<th>FMFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>.29*</td>
<td>.26*</td>
<td>.25**</td>
<td>-.60****</td>
<td>.47****</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.29*</td>
<td>.26*</td>
<td>.25**</td>
<td>-.60****</td>
<td>.47****</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.29*</td>
<td>.26*</td>
<td>.25**</td>
<td>-.60****</td>
<td>.47****</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Female Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>SES</td>
</tr>
<tr>
<td>.22</td>
</tr>
<tr>
<td>.22</td>
</tr>
<tr>
<td>.22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Male Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>SES</td>
</tr>
<tr>
<td>.15</td>
</tr>
<tr>
<td>.15</td>
</tr>
<tr>
<td>.15</td>
</tr>
</tbody>
</table>

* p<.05  ** p<.01  *** p<.001  **** p<.0001
shared variance estimate of 41%; for Total Reading score and GPA the coefficient was reported to be .60 (p < .0001), for a shared variance estimate of 36%.

The correlations between FSRQ-CF scores and GPA, SAT (Math) and SAT (Reading) are listed in Table 9. Of the variance in FSRQ-CF, 6.8% was shared with GPA, 8.4% with SAT (Math) and 5.3% with SAT (Reading) scores.

Family and Friends Construct.

The hypothesis regarding the expected positive correlation between scores on the FSRQ-CF and scores on the Family and Friends construct was strongly supported with a shared variance of 22%. The Pearson correlation coefficient is listed in Table 9.

Kanfer-Rehm Model and Factor Analysis.

Table 10 contains a summary of semantic Factor labels for both the FSRQ-CF and FSRQ-FMFR-CF. A Principal Components Factor analysis with a Varimax rotation on the FSRQ-CF (15 items) yielded six main factors. Table 11 contains a listing of all item loadings for the rotated factor pattern for FSRQ-CF, proportion of variance explained by each factor and communality estimates for all items. Table 12 shows the Factor pattern after a cutoff item loading score of .40 is applied. This cutoff results in the cleanest separation of factors except for item 4
### TABLE 10

**Summary of Factor Labels**

<table>
<thead>
<tr>
<th>FAMILY AND FRIENDS</th>
<th>A</th>
<th>Not a Factor in FSRQ-CF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Factor 1 in FSRQ-FMFR-CF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SELF-EVALUATION (+ &amp; -)</th>
<th>B</th>
<th>Factor 1 in FSRQ-CF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Factor 2 in FSRQ-FMFR-CF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NEGATIVE SELF-ARD, SELF PUNISHMENT</th>
<th>C</th>
<th>Factor 2 in FSRQ-CF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Factor 3 in FSRQ-FMFR-CF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SELF-REINFORCEMENT (+)</th>
<th>D</th>
<th>Factor 4 in FSRQ-CF</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVIRONMENTAL (+)</td>
<td></td>
<td>Factor 4 in FSRQ-FMFR-CF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POSITIVE SELF-ARD, REINFORCEMENT (-)</th>
<th>E</th>
<th>Factor 3 in FSRQ-CF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Factor 5 in FSRQ-FMFR-CF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ABILITY TO PERSIST</th>
<th>F</th>
<th>Factor 5 in FSRQ-CF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Factor 6 in FSRQ-FMFR-CF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENJOYMENT OF SOLITUDE</th>
<th>G</th>
<th>Factor 6 in FSRQ-CF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Factor 7 in FSRQ-FMFR-CF</td>
</tr>
</tbody>
</table>

**Common core of items in factors stable across versions**

- B: 1, 10, 13.
- C: 2, 5, 12.
- D: 8, 11.
- E: 4, 6, 15.
TABLE 11

Varimax Rotated Factor Pattern
for FSRQ-CF

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.63</td>
<td>.06</td>
<td>.22</td>
<td>-.03</td>
<td>-.00</td>
<td>.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>-.14</td>
<td>.73</td>
<td>-.09</td>
<td>.38</td>
<td>-.06</td>
<td>-.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>.35</td>
<td>.40</td>
<td>-.32</td>
<td>-.04</td>
<td>-.32</td>
<td>.33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>-.01</td>
<td>.28</td>
<td>.48</td>
<td>.50</td>
<td>-.18</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>.14</td>
<td>.59</td>
<td>.12</td>
<td>-.15</td>
<td>.17</td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>.01</td>
<td>.09</td>
<td>.87</td>
<td>-.09</td>
<td>.03</td>
<td>-.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>.07</td>
<td>.05</td>
<td>.05</td>
<td>.04</td>
<td>.84</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>.04</td>
<td>.03</td>
<td>-.01</td>
<td>.76</td>
<td>.17</td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>-.02</td>
<td>-.04</td>
<td>.00</td>
<td>.03</td>
<td>.02</td>
<td>.94</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>.75</td>
<td>.13</td>
<td>-.15</td>
<td>.13</td>
<td>.06</td>
<td>-.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>.14</td>
<td>-.18</td>
<td>.16</td>
<td>.50</td>
<td>-.38</td>
<td>-.16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>.26</td>
<td>.72</td>
<td>.02</td>
<td>.02</td>
<td>.05</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>.81</td>
<td>.14</td>
<td>.01</td>
<td>.05</td>
<td>-.01</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>.38</td>
<td>.52</td>
<td>.10</td>
<td>-.18</td>
<td>-.33</td>
<td>-.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>.12</td>
<td>-.11</td>
<td>.61</td>
<td>.41</td>
<td>.06</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P = .14    .14    .11    .10    .08    .07

P = Proportion of Variance Explained

Final Communality Estimates

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.46</td>
<td>.74</td>
<td>.61</td>
<td>.62</td>
<td>.45</td>
<td>.79</td>
<td>.72</td>
<td>.61</td>
<td>.89</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.64</td>
<td>.52</td>
<td>.60</td>
<td>.69</td>
<td>.60</td>
<td>.58</td>
</tr>
</tbody>
</table>
TABLE 12

Edited
Varimax Rotated Factor Pattern
for FSRQ-CF

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.63</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>.49</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>.59</td>
<td>.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.84</td>
<td>.94</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>.76</td>
<td></td>
<td></td>
<td>.94</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.61</td>
<td>.41</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cronbach Alpha

(Internal consistency of factors)
(.49 on Factor 3 and .50 on Factor 4), and item 15 (.61 on Factor 3 and .41 on Factor 4). The same table also lists the Cronbach Alpha values for the internal consistency of factors 1-4. Factors 5 and 6 are factors with only one item each. Table 13 lists the six factors with proposed semantic labels and a linguistic, not just numeric, listing of items that make up a given factor.

A similar analysis was conducted on the FSRQ-CF and FMFR combined (21 items); the resulting form is labeled FSRQ-FMFR-CF. The results of that analysis are contained in Tables 14-16. Seven main factors were obtained in this analysis, and a cutoff item loading score of .45 uniquely separates all items into 7 mutually exclusive and jointly exhaustive factors. Table 15 contains the Cronbach Alpha values for Factors 1-5. Factors 6 and 7 are single item factors.

A numeric and semantic examination of items loading on different factors in the two variations of the FSRQ-CF points to a stable core of items that jointly load on a given factor (See Table 10). This common core of stable items appears to support the tripartite division of self-regulation into self-monitoring, self-evaluation and self-reinforcement. The Cronbach Alpha for the three subscales is as follows: Self-monitoring = .39, self-evaluation .60 and self-reinforcement .58.
### Table 13

List of Factors for FSRQ-CF

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>1</td>
<td>SELF-EVALUATION (+ AND -)</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>If I make a mistake it does not get me down.</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>When I make a mistake I get mad at myself.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Even when I can’t do something right, I still like myself.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.81) 13.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.75) 10.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.63) 1.</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>NEGATIVE SELF-ARD / SELF PUNISHMENT</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>I think it is my fault when something goes wrong.</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Sometimes I think bad things about myself.</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>When people put me down I believe them.</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Sometimes people are hard on me, but I am harder on myself.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>I want to do things so well that sometimes I have a hard time being happy with my work.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.73) 2.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.72) 12.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.59) 5.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.52) 14.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.40) 3.</td>
</tr>
<tr>
<td>E</td>
<td>3</td>
<td>POSITIVE SELF-ARD / SELF-REINFORCEMENT (-)</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>When I feel sad I cheer myself up by thinking good things about myself.</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Even when other people don’t say nice things to me, I say nice things to myself.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>I find that I feel better when I think nice things about myself.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.87) 6.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.61) 15.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.49) 4.</td>
</tr>
<tr>
<td>D</td>
<td>4</td>
<td>SELF-REINFORCEMENT (+) / ENVIRONMENTAL (+)</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>When I do something right I feel happy and take time to enjoy the feeling.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>I find that I feel better when I think nice things about myself.</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>When I am having a hard time with my work, I help myself finish it by planning to do something fun afterwards.</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Even when other people don’t say nice things to me, I say nice things to myself.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.76) 8.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.50) 4.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.50) 11.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.41) 15.</td>
</tr>
<tr>
<td>F</td>
<td>5</td>
<td>ABILITY TO PERSIST/SELF-ARD SKILLS</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>I can do a long boring job by myself without someone making me stick to it.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.84) 7.</td>
</tr>
<tr>
<td>G</td>
<td>6</td>
<td>ENJOYMENT OF SOLITUDE/SELF-ARD SKILLS</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>When I am along I still have fun, doing things that I like to do by myself.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.94) 9.</td>
</tr>
</tbody>
</table>
TABLE 14
Varimax Rotated Factor Pattern
for FSRQ-FMFR-CF

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.42</td>
<td>.47</td>
<td>-.01</td>
<td>-.06</td>
<td>.23</td>
<td>-.06</td>
<td>-.03</td>
</tr>
<tr>
<td>2</td>
<td>-.08</td>
<td>-.03</td>
<td>.78</td>
<td>.24</td>
<td>-.06</td>
<td>-.14</td>
<td>-.02</td>
</tr>
<tr>
<td>3</td>
<td>.00</td>
<td>.50</td>
<td>.29</td>
<td>-.04</td>
<td>-.27</td>
<td>-.28</td>
<td>.32</td>
</tr>
<tr>
<td>4</td>
<td>.15</td>
<td>-.02</td>
<td>.25</td>
<td>.42</td>
<td>.49</td>
<td>-.26</td>
<td>.12</td>
</tr>
<tr>
<td>5</td>
<td>.28</td>
<td>.12</td>
<td>.59</td>
<td>-.12</td>
<td>.01</td>
<td>.22</td>
<td>-.02</td>
</tr>
<tr>
<td>6</td>
<td>.04</td>
<td>-.01</td>
<td>.06</td>
<td>-.11</td>
<td>.87</td>
<td>.05</td>
<td>-.06</td>
</tr>
<tr>
<td>7</td>
<td>.00</td>
<td>-.00</td>
<td>.09</td>
<td>.00</td>
<td>.07</td>
<td>.82</td>
<td>.07</td>
</tr>
<tr>
<td>8</td>
<td>.15</td>
<td>-.06</td>
<td>.17</td>
<td>.58</td>
<td>.09</td>
<td>.04</td>
<td>.13</td>
</tr>
<tr>
<td>9</td>
<td>-.03</td>
<td>.02</td>
<td>-.09</td>
<td>.08</td>
<td>.00</td>
<td>.05</td>
<td>.82</td>
</tr>
<tr>
<td>10</td>
<td>-.03</td>
<td>.79</td>
<td>.08</td>
<td>.14</td>
<td>-.05</td>
<td>.13</td>
<td>.02</td>
</tr>
<tr>
<td>11</td>
<td>-.08</td>
<td>.13</td>
<td>-.06</td>
<td>.58</td>
<td>.11</td>
<td>-.19</td>
<td>-.35</td>
</tr>
<tr>
<td>12</td>
<td>.16</td>
<td>.33</td>
<td>.59</td>
<td>-.14</td>
<td>.08</td>
<td>-.02</td>
<td>.16</td>
</tr>
<tr>
<td>13</td>
<td>.34</td>
<td>.73</td>
<td>.06</td>
<td>.07</td>
<td>.03</td>
<td>.03</td>
<td>-.06</td>
</tr>
<tr>
<td>14</td>
<td>-.12</td>
<td>.53</td>
<td>.41</td>
<td>-.24</td>
<td>.16</td>
<td>-.28</td>
<td>-.13</td>
</tr>
<tr>
<td>15</td>
<td>-.07</td>
<td>.09</td>
<td>-.06</td>
<td>.43</td>
<td>.63</td>
<td>.13</td>
<td>.02</td>
</tr>
<tr>
<td>16</td>
<td>.68</td>
<td>.15</td>
<td>.12</td>
<td>.29</td>
<td>.02</td>
<td>-.11</td>
<td>-.02</td>
</tr>
<tr>
<td>17</td>
<td>.75</td>
<td>.01</td>
<td>-.01</td>
<td>.07</td>
<td>-.06</td>
<td>.08</td>
<td>-.13</td>
</tr>
<tr>
<td>18</td>
<td>.04</td>
<td>.10</td>
<td>.56</td>
<td>.21</td>
<td>.11</td>
<td>.20</td>
<td>-.26</td>
</tr>
<tr>
<td>19</td>
<td>.71</td>
<td>.17</td>
<td>.05</td>
<td>.11</td>
<td>.02</td>
<td>.10</td>
<td>.08</td>
</tr>
<tr>
<td>20</td>
<td>.28</td>
<td>.04</td>
<td>-.03</td>
<td>.64</td>
<td>-.07</td>
<td>.09</td>
<td>.04</td>
</tr>
<tr>
<td>21</td>
<td>.50</td>
<td>-.17</td>
<td>.29</td>
<td>-.02</td>
<td>.13</td>
<td>-.27</td>
<td>.22</td>
</tr>
</tbody>
</table>

P = Proportion of Variance Explained

Final Communality Estimates

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.47</td>
<td>.70</td>
<td>.60</td>
<td>.60</td>
<td>.52</td>
<td>.80</td>
<td>.70</td>
<td>.43</td>
<td>.71</td>
<td>.68</td>
</tr>
<tr>
<td>Item</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>.55</td>
<td>.56</td>
<td>.68</td>
<td>.66</td>
<td>.63</td>
<td>.61</td>
<td>.61</td>
<td>.50</td>
<td>.57</td>
<td>.51</td>
</tr>
<tr>
<td>Item</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.52</td>
</tr>
</tbody>
</table>

85
<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>.59</td>
<td></td>
<td>.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>.88</td>
<td></td>
<td></td>
<td>.83</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.58</td>
<td>.83</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.83</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>.58</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>.58</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>.54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.64</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.64</td>
</tr>
<tr>
<td>17</td>
<td>.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td>.64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cronbach Alpha

(.64 .68 .62 .39 .33 -- --)

(Internal consistency of factors)
TABLE 16

List of Factors for FSRQ-FMFR-CF

A
Factor 1  FAMILY AND FRIENDS/MODELING OF SELF-ARD SKILLS
(.76)  17. My parents love me even when I make mistakes.
(.71)  19. I feel I cannot please my parents.
(.68)  16. I feel I am important to my family.
(.50)  21. My friends like to spend time with me.

B
Factor 2  SELF-EVALUATION (+ AND -)
(.79)  10. When I make a mistake I get mad at myself.
(.74)  13. If I make a mistake it does not get me down.
(.54)  14. Sometimes people are hard on me, but I am harder on myself.
(.50)  3. I want to do things so well that sometimes I have a hard time being happy with my work.
(.48)  1. Even when I can’t do something right I still like myself.

C
Factor 3  NEGATIVE SELF-ARD / SELF-PUNISHMENT
(.78)  2. I think it is my fault when something goes wrong.
(.60)  12. Sometimes I think bad thoughts about myself.
(.59)  5. When people put me down, I believe them.
(.56)  18. My parents can always find something wrong with me.

D
Factor 4  SELF-REINFORCEMENT (+) / ENVIRONMENTAL (+)
(.64)  20. When I do something right my parents praise me.
(.58)  8. When I do something right, I feel happy and take time to enjoy the feeling.
(.58)  11. When I am having a hard time with my work, I help myself finish it by planning to do something fun afterwards.

E
Factor 5  POSITIVE SELF-ARD / SELF-REINFORCEMENT (-)
(.88)  6. When I feel sad, I cheer myself up by thinking good things about myself.
(.64)  15. Even when other people don’t say nice things to me, I say nice things to myself.
(.50)  4. I find that I feel better when I think nice things about myself.

87
TABLE 16 (Continued)

F
Factor 6. ABILITY TO PERSIST/SELF-ARD SKILLS
(.82) 7. I can do a long boring job by myself without
someone making me stick to it.

G
Factor 7. ENJOYMENT OF SOLITUDE/SELF-ARD SKILLS
(.83) 9. When I am alone I still have fun, doing things
that I like to do by myself.
It is clear that items that move from one factor to another between the two versions, or load on more than one factor in the same version, are complex in structure. In the language of Paradigmatic Behaviorism, these items involve several basic behavior repertoires, sometimes overlapping in the sub-repertoires. These complex items are listed in Table 17.

**Criterion related concurrent validity**

**Teacher Ratings.**

The hypothesis concerning the expected positive correlation between teacher ratings of a student’s self-reinforcement skills and his score on the FSRQ-CF was supported for the combined sample (Table 9). The shared variance was found to be 6.2%.

**Gender linked differences**

**Achievement Scores.**

For female subjects the correlation between FSRQ-CF scores and achievement scores was positive but not significant (Table 9). For male subjects the correlations between scores on the FSRQ-CF and achievement scores were positive, and significant, yielding a shared variance.
TABLE 17

"Complex Items"

3. I want to do things so well that sometimes I have a hard time being happy with myself.
   Classified as a Self-monitoring item
   Loads on Self-evaluation and Negative Self-ARD/Self-punishment factors.

4. I find that I feel better when I think nice things about myself.
   Classified as Self-evaluation item

14. Sometimes people are hard on me, but I am harder on myself.
   Classified as a Self-evaluation item
   Loads on self-evaluation and negative self-ARD/self punishment factors.

15. Even when other people don’t say nice things to me, I say nice things to myself.
   Classified as a Self-reinforcement item
   Loads on self-reinforcement (-) and positive self-ARD factors
estimate of 13% for SAT (Math) and 13% with GPA scores. These differences are in the expected direction (Table 9).

**Teacher Ratings.**

For female students, teacher rating and FSRQ-CF had a shared variance of 7.8%, when teacher gender was not specified. For correlation coefficients see Table 9. For male students the correlation between teacher ratings and scores on the FSRQ-CF was not significant. For correlation coefficients see Table 9.

When teacher and student are of the same gender, the results change. In the case of same gender student-teacher, the FSRQ-CF scores and teacher ratings are not significant. On the other hand, the correlation between teacher ratings and scores on the FSRQ-CF for opposite student-teacher gender is positive and significant, (p < .003, df = 49), yielding a shared variance of 16%.

Three out of the four possible combinations of student and teacher gender did not yield significant correlations. It must be noted that the sample size is very small. Yet, with the same size sample, the male teacher's ratings of female students correlated positively and significantly with scores on the FSRQ-CF, for a shared variance of 42%. See Table 18 for correlation coefficients.
TABLE 18
Correlation of Teacher Rating with FSRQ-CF scores

<table>
<thead>
<tr>
<th>Teacher Gender</th>
<th>Student Gender</th>
<th>F</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>.19</td>
<td>.65 *</td>
</tr>
<tr>
<td></td>
<td>N = 41</td>
<td></td>
<td>N = 13</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>.28</td>
<td>-.29</td>
</tr>
<tr>
<td></td>
<td>N = 38</td>
<td></td>
<td>N = 15</td>
</tr>
</tbody>
</table>

* p < .01

Analysis of specific items of interest

Items 7 and 9 of the FSRQ-CF.

Item 7 of the FSRQ-CF was left in the questionnaire, after showing a zero correlation with the total FSRQ-CF score (in the pilot study conducted on fourth graders alone), in order to explore the possibility that the item may become relevant to the total score for children from higher grades. Table 19 details the item total correlation for item 7.

Table 19 also details the item-total correlation for item 9 of the FSRQ-CF which showed a close to zero correlation of -.01 in the current study.
### TABLE 19

**FSRQ-CF Items of Interest**

<table>
<thead>
<tr>
<th>Grade</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>Corr with Total</th>
<th>Mean</th>
<th>S.D.</th>
<th>Corr with Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-5</td>
<td>28</td>
<td>1.78</td>
<td>.57</td>
<td>-.02</td>
<td>2.50</td>
<td>.74</td>
<td>-.07</td>
</tr>
<tr>
<td>6</td>
<td>28</td>
<td>1.82</td>
<td>.77</td>
<td>.05</td>
<td>2.64</td>
<td>.56</td>
<td>.00</td>
</tr>
<tr>
<td>7</td>
<td>26</td>
<td>2.00</td>
<td>.75</td>
<td>.07</td>
<td>2.50</td>
<td>.58</td>
<td>.22</td>
</tr>
<tr>
<td>8</td>
<td>26</td>
<td>1.81</td>
<td>.63</td>
<td>.05</td>
<td>2.50</td>
<td>.71</td>
<td>-.26</td>
</tr>
</tbody>
</table>

**Notes:**
1) Total is adjusted to remove scores on FSRQ-CF items 7 and 9.
2) Item 7: "I can do a long boring job by myself without someone making me stick to it."
   Item 9: "When I am alone I still have fun, doing things that I like to do by myself."

### TABLE 20

**CDI Items of Interest:**
**Correlation with FSRQ-CF**

<table>
<thead>
<tr>
<th>Item 9</th>
<th>Item 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 108</td>
<td>N = 108</td>
</tr>
<tr>
<td>-.27 **</td>
<td>-.39 ***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item 9</th>
<th>Item 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 54</td>
<td>N = 54</td>
</tr>
<tr>
<td>-.26</td>
<td>-.35 **</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item 9</th>
<th>Item 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 54</td>
<td>N = 54</td>
</tr>
<tr>
<td>-.27 *</td>
<td>-.43 ***</td>
</tr>
</tbody>
</table>

* p<.05  ** p<.01  *** p<.001

**Notes:**
1) Item 9 pertains to suicidal ideation. Item 14 pertains to satisfaction with physical appearance.
Neither item exhibits any significant or interpretable correlation with total FSRQ-CF score as a function of grade.

Items 9 and 14 of the CDI.

Table 20 details the item-FSRQ-CF total score correlations with items 9 and 14 of the CDI. During data collection it was observed that children in all grades showed reactivity to those two items of the CDI by laughing uproariously. It always took some time before test administration could proceed. Therefore it was decided to tabulate these particular item-total correlations to assess the effect, if any, of the reactivity on FSRQ-CF total scores.

Both CDI items are negatively and significantly related to total FSRQ-scores, for combined subjects as well as for males and females separately (See Table 20).
CHAPTER VII
DISCUSSION

At the very outset, a few caveats regarding the study under discussion need to be recorded. The number of subjects was small for the purposes of developing any grade related norms. The 'mixed' nature of the population allows inferences to be made only in the multi-ethnic context of Hawaii.

The sample of teachers, whose ratings were evaluated in the gender-linked accuracy exploration, was very small. Only four teachers provided the teacher ratings; only one of them was male. This extremely small, and perhaps idiosyncratic sample does not allow any reasonable inferences to be made regarding any gender interaction in accuracy of teacher ratings. Given the fact that the teachers did not experience themselves to be experts in the matter of providing ratings of self-ARD behavior, it appears that the study might have been considerably strengthened by the inclusion of some other source of expert ratings.

One possibility is the inclusion of parental estimations of children's self-ARD. Parents do possess an unique observational opportunity. Expert ratings from
child psychologists in the form of behavioral observations in the classroom, individual interviews with the child are another possible source. The inclusion of all three may produce a stronger measure of criterion related validity.

Another aspect that could be improved upon concerns the philosophical analysis and classification of FSRQ-CF items into the threefold Kanfer-Rehm schema. The analysis of only one individual was employed in the construction of the three subscales; it might be improved by the device of several judges and the computation of inter-rater agreement.

The study reported in the preceding pages has demonstrated the feasibility of the construction of a self-report questionnaire designed to measure self-ARD skills in children in grades 3-8. The experimental FSRQ-CF (15 items) was found to exhibit acceptable internal consistency and test-retest reliability. The validity of the FSRQ-CF was evaluated by an examination of correlations of FSRQ-CF scores with achievement scores, depression scores, teacher ratings and the Family and Friends construct. All correlations were in the expected direction, thus suggesting that a fairly homogenous and measurable construct was being expressed in the FSRQ-CF.

The sample size in the current study was large enough to provide an acceptable level of reliability and validity.
data, but was not large enough to generate norms by grade level. It would be worthwhile to readminister the FSRQ-CF, subsequent to incorporating any changes suggested by the current study, to a larger sample of children in an effort to generate norms. For some grade levels (6, 7 and 8) this study can be considered to have generated preliminary norms (See Table 21). Subject numbers in grades 3, 4 and 5 were quite small and the fact of three grades in one room with one teacher makes for a qualitative as well as a quantitative difference to the generation of any preliminary norms.

TABLE 21

Preliminary Norms for FSRQ-CF

<table>
<thead>
<tr>
<th>Grade</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 5</td>
<td>28</td>
<td>34.4</td>
<td>3.7</td>
</tr>
<tr>
<td>6</td>
<td>28</td>
<td>32.4</td>
<td>3.8</td>
</tr>
<tr>
<td>7</td>
<td>26</td>
<td>31.0</td>
<td>4.8</td>
</tr>
<tr>
<td>8</td>
<td>26</td>
<td>31.6</td>
<td>3.2</td>
</tr>
</tbody>
</table>

(Range of Possible Score 15 - 45)

Preliminary Norms for FSRQ-FMFR-CF

<table>
<thead>
<tr>
<th>Grade</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 5</td>
<td>28</td>
<td>49.4</td>
<td>4.4</td>
</tr>
<tr>
<td>6</td>
<td>28</td>
<td>47.9</td>
<td>4.9</td>
</tr>
<tr>
<td>7</td>
<td>26</td>
<td>45.6</td>
<td>6.8</td>
</tr>
<tr>
<td>8</td>
<td>26</td>
<td>46.4</td>
<td>4.7</td>
</tr>
</tbody>
</table>

(Range of Possible Score 21 - 63)
At this juncture it may be appropriate to insert a few comments comparing and contrasting the FSRQ and FSRQ-CF. The two instruments aim to measure the same behavioral domain of self-reinforcement behavior, using self-report as a data collection method. The FSRQ-CF has fewer items, couched in simpler language, than the FSRQ in order to be developmentally more appropriate. However, the FSRQ-CF is longer than the short form of the FSRQ. An effort was also made to keep the item-content relevant to a child's experience and environment. This concern led to the development of a new subscale entitled "Family and Friends" in the FSRQ-CF. The domain of family and friends is not directly sampled in the adult FSRQ. Hence, the "Family and Friends" subscale can be called a special feature of the FSRQ-CF. Another feature unique to the FSRQ-CF is the deliberate selection of items to reflect the Kanfer-Rehm analysis of the process of self-reinforcement into three components, namely, self-monitoring, self-evaluation and self-reinforcement.

Both FSRQ and FSRQ-CF have demonstrated reliability and validity. Total scores on both instruments have been correlated negatively with scores on age appropriate Depression Inventories (Heiby, 1983b; See Table 9). The FSRQ has demonstrated divergent validity with the Marlowe-Crown Social Desirability Scale (Heiby, 1982). There is no divergent validity data for the FSRQ-CF as yet. The
present writer is not aware of a social desirability scale for children. The FSRQ has been employed in many studies as a correlational measure. It is hoped that the database for FSRQ-CF will continue to accumulate through further research work on the part of the present investigator and others.

An interesting result from the current study relates to the examination of the conceptual framework of the FSRQ-CF relative to its factor structure. Based on Kanfer's tripartite conceptual schema, three sets of five items each pertaining to self-monitoring, self-evaluation and self-reinforcement were incorporated into the FSRQ-CF. The items were categorized by a 'child philosopher', if the writer may be allowed to coin a phrase. A child philosopher is a philosopher who does philosophy with children, who listens to the philosophical discourse of children and encourages the growth of naturally present critical thinking in young children.

Perhaps the experience with children's philosophical minds accounts for the relative integrity of the tripartite conceptual structure in the FSRQ-CF in the Factor Analysis. The three components are interrelated, and hence a completely clean classification is extremely difficult, if not impossible. Table 3 contains a listing of the tripartite classification of FSRQ-CF items.
The factor analysis generated 6 factors for the FSRQ-CF and 7 factors for the FSRQ-FMFR-CF. In factor analysis factors are numbered in the order of their extraction, i.e., in decreasing order of explaining common variance in the questionnaire. Therefore, the same semantic label is found to be applicable to factors with different numerical labels. In order to facilitate comparison between the two factor analyses and with the semantic analysis along Kanfer’s lines, factors have been given a letter code along with a semantic label. A summary of semantic labels and letter codes is contained in Table 10 along with a listing of the core cluster of items that demonstrated stability.

Table 17 details the complex items, i.e., these items appear on more than one factor. The table lists the original classification of the specific item. It also lists semantic labels of the factors on which the given item loads. These items are semantically complex and therefore appear on different but closely related factors.

From the original three-fold classification, items classified under self-evaluation and self-reinforcement demonstrated the most stability across factor analyses of the two forms. However, items classified under self-evaluation appeared together stably on a factor labeled
in the final analysis as 'negative self-ARD / self-punishment'. Items originally classified as self-monitoring tended to cluster on a factor more easily labeled 'self-evaluation (+ and -).

Items categorized as self-reinforcement in the original analysis were clustered on factors labeled self-reinforcement. When self-reinforcement divides it breaks up into factor D (Self-reinforcement (+) and environmental reinforcement (+)) and factor E (Positive self-ARD / self-reinforcement (-)). It is encouraging that empirical feedback from children's responses not only preserved the integrity of the Self-reinforcement factor, but refined it along lines well established in psychological literature, that is to say positive and negative self-reinforcement. To put it in the language of Paradigmatic Behaviorism, factor D relates to environmental factors and factor E relates to personality variables. Both of them appear to measure the language-cognitive and emotional-motivational repertoires of an individual. Factors F and G, the singlet factors, appear to relate to the sensory-motor repertoire.

Turning to the intertwined relationship between self-monitoring and self-evaluation, mention must be made here of a factor-analytic study detailed earlier, conducted on the FSRQ and analyzed along gender lines by Wagner, Holden and Jannarone (1988). They found that a factor analysis
of the FSRQ yielded five factors with the Self-evaluation factor explaining most of the variance in the FSRQ Total Score, for males and females.

To link the foregoing to the current discussion of the factor structure of the FSRQ-CF and the relative stability of the tripartite classification, it can be pointed out that self-monitoring and self-evaluation are intimately intertwined.

That every description has an evaluative component, and every evaluation has a descriptive component has been convincingly analyzed by Hare in his *Language of Morals* (1964). The same conceptual analysis applies to self-monitoring and self-evaluation. It is difficult to self-monitor without some evaluative content creeping in. The entire issue of the reactivity of self-monitoring in behavioral therapy literature is a consequence of this difficulty (Nelson & Hayes, 1981). However, the distinction remains of great heuristic value; it is more than a distinction without a difference. The relative cohesiveness of items classified as self-monitoring indicates the possible value of using the conceptual framework.

Another advantage to employing the Kanfer conceptual framework as part of the context for the development of the FSRQ-CF is the elegant manner in which implications from Paradigmatic Behaviorism can be combined with
strategies from the Kanfer-Rehm model to yield implications for therapy. The Kanfer-Rehm model does not address the issue of non-contingent self-reinforcement or self-language; the Paradigmatic Behaviorism analysis accommodates both contingent and non-contingent self-reinforcement and self-language in its expanded concept of self-ARD. Language-cognitive repertoires interact with emotional motivational repertoires through the mechanism of the classical conditioning of emotions, and the sensory-motor repertoire enables the individual to exhibit approach-avoidance behaviors.

The Kanfer-Rehm and the Paradigmatic Behaviorism theoretical frameworks are seen as operating on separate conceptual levels. Self-monitoring uses mainly the language-cognitive repertoire but possesses emotional-motivational overtones as well. Self-evaluation may be viewed as mainly employing the emotional-motivational repertoire with the language-cognitive repertoire acting as a vehicle for self-evaluative comments. Self-reinforcement may employ all three BBRs, including the sensory-motor repertoire. The conceptualizing of the FSRQ-CF within a twin theoretical framework allows for a flexibility of approach in assessment and treatment planning.

Analogous to the issues contained in therapy outcome studies in clinical psychology, in the field of
neuropsychology, attention is currently being focussed on the issue of supporting the efficacy of neuropsychological rehabilitation. A recent study (Armstrong-Cassidy, 1985) failed to support the efficacy of neuropsychological rehabilitation. However, the phenomenon of successful rehabilitation is observed on an anecdotal basis.

It may be possible to reconcile the two apparently conflicting observations by introducing the emotional-motivational dimension in neuropsychological rehabilitation. What gets left out of 'traditional' neuropsychological assessment and rehabilitation is the emotional, social, the 'quality of life' factor. The current writer was encouraged to find a corroboration of her views in the Presidential Address of the 1990 European Meeting of the International Neuropsychological Society (Brooks, 1990), as well as in the Invited Address at the 1991 North America Meeting of the same body (Newcombe, 1991).

In the area of rehabilitation of brain damage and cognitive re-training a great deal of attention is paid to sensory-motor and language-cognitive skills (Craine & Gudeman, 1981). Not enough attention is paid, in any formalized way, to emotional-motivational factors. The development and use of measures such as the FSRQ and FSRQ-CF would enable the neuropsychologist to monitor the emotional-motivational status of the adult or child.
undergoing cognitive re-training. Self-reinforcement skills can also influence an individual's continuing participation in a rehabilitative exercise program in which naturally occurring reinforcement is delayed.

The central importance of adequate self-ARD skills, (or a positive self concept or high self esteem) cannot be stressed enough. Low self esteem has been found to be associated with poor academic performance and behavior problems (Thompson, Lampron, Johnson, & Eckstein, 1990), and depression (Sohlberg, 1990; Craighead & Green, 1989). The results of the current study are consistent with the aforementioned studies. FSRQ-CF Total Score was correlated negatively with depression scores, positively with academic indices and with an index of 'family and friends' involvement as perceived by the child. Though self-esteem was not studied in the current research, it would be appropriate to suggest a more direct investigation of the relationship between self-reinforcement abilities and self-esteem based on the data gathered in the current study.

With reasonable success, school counsellors have attempted to increase self esteem by a variety of cognitive-behavioral techniques employing positive reinforcers and teaching the children to notice and talk about positive qualities in themselves (Kostelnik, Stein & Whirren, 1988). The strategy behind teaching
self-reinforcement skills is that the child can continue to provide the positive reinforcers after the formal or informal association with the counsellor or teacher has ended. Based solely on the correlational data presented in the current research, specific recommendations to teachers are not justified. Correlational data, in the current study, support a connection between frequency of self-reinforcement as reflected in the FSRQ-CF Total Score and academic indices, such as SAT scores and grade point averages, as well as emotional indices, such as scores on a Depression Inventory and scores on the 'Family and Friends. Correlational data do not indicate causal relationships nor the direction of such causal relationships. However, the connections investigated and supported in a correlational study can reasonably justify a follow-up study. A subsequent study designed to evaluate the effectiveness of a self-reinforcement training intervention could yield concrete recommendations for teachers and other professionals working with children.

The current study is the first step towards the final construction of a valid, reliable and sensitive instrument designed to measure self-ARD in children in a global, and self-reinforcing skills in a specific fashion. The specificity indicated here refers to the Kanfer-Rehm tripartite schema of self-monitoring, self-evaluation and
self-reinforcement. The fully developed FSRQ-CF will assist in the assessment of a child’s self-reinforcing abilities. It will be of value not only in providing baseline measures but also in documenting progress or regress.

It would be fruitful to categorize items and subscales using a Paradigmatic Behaviorism analysis, specifying the precise basic behavioral repertoires and sub-repertoires involved. This would allow for a finer level of analysis at the assessment stage; and treatment recommendations could be more specific. An individual’s reinforcement history determines to a great extent the frequency and style of self-reinforcement for him. For example, a child with a limited sensory-motor repertoire cannot make friends or find reinforcement (and then self-reinforcement) in an athletic context, and a child with a limited language subrepertoire may find himself shy in social contexts running the risk of social isolation. However, alternative modes of reinforcement and self-reinforcement using the child’s ‘stronger’ or preferred repertoires can be found. The non-athletic child could be a potential story teller, or the socially shy child a good swimmer. Analyzing self-reinforcement into operationally definable behavior repertoires moves FSRQ-CF from the realm of clinical theory into clinical practice.
A larger study needs to be conducted in order to generate meaningful norms. Having established a foundation of initial reliability and validity estimates, it now seems reasonable to study the FSRQ-FMFR-CF, the proposed FSRQ-CF, in connection with a self-esteem inventory. This may result in the delineation of the delicate and complicated connections between self-esteem, self-concept and self-reinforcement skills. The Piers-Harris Self Concept Scale Piers, (1969) used in the Kugle et al. (1983) study on the relationship between level and stability of self-esteem, would be a possible choice. The distinction drawn by Pope et al. (1988) between self-concept and self-esteem could be used to investigate whether the FSRQ-CF and the Piers-Harris (Piers, 1969) measure different aspects of the self-concept/self-esteem dyad.
APPENDIX A

ATTITUDES QUESTIONNAIRE

Below are a number of statements concerning beliefs or attitudes that people have. Indicate whether the statements are characteristic and descriptive of you by circling T if the statement is somewhat or very true of yourself. Circle F if the statement is somewhat or very false for yourself. Please be as honest as possible. Your answers are completely anonymous.

T F 1. When I fail at something, generally I am still able to feel good about myself.

T F 2. I can stick to a tiresome task that I need to complete for a long time without someone encouraging me.

T F 3. I don’t often think positive thoughts about myself.

T F 4. When I do something right, I take time to enjoy the feeling.

T F 5. I have such high standards for what I demand of myself that I rarely meet these standards.

T F 6. I seem to blame myself when things go wrong and am very critical of myself.

T F 7. There are pleasurable activities which I enjoy doing alone at my leisure.

T F 8. I usually get upset when I make mistakes because I rarely learn from them.


T F 10. When I succeed at small things, I become encouraged to go on.

T F 11. Unless I do something absolutely perfectly, it gives me little satisfaction.

T F 12. I get myself through hard things mostly by planning to enjoy myself afterwards.

T F 13. When I make mistakes, I take time to criticize myself.

T F 14. I encourage myself to improve by feeling good about myself or giving myself something special whenever I make some progress.

T F 15. If I didn’t criticize myself frequently, I would continue to do things poorly forever.

T F 16. I think talking about what you’ve done right is being too boastful.

T F 17. I find I feel better and do better when I silently praise myself for even small achievements.

T F 18. I can keep trying at something when I stop to think of what I’ve accomplished.
19. The way I keep up my confidence is by acknowledging any success I have.
20. The way I achieve my goals is by rewarding myself every step along the way.
21. Praising yourself is being selfish and egotistic.
22. When someone criticizes me, my self-confidence is shattered.
23. I criticize myself more frequently than others criticize me.
24. I have a lot of worthwhile qualities.
25. I silently praise myself even when others do not praise me.
26. Any activity can provide some pleasure regardless of how it comes out.
27. If I don't do the best possible job, I think less of myself.
28. I should be upset if I make a mistake.
29. My happiness depends more on myself than it does on other people.
30. People who talk about their own better points are just bragging.
Appendix B

FSR ATTITUDES QUESTIONNAIRE (SHORT FORM)

Below are a number of statements about beliefs or attitudes people have. Indicate how descriptive the statements are for yourself by rating each item, as indicated below. There are no right or wrong answers. Your answers are confidential, so do not put your name on this sheet. Thank you!

Directions: Rate each item for how much of the time it is descriptive for you. In the blank before each item, rate:

0 never descriptive of me
1 a little of the time descriptive of me
2 some of the time descriptive of me
3 most of the time descriptive of me

___ 1. When I fail at something, I am still able to feel good about myself.
___ 2. I have negative thoughts about myself.
___ 3. I have such high standards for what I expect of myself that I have a hard time meeting my standards.
___ 4. I seem to blame myself and be very critical of myself when things go wrong.
___ 5. My feelings of self-confidence go up and down.
___ 6. I encourage myself to improve at something by feeling good about myself.
___ 7. I find that I feel better when I silently praise myself.
___ 8. The way I keep up my self-confidence is by remembering any success I have had.
___ 9. When someone criticizes me, I lose self-confidence.
___ 10. I feel I have a lot of good qualities.
APPENDIX C
FREQUENCY OF SELF-REINFORCEMENT QUESTIONNAIRE—CHILDREN’S FORM (PILOT)

The sentences on the next page talk about feelings that people sometimes have. You might have some of these feelings too. Only you can tell us how you feel.

Please use the following table to get a number to match with what you think best describes you. In the blank space at the end of each sentence write in the number you chose for that sentence.

HOW YOU FEEL IS THE BEST ANSWER.

1 hardly ever true about me
2 sometimes true about me
3 true about me most of the time
1. hardly ever true about me
2. sometimes true about me
3. true about me most of the time

HOW YOU FEEL IS THE BEST ANSWER.

1. Even when I can’t do something right, I still like myself. _______
2. I think it is my fault when something goes wrong. _______
3. I encourage myself to get better at something by feeling good about myself. _______
4. I find that I feel better when I think nice things about myself. _______
5. The way I keep up my self-confidence is by reminding myself of the things I do well. _______
6. When I feel sad, I cheer myself up by thinking good things about myself. _______
7. I can do a long boring job by myself without someone making me stick to it. _______
8. When I do something right, I feel happy and take time to enjoy the feeling. _______
9. When I am alone I still have fun, doing things that I like to do by myself. _______
10. When I make a mistake I get mad at myself. _______
11. When I am having a hard time with my work, I help myself finish it by planning to do something fun afterwards. _______
12. When I have a long boring job to do, I get it done by taking fun breaks. _______
13. If I make a mistake it does not get me down. _______
14. Sometimes people are hard on me, but I am harder on myself. _______
15. Even when other people don’t say nice things to me, I say nice things to myself. _______

(1. 2. 3. 4. 5. 6. 7.)
APPENDIX D

FREQUENCY OF SELF-REINFORCEMENT QUESTIONNAIRE—CHILDREN'S FORM

The sentences on the next page talk about feelings that people sometimes have. You might have some of these feelings too. Only you can tell us how you feel.

Please use the following table to get a number to match with what you think best describes you. In the blank space at the end of each sentence write in the number you chose for that sentence.

1 hardly ever true about me
2 sometimes true about me
3 true about me most of the time

HOW YOU FEEL IS THE BEST ANSWER.
1 hardly ever true about me
2 sometimes true about me
3 true about me most of the time

HOW YOU FEEL IS THE BEST ANSWER.

1. Even when I can't do something right, I still like myself. ______
2. I think it is my fault when something goes wrong. ______
3. I want to do things so well that sometimes I have a hard time being happy with my work. ______
4. I find that I feel better when I think nice things about myself. ______
5. When people put me down, I believe them. ______
6. When I feel sad, I cheer myself up by thinking good things about myself. ______
7. I can do a long boring job by myself without someone making me stick to it. ______
8. When I do something right, I feel happy and take time to enjoy the feeling. ______
9. When I am alone I still have fun, doing things that I like to do by myself. ______
10. When I make a mistake I get mad at myself. ______
11. When I am having a hard time with my work, I help myself finish it by planning to do something fun afterwards. ______
12. Sometimes I think bad things about myself. ______
13. If I make a mistake it does not get me down. ______
14. Sometimes people are hard on me, but I am harder on myself. ______
15. Even when other people don't say nice things to me, I say nice things to myself. ______
HOW YOU FEEL IS THE BEST ANSWER.

<table>
<thead>
<tr>
<th></th>
<th>hardly ever true about me</th>
<th>sometimes true about me</th>
<th>true about me most of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. I feel I am important to my family.  
17. My parents love me even when I make mistakes.  
18. My parents can always find something wrong with me.  
19. I feel I cannot please my parents.  
20. When I do something right my parents praise me.  
21. My friends like to spend time with me.
APPENDIX E

ICD INVENTORY

NAME: ____________________________ CARD 3

DATE: ________________

CASE: ____________

GROUP NUMBER

CASE

2 3 4 5

DATE

6 7 8 9 10 11

KIDS SOMETIMES HAVE DIFFERENT FEELINGS AND IDEAS.

THIS FORM LISTS THE FEELINGS AND IDEAS IN GROUPS. FROM EACH GROUP, PICK ONE SENTENCE THAT DESCRIBES YOU BEST FOR THE PAST TWO WEEKS.

AFTER YOU PICK A SENTENCE FROM THE FIRST GROUP, GO ON TO THE NEXT GROUP.

THERE IS NO RIGHT ANSWER OR WRONG ANSWER. JUST PICK THE SENTENCE THAT BEST DESCRIBES THE WAY YOU HAVE BEEN RECENTLY. PUT A MARK LIKE THIS X NEXT TO YOUR ANSWER. PUT THE MARK IN THE BOX NEXT TO THE SENTENCE THAT YOU PICK.

HERE IS AN EXAMPLE OF HOW THIS FORM WORKS. TRY IT. PUT A MARK NEXT TO THE SENTENCE THAT DESCRIBES YOU BEST.

EXAMPLE:

☐ I READ BOOKS ALL THE TIME

☐ I READ BOOKS ONCE IN A WHILE

☐ I NEVER READ BOOKS

Developed by M. Kovacs, The University of Pennsylvania School of Medicine, Philadelphia, Pa. 19104. Not to be used, quoted, or reproduced without permission.
Rev. 3/75; 2/76; 5/77; 7/77

117
REMEMBER, PICK OUT THE SENTENCES THAT DESCRIBE YOUR FEELINGS AND IDEAS IN THE PAST TWO WEEKS.

1.  0  I AM SAD ONCE IN A WHILE
    1  I AM SAD MANY TIMES
    2  I AM SAD ALL THE TIME

2.  2  NOTHING WILL EVER WORK OUT FOR ME
    1  I AM NOT SURE IF THINGS WILL WORK OUT FOR ME
    0  THINGS WILL WORK OUT FOR ME O.K.

3.  0  I DO MOST THINGS O.K.
    1  I DO MANY THINGS WRONG
    2  I DO EVERYTHING WRONG

4.  0  I HAVE FUN IN MANY THINGS
    1  I HAVE FUN IN SOME THINGS
    2  NOTHING IS FUN AT ALL

5.  2  I AM BAD ALL THE TIME
    1  I AM BAD MANY TIMES
    0  I AM BAD ONCE IN A WHILE

6.  0  I THINK ABOUT BAD THINGS HAPPENING TO ME ONCE IN A WHILE
    1  I WORRY THAT BAD THINGS WILL HAPPEN TO ME
    2  I AM SURE THAT TERRIBLE THINGS WILL HAPPEN TO ME

7.  0  I HATE MYSELF
    1  I DO NOT LIKE MYSELF
    2  I LIKE MYSELF
8.  
   - 2 - ALL BAD THINGS ARE MY FAULT
   - 1 - MANY BAD THINGS ARE MY FAULT
   - 0 - BAD THINGS ARE NOT USUALLY MY FAULT

9.  
   - 0 - I DO NOT THINK ABOUT KILLING MYSELF
   - 1 - I THINK ABOUT KILLING MYSELF BUT I WOULD NOT DO IT
   - 2 - I WANT TO KILL MYSELF

10.  
    - 2 - I FEEL LIKE CRYING EVERYDAY
     - 1 - I FEEL LIKE CRYING MANY DAYS
      - 0 - I FEEL LIKE CRYING ONCE IN A WHILE

11.  
    - 2 - THINGS BOTHER ME ALL THE TIME
     - 1 - THINGS BOTHER ME MANY TIMES
      - 0 - THINGS BOTHER ME ONCE IN A WHILE

12.  
    - 0 - I LIKE BEING WITH PEOPLE
     - 1 - I DO NOT LIKE BEING WITH PEOPLE MANY TIMES
      - 2 - I DO NOT WANT TO BE WITH PEOPLE AT ALL

13.  
    - 2 - I CANNOT MAKE UP MY MIND ABOUT THINGS
     - 1 - IT IS HARD TO MAKE UP MY MIND ABOUT THINGS
      - 0 - I MAKE UP MY MIND ABOUT THINGS EASILY

14.  
    - 0 - I LOOK O.K.
     - 1 - THERE ARE SOME BAD THINGS ABOUT MY LOOKS
      - 2 - I LOOK UGLY

15.  
    - 2 - I HAVE TO PUSH MYSELF ALL THE TIME TO DO MY SCHOOLWORK
     - 1 - I HAVE TO PUSH MYSELF MANY TIMES TO DO MY SCHOOLWORK
      - 0 - DOING SCHOOLWORK IS NOT A BIG PROBLEM
REMEMBER, DESCRIBE HOW YOU HAVE BEEN IN THE PAST TWO WEEKS.

16. [ ]  I HAVE TROUBLE SLEEPING EVERY NIGHT  
        [2]  I HAVE TROUBLE SLEEPING MANY NIGHTS  
        [1]  I SLEEP PRETTY WELL

17. [ ]  I AM TIRED ONCE IN A WHILE  
        [0]  I AM TIRED MANY DAYS  
        [1]  I AM TIRED ALL THE TIME

18. [2]  MOST DAYS I DO NOT FEEL LIKE EATING  
        [1]  MANY DAYS I DO NOT FEEL LIKE EATING  
        [0]  I EAT PRETTY WELL

19. [ ]  I DO NOT WORRY ABOUT ACHES AND PAINS  
        [0]  I WORRY ABOUT ACHES AND PAINS MANY TIMES  
        [1]  I WORRY ABOUT ACHES AND PAINS ALL THE TIME

20. [ ]  I DO NOT FEEL ALONE  
        [0]  I FEEL ALONE MANY TIMES  
        [1]  I FEEL ALONE ALL THE TIME

21. [2]  I NEVER HAVE FUN AT SCHOOL  
        [1]  I HAVE FUN AT SCHOOL ONLY ONCE IN A WHILE  
        [0]  I HAVE FUN AT SCHOOL MANY TIMES

22. [ ]  I HAVE PLENTY OF FRIENDS  
        [0]  I HAVE SOME FRIENDS BUT I WISH I HAD MORE  
        [1]  I DO NOT HAVE ANY FRIENDS
23. 0  MY SCHOOL WORK IS ALRIGHT
      1  MY SCHOOLWORK IS NOT AS GOOD AS BEFORE
      2  I DO VERY BADLY IN SUBJECTS I USED TO BE GOOD IN

24. 1  I CAN NEVER BE AS GOOD AS OTHER KIDS
      2  I CAN BE AS GOOD AS OTHER KIDS IF I WANT TO
      0  I AM JUST AS GOOD AS OTHER KIDS

25. 1  NOBODY REALLY LOVES ME
      2  I AM NOT SURE IF ANYBODY LOVES ME
      0  I AM SURE THAT SOMEBODY LOVES ME

26. 1  I USUALLY DO WHAT I AM TOLD
      2  I DO NOT DO WHAT I AM TOLD MOST TIMES
      0  I NEVER DO WHAT I AM TOLD

27. 1  I GET ALONG WITH PEOPLE
      2  I GET INTO FIGHTS MANY TIMES
      0  I GET INTO FIGHTS ALL THE TIME

THE END
THANK YOU FOR FILLING OUT THIS FORM

TOTAL SCORE: ____

TYPE: 0. INITIAL
      1. RETEST

IF RETEST, INTERVAL IN DAYS (NAP=0)

121
REFERENCES


Brooks, D. N. (1990). The head-injured family, Presidential address, 13th European meeting of the INS, Innsbruck, Austria.


Caplin, M. D. (1966). The relationship between self concept and academic achievement and between level of aspiration and academic achievement, Dissertation Abstracts, 27, 979-A.


126


