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Level of aspiration and the Type A coronary-prone pattern in children

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Type A coronary-prone behavior has been recognized as a major risk factor for coronary heart disease. Characterized by extremes of achievement-striving, impatience-aggression, and easily aroused hostility, this behavior pattern has been studied extensively in adults, but relatively few studies have examined the behavior pattern in children.

The purpose of the present investigation was to examine aspects of assessment of the Type A behavior pattern, goal-setting behaviors displayed by Type A and B children, and parents' goal-setting behaviors toward their offspring.

Type A behavior in children is most frequently assessed by two instruments, the Matthews Youth Test for

Health (MYTH) and the Hunter-Wolf A-B Rating Scale. Because research on Type A behavior in children is relatively new, few comparisons between measures have been made. Both instruments were administered in the present study in order to determine the relationship between them. Results indicated that the instruments correlated only marginally.

Second, goal-setting behavior was assessed in 30 male and 34 female Type A and B 9- to 12-year-olds. Past research with Type A and B men (Snow, 1978) indicated that Type A men set higher goals for themselves than Type B men. The present investigation explored goal-setting in children using Snow's (1978) procedure.

Finally, in order to determine parental influences on the development of Type A behavior, questionnaires were administered to 37 mothers and 27 fathers assessing expectations and goal-setting behaviors toward their children.

Results indicated that Type A children (as assessed by the MYTH) did not set higher goals for themselves than did Type B children. Type A females did, however, perform at significantly higher levels than Type B females. The hypothesis that parents of Type As set higher goals for their children than parents of Type Bs was partially supported in daughters only. Mothers perceived their goals to be higher for daughters scoring high on Type A characteristics. They also indicated that the more Type A behavior their daughters displayed, the less likely their daughters were to attain these goals. Fathers indicated that the greater the degree of Type A behavior in their daughters, the more likely they were to have high educational aspirations for them. Additionally, fathers reported that daughters with high Type A scores are aware of what is expected of them.

These findings suggest that although 9- to 12-year old Type As did not differ from Bs in their goal-setting behavior in the present study, parental goal-setting tends to be higher for female Type A children than for female Type B children.

LEVEL OF ASPIRATION AND THE TYPE A CORONARY-PRONE BEHAVIOR PATTERN IN CHILDREN

by

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CHAPTER I

INTRODUCTION

The Type A coronary-prone behavior pattern has been described by Friedman and Rosenman (1974) as an

> action-emotion complex that can be observed in any person who is aggressively involved in a chronic, incessant struggle to achieve more and more in less and less time, and if required to do so, against the opposing efforts of other things and other persons (p. 84)

Thus, the behavior of Type A individuals may best be summarized by three major components: aggressiveness, a sense of time urgency, and impatience-hostility (Rosenman, 1978). The Type A behavior pattern is not considered to be a trait nor a discrete typology. It is, instead, "a set of overt behaviors that is elicited from susceptible individuals by an appropriately challenging environment" (Matthews, 1982, p. 293). Type B persons, by contrast, are individuals who do not display the above characteristics. They are more relaxed and easygoing than Type As.

Two major instruments for assessing the degree of Type A behavior in adults are the Structured Interview (SI) (Rosenman et al., 1964) and the Jenkins Activity Survey for Health Prediction (JAS)(Jenkins, Rosenman, & Friedman, 1967). The Structured Interview is a standardized interview technique in which subjects are asked 26 questions dealing with the intensity of their ambitions, competitiveness, sense of time urgency, and the nature and magnitude of their hostile feelings. Both verbal and nonverbal behaviors are incorporated in scoring the interview. The Jenkins Activity Survey is a 52-item self-report questionnaire which also assesses

competitive drive and time urgency. The adult version of the JAS assesses job involvement as well. Interrater and test-retest reliability (based on 12 - 20 month separation intervals) for the SI is .84 and .80, respectively (Jenkins, Rosenman, & Friedman, 1968). The test-retest reliability of the adult version of the JAS (based on a 1-year separation interval) is .66 (Jenkins, Zyzanski, & Rosenman, 1971).

Both retrospective and prospective studies (e.g., Jenkins, 1976; Jenkins, Rosenman, & Zyzanski, 1974; Rosenman et al., 1975) have linked Type A behavior with approximately twice the risk of coronary heart disease in both men and women, and degree of atherosclerosis in men (Blumenthal, Williams, Kong, Schanberg, & Thompson, 1978). However, while Type A behavior has now been firmly established as an independent risk factor for coronary heart disease (CHD), the pathophysiological mechanisms linking Pattern A and CHD are unclear. Type As, for example, do not differ from Type Bs on other risk factors for CHD (e.g., elevated serum cholesterol, elevated blood pressure) which are measured during resting conditions (see Lovallo & Pishkin, 1980; Scherwitz, Berton, & Leventhal. 1978, for examples). Recall that Type A behavior only occurs in an appropriately challenging environment. Therefore, it may not be surprising that physiological measures of Type As taken under resting conditions do not differ from Type Bs.

In recent studies examining physiological responses of Type As and Bs to environmental stressors, Type As seem to show a distinct pattern of response. For example, Type A males exhibit higher elevations in systolic blood pressure relative to a resting baseline than Type B males (Contrada et al., 1982; Dembroski, MacDougall, Herd, & Shields, 1979; Dembroski, MacDougall, & Lushene, 1979; Dembroski, MacDougall, Shields, Petito, & Lushene, 1978; Glass et al., 1980; Krantz et al., 1981; Manuck, Craft, & Gold, 1978; Manuck & Garland, 1979). Additionally,

Type A males (relative to Type B males) respond with elevations in plasma epinephrine or norepinephrine (Contrada et al., 1982; Glass et al., 1980), and higher heart rates (Contrada et al., 1982; Dembroski et al., 1979; Glass et al., 1980) to stressful situations. It may well be that the way in which Type As respond to stress contributes to their increased risk for CHD, making the study of physiological characteristics important.

While studies examining physiological characteristics of Type As are a relatively recent phenomenon, studies of the psychological characteristics of Type A persons are quite numerous. Experiments on construct validation of the Type A behavior pattern have indicated that, compared to Type Bs, Type As signal the passage of time sooner and work at a more rapid pace regardless of the presence of a time deadline (Burnam, Pennebaker, & Glass, 1975), show more signs of irritation and impatience when performance is slowed down by a partner (Glass, Snyder, & Hollis, 1974, Exp. 2), and act more aggressively when their sense of competence or mastery is threatened (Carver & Glass, 1977).

Additional experimental studies have indicated that Type As put greater efforts into tasks and simultaneously underreport fatigue and other symptoms (Carver, Coleman, & Glass, 1976; Weidner & Matthews, 1978), and appear to be prone to giving up efforts to control after prolonged exposure to uncontrollable events (Brunson & Matthews, 1981; Krantz, Glass, & Snyder, 1974). Additionally, Type As are better able to focus their attention on central tasks than Type Bs (Matthews & Brunson, 1979; Lundberg, Warm, Seeman, & Porter, 1980) and set higher aspirations for themselves (Ovcharchyn, Johnson, & Petzel, 1981; Snow, 1978). In sum, the above experimental studies reinforce Glass's (1977) notion that Type A behavior can be conceptualized as a behavioral style aimed at asserting control over the environment.

RESEARCH ON CHILDREN

While a large amount of research has been conducted on Type A behavior in adults, relatively little is known of its antecedents. According to recent observations, it appears that elements of Type A behavior are visible in 4-year-olds (Glass, 1977, p. 154), and that the behavioral manifestations of Pattern A stabilize in late childhood (Matthews, 1981, p. 237). One difference that does seem to exist between Type A adults and children is the stability of the behavior pattern. While Type A behavior is relatively stable among adults, researchers have found the Type A behavior pattern in children to increase with age (Wolf, Hunter, Webber, & Berenson, 1981; Matthews & Avis, in press).

Knowing how Type A behavior develops should offer insights into cardiovascular risk reduction in children as well as in adults. This issue is particularly relevant since it is now well recognized that the atherosclerotic process begins during the childhood years (Berenson et al., 1980; Strong & McGill, 1969). The following sections will review experimental literature on Type A behavior in children, preceded by an overview of the assessment measures. Then the physiological and psychological characteristics of Type A children will be discussed.

Assessment of Type A Behavior in Children

To date, several assessment measures of Type A behavior in children and adolescents have been validated. These include the Bortner A-B index (Bortner & Rosenman, 1967; Bortner, Rosenman, & Friedman, 1970), the Adolescent Structured Interview (Siegel, Matthews, & Leitch, 1981), the Butensky-Waldron interview (Butensky, Faralli, Heebner, & Waldron, 1976), the Matthews Youth Test for Health (Matthews & Angulo, 1980), and the Hunter-Wolf A-B Rating Scale (Wolf, Sklov, Wenzl, Hunter, & Berenson, 1982).

The Matthews Youth Test for Health (MYTH) and the Hunter-Wolf A-B Rating Scale are the two instruments most frequently used with children. The Hunter-Wolf A-B Rating Scale is a self-administered measure. The MYTH, by contrast, is completed by an external observer, usually the child's teacher. (Both measures are discussed in greater detail in the Method section.) Because research on Type A behavior in children is relatively new, few comparisons between measures have been made. One purpose of the present study was to determine the relationship between the MYTH and the Hunter-Wolf A-B Rating Scale.

Physiological Characteristics of Type A Children

In studies of physiological characteristics of Type A and B children, results are mixed. Using the Butensky-Waldron interview to assess Type A behavior, Buck and Stenn (1979) found no significant A-B differences in systolic blood pressure in a study of 94 hypertensive and normatensive adolescents. However, a study of 1567 10- to 16-year-olds found that students with "Type A factors" (i.e., achievement orientation, intellectual orientation, order and control) had higher systolic and diastolic blood pressure levels than students characterized by a relative absence of Type A factors (Insel, Fraser, Phillips, & Williams, 1981). Similarly, Lawler, Allen, Critcher, and Standard (1981) also noted physiological differences in 41 Type A and B 11- and 12-year-olds, depending on the classification instrument used. Both male and female children classified as Type As by the Bortner Rating Scale showed significantly greater heart rate levels than Type Bs. When subjects were classified by the MYTH, Type A females showed lower mean heart rates and Type A males showed higher mean heart rates than Type Bs. In the above studies, physiological measures were collected under resting conditions.

In three studies in which physiological measures were assessed under situations of behavioral challenge (i.e., a 10-minute unsignaled reaction time task and a 10-minute word task) or physical challenge (i.e., running), results were also inconsistent. Lawler and Allen's (1981) study of 39 11- to 13-year-old males and females indicated no A-B differences (as assessed by the Bortner Rating Scale and the MYTH) in systolic and diastolic blood pressure, heart rate, or skin conductance. The same investigators and their colleagues (Lawler et al., 1981), using the identical behavioral challenge, found a number of physiological differences in 11- and 12-year-olds classified Type As or Bs. However, the results were again dependent on the classification instrument used. Both male and female children classified as Type As by the Bortner Rating Scale showed significantly greater heart rate reactivity to the tasks and skin conductance response magnitude to the reaction time signals. When subjects were classified by the MYTH, only Type A females showed larger increases in systolic blood pressure and heart rate to tasks, and faster reaction times. In a study of 15 male 3- to 6-year-olds, Lundberg (1983) also noted A-B physiological differences. Using a Swedish translation of the MYTH to classify children by Type, he found that Type A boys had significantly greater increases in systolic blood pressure during a challenging running task than Type B boys.

In summary, the data on the physiological responses of Type A children are inconsistent and difficult to explain. Consistent age or sex trends are not apparent; consistent results across assessment instruments or tasks are not obtained either. More research is necessary to sort out the discrepancies in this area.

Psychological Characteristics of Type A Children

Construct Validation. In contrast to studies of physiological responses, studies examining the psychological characteristics of Type A children are more clear cut. Experiments on construct validation have indicated that Type As are more aggressive and impatient than their Type B counterparts (Matthews & Angulo, 1980), and are more competitive (Wolf et al., 1982). As Type A adults (Glass, 1977), Type A children initially respond to highly salient uncontrollable events with more efforts to assert control than Type Bs (Matthews, 1979). Additionally, both Type A adults and children ignore fatigue while performing a strenuous task (Carver, Coleman, & Glass, 1976; Matthews & Volkin, 1981; Weidner & Matthews, 1978).

While research has not directly examined Type A and achievement in children, several studies have explored this component of Type A behavior indirectly. Experimental studies have shown that Type A fourth- and sixth-graders make greater efforts to excel than Type Bs on tasks that have ambiguous performance criteria (Matthews & Volkin, 1981). For example, Type A fourth-graders solved a greater number of simple arithmetic problems than Type Bs when no time deadline was given. In a second "no-deadline" experiment, male Type A sixth-graders held a weight 50% longer than Type Bs. An additional study (Matthews & Siegel, 1983) examined the impact of performance standards on the social comparison behaviors of Type A and B fourth-graders. Children were asked to perform a creativity task that had five trials. Half of the children were given an explict standard by which to evaluate their performance prior to each trial; half were given no standard. In between trials, children had the opportunity to compare their performance with that of hypothetical coactors. After the five trials were completed, all subjects were informed that their total score represented the middle score of 11 tested children and were asked to select the score of another child for examination. Results indicated

that the Type A children, when comparing themselves to a standard of performance, chose to evaluate their performance against a top-scoring coactor regardless of the presence or absence of an explicit standard. Type Bs only chose to evaluate their performance against a top-scoring coactor in the absence of an explicit standard. While not directly addressing achievement in Type A children, these studies indicate that Type A children do make greater efforts to excel and are more concerned with their performance than Type B children.

In contrast to the literature on Type A and achievement in children, research with adults and adolescents has directly examined this area. As might be expected, academic achievement is positively correlated with Type A behavior in adults and adolescents (Glass, 1977, pp. 39 - 42; Matthews, Helmreich, Beane, & Lucker, 1980; Ovcharchyn, Johnson, & Petzel, 1981; Waldron et al., 1980). Ovcharchyn et al. (1981), for example, report that with respect to academic achievement, Type A students "tend to have more articulated goals and interests than their Type B counterparts" (p. 253).

Type A and Goal-Setting Behavior. Although studies of Type A behavior in children have examined a number of relevant psychological characteristics, one facet of Type A behavior that has not been explored in children is goal-setting behavior. Goal-setting studies with children in general have found that aspiration levels are tied to a child's self-concept (Bernstein, 1975) and ego-involvement in a task (Sears, 1940). It appears that self-confident and successful children have higher aspirations than children who are unsuccessful or lack self-confidence (Sears, 1940). There is some evidence that adult Type As are more self-confident than Type Bs (Glass, 1977, p. 185). Since adult Type As tend to be higher achievers than Type Bs, Type As might also set higher goals for themselves than

Type Bs.

Support for the above hypothesis comes from a study by Snow (1978). In a level-of-aspiration study with adult males, Snow (1978) used a procedure in which he had Type As and Bs complete a series of puzzles. Prior to the start of each puzzle participants noted how much of the task they would try to complete in the allotted time period. His results showed that these values, or aspiration levels, were significantly higher for Type A men than for Type B men, although actual performance levels were equivalent. Snow concluded that the competitive achievement striving of Type A men, perhaps one way of asserting control over the environment, did indeed result in significantly higher goal-setting.

Since Type A children behave similarly to Type A adults on a variety of measures, it is conceivable that Type A children might also set higher goals for themselves than Type B children. One purpose of this study was to determine if the goal-setting behaviors of male and female Type A and B children are similar to the goal-setting behaviors reported for adult male Type As and Bs.

Parental Correlates of Type A Behavior in Children. Research on twins examining the origins of Type A behavior seems to suggest that the behavior pattern is largely socialized. For example, in a correlational study of 93 pairs of monozygotic and 97 pairs of dizygotic middle-aged male twins, Rahe, Herwig, and Rosenman (1978), using heritability estimates, found the Type A behavior pattern to be noninheritable. That is, although Type A behavior was significantly correlated between sibling pairs, Type A behavior in monozygotic twins did not correlate significantly higher than Type A behavior in dizygotic twins. Rahe et al. (1978) note that "this significant concordance for monozygotic and dizygotic twins presumably reflected

behaviors developed from early critical learning experiences" (p. 482).

The suggestion that Type A behavior is learned is partially supported by a study of Type A behavior in twins and their parents. Matthews and Krantz (1976) found male twins to be more similar to their fathers than to their mothers in behavior Type. Female twins were more similar to their mothers than to their fathers, although correlations were weaker than those obtained from males in the sample. An additional study of male adolescents and their fathers (Bortner, Rosenman, & Friedman, 1970) examined the similarity of father and son A-B classifications. These researchers found a significant positive correlation between father and son A-B ratings. These two studies also suggest that Type A behavior is learned.

Research based on behavioral observations and on self-reports has also provided some information on parental correlates of Type A behavior in children. In a study of Type A behavior in college students (Waldron et al., 1980), Type A men (when compared to Type Bs) recalled their fathers as having been more severe, having punished them more often physically, and having made them feel resentful rather than guilty when punished. Type A women recalled their mothers as having punished them more often physically. An experimental investigation based on observations of mothers and sons suggested that mothers of Type A sons tend to be critical of their child's performance and repeatedly push them to do better (Matthews, Glass, & Richins, 1977).

In sum, although there is some evidence that Type A behavior is learned and that parents treat Type A children differently than Type B children, it is not clear what specific parental behaviors encourage the development of Type A behavior. The present study examined parental aspirations and expectations for Type A and Type B children in order to determine if parents of Type A children report

having higher aspirations for their offspring than parents of Type B children.

To conclude, the present investigation attempted to answer the following three questions:

1. What is the relationship between the MYTH and the Hunter-Wolf A-B Rating Scale?
2. Do Type A male and female children set higher aspirations for themselves than Type B children?
3. Do parents of Type As set higher goals for their offspring than parents of Type Bs?

Consistent with recent findings based on adult male Type As (Snow, 1978), it was expected that Type A children would set higher goals for themselves than Type Bs. Further, it was predicted that parents of Type A children would report having higher aspirations for their offspring than parents of Type B children.

CHAPTER II

METHOD

SUBJECTS

The subjects were 41 female and 32 male 9- to 12-year-old children and their parents. Subjects were recruited from the fourth, fifth, and sixth grade classes of a private grade school in the Northwest. Parents of all the children in these grades were contacted by letter, asked to allow their children to participate in the research, and requested to participate themselves. Seventy-three parents (83%) agreed to allow their children to participate. Thirty-seven mothers (62%) and 27 fathers (53%) agreed to participate themselves, and completed questionnaires. Due to illness on the day of the experiment, two male and seven female children did not participate in the study. Thus, the subjects of the present study were 30 male and 34 female children.[1]

ASSESSMENT OF TYPE A BEHAVIOR

Type A behavior of the students was assessed by the Matthews Youth Test for Health (MYTH)(Matthews & Angulo, 1980). The MYTH is a 17-item questionnaire to be completed by teachers. Examples of items include "When this child plays games, he/she is competitive," and "This child gets irritated easily." Ratings were made on 5-point scales. A score of 1 indicates that a statement is extremely uncharacteristic of a child; a score of 5 denotes an extremely characteristic statement. Possible total MYTH

scores range from 17 (extreme Type B) to 85 (extreme Type A). Items of the MYTH cluster around two primary factors: "competitiveness" and "impatience-aggression." Children's summed scores of all items and the factors were used in the analyses. The MYTH has a test-retest reliability ranging from .48 to .55 (across 1 year)(Lundberg, 1983; Matthews & Avis, in press) to .83 (across 3 months). It is an internally consistent instrument (α = .90), and there is considerable evidence of its validity (Matthews & Angulo, 1980). (See Appendix B for a copy of the MYTH.)

A second classification instrument used was the Hunter-Wolf A-B Rating Scale (Wolf et al., 1982). This self-report measure consists of 24 items reflecting major components of Type A behavior. All items were rated on 7-point scales. Examples of items include "I drink slowly--I drink fast" and "I am never a leader in activities--I am always a leader in activities." The scale yields the following factors: "eagergy" (eagerness-energy), "restlessness-aggression", "leadership", and "alienation." Test-retest reliability of the Hunter-Wolf is .53 (across 6 weeks). Partial support for the validity of the instrument is reported by Wolf et al. (1982). (See Appendix B for a copy of the Hunter-Wolf Rating Scale.)

ASSESSMENT OF PARENTAL ASPIRATIONS

Parental aspirations were assessed by a two-page self-administered questionnaire. The questionnaire asked both parents to independently rate (on 7-point scales) the educational aspirations they have for their child, their goal-setting behaviors toward their child, and how they perceive their child's reactions to their goals. Parental responses on this questionnaire were examined as predictors of children's Type A behavior. (See Appendix C for a copy of the Parental Information Form.)

ASSESSMENT OF CHILDREN'S ASPIRATIONS

Children's goal-setting was assessed by means of five "Connect the Numbers" puzzles (Raynor & Smith, 1966; Snow, 1978). (See Appendix C for copies of these puzzles.) This task was chosen because it is not generally frustrating, and because it is not related to academic ability, a potentially confounding variable. A pilot test of the puzzles with 9- and 10-year-olds indicated suitability for this age group. The five puzzles were of similar difficulty and consisted of the numbers 1 to 80 arranged randomly on a page. The task was to connect the numbers consecutively, beginning with the number 1, as fast as possible, reaching the highest number possible in the allotted time. Subjects were given 15 seconds to review each puzzle prior to working it, and 1 minute to work it. This was the identical procedure employed by Snow (1978).

Dependent Measures

Prior to starting each puzzle, subjects estimated which number they would try to reach on that puzzle, and recorded that number at the top of the page. This measure served as the level of aspiration. Other dependent measures recorded include puzzle performance, the actual number reached by a subject; attainment discrepancy, the difference between a subject's puzzle performance and aspiration level; and goal discrepancy, the level of aspiration for a puzzle minus the attainment score on the previous puzzle.

PROCEDURE

Informed consents of the institution, teachers, and parents were obtained prior to having contact with the children. (See Appendix A for copies of the consent forms.)

Three weeks before the investigator met with the children, teachers were contacted and given copies of the MYTH to complete. The teachers were "blind" to the focus of the study and to the hypotheses being tested. At approximately the same time, parents were mailed a detailed packet about the research project. This packet contained a cover letter explaining the nature of the project, a letter from the school principal informing parents of institutional approval, consent forms for each parent, a Parental Information Form for each parent, and a stamped return envelope addressed to the principal investigator. Parents were asked to respond within 10 days. After 10 days had elapsed, the investigator telephoned slow respondents twice or until they indicated that they did not wish to participate.

One week before contact with the children, copies of the MYTH were collected from the teachers. In order to remain "blind" to the children's Type A ratings, the investigator did not score the MYTHs until the data had been collected from all children.

Once informed consents were obtained and the MYTH and Parental Information Forms were completed and returned, the principal investigator visited the school to conduct the experiment. Data were collected from the fourth, fifth, and sixth grade classrooms separately on the same morning. Each classroom had approximately 20 students participating in the study (varying from 15 to 25). In each classroom the investigator explained the nature of the study to the children and obtained their informed consent to participate. After the students completed the Hunter-Wolf A-B Rating Scale the goal-setting task was administered. (See Appendix D for the experimental instructions.)

After completion of the tasks, subjects were debriefed according to the APA (1981) ethical principles of psychologists, and praised for their performance. (See Appendix D for the debriefing procedure.)

CHAPTER III

RESULTS

The medians, means, and standard deviations of the MYTH for boys and girls are presented in Table I. Consistent with findings reported by Matthews and Angulo (1980), teachers assessed boys to be more Type A (M = 55.2) than girls (M = 43.4), $t(62) = 16.42$, $p < .01$. A different pattern of response was reflected in the Hunter-Wolf ratings. As can be seen in Table II, boys did not rate themselves to be more Type A (M = 96.9) than did girls (M = 91.9), $t(62) = 1.88$, $p > .05$. This finding is also consistent with past research (Wolf et al., 1982) which found no sex differences in self-ratings of Type A behavior.

CORRELATIONS BETWEEN THE ASSESSEMNT INSTRUMENTS

The correlations between the MYTH Type A ratings and the Hunter-Wolf Type A ratings for both sexes combined was marginally significant, $r = .21$, $p < .10$. As can be seen in Tables III and IV, however, when correlations between instruments were examined for each sex, these correlations were not significant ($r = .09$, $p > .10$ for males; $r = .19$, $p > .10$ for females). Similar factors of the two instruments -- Factor 2 (impatience-aggression) of the MYTH and Factor 1 (restlessness-aggression) of the Hunter-Wolf -- were marginally correlated ($r = .32$, $p < .10$) in females only.

In contrast, correlations within each of the instruments were highly significant. As reflected in Tables III and IV, MYTH Type A ratings correlated significantly with

TABLE I

MEDIANS, MEANS, AND STANDARD DEVIATIONS OF THE MATTHEWS YOUTH TEST FOR HEALTH FOR BOYS AND GIRLS

	Boys (N = 30)	Girls (N = 34)	t	p
MYTH Type A Score[a]				
Median	55.50	43.83		
Mean	55.23	43.44	16.42	.01
SD	10.99	12.14		
MYTH Factor 1 Score[b] (competitiveness)				
Median	26.90	23.50		
Mean	26.83	22.68	7.26	.01
SD	5.33	6.80		
MYTH Factor 2 Score[c] (impatience-aggression)				
Median	30.00	18.10		
Mean	28.40	20.65	15.05	.05
SD	8.10	7.87		

[a]Range = 17 - 85. Higher scores indicate greater Type A behavior.

[b]Range = 8 - 40. Higher scores indicate greater competitiveness.

[c]Range = 9 - 45. Higher scores indicate greater impatience-aggression.

TABLE II

MEDIANS, MEANS, AND STANDARD DEVIATIONS OF THE HUNTER-WOLF A-B RATING SCALE FOR BOYS AND GIRLS

		Boys (N = 30)	Girls (N = 34)	t	p
Hunter-Wolf Type A Score[a]					
	Median	94.50	92.50		
	Mean	96.87	91.91	1.88	n.s.
	SD	12.51	15.94		
Hunter-Wolf Factor 1 Score					
(restlessness-aggression)	Median	31.50	29.83		
	Mean	32.10	29.94	1.06	n.s.
	SD	7.73	8.90		
Hunter-Wolf Factor 2 Score					
(eagerness-energy)	Median	17.00	15.83		
	Mean	16.73	15.91	0.71	n.s.
	SD	3.70	4.06		
Hunter-Wolf Factor 3 Score					
(leadership)	Median	7.25	6.10		
	Mean	7.33	6.82	0.43	n.s.
	SD	3.07	3.12		
Hunter-Wolf Factor 4 Score					
(alienation)	Median	13.50	11.50		
	Mean	13.27	12.12	1.65	n.s.
	SD				

[a]Range = 24-168. Higher scores indicate greater Type A behavior.

TABLE III

CORRELATIONS BETWEEN THE MATTHEWS YOUTH TEST FOR HEALTH, THE HUNTER-WOLF A-B RATING SCALE AND THEIR FACTORS FOR BOYS (N = 30)

	MYTH A-B Rating	MYTH Factor 1	MYTH Factor 2	Hunter-Wolf A-B Rating	Hunter-Wolf Factor 1	Hunter-Wolf Factor 2	Hunter-Wolf Factor 3	Hunter-Wolf Factor 4
MYTH A-B Rating	1.0000	.7134***	.8873***	.0888	.1077	-.0264	-.0842	.1321
MYTH Factor 1 Competiveness	.7134***	1.0000	.3098*	.2210	.0607	.0518	.1702	.3769**
MYTH Factor 2 Impatience-Aggression	.8873***	.3098*	1.0000	-.0250	.1062	-.0699	-.2263	-.0688
Hunter-Wolf A-B Rating	.0888	.2210	-.0250	1.0000	.8527***	.5717***	.1469	.3858**
Hunter-Wolf Factor 1 Restlessness-Aggression	.1077	.0607	.1062	.8527***	1.0000	.4153**	-.0175	.1932
Hunter-Wolf Factor 2 Eagergy	-.0264	.0518	-.0699	.5717***	.4153**	1.0000	-.0982	.0254
Hunter-Wolf Factor 3 Leadership	-.0842	.1702	-.2263	.1469	-.0175	-.0982	1.0000	-.0458
Hunter-Wolf Factor 4 Alienation	.1321	.3769**	-.0688	.3858**	.1932	.0254	.0458	1.0000

*$p < .10$
**$p < .05$
***$p < .01$

TABLE IV

CORRELATIONS BETWEEN THE MATTHEWS YOUTH TEST FOR HEALTH, THE HUNTER-WOLF A-B RATING SCALE AND THEIR FACTORS FOR GIRLS (N = 34)

	MYTH A-B Rating	MYTH Factor 1	MYTH Factor 2	Hunter-Wolf A-B Rating	Hunter-Wolf Factor 1	Hunter-Wolf Factor 2	Hunter-Wolf Factor 3	Hunter-Wolf Factor 4
MYTH A-B Rating	1.0000	.7988***	.8493***	.1857	.2949*	.0870	.2246	-.0430
MYTH Factor 1 Competitiveness	.7988***	1.0000	.3651**	.0743	.1548	-.0725	.2557	-.0530
MYTH Factor 2 Impatience-Aggression	.8493***	.3651**	1.0000	.2222	.3212*	.2079	.1443	-.0324
Hunter-Wolf A-B Rating	.1857	.0743	.2222	1.0000	.8926***	.6332***	.3276*	.3808**
Hunter-Wolf Factor 1 Restlessness-Aggression	.2949*	.1548	.3212*	.8926***	1.0000	.4952***	.3119*	.1135
Hunter-Wolf Factor 2 Eagergy	.0870	-.0725	.2079	.6332***	.4952***	1.0000	.0923	.0703
Hunter-Wolf Factor 3 Leadership	.2246	.2257	.1443	.3276*	.3119*	-.0923	1.0000	.2761
Hunter-Wolf Factor 4 Alienation	-.0430	-.0530	-.0324	.3808**	.1135	.0703	.2761	1.0000

*$p \leq .10$
**$p \leq .05$
***$p \leq .01$

MYTH Factor 1 (r = .71, $p < .01$ for males; r = .80, $p < .01$ for females) and with MYTH Factor 2 (r = .89, $p < .01$ for males; r = .85, $p < .01$ for females). Similarly, the Hunter-Wolf Type A ratings correlated significantly with Factor 1 (r = .85, $p < .01$ for males; r = .89, $p < .01$ for females), Factor 2 (r = .57, $p < .01$ for males; r = .63, $p < .01$ for females), and Factor 4 (r = .39, $p < .05$ for males; r = .38, $p < .05$ for females). Factor 3 was marginally correlated with the Hunter-Wolf Type A rating (r = .33, $p < .10$) in females only.

Because we have more information on the reliability and validity of the MYTH than on the Hunter-Wolf A-B Rating Scale, the analyses reported below employed the MYTH as the primary classification measure. Analyses were also performed using the Hunter-Wolf scale as a classification instrument. Where results based on the Hunter-Wolf assessment of Type A behavior differ from those of the the MYTH they will be noted.

CHILDREN'S ASPIRATIONS AND PERFORMANCE

It was expected that the results of Snow's (1978) study would replicate in a sample of male and female children. Recall that Snow found adult male Type As to have higher aspirations than adult male Type Bs. Identical to Snow's statistical procedure, a series of t tests were used to analyze the children's aspirations and performance levels. The independent variable was the children's Type A or B score.[2] All analyses were conducted separately for males and females. As can be seen in Tables V and VI, neither Type A males nor Type A females exhibited higher aspiration levels than their same-sex counterparts on any of the puzzles (ts(29) $\leq .94$, ps $> .10$ for males on all puzzles; ts(33) ≤ 1.28, ps $> .10$ for females on all puzzles). Results were similar when based on the Hunter-Wolf

TABLE V

LEVEL OF ASPIRATION FOR MALE TYPE A AND B CHILDREN ON PUZZLES 1 - 5

Puzzle	Type	M	SD	t	p
1	Type A	47.73	19.31	0.33	n.s.
	Type B	51.60	17.56		
2	Type A	33.87	16.27	0.001	n.s.
	Type B	33.73	9.10		
3	Type A	31.53	17.50	0.34	n.s.
	Type B	28.40	11.30		
4	Type A	32.33	17.56	0.70	n.s.
	Type B	27.07	16.93		
5	Type A	32.27	16.75	0.94	n.s.
	Type B	27.40	9.94		
Mean Puzzle Data	Type A	34.67	16.56	0	n.s.
	Type B	34.60	10.97		

Note. N = 30. Matthews Youth Test for Health (MYTH) scores were split on the median to classify by Type, resulting in 15 Type As and 15 Type Bs.

TABLE VI

LEVEL OF ASPIRATION FOR FEMALE TYPE A AND B CHILDREN ON PUZZLES 1 - 5

Puzzle	Type	M	SD	t	p
1	Type A	54.07	24.69	1.28	n.s.
	Type B	44.74	23.29		
2	Type A	37.80	15.23	0.08	n.s.
	Type B	36.12	18.87		
3	Type A	32.26	17.20	0.007	n.s.
	Type B	32.79	18.80		
4	Type A	26.80	8.36	0.12	n.s.
	Type B	28.26	14.73		
5	Type A	25.33	6.34	0.40	n.s.
	Type B	27.95	14.99		
Mean Puzzle Data	Type A	36.73	11.97	0.36	n.s.
	Type B	33.89	14.93		

Note. N = 34. Matthews Youth Test for Health (MYTH) scores were split on the median to classify by Type, resulting in 17 Type As and 17 Type Bs.

assessment of Type A behavior. Thus, Snow's findings did not replicate in a sample of Type A and B children.

Significant differences due to Type A females were obtained on the performance data. While male Type As and Bs did not differ with respect to puzzle performance ($\underline{t}$s(29) $\leq$ .55, $\underline{p}$s $>$ .10 on all puzzles)[3], female Type As did perform at significantly higher levels than female Type Bs ($\underline{t}$(33) = 7.78, $\underline{p} <$ .008 on puzzle 1; $\underline{t}$(33) = 3.37, $\underline{p} <$ .08 on puzzle 4; $\underline{t}$(33) = 2.74, $\underline{p} <$ .10 on puzzle 5; $\underline{t}$(33) = 5.00, $\underline{p} <$ .03 on mean puzzle performance)[4] (see Tables VII and VIII). Female Type As did not outperform male Type As on any puzzle, $\underline{t}$s(31) $\leq$ 1.32, $\underline{p}$s $>$ .10. No significant results were obtained for attainment discrepancy or goal discrepancy values. Results obtained for boys in the current study parallel those of Snow (1978) who found no performance differences among Type A and B men.

PARENTAL ASPIRATIONS

It was hypothesized that parents would report having higher aspirations for their Type A children than for their Type B children. Bivariate correlations between Type A scores and parental questionnaire responses are presented in Table IX. As can be seen from this table, mothers who perceived themselves as setting higher goals than other mothers had children who scored high on Type A behaviors, $\underline{r}$ = .31, $\underline{p} <$ .06. The remaining items were not significantly related to Type A behavior in children. No significant correlations were found for fathers.

In order to determine how much variance in Type A behavior could be accounted for by parental aspirations, the questions most strongly related to Type A scores were entered into multiple regression equations as predictor variables.[5] These variables are also noted in Table IX. For mothers, the following two predictors

TABLE VII

PUZZLE PERFORMANCE FOR MALE TYPE A AND B CHILDREN ON PUZZLES 1 - 5

Puzzle	Type	M	SD	t	p
1	Type A	29.27	5.45	0.41	n.s.
	Type B	30.60	5.84		
2	Type A	23.26	9.79	0.06	n.s.
	Type B	23.93	4.45		
3	Type A	25.60	8.52	0.05	n.s.
	Type B	26.20	5.54		
4	Type A	25.40	8.16	0.55	n.s.
	Type B	27.40	4.62		
5	Type A	32.80	9.78	0.03	n.s.
	Type B	33.33	7.75		
Mean Puzzle Data	Type A	26.87	8.48	0.29	n.s.
	Type B	28.13	3.31		

Note. N = 30. Matthews Youth Test for Health (MYTH) scores were split on the median to classify by Type, resulting in 15 Type As and 15 Type Bs.

TABLE VIII

PUZZLE PERFORMANCE FOR FEMALE TYPE A AND B CHILDREN ON PUZZLES 1- 5

Puzzle	Type	M	SD	t	p
1	Type A	28.86	5.22	7.78	.008
	Type B	23.68	5.50		
2	Type A	23.20	6.09	2.35	n.s.
	Type B	20.21	5.28		
3	Type A	25.27	6.48	1.33	n.s.
	Type B	22.79	6.01		
4	Type A	27.80	4.96	3.37	.08
	Type B	23.53	7.86		
5	Type A	33.87	7.29	2.74	.10
	Type B	29.32	8.44		
Mean Puzzle Data	Type A	27.87	2.85	5.00	.03
	Type B	24.16	5.89		

Note. N = 34. Matthews Youth Test for Health (MYTH) scores were split on the median to classify by Type, resulting in 17 Type As and 17 Type Bs.

TABLE IX

CORRELATIONS BETWEEN THE MATTHEWS YOUTH TEST FOR HEALTH AND MOTHERS' AND FATHERS' RESPONSES ON THE PARENTAL INFORMATION FORM

Questionnaire Item	Parent	
	Mother	Father
1. Do you set educational goals for your child?	.03	-.19
2. If you set goals for your child, how would you compare them to goals other parents set for their children?	.31*[a]	-.08
3. Do you think goal-setting in general is valuable?	-.07	.02
4. How would you rate your child's ability compared to other children of the same age?	-.09	-.02
5. What is the highest educational level you want to see your child achieve?	0	.21[a]
6. Does your child complain about the goals you set for him or her?	-.23	-.09
7. Does your child attain the goals you set for him or her?	-.23[a]	-.17
8. Does your child know what you expect from him or her?	.12	.23[a]

Note. Bivariate correlations are based on 37 mothers and 27 fathers.

*$p < .06$

[a]Used as predictors of Type A behavior in the regression analyses.

were entered into the regression equations: (1) mothers' reports that they set higher goals for their children compared to other mothers (r = .31), and (2) mothers' perceived goal attainment by their children (r = -.23). For regression analyses involving the fathers, the following two predictors were entered into regression equations: (1) fathers' reported educational aspirations for their children (r = .21), and (2) fathers' reports that their children know what is expected of them (r = .23). Type A scores were regressed on these predictor variables. Analyses were conducted separately for each sex.[6]

Tables X and XI present the results of the stepwise solutions for Type A behavior regressed on the predictor variables. As can be seen in Table X, maternal goal-setting and perceptions of goal attainment accounted for 22% of the variance in the Type A behavior of their daughters. These results indicate that mothers perceive their goals to be higher for daughters scoring high on Type A characteristics. They also indicated that the more Type A behavior their daughters displayed, the less likely their daughters were to attain these goals. While 22% of the variance was accounted for in daughters' Type A behavior, virtually none (7%) of the variance was accounted for in the Type A behavior of their sons. Thus, mothers did not indicate that they set higher goals for their Type A sons than for their Type B sons, nor did they report that Type A sons differed in goal attainment from Type B sons.[7]

As reported in Table XI, paternal educational aspirations and children's perceived knowledge of expectations accounted for 19% of the variance in the Type A behavior of daughters. These results indicate that the greater the degree of Type A behavior in their daughters, the more likely fathers were to have high educational aspirations for them. Additionally, fathers perceive that daughters with high Type A scores are aware of what is expected of them.

As with mothers, a large percentage (19%) of the variance was accounted for in daughters' Type A behavior, but only 8% of the variance was accounted for in the Type A behavior of sons. Fathers do not, therefore, report having higher educational aspirations for Type A sons than for Type B sons. Neither do fathers indicate that their Type A sons have greater knowledge of what is expected of them than their Type B sons.

In sum, the aspirations reported by parents in the present study were different for daughters and sons. Both mothers and fathers tended to report having higher aspirations for their Type A daughters than for their Type B daughters. In contrast, mothers and fathers alike did not report differences in their goal-setting behavior toward and expectations of Type A and B sons.

TABLE X

MOTHERS' ASPIRATIONS AS PREDICTORS OF TYPE A BEHAVIOR IN CHILDREN

Predictors	Criteria
	a) Daughters' Type A Behavior (N = 17)
Mothers' perceptions that they set higher goals for their children than other parents set for their offspring	.35
Mothers' perceptions that their children attain the goals they set for them	-.16
Multiple R	.46
R^2	.22
	b) Sons' Type A Behavior (N = 20)
Mothers' perceptions that they set higher goals for their children than other parents set for their offspring	.20
Mothers' perceptions that their children attain the goals they set for them	-.09
Multiple R	.26
R^2	.07

TABLE XI

FATHERS' ASPIRATIONS AS PREDICTORS OF TYPE A BEHAVIOR IN CHILDREN

Predictors	Criteria
	a) Daughters' Type A Behavior (N = 12)
Fathers' perceptions that their children know what is expected of them	.36
Fathers's educational aspirations for their children	.14
Multiple R	.44
R^2	.19
	b) Sons' Type A Behavior (N = 15)
Fathers' perceptions that their children know what is expected of them	.28
Fathers' educational aspirations for their children	.04
Multiple R	.28
R^2	.08

CHAPTER IV

DISCUSSION

CHILDREN'S ASPIRATIONS AND PERFORMANCE

The results of the present study indicate that Type A children do not set higher goals for themselves than Type B children. This result was unexpected, and contrasts previous research (Snow, 1978) which found Type A men to set higher goals for themselves than Type B men.

The discrepancy between Snow's results and the present findings may simply reflect an age difference in the samples. It may be that differences in goal-setting among Type As and Bs do not emerge during childhood. Recall that all children in the current study were preadolescents, while Snow's subjects were between 17 and 58 years old.

Although Type As and Bs did not differ with respect to goal-setting, Type A females did perform at significantly higher levels than Type B females on the puzzles. The performance levels of male Type As and Bs did not differ, nor did Type A females outperform Type A males. These findings are consistent with Snow's (1978) research which found no performance differences for Type A and B men on the same task.

Past research with both Type A adults (Burnam et al., 1975) and Type A male and female children (Matthews & Volkin, 1981) has indicated that on tasks with explicit deadlines, performance differences do not exist between Type As and Bs. The finding in the present study that male Type A and B children did not differ in puzzle

performance is therefore not surprising. It is unclear, however, why Type B females performed poorly on the puzzles compared to Type A females and Type A and B males. One possible reason for the performance discrepancy concerns the fact that the Type B females in the current study had very low Type A and impatience-aggression (Factor 2) ratings when compared to the remaining three groups of children. Type B females in this study had Type A and Factor 2 scores not only lower than Type A males and females, but also lower than most (73%) of the Type B males. Although not typically the case with deadline tasks, the Type B females in this sample might have been prone to work slower on the puzzles, thereby completing less of the puzzles in the allotted time period.

PARENTAL ASPIRATIONS

Parental responses to the questionnaire provide partial support for the notion that mothers and fathers set higher goals for their Type A daughters than for their Type B daughters. Mothers perceive their goals to be higher for daughters scoring high on Type A characteristics. Further, mothers indicated that the more Type A behavior their daughters displayed, the less likely their daughters were to attain they goals they set for them. Fathers indicated that the greater the degree of Type A behavior in their daughters, the more likely they were to have higher educational aspirations for them. Additionally, fathers reported that daughters with high Type A scores are aware of what is expected of them.

Past research (Waldron et al., 1980) has reported that Type A women, compared to Type B women, recalled their mothers as having punished them more often physically. Research with mothers of Type A sons (Matthews et al., 1977) has indicated that mothers tend to be critical of

their child's performance and repeatedly push them to do better. Perhaps the present finding that mothers perceive their Type A daughters as not attaining the goals set for them reflects a tendency for mothers to be critical of their Type A daughters' performance. High goal-setting by mothers of Type As might also be related to a tendency to criticize their child's performance. Perhaps this reported high goal-setting by mothers of Type As is one way of trying to motivate their daughters to do better, and thus encourages Type A behavior.

In contrast to the responses of parents regarding their daughters, parents of sons did not indicate that they had higher aspirations for Type A sons than for Type B sons. Mothers of Type A sons did not report that they set higher goals for their sons than other mothers set for their children. Likewise, fathers of Type A sons, compared to fathers of Type B sons, did not report having higher educational aspirations for their sons.

The responses by parents of sons are somewhat surprising and difficult to explain. It is unclear why parents did not show a tendency toward higher aspirations for Type A sons than for Type B sons. Perhaps because parents who participated in the study were largely from middle- and upper-classes, the aspirations reported for their sons were similar, regardless of Type. Limited sample size might have also made it difficult to detect subtle differences in behavior toward Type A and B sons.

In sum, the present study provides partial support for the notion that parents set higher aspirations for Type A daughters than for Type B daughters. No differences were noted for parents of Type A and B sons. The reasons differences were obtained for daughters but not for sons are perplexing. As noted above, it may be that these results are due in part to the nature of the sample. In addition to the socioeconomic status of most of the parents, several (19%) of the fathers who responded were

raising their daughters as single parents. It may be that the parents who completed the questionnaire respond to their sons fairly similarly, but react to Type A (i.e., aggressive and competitive) daughters differently than to Type B daughters.

MEASUREMENT OF THE TYPE A BEHAVIOR PATTERN

As indicated by the median Type A scores for boys and girls, the sample employed in this study was fairly similar to subject populations studied elsewhere. Previous studies (Lawler et al., 1981; Matthews & Angulo, 1980; Matthews & Siegel, 1983; Matthews & Volkin, 1981) have reported median MYTH Type A scores ranging from 51-54 for males and 45-51 for females. Thus, the Type A scores of the current sample were not atypical (however, Type B girls scored atypically low on Type A and impatience-aggression ratings).

It is interesting to note that, as with past research (Matthews & Angulo, 1980), teachers assessed boys to be more Type A than girls. This finding is probably accounted for by the aggressive component of Type A behavior, and examination of Table I lends support to this idea. Observational studies of aggressive behavior (see Maccoby & Jacklin, 1974, 1980 for reviews) in boys and girls have noted a higher frequency of physically aggressive actions in males. Additionally, as Huston (in press) notes in her review of the literature on sex-typing, teachers, as well as other adults, perceive female students as having feminine characteristics and male students as having masculine characteristics. Since aggression is typically considered a "masculine" trait, teachers might perceive boys to be more aggressive than girls, even if they are not.

In contrast to the MYTH, no sex differences emerged when the Hunter-Wolf was used to classify children by Type. This result is also consistent with past research

(Wolf et al., 1982) which reported no sex differences in self-ratings of Type A behavior. Thus, sex differences in Type A behavior are only noted when the behavior pattern is assessed by an external observer.

Another explanation for the above results on sex differences, which may not be incompatible with the ideas already mentioned, concerns the fact that the reference points of individuals completing the assessment instruments are different. Recall that teachers generally complete the MYTH and children complete the Hunter-Wolf themselves. Because teachers are asked to rate children's behavior in terms of how they relate to others (e.g., when playing games, when working with others, when competing), children are compared to one another and the point of reference becomes the group the children are in. This is not true of the Hunter-Wolf. There are two questions about a child's relationship to his or her peers (in leadership roles), but the remainder of the instrument focuses on how the child perceives herself to <u>be</u>, and does not use the context of a group. Consequently, a child is not asked to compare herself to others. A child does not have to decide, for example, if she argues more than John or Sue, but only if she likes to argue.

Also, children's perceptions of their behavior might well differ from others' perceptions of their behavior, resulting in the lack of sex differnces using the Hunter-Wolf. Although research has shown that Type A adults are able to accurately describe themselves using a self-rating instrument (Herman, Blumenthal, Black, & Chesney, 1981), children might not be old enough to accurately perceive their behavior. Boys, for example, might perceive themselves to be less aggressive or competitive than others perceive them to be.

Regarding the correspondence of MYTH Type A ratings and the Hunter-Wolf Type A ratings, the correlation

between these two instruments was marginally significant for both sexes combined, but was not significant when correlations were examined separately for each sex. There are several possible explanations for this finding. As mentioned above, the fact that one instrument employs others' ratings of behavior and relies on intragroup comparisons, and a second uses self-ratings of behavior, thereby creating a different point of reference, may account for the relative lack of correspondence. Second, it may be that the Hunter-Wolf Rating Scale assesses only a part of the Type A behavior pattern. While the Hunter-Wolf has been found to be a reliable instrument (see the Method section), the validation study (Wolf et al., 1982) provided only partial support for its validity. The MYTH, by contrast, has been found to be both a reliable and a highly valid instrument. Assuming the Hunter-Wolf does assess part of the Type A behavior pattern, this accounts for the marginally significant relationship between the Type A ratings of the MYTH and the Hunter-Wolf.

To conclude, it appears that the MYTH and the Hunter-Wolf Rating Scale may be assessing different aspects of Type A behavior in children. Several issues involving these assessment instruments need to be explored. These include teachers' biases in rating Type A behavior, problems of self-perception in completing the Hunter-Wolf, and the stability of the Hunter-Wolf over time.

SUMMARY AND SUGGESTIONS FOR FUTURE RESEARCH

The present study examined goal-setting behaviors displayed by Type A and B children, parents' goal-setting behaviors toward their offspring, and aspects of assessment of the Type A behavior pattern.

With respect to goal-setting, Type A children in this study did not set higher goals for themselves than Type B

children. This result may have been due to the age of the children. It is possible that the differences in goal-setting between Type As and Bs emerge during adolescence. Cross-sectional and/or longitudinal studies of goal-setting need to be conducted to determine at what age these differences become evident.

An assessment of parental aspirations generally indicated that parents set higher goals for their Type A daughters than for their Type B daughters. No differences were noted between parents of Type A and B sons. The lack of differences between parents of Type A and B sons could be due to the characteristics of this sample and the limited responses from fathers. Future research on parental aspirations needs to include more representative samples. Additionally, alternative measures of parental goal-setting which have established criterion validity should be employed. Rather than relying entirely on self-report data, future studies of parental aspirations should incorporate observations of parent-child interactions in naturalistic environments.

Finally, a comparison of the two most common instruments used to assess Type A behavior in children revealed that they correlated only marginally. This result may be due to biased ratings by teachers in completing the MYTH, problems of self-perception in completing the Hunter-Wolf Rating Scale, or only partial validity of the Hunter-Wolf. Future research needs to focus on the stability and validity of the Hunter-Wolf in assessing Type A behavior. Researchers also need to explore the problems of biases by self and others in rating Type A behavior.

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FOOTNOTES

[1]Completed data were obtained on 64 children. Sixteen were from single-parent homes. A total of 60 mothers and 51 fathers were available to participate, accounting for the discrepancy in the percentage of response rates for mothers and fathers.

[2]Median splits were used to classify the children by Type, and were calculated separately for males (MD = 55.00 on the MYTH, 94.50 on the Hunter-Wolf) and females (MD = 43.83 on the MYTH, 92.50 on the Hunter-Wolf).

[3]When classified by the Hunter-Wolf, male Type As performed at significantly higher levels than male Type Bs on puzzle 5 and on mean puzzle performance $\underline{t}s(29) \geq 4.15$, $\underline{p}s < .05$. Type As performed at marginally significant higher levels than Type Bs on puzzles 2 and 4, $\underline{t}s(29) \geq 3.30$, $\underline{p}s < .08$.

[4]When classified by the Hunter-Wolf, female Type As outperformed female Type Bs only on puzzle 3, $\underline{t}(33) = 3.31$, $\underline{p} < .08$.

[5]Bivariate correlations between Hunter-Wolf Type A scores and parental questionnaire responses differed widely from correlations obtained using the MYTH to assess Type A behavior. Significant correlations were obtained on two responses by fathers. Question 3 (value of goal-setting generally) was positively correlated with Type A behavior ($\underline{r} = .39$, $\underline{p} < .05$), and Question 5 (educational aspirations) correlated negatively ($\underline{r} = -.53$, $\underline{p} < .005$) with Type A behavior.

[6]Due to the small sample size, only two predictors were used in each of the four regression analyses.

[7]In addition to the regression analyses, a series of 2 (sex of child) x 2 (Type of child) ANOVAs were performed

to assess parental aspirations. Mothers of Type A children (relative to mothers of Type B children) reported that they set higher goals for their children than other parents ($F(3, 33) = 2.86$, $p < .05$, one-tailed).

APPENDIX A

INFORMED CONSENTS

I, _____ hereby agree to serve as a subject in the research project on personality and goals conducted by Wendy Kliewer under the supervision of Dr. Gerdi Weidner.

I understand that the study involves

(1) completing a short (24-item) Health Habits Questionnaire on my personal likes and dislikes, habits, and behavior, and

(2) working 5 "Connect the Numbers" puzzles.

I understand that before I begin each puzzle I will be asked how far I will try to get in the puzzle during a minute.

I understand that this study will take about 45 minutes of my time, and that some of the information I give will be private. I also understand that no one except the investigator will see my scores on the puzzles and Health Habits Questionnaire. All information will be kept <u>strictly confidential</u>.

It has been explained to me that the purpose of this study is to learn how different boys and girls solve these puzzles.

Wendy Kliewer has offered to answer any questions I may have about the study.

I understand that I do not have to participate in the study if I choose not to, and that if I decide not to participate my grades in this school will not be affected.

I have read and understand the above information.

Date_____Signature_____

I, _____ hereby agree to serve as a subject in the research project on personality and goals conducted by Wendy Kliewer under the supervision of Dr. Gerdi Weidner. I also agree to allow my child _____ to participate in this research.

I understand that my involvement in this research is simply completing a short questionnaire regarding the goals I set for my child. I understand that my child's involvement includes completing a short Health Habits Questionniare and working 5 "Connect the Numbers" puzzles.

I understand that my participation will take approximatley 15 minutes of my time. I also understand that no one except the investigator will see my questionniare responses and my child's responses to the questionnaire and puzzles. All information will be kept strictly confidential, and the identity of all participants in this research project will remain anonymous.

It has been explained to me that the purpose of this study is to research individual differences in the way people set goals and their performance on tasks. I understand that the results of the study will be made available to me, if I so desire, once the research is complete.

I may not receive any direct benefit from participation in this study, but my participation may help to increase knowledge which may benefit others in the future.

Dr. Gerdi Weidner has offered to answer any questions I may have about the study, and may be contacted at the Oregon Health Sciences University, 225-8005.

I understand that I am free to withdraw from participation in this study at any time without jeopardizing my relationship with Portland State University and/or Cathedral School.

I have read and understand the foregoing information.

Date_____Signature_____

If you experience problems that are the result of your participation in this study, please contact John Lorentz, Office of Graduate Studies and Research, 105 Neuberger Hall, Portland State University, 229-3423.

I, _____ hereby agree to assist in the research project on personality and goals conducted by Wendy Kliewer under the supervision of Dr. Gerdi Weidner.

I understand that my involvement in the study includes completing a 17-item questionnaire on each of my students in which I rate statements on a 5-point scale as being characteristic or uncharacteristic of a student.

I understand the study will take approximately 60 minutes of my time and 45 minutes of classroom time. To protect privacy, I understand that no one except the investigator will see my student ratings. All information will be kept strictly confidential, and the identity of all participants in this research will remain anonymous.

It has been explained to me that the purpose of this study is to research individual differences in goal-setting and performance. I understand that the results of this study will be made available to me, if I so desire, once the research is complete.

I may not receive any direct benefit from participation in this study, but my participation may help to increase knowledge which may benefit others in the future.

Dr. Gerdi Weidner has offered to answer any questions I may have about the study, and may be contacted at the Oregon Health Sciences University, 225-8005.

I understand that I am free to withdraw from participation in this study at any time without jeopardizing my relationship with Portland State University and/or Cathedral School.

I have read and understand the foregoing information.

Date_____Signature_____

If you experience any problems that are the result of your participation in this study, please contact John Lorentz, Office of Graduate Studies and Research, 105 Neuberger Hall, Portland State University, 229-3943.

APPENDIX B

MEASURES USED TO ASSESS TYPE A BEHAVIOR

Name of Child_____ Age_____

Rater_____

This rating scale is designed to assess various aspects of a child's behavior. Please mark how well the statement characterizes the child using the following scale:

1	2	3	4	5
extremely uncharacteristic	uncharacteristic	neutral	characteristic	extremely characteristic

1. When this child plays games, he/she is competitive.

   1 2 3 4 5

2. This child works quickly and energetically rather than slowly and deliberately.

   1 2 3 4 5

3. When this child has to wait for others, he/she becomes impatient.

   1 2 3 4 5

4. This child does things in a hurry.

   1 2 3 4 5

5. It takes a lot before this child gets angry at his/her peers.

   1 2 3 4 5

6. This child interrupts others.

   1 2 3 4 5

7. This child is a leader in various activities.

   1 2 3 4 5

8. This child gets irritated easily.

   1 2 3 4 5

1	2	3	4	5
extremely uncharacteristic	uncharacteristic	neutral	characteristic	extremely characteristic

9. He/she seems to perform better than usual when competing against others.

1	2	3	4	5

10. This child likes to argue or debate.

1	2	3	4	5

11, This child is patient when working with children slower than he/she is.

1	2	3	4	5

12. When working or playing, he/she tries to do better than other children.

1	2	3	4	5

13. This child can sit still long.

1	2	3	4	5

14. It is important to this child to win, rather than to have fun in games or schoolwork.

1	2	3	4	5

15. Other children look to this child for leadership.

1	2	3	4	5

16. This child is competitive.

1	2	3	4	5

17. This child tends to get into fights.

1	2	3	4	5

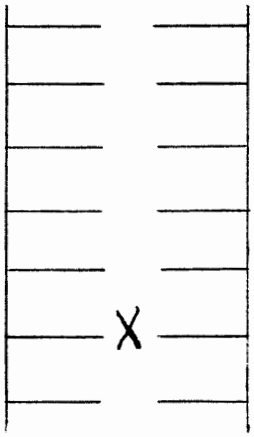
Thank you.

HEALTH HABITS QUESTIONNAIRE

EXAMPLE

INSTRUCTIONS: *Here is a picture of a ladder. At the bottom is a statement: I am very hungry. At the top is a statement: I am not very hungry. Which statement is more like you? Of course, you may be somewhere in between. Put an "X" on the step where you are on this ladder most of the time.*

I am not very hungry.



I am very hungry.

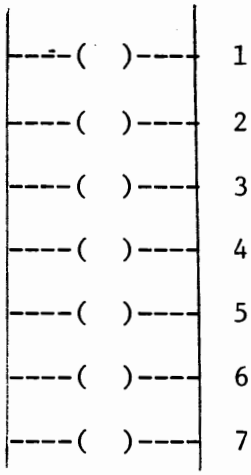
If you think you are hungry much of the time, but not all of the time, you would put an "X" here.

BE SURE YOU ANSWER THE QUESTIONS IN THE NUMBERED ORDER. ALL OF YOUR ANSWERS WILL BE KEPT SECRET.

CONFIDENTIAL

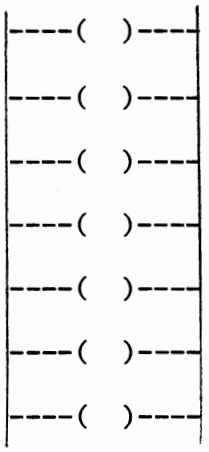
GO TO NEXT PAGE

1. I am easy going.



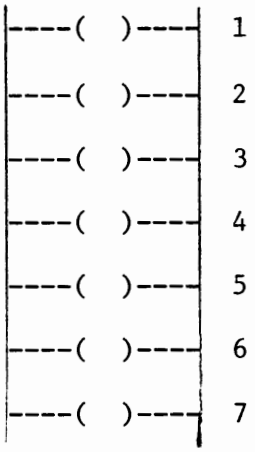
I am hard driving.

2. I feel time passes quickly.



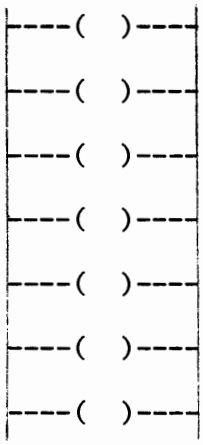
I feel time passes slowly.

3. I walk fast.



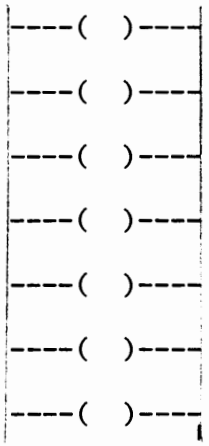
I walk slowly.

4. I take it easy and put little effort into the things I do.



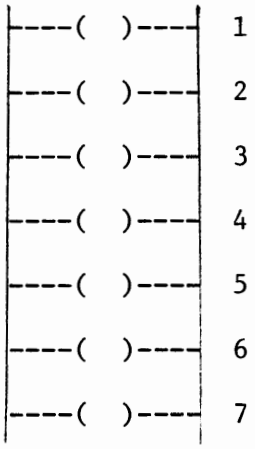
I go all out and put a lot of effort into the things I do.

5. It does matter if I am late.



It doesn't matter if I am late.

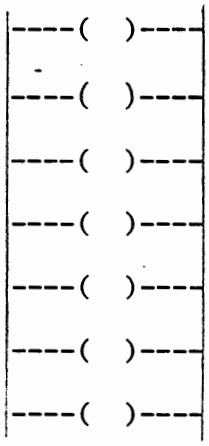
6. I always want to win at everything.



I don't care if I win at anything.

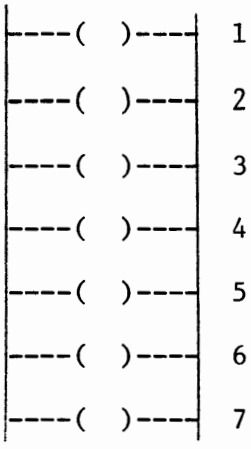
GO TO NEXT PAGE

7. I often break in or finish when someone else is talking.



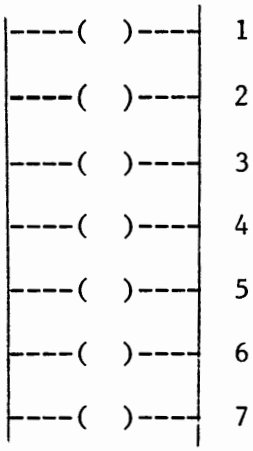
I always sit and listen when someone else is talking.

8. I have no interests.



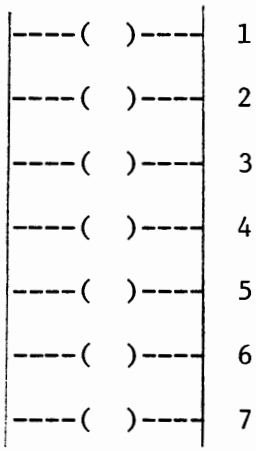
I have many interests.

9. I want to do better in school.



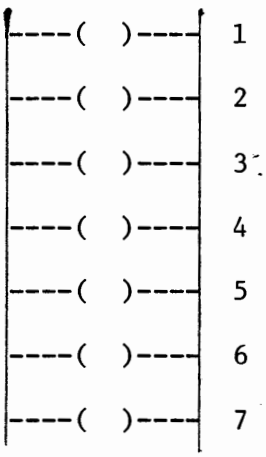
I am satisfied with how well I am doing in school.

10. I find it difficult to wait.



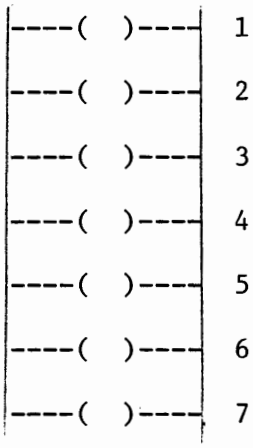
I find it easy to wait.

11. I talk slowly.



I talk fast.

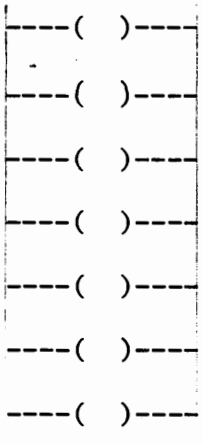
12. I talk loud.



I talk softly.

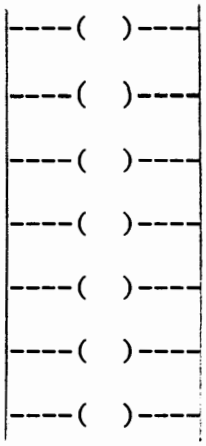
GO TO NEXT PAGE

13. I always feel rushed.



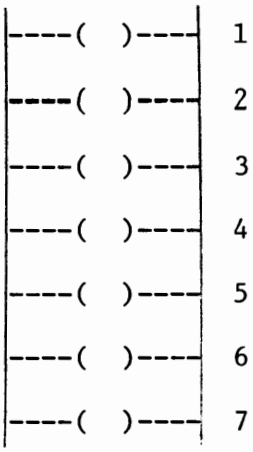
I never feel rushed.

14. I eat slowly.



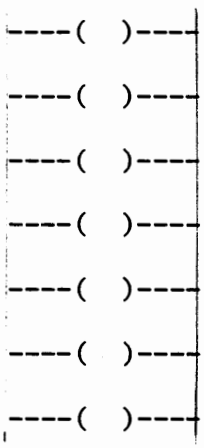
I eat fast.

15. I think about many things at the same time.



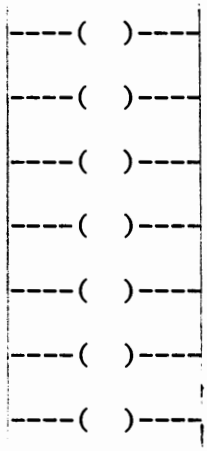
I think about one thing at a time.

16. I like to argue.



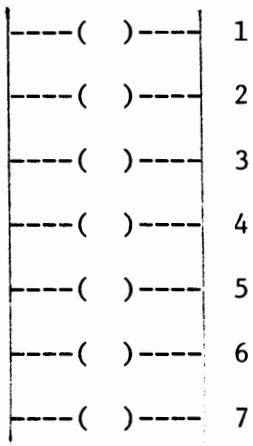
I don't like to argue.

17. I often get into fights.



I never get into fights.

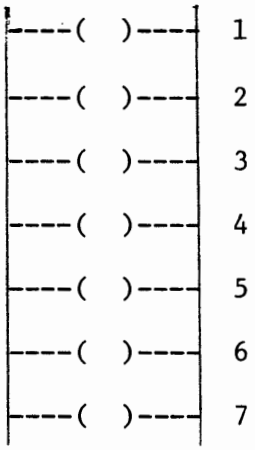
18. I like to tell others what to do.



I don't like to tell others what to do.

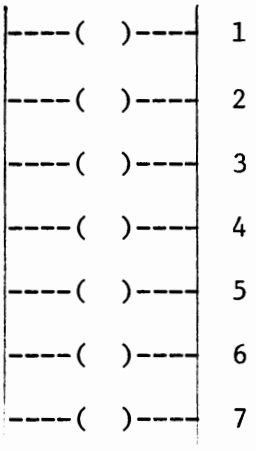
GO TO NEXT PAGE

19. It takes a lot to get me angry.



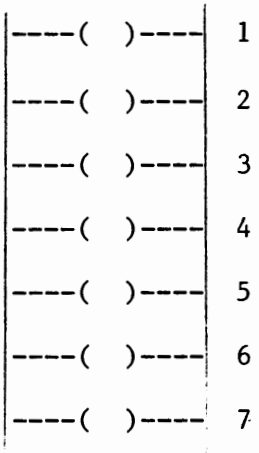
It takes very little to get me angry.

20. I am always a leader in activities



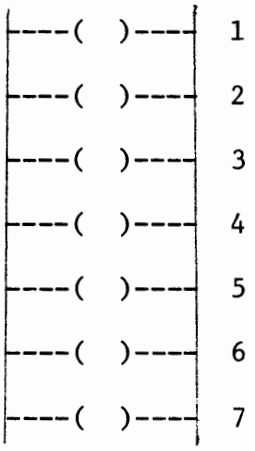
I am never a leader in activities.

21. My friends always pick me to be leader when we play games.



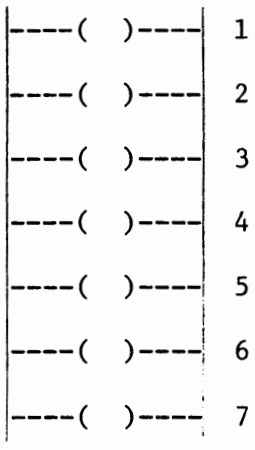
My friends never pick me to be leader when we play games.

22. I drink fast.



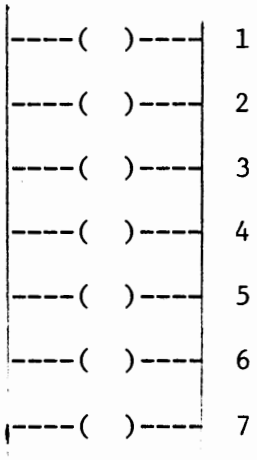
I drink slowly.

23. I have many hobbies.



I have few hobbies.

24. I lose my temper easily.



I do not lose my temper easily.

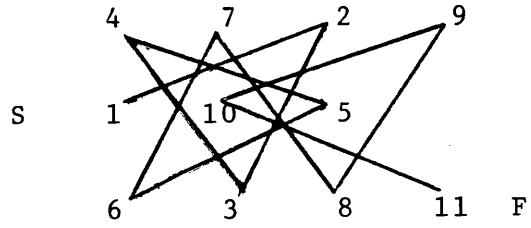
APPENDIX C

MEASURES USED TO ASSESS ASPIRATIONS

CONNECT THE NUMBERS

This booklet contains five puzzles. For each puzzle your task is to draw a line connecting the numbers in order from 1 to the last number. Follow the line in the example below. The line connects the numbers in order going from 1, marked S for START, to 2, then to 3, then to 4, and so on to 11, the last number, marked F for FINISH.

Example 1



Now you try the next example. Draw an unbroken line from S to F connecting the numbers in order from 1 to 13.

Work This Example

		9	7	5
		8	10	6
F	13	11	4	2
		12	1	3
			S	

The last number in each of the puzzles in this booklet is 80. However, you may not get that far in the one minute which will be allowed for each puzzle.

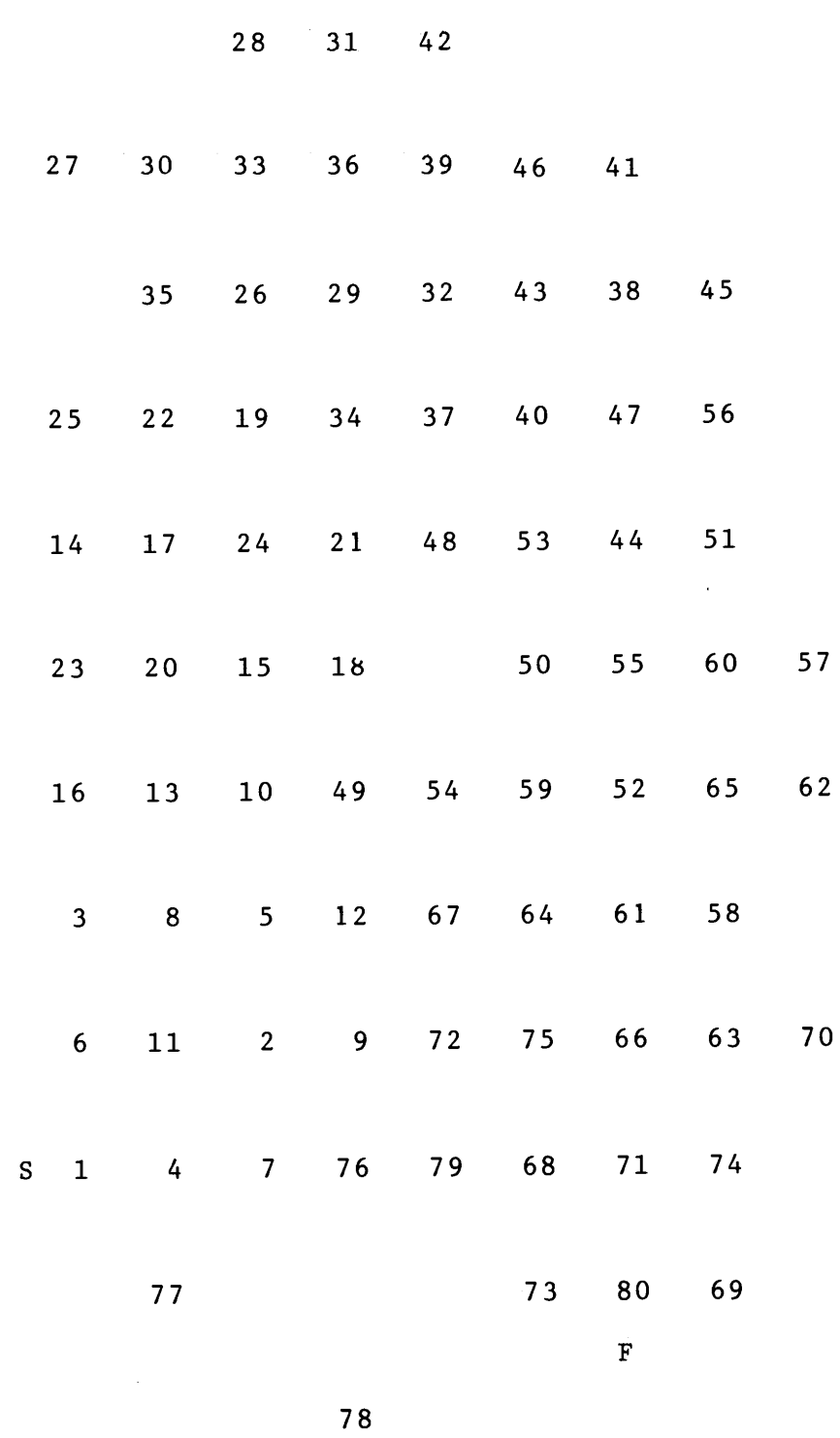
PUZZLE 1

Write the number you will try to reach in one minute._____

		24								
23	20		26	31	28	77	74	69		
18	25	22	29	36	33	70	67	78	75	80 F
21	13	19	32	27	30	35	76	73	68	
14	17	11	37	34	71	66	63	60	79	
12	10		16	41	38	61	72	65		
6	15	8	39	46	43	64	59	62		
9	2	5	42	49	40	45	56	53		
4	7		47	44	51	54		58		
S 1		3	50		48	57	52	55		

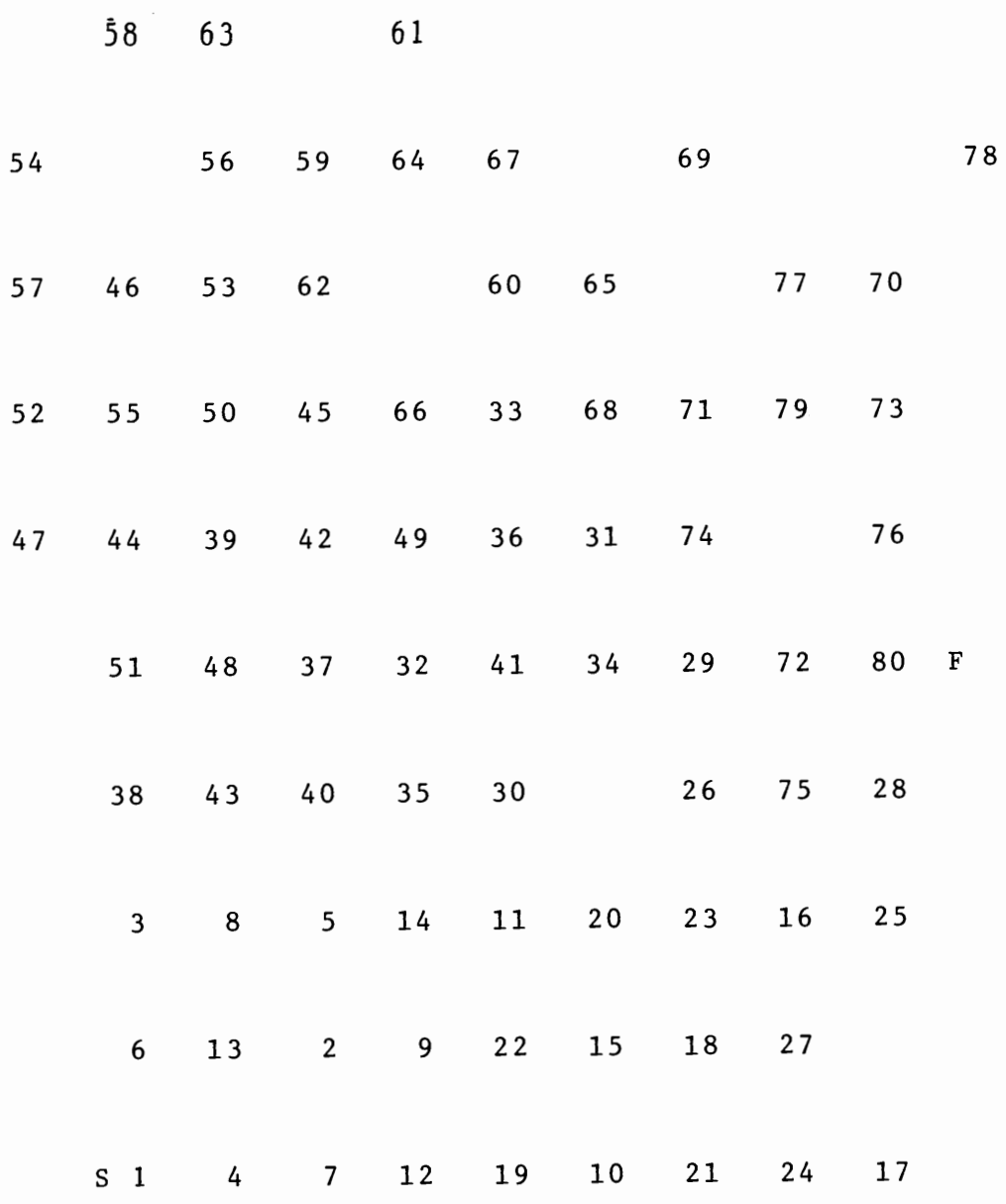
PUZZLE 2

Write the number you will try to reach in one minute._____



PUZZLE 3

Write the number you will try to reach in one minute._____



PUZZLE 4

Write the number you will try to reach in one minute._____

S

21	24	17	14	19	12	1	4	7		
	27	20	23	16	5	8	11	2		
25	22	15	18	13	51	3	6	9		
28	31	26	52		56	10	54	75	72	
35	38	33	30	50	53	58	73	78		76
32	29	36	47	57	49	55	60	71	74	79
37	34	39	42	45	59	68	65	62	77	
40	43	46		48	64	61	70	67	80	F
		41	44		69	66	63			

PUZZLE 5

Write the number you will try to reach in one minute._____

S	1	4	7	10	13	16	19	21	24	27
	8	11	2	5	18	22	14	26		
	3	6	9	12	15	20	17	23	28	25
	53	50	45	48	39	42	37	30	35	32
		47	54	51	44		40	33		29
	55	52	49	46	41	38	43	36	31	34
		59	56	65	62	67	70	73	76	79
	57	64	61	68	71	74		78		
	60		58	63	66	69	72	75	80	77
									F	

PARENTAL INFORMATION FORM

This form will remain strictly confidential.

Your name:_____

How much schooling have you completed? (Circle one):

1 0-4 years
2 5-8 years
3 some high school
4 graduated from high school
5 trade school or business school
6 some college (including junior college)
7 graduated from a 4-year college
8 post graduate work at a college or university

Child's name:_____Age:_____Sex:_____

Your relationship to the child (e.g., mother, father):_____

Child's birth order (Circle one):

1 first-born or only child
2 second born
3 third born
4 fourth born
5 fifth born
6 other:_____

Child's grade in school (Circle one): 4th 5th 6th

****

Many parents have some ideas about certain goals their child should achieve. For example, you might expect your child to do well in school. While some parents may communicate their goals to their children, others may not. In this study we are interested in goals you may have for your child.

Please answer the following questions as objectively as possible. Circle the number which best describes your position. Please do not place circles between numbers.

For example, if you expect you child to win in sports competitions most of the time, but not all of the time, you would circle the number "6" on the following scale:

How often do you expect your child to win in sports competitions?

1 2 3 4 5 (6) 7
never always

****

1. Do you set educational goals for your child?

1 2 3 4 5 6 7
never always

2. If you set goals for your child, how would you compare them to goals other parents set for their children?

1 2 3 4 5 6 7

My goals are definitely lower ——— My goals are definitely higher

3. Do you think goal-setting in general is valuable?

1 2 3 4 5 6 7

not at all valuable ——— very valuable

4. How would you rate your child's <u>ability</u> compared to other children of the same age?

1 2 3 4 5 6 7

below average ——— average ——— superior

5. What is the highest educational level you want to see your child achieve?

1 5-8 years
2 some high school
3 high school graduate
4 trade or business school
5 some college (including junior college)
6 graduate of a 4-year college
7 post-graduate work at a college or university

6. Does your child complain about the goals you set for him or her?

1 2 3 4 5 6 7

never ——— always

7. Does your child attain the goals you set for him or her?

1 2 3 4 5 6 7

never ——— always

8. Does your child know what you expect from him or her?

1 2 3 4 5 6 7

definitely does not know ——— clearly knows

9. Give some examples of educational goals you might set for your child. _____

10. Give some examples of other types of goals you might set for your child. _____

****

Please make sure you have answered each of the questions above. If you are not sure about an answer, try to make an "educated guess". Please do not leave any questions unanswered.

Thank you for your cooperation. Please return this form with the signed consent form in the enclosed envelope.

APPENDIX D

EXPERIMENTAL INSTRUCTIONS

EXPERIMENTAL INSTRUCTIONS

A booklet consisting of a cover sheet and the 5 puzzles was placed before each child. The children were asked not to open the booklets or mark on them until they were given permission to do so.

Investigator: What we are going to do today is complete 5 "Connect the Numbers" puzzles. Each puzzle begins with the number 1 and ends with the number 80. For each puzzle your task is to draw a line connecting the numbers in order from the number 1 to the last number, just like the example on your booklet. As you can see in your example, the line connects the numbers in order from one, marked S for START, to 2, then to 3, then to 4, and so on to 11, the last number, marked F for FINISH.

Now I want you to try the example on your paper. Draw an unbroken line from S to F, connecting the numbers in order from 1 to 13. Good.

Now I want you to imagine for a while how long 1 minute is. Can you think of how long a minute is? In the next 5 puzzles I am going to give you 15 seconds to look over each puzzle, and 1 minute to work each puzzle. The last number of the puzzles in this booklet is 80. You may not get that far in the 1 minute time period. This is O.K. I just want you to try to connect as many numbers as you can in the 1 minute.

Before you begin each puzzle I want you to think of what number you will try to reach in the 1 minute. Before I tell you to start working the puzzle, I want you to write the number you will try to reach in the blank on the top of the page. Does everyone understand what we are going to do?

Now turn the page to Puzzle 1. You will now have 15 seconds to look over the puzzle. Do not begin connecting the numbers until I tell you to do so.

The children are now given 15 seconds to examine the puzzle.

Investigator: Now I want you to write the number that you will try to reach in the blank at the top of the page. Has everyone written the number they will try to reach? Good.

When I say "Go", begin connecting the numbers. Try to connect as many numbers as you can in 1

minute. Ready. Go.

The children are now given 1 minute to work the puzzle.

Investigator: Stop. Very good. Now turn the page to puzzle 2. You will have 15 seconds to look over the puzzle. Do not begin connecting the numbers until I tell you to do so.

Instructions are repeated through the fifth puzzle.

DEBRIEFING PROCEDURE

Once the Hunter-Wolf A-B Rating Scale and the Puzzles had been completed and collected, the children were debriefed. The experimenter informed the children that she was studying how children with different personality types performed on these puzzles. Children were also told that their parents would be given the results of the study once it was completed. The experimenter answered any questions the students had before proceeding to the next classroom.