TYPE A BEHAVIOR, STRESS AND SOCIAL SUPPORT AMONG EARLY ADOLESCENTS

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ABSTRACT

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The Type A behavior pattern (TABP) is typically associated with hostile, competitive, and hard driving adults, who are also at risk for coronary heart disease. However, there is growing evidence for TABP among children and adolescents. This study is designed to investigate the relationship among TABP, hassles, emotions, cognitions, social support and gender for 171 sixth and eighth graders (103 females, 68 males).

Findings support two distinct dimensions of TABP: impatience, hostility and aggression (IMPAGG), and competitiveness and achievement striving (COMPETE). Hassles, distress, anger, and perceptions of unfairness are positively correlated with IMPAGG. Number of supporters, number of peer supporters, and high mutuality--giving more support than receiving--are positively correlated with COMPETE. These findings are significant for males only. In fact, there is only one significant finding for females among the eleven hypotheses tested. In addition, the scales measuring TABP, hassles, emotions, cognitions and social support have acceptable internal consistency (Cronbach alphas = .77 to .90) for both males and females.

To further understand the interaction between the two TABP dimensions, three TABP models (cognitive, affect and social) are tested only for males using hierarchical multiple regression. Findings indicate that TABP is best explained by a cognitive model, although cognitions interact with both affective and social variables. Interactions among perceptions of unfairness, anger, distress, and high peer support contribute significant amounts of variance beyond that of hassles when predicting males' TABP. Implications for these findings and future research are also discussed.

This work is dedicated to Mary, my wife,

and, on her behalf, to all who support

their spouses through such ordeals.

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Doing this dissertation answered many questions beyond the Hypotheses tested. It provided personal insight, as well as an initial formulation of a clinical model. During the process many other questions were raised, that will spur future investigations. Clearly it was an enlightening and positive experience for me in large part because of the following people:

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INTRODUCTION

Friedman and Rosenman (1974) have described the well-known Type A Behavior Pattern (TABP) 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 or persons" (p. 84). Conversely, Type B behavior refers to those who are relatively unhurried, relaxed, satisfied and serene in life style.

The TABP is particularly evident among white middle-aged men and has been linked to an increased risk for coronary heart disease (CHD). Researchers of the Western Collaborative Group Study (WCGS) (Rosenman, et al., 1975) followed 3,154 initially well, adult males divided equally into Type A or B categories, for eight and one-half years. Type As were two to three times as likely to develop or die from CHD as Type Bs. The TABP predicted CHD better than levels of hypertension, serum cholesterol and smoking, although these exacerbated the risk for CHD. Moreover, none of the men classified as pure Type Bs incurred a heart attack during the 12 years following the study's inception (Friedman & Ulmer, 1984). Jenkins, Zyzanski & Rosenman (1976) also reported that Type As, following a first myocardial infarction, were twice as likely to have a second myocardial infarction as Type Bs. Thus, the TABP represents a continuum of proneness

for CHD and a unique paradigm in which psychosocial factors are the best predictors of a disease process, at least among adult males.

The TABP appears to unbalance certain physiological processes which serve to maintain hormonal, cholesterol and fat blood levels. Friedman and Ulmer (1984) suggest Type As' pervasive competitiveness and hostility results in continual discharges of norepinephrine. Norepinephrine is secreted by the adrenal glands especially in response to fight-flight situations. The elevation of norepinephrine diverts blood to the heart, brain and muscles which are needed to outmaneuver or engage an adversary. This diversion of blood results in a drastic reduction of blood to the liver, impairing its ability to metabolize cholesterol and fat in the blood. Thus, the cost of a constant state of competitiveness and aggression may be increased "sludging" in the blood system which then creates an increased risk for cardiovascular disease.

The TABP was once thought to be a unique phenomenon of white middle-aged executives, who were continually pressured by the demands of competitive work environs. However, recent evidence suggests that TABP is becoming more prevalent in the population as a whole. For example, the incidence among females rises as more women enter the work force, especially in managerial positions (Haynes & Feinleib, 1980). Perhaps more disturbing is the identification of TABP among children as young as three years (Corrigan & Moskowitz, 1983; Matthews & colleagues, 1977-1983). Growing evidence suggests that TABP among children is also linked to increases in coronary related diseases in childhood, especially hypertension (Drummond, 1982), and may be the antecedent of adult CHD (Kannel & Dawber, 1972).

The quest by parents since the early seventies to create the best and brightest children may be partly responsible for the incidence of TABP among children. A revealing article in Newsweek entitled "Bringing up superbaby" (Langway, Jackson, Shirley & Whitmore, 1983) yielded the following quotes by parents enrolling babies and toddlers (and sometimes themselves) in academic acceleration programs.

> You have to start them young and push them toward their goal. They have to be aware of everything--the alphabet, numbers, reading. I want to fill these little sponges as much as possible. [38 year old mother speaking about her 3 year old son]

> I have learned that if you want something good, you go after it, whether it's a job or a promotion or having the kind of kid you want. [32 year old father speaking about his 20 month son]

> There is a place in every environment to take a break, but I cannot support the idea of my child being involved in nothing but a playful or non-academic environment at any age. [31 year old father speaking about his 4 year old daughter]

These quotes clearly convey the essential ingredients of the TABP: competitiveness, achievement striving and impatience, as well as devaluing play and relaxation. This attitude is aptly summarized as..."the new ABC's of babyhood: Anxiety, Betterment, Competition" (p. 62). It appears to be widespread as evidenced by the proliferation of early education institutes and books entitled "Kindergarten is too late," "Teach your baby math," "How to multiply your baby's intelligence" and "How to teach your baby to read." The latter book was on the best seller list in 1964 and has since been translated into 16 languages.

Models for TABP are not confined to academic pursuits. Noted sports writer, John Underwood (cited in Elkind, 1981) criticizes the emphasis placed on competition and aggression in Little League sports.

> ...The sine qua non of sport is enjoyment. When you take that away, it's no longer sport. Perhaps the worst creators of specialists are the Little Leagues in all sports...Some coaches...even "think that sports is a war."...To visit on small heads the pressure to win, the pressure to be "just like mean Joe Green" is indecent. To dress our children up like pros in costly outfits is ridiculous. In so doing, we take away many of the qualities that competitive sports are designed to give to the growing process...
> (pp. 30-31)

Despite the evidence, it is still questionable whether children's aggression and competitiveness are the precursors of adult TABP. One must be confident the construct of Type A behavior is appropriate to children as suggested by earlier research by Matthews, the leader of research in this area. Therefore, this study will attempt to replicate the findings of Matthews and Angulo (1981) by utilizing their measure of children's TABP--Matthews Youth Test for Health (MYTH)--with a sample of early adolescents.

Perhaps more important, assuming cross validation of the MYTH, is the construct validation of children's TABP based on psychosocial factors. Physiological validation is problematic because the major symptom, heart attack, is not prevalent among children. Physiological validation could be made with a prohibitively lengthy and costly longitudinal study of children through adulthood, yet to be undertaken. However, evidence suggests Type A children are also cardiovascular hyperresponders (Lawler, Allen, Chrichter & Standard, 1981). Thus, it is plausible Type A children will develop into Type A adults with high risk for CHD.

One way to assess construct validity of adolescents' TABP is to view TABP as a method of coping with stress. Adolescents may acquire these coping behaviors in response to academic and social stressors, and through reinforcement by role models. Therefore certain stressors,

perceptions of stress and significant others may be predictive of TABP. Margolis, McLeroy, Runyan and Kaplan (1983) underscore the utility of this approach in a critique of TABP research. The authors note the majority of research on TABP is at the individual level. They strongly suggest future research on TABP expand individual paradigms toward a more ecological model by including interpersonal, institutional, and cultural effects. Taking their suggestion to heart, this researcher investigated the relationship among stress, emotions, attributions, social support, gender, and TABP among young adolescents.

Type A behavior and youth

The prevalence of Type A behaviors in children has been well documented in preschoolers and kindergarteners (Corrigan & Moskowitz, 1983; Matthews & Angulo, 1980); in elementary school children (Butensky et al., 1975; Matthews, & colleagues, 1980, 1981, 1982, 1983; Wolf, Sklov, Wenzl, Hunter & Berenson, 1982), and in middle and high school students (Butensky et al., 1976; Siegel, Matthews and Leitch, 1981; Wolf et al., 1981).

In general, Type A children reflect their adult counterparts on measures of achievement orientation, higher standards, impatience with peers, aggressiveness, anger and frustration. For example, Matthews and Angulo (1980) found Type A children more competitive, striving, aggressive, and less empathic than Type B children. Boys had significantly higher Type A scores than did girls. Type A children underreport subjective fatigue (Matthews & Volkin, 1981), have higher standards for themselves, compare themselves more often to superior

children (Matthews & Siegel, 1983), come from middle to higher SES families (Matthews & Avis, 1983), and are more likely to be white than black (Wolf, Hunter, Webber & Berenson, 1981).

Research also suggests young Type A adolescents may show physiological signs resembling those of Type A adults. Lawler and colleagues (1981) separated forty-one 11 and 12 year-old children (20 boys, 21 girls) into Type A and B categories. They administered tasks designed to elicit Type A behavior while monitoring the children's systolic blood pressure, heart rate, and reaction time. Results were mixed. As expected, Type A boys had higher hearts rate than Bs. However, systolic blood pressure and reaction time were significant predictors only for the Type A girls. Unexpected were Type A girls' relatively low heart rates during reaction time tasks. These results suggest that physiological mechanisms of adult TABP do not appear fully by adolescence, perhaps because adolescents are still maturing and have generally robust health.

The etiology of the TABP has been investigated with genetic twin studies (Matthews & Krantz, 1976; Matthews et al., in press). Results indicate modest evidence for TABP's heritability. However, the authors also suggest that TABP may be a result of parent-child interactions explained by social learning theory.

There is strong evidence for a social learning theory explanation of TABP, from both experimental and retrospective studies. Matthews, Glass & Richins (1977) observed mother-child interactions of Type A and B children. They found mothers gave more positive evaluations to Type B than to Type A children, and Type As were pushed harder and more often

than Type Bs. Whether this was due to different parenting styles or elicitation by children was not concluded.

In a subsequent study, Matthews (1977) controlled for parenting style by observing interactions between mothers (n = 40) and confederate children trained to behave as either extreme Type A or Type B. Her results supported the elicitation hypothesis. Type A children elicited more pushing and positive task evaluation than Type B children, but these effects were only evident for interactions with Type B mothers. Matthews concluded Type A children's competitiveness and impatience elicited more pushing and commendations from Type B mothers which in turn reinforced them to achieve ever-escalating goals.

Wolf, Sklov, Wenzel, Hunter and Berenson (1982) classified 438 fifth and sixth graders as either Type A or B with the A-B Rating Scale (Hunter & Wolf, 1980). The students were exposed to experimental situations with varying demands for competition and accelerated behavior. As predicted, Type As were more eager, energized, restless, and aggressive than Bs. Type As also displayed more leadership as well as alienation in tasks of eating, reading, walking, competition, time estimation and crossing out numbers than Bs.

Retrospective studies suggest that parent-child relationships are prime reinforcers of adult Type A behavior. Burke (1983) assessed students enrolled in a masters level business program. He found women exhibited significantly more Type A behaviors than males, although the entire sample was higher on Type A behaviors than a normative group. Females' speed and impatience factors were significantly associated with early parent behavior and coping style. This contrasted with almost no

significant findings for men. The author concluded that Type A women wanted their parents, especially mothers, to (1) feel that they were important, (2) respect their abilities, (3) give them more love, affection and freedom. This interpretation conforms with the evidence for children's elicitation of mothers' approval found by Matthews (1977).

In addition, parents may model specific behaviors associated with the TABP. Waldron et al. (1980) reported Type A male undergraduates recalled their fathers as more harsh, physically punishing and able to make them feel resentful when punished, than did Type Bs. Type A females also reported that their mothers frequently punished them physically. Thus, parental aggression may contribute to anger and aggression factors of TABP.

Lifestyle and stressful situations also may promote TABP. Butensky et al. (1976) interviewed fifth, ninth and twelfth grade students to determine the incidence of TABP and its relationship to environmental (suburban vs. rural), gender, and age factors. They found TABP was greater among suburban students than rural students, and not related to gender or age. The authors attributed suburban students' higher TABP scores to (1) living more closely together, (2) having moved more often, and (3) having less contact with an extended family. In contrast, they described rural students as "young people trying to achieve within well-defined and readily available roles and therefore less prone to the harassed pace of the Coronary Prone individual..." (p. 443). In particular, the authors' observed TABP among students mostly during times of external stress, such as exams. However, students became more relaxed and easy-going as the stress abated. This

suggests that adolescent TABP is a learned coping response to stress, and reinforcement of the TABP may be contingent upon alleviation of stress.

Hicks and Schretlen (1981) reported small but significant increases in TABP scores over four consecutive years, 1977 through 1980, for undergraduates. Moreover, their median scores equalled or exceeded levels predictive of CHD. Taken as a whole, one may speculate that academic pressure promotes TABP during adolescence, and the steady demands of college academics maintain high levels of TABP.

In summary, the evidence supports the existence of the TABP among children and adolescents. Social learning theory provides the best explanation for TABP's development. TABP appears associated with 1) parental demands for achievement, 2) children's needs for parental approval, 3) parental modeling of aggression, and 4) coping with external stress.

Accelerated maturation. The TABP appears especially noticeable among adolescents (Butensky, Faralli, Heebner & Waldron, 1976; Siegel, Matthews & Leitch, 1981). Elkind suggests that TABP is a result of excessive pressure on early adolescents to imitate adult life styles which they are unprepared for.

> Hurried children are forced to take on the physical, psychological, and social trappings of adulthood before they are prepared to deal with them. We dress our children in miniature adult costumes (often with designer labels), we expose them to gratuitous sex and violence, and we expect them to cope with an increasingly bewildering social environment...through all of these pressures the child senses that it is important for him or her to cope without admitting the confusion and pain that accompany such changes. Like adults, they are made to feel they must be survivors, and surviving means adjusting...(Elkind, 1981, p. xii)

Not surprisingly, Elkind (1981) reports that the majority of child psychological referrals today are for both acute and chronic stress among young adolescents.

Unlike other stressors of adolescence (e.g., heightened concerns with self image, psychosexuality, peer pressure, intimacy and family dependence/independence, etc.), stressors associated with the TABP appear to be sanctioned by adults and society. Consider adolescents pressed to do well academically or face the ignominy of attending a low prestige college. Consider coaches who instruct their players that (1) competition on the playing field is tantamount to achievement in life, (2) dealing with opponents now is valuable practice for future confrontations, and (3) second place is defeat.

Besides the price of failure, consider the price of success portrayed in television commercials, in which successful persons are plagued with upset stomachs, headaches and insomnia. The message is clear and consistent. Success is the greatest goal in life; it is attainable through hard work, competition and sacrifice; and the price one pays maybe "minor" health impairments. Neglected is the possibility that "minor" health problems may be cumulative and lead to more serious diseases. Based on the preceding discussion the following hypotheses were tested:

Hypothesis I: TABP will be positively correlated with academic grades.

Hypothesis II: TABP will be positively correlated with sports and extracurricular activities.

Hypothesis III: TABP will be positively correlated with prestigious career choice.

Type A behavior and stressful life events.

Type A persons feel obstructed and impugned by others or objects in their attempt to reach sometimes ill-defined goals. Type As likely perceive these obstructions as stresses which must be aggressively overcome. Perhaps only certain stressors [1] trigger TABP. Knowing these stressors and how Type As perceive them could give insight into TABP's etiology.

Stressful life events measures generally list major life events which are deemed to be stressful for most people (cf. Holmes & Rahe, 1967). They generally account for low amounts of variance (4 to 10 percent) when predicting subsequent pathology, and have low test-retest reliabilities, raising serious doubts whether individuals can accurately recall the impact of life events beyond a few months (see Dohrenwend & Dohrenwend, 1974; Perkins, 1982 for reviews). Fortunately, there are more recent measures of stress that address these problems.

Hassles. Kanner, Coyne, Schaefer and Lazarus (1981) developed measures of minor daily stress, Hassles and Uplifts Scales, and compared them with a major life events scale. These scales and a measure of psychological symptoms were administered to 100 adults (52 women and 48 men) monthly for nine consecutive months. Test-retest coefficients for the Hassles and Uplifts Scales from the second through tenth month averaged .76 for men and .66 for women, indicating adequate reliability.

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[1] Stressors refers to events with the potential to cause stress. Stress refers to the actual psychophysiological discomfort. Thus stressors may not cause stress for everyone.

The average nine month correlation between frequency of hassles and psychological symptoms was .60 (.55 for men and .66 for women). Utilizing regression analysis, frequency of hassles proved to be a better predictor of psychological symptoms than either uplifts or life events. In fact, hassles subsumed most of the variance accounted for by life events.

In a subsequent study, DeLongis, Coyne, Dakof, Folkman and Lazarus (1982) investigated the relationship among hassles, uplifts, life events and physical symptoms. Their results paralleled those of the previous study by Kanner et al. (1981). The correlation between intensity of hassles and overall health status ranged from -.38 to -.29 (ps < .01) and the correlation between frequency of hassles and somatic symptoms ranged from .27 to .35 (ps < .01). Again, regression analysis revealed that hassles' frequency and intensity, compared to uplifts or life events, were the best predictors of overall health and somatic symptoms.

The predictive validity of the Hassles and Uplifts Scales were tested in a prospective study involving 73 adults (37 women, 36 men) who initially completed these scales, a life events scale, and a measure of psychological symptoms monthly for four months (Monroe, 1982). The results from this rigorous design provided further evidence that hassles are the best predictor of distress even when initial symptomatology is controlled for.

Besides its statistical advantages, a hassles measure is simply more appropriate for adolescents. Few adolescents experience many of the major stressors listed by most life events scales, even those developed for them (e.g., Coddington, 1972; Sandler & Ramsey, 1980). On the other hand, events such as tardiness, academic tests, and home chores are typically

recurring events for adolescents. Furthermore, TABP is viewed as a stable response to daily events and persons, and less a response to trauma. For this study a measure of hassles was developed containing daily hassle items typical of those experienced by young adolescents. It was used to test the following hypothesis:

Hypothesis IV: TABP will be positively correlated with the number of hassles.

Type A behavior and mixed emotions.

Another problem with life events scales is the assumption that stress is only negative. Although some measures allow for positive endorsement of stressors, they are generally not included in the final calculation of the stress score. The limitation of perceiving stressful life events as only negative is readily seen in the following study.

Schwartz and Weinberger (1980, cited in Schwartz, 1982) studied the phenomenon of simultaneous emotions, which are sometimes opposing. The authors asked Yale undergraduates to imagine situations (experienced and not experienced) and to describe their emotions from a choice of six: happiness, sadness, anger, fear, anxiety, and depression. Recalling their acceptance to Yale, students most frequently felt happiness and anxiety. Imagining graduating from Yale elicited five emotions: happiness, sadness, fear, anxiety, and depression.

Schwartz, Weinberger and Singer (1981, cited in Schwartz, 1982) demonstrated in another study that cardiovascular measures differentiated between fear and anger. It took longer for systolic blood pressure to recover after an anger exercise than after a fear exercise. Their results

further support the psychophysiological link between coronary heart disease and anger characteristic of Type As.

Therefore, the measure of hassles developed for this study provided respondents with an opportunity to report any of five emotions (or nothing) associated with specific hassles. The emotion choices were Happy, Excited, Angry, Frustrated and Sad.

"Frustration-aggression" versus "thrill of victory". The above emotion choices also give the opportunity to address whether TABP is a result of negative feelings after stressful situations or the result of positive feelings when meeting the challenges of stress, or a combination of the two.

The distinguishing feature most often cited as crucial for TABP is anger (Friedman & Rosenman, 1974). Type As' anger is often described as hostile, unwarranted and self-destructive. Moreover, this hostility appears pervasive and permeates tasks of everyday life. What maintains their hostility is a heightened sense of survival, which goes hand in hand with a need to master the environment. After all, opponents rendered harmless or out-distanced are less likely to impede Type As' progress. As Type As pursue control over others and the environment, they are bound to meet with failures owing to their own limitations or those imposed by society. In fact, it is often the case that Type As' efforts are counterproductive, leading to high levels of frustration (Friedman & Ulmer, 1984). According to Dollard et al. (1939) this frustration may increase aggression. Thus, Type As may be caught in escalating aggression-frustration-aggression cycles.

Concomitant with their hostility, Type As appear to devalue or overlook pleasurable experiences (Friedman & Ulmer, 1984). Engaged in an incessant struggle to survive academically or financially, Type As have little time left to enjoy other rewarding aspects of life. This devaluation of positive experiences by Type As was demonstrated by Weidner and Andrews (1983). They found Type As, compared to Type Bs, rated desirable events as less important than undesirable events. Perhaps this phenomenon is part of an exclusionary perspective that ignores everything except the task-at-hand. This may explain the underreporting of fatigue during cognitive and physical tasks by Type A adults (Carver, Coleman & Glass, 1976) and children (Matthews & Brunson, 1979; Matthews & Volkin, 1981).

An alternative to the frustration-aggression view of TABP is the opponent process theory of acquired motivation (Solomon, 1980). For example, Solomon explains that a skydiver's fear of jumping out of a plane is countered by the anticipated exhilaration after landing. As the exhilaration wears off, the skydiver is driven to seek more exhilaration by again confronting the challenge of jumping. Eventually, the fear is minimized and the exhilaration becomes a sort of craving which hastens the next jump. In order to maintain a heightened sense of exhilaration, the skydiver is is driven to higher heights or riskier stunts.

Likewise, Type As welcome stressful challenges not only for the material gain, but also for the "thrill of victory." After repeated successes, the material gain becomes less meaningful. Instead the acquired motivation of maintaining the "thrill of victory" urges Type As to work longer hours, complete larger tasks in less and less time, and

challenge the limits of others and the environment. This explanation accounts for Type As' internally driven quality.

There is evidence to support this view in research with children. For example, Corrigan and Moskowitz (1983) report that Type A preschoolers work more quickly than Type Bs in situations without incentives or time limits. Matthews and Siegel (1983) also report that Type A children, regardless of the presence or absence of explicit standards, choose to evaluate their performance against those of the top scoring children; whereas Type B children choose to do so only in the absence of an explicit standard. Thus, when expectancies (which effect control) are not explicit, Type As self-impose high standards to insure success. This finding also suggests these high standards are internalized early in life.

The preceding arguments pose an empirical question. Is the TABP related to frustration-aggression with stressors or exhilaration accompanying the challenge of stressors? Perhaps both views explain different facets of TABP. The frustration-aggression view accounts for Type As' aggressiveness, whereas the exhilaration view accounts for their competitiveness. Based on this dual explanation, the following hypotheses were tested:

Hypothesis V: Happiness and excitement will contribute significant variance beyond that of hassles when predicting competitiveness and achievement striving of TABP.

Hypothesis VI: Anger, frustration, and sadness will contribute significant variance beyond that of hassles when predicting impatience, hostility and aggression of TABP.

Type A behavior and attributions.

Type As possess unique cognitions that appear triggered by stress. Their reactions to stress appear at times to be uncalled for and exaggerated, especially when the stress is minor. Type As, in the words of Antonovsky (1980), seem to lack a "sense of coherence," that is, "...a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can be reasonably expected" (p. 123). Antonovsky further posited that having a sense of coherence is essential to combating stress which would otherwise deteriorate health. Antonovsky's "sense of coherence" suggests a cognitive appraisal or attributional processes.

Control and expectancy. Research into cognitive processes of TABP has focused primarily on attributions of control and expectancy, especially within the paradigm of learned helplessness (Seligman, 1975). Briefly, Seligman posited that subjects exposed to uncontrollable failure situations learn a lack of association between their efforts and outcomes (noncontingency), leading to weak expectancies of control, which in turn result in poor performance in subsequent controllable situations (contingency). Thus, subjects learned to minimize their personal control over the environment.

Glass and colleagues (Glass, 1977) ran a series of learned helplessness experiments in which undergraduates, classified as Type A or B, were exposed to noncontingent situations followed by contingent situations. They found Type As, compared to Type Bs, were more sensitive

to cues of uncontrollability. Type As' greater efforts to control also led to greater vulnerability and helplessness after extended noncontingency. Glass concluded Type As' hard driving, competitive, and aggressive behaviors were a manifestation of fear of uncontrollability in a potentially harmful environment.

Pursuing the uncontrollability hypothesis, Weidner (1980) recruited 40 male undergraduates under the guise of a drug experiment. He evenly divided his subjects (Type A or B) and exposed half of each group to feedback (contingeny) or failure (noncontingency) tasks. Before exposure to a subsequent task the participants were given a choice between two drugs, each with four dosage levels. Both drugs were described as having fictitious properties of either enhancing or inhibiting cognitive functioning. After selecting a "drug," the experiment was stopped and subjects were debriefed. Weidner found Type As who experienced failure tasks were more likely to have chosen the inhibiting drug than Type Bs. Weidner speculated Type As faced with the prospect of failing at a task were likely to adopt self-handicapping strategies. He reasoned these strategies protected Type As' self esteem by attributing failure to external causes, rather than to personal loss of control. Ordinarily Type As were found to blame themselves for undesirable events more than Type Bs (Weidner & Andrews, 1983).

Smith and Brehm (1981) advanced the uncontrollability hypothesis into the arena of interpersonal behaviors. Forty-eight male undergraduates, classified Type A or B, were given opportunities to observe the behavior of future opponents during a prisoner's dilemma game. Actually, the opponents were confederates whose scenario was repeated for all subjects.

This procedure controlled for information regarding the future opponent. After the observation, subjects were asked to complete questionnaires regarding the upcoming game and what they predicted of future opponents. As Smith and Brehm predicted, Type As were more motivated to succeed in the games than were Type Bs. Type As, compared to Type Bs, also reported more dispositional information about future opponents despite equal amounts of information. The authors concluded that Type As' competitive nature and need to control served to distort perceptions of impending conflict in their favor.

Van Egeren (1979) demonstrated physiological and behavioral differences between Type As and Bs engaged in a computer-assisted version of a mixed motive game. Thirty male and thirty female undergraduates were paired in various Type A-B dyads. All moves (punishment, reward, withdrawal, cooperation), communications between players (feelings, requests and intentions) and physiologic measures (heart rate and digital blood volume pulse) of each player were recorded. Type As were noticeably more aggressive (e.g., they punished and blocked messages more often than Bs) in both AA and AB dyads. This resulted in decreased digital blood volume pulse for both players. Besides demonstrating a psychobiological link between TABP and cardiovascular systems, Van Egeren demonstrated the effect of Type As' competitiveness and aggression on others.

Research on attributions of Type A children has been limited and inconclusive. Glass (1977) exposed fourth and fifth grade boys (n = 88) to No-Escape (noncontingency) or Escape (contingency) conditions. Boys exposed to No-Escape conditions, compared to those in Escape, showed greater decrements in performance in subsequent Escape conditions.

However, this effect was greater for Type Bs than for Type As, a finding opposite to previous research involving adults (Glass, 1975). Dweck and Repucci (1973) have noted children's decreased motivation resulting in lowered performance following a failure experience. This accounts for the overall performance decrement after exposure to the No-Escape condition. However, the differences between Type As and Bs' criterion measure (response latency) were marginal and the resulting significance tests barely reached the .05 level of rejection. Therefore the evidence for attributions' effects on Type A children's behaviors is sparse and inconclusive.

In summary, behaviors such as competitiveness, aggression, and impatience may result from a need to maintain control, as well as to defend against defeat. Extended exposure to uncontrollable situations results in learned helplessness to the extent that Type As may employ self-handicapping strategies in order to affix blame on external causes. They also may distort expectancies and ignore communications of cooperation to maintain a competitive edge. Indeed, the strategies of distorting and blocking communications may be similar to Type A adults (Matthews & Brunson, 1979) and children (Matthews & Volkin, 1981) underreporting subjective fatigue. Ignoring fatigue and other prodromal signs of CHD may contribute to Type As' morbidity because it delays medical attention (Carver, Coleman & Glass, 1976).

Fairness and sex roles. A concept akin to Antonovsky's "sense of coherence" is that of fairness. Fairness according to Webster's New Twentieth Century Dictionary (unabridged) includes qualities of justice, evenhandeness, impartiality, goodness, advantageousness, accessibility,

and freedom from obstacles. In short, fairness is a belief that one can have positive outcomes in life as readily as others.

Horney (1954) described individuals whose perceptions of fairness were distorted into "neurotic claims." "He is entitled to be treated by others, or by fate, in accord with his grandiose notions about himself. Everything short of this is unfair. He is entitled to a better deal" (p. 41). Thus, normal desires and wishes are twisted into outlandish demands and the pursuit of these claims become life's goal. Never being satisfied, of course, this neurotic struggles harder, often in opposition to others. Clearly, this neurotic resembles the Type A individual. Thus, Type As' aggressiveness may be generated by feelings of being treated unfairly.

In addition, aggression is more typical of males than females (Macoby & Jacklin, 1974). From a social learning perspective, sex roles and the TABP are largely a result of socialization (Bem, 1974, 1977). Therefore, TABP is a coping strategy particularly suited to males. How sex differences contribute to the development of TABP may be construed from the observations of children's play and games by Gilligan (1982). She observed striking differences between girls' and boys' competitive play. Boys and girls were equally competitive. However, boys usually won the games while girls, capable of winning, often relinquished. Gilligan questioned the children and found that for boys winning by the rules was the object of play. On the other hand, girls explained their lack of winning as reluctance to place winning above the possibility of hurting friends' feelings. Disregarding rules was considered a breech of fairness

by the boys, whereas disregarding rules was considered empathic by the girls.

Gilligan (1984) notes sex differences for the concept of fairness. Boys view fairness as equity, especially of resources--for example, the same number of players, or marbles, or turns on each side, or whoever did the most work gets the most pay. In contrast, girls view fairness as equality--for example, everyone should play even if the teams are uneven, or everybody gets the same share because they worked regardless of contribution. More importantly, girls were more adept than boys at arriving at synergistic solutions, perhaps a result of their not being as "rule-bound" as boys. For example, she recounts an incident where a girl was asked to decide whether to play pirates or house, each respectively proposed by a boy and a girl. She responded (presumably not wishing to disappoint either playmate), "Let's play pirates at home." Both proponents readily agreed and proceeded to play together.

Thus, play provides the initial practice for rules of fairness and, in the case of boys, reinforcement for competitiveness. By adulthood, the male view of competition and fairness becomes the method and rationale for Type As' pursuit of success. Shakespeare describes well the abuse of the equity principle and his understanding of the nature of aggression in The Merchant of Venice. The usurer Shylock (a prototypical, entrepreneurial Type A) demands a pound of flesh legally forfeited to him by the tardy borrower, Antonio. Several of Antonio's friends implore Shylock to show mercy and offer to repay Antonio's debt several times over. However, fueled by years of humiliation by Antonio and his friends, Shylock refuses and demands his pound of flesh. Luckily for Antonio, Portia, an heiress,

hears of his plight and intervenes. She saves Antonio by disguising herself as a man and shrewdly invokes the equity principle. She demands that Shylock not take one speck more or less flesh than a pound, else Shylock should be penalized similarly.

Based on the foregoing discussions of control, expectancy, fairness, and sex roles, the following hypothesis was tested:

Hypothesis VII: TABP will be related to attributions of low control, low expectancy and unfairness in response to hassles.

TABP and social support.

The role of social support as a moderator of the stress-illness behavior relationship is well documented. Broadhead et al. (1983) summarize the findings of numerous epidemiological studies investigating the role of social support on health. Briefly, their conclusions are: (1) poor social support precedes poor health outcomes, (2) social support further contributes variance beyond that of stress when predicting illness, (3) social supports are greater for women than for men--generally, women rely on family and relatives, whereas men rely more on coworkers for support, (4) quality of social support is a better predictor of health outcome than quantity of support; (5) social support is an effective intervention for certain situations, for example, during pregnancy and labor (Nuckolls, Cassel & Kaplan, 1972), (6) social support use and source differ along the life cycle; and (7) social support's benefits are not specific to any particular symptom or disease process, but rather affect the entire biopsychosocial health continuum. Finally, there is evidence that social support is reactive to stress rather than

prophylactic for adults (Lin, Simeone, Ensel & Kuo, 1979) and adolescents (Hotaling, Atwell & Linsky, 1978).

Type A adults have reported different social relationships than Type Bs. For example, Waldron et al. (1980) noted that undergraduate Type As, when compared to Type Bs, (42 As, 42 Bs) reported less successful social relationships with either sex. Burke and Weir (1980) interviewed 127 administrators of correctional institutions for TABP and social participation. Type As were more active than Type Bs in community organizations but not in friendships.

There is, however, confusion as to what constitutes social support, especially as it relates to health (Wallston, Alagna, DeVellis & DeVellis, 1983). However, Cobb (1976) has provided a definition of social support that is oft cited by researchers. He described social support as belonging to one or more of the following three classes:

> 1) Information leading the subject to believe that he is cared for and loved.
>
> 2) Information leading the subject to believe that he is esteemed and valued.
>
> 3) Information leading the subject to believe that he belongs to a network of communication and mutual obligation. (p. 300)

The first two are unidirectional, that is, towards the individual. The third is bidirectional and logically includes elements of the first two, that is, the person after feeling loved and esteemed may reciprocate those same feelings. This third class of social support, henceforth termed mutuality, has special implications for the Type A person. Mutuality is best understood as the interpersonal enactment of Antonovsky's "sense of coherence" in the world (1980). In fact, he operationalized his concept

of coherence with numerous studies exemplifying the health-related benefits of social support. Thus having a "sense of coherence" implies that one feels a shared sense of commitment to others which leads to a sense of belongingness or mutuality.

Children's mutuality, as described by Cochran and Brassard (1979), is the support dimension of "reciprocal exchange." Reciprocal exchange appears to be a hallmark of social and cognitively mature children, that is, those beyond egocentrism (typical of concrete operational and older children). They understand rules for exchange of feelings, goods or favors. Initially children reciprocate in mirror-like fashion (i.e., hurt for hurt, candy for candy, etc.), but as they mature the reciprocity can include different categories, (e.g., a kind word may be reciprocated by sharing a snack). Thus, reciprocal exchanges increase as children mature cognitively and are able to equate different types of social support. Furthermore, mutuality is the mechanism by which relationships are sustained. It is unlikely that any relationship can endure in which one always receives and another always gives.

There is other evidence that mutuality distinguishes adolescent males' achievement orientation. Gottlieb (1975) trained adolescents to reliably rate their peers' social standing. Twenty adolescent males were rated as one of the following: Elites, Isolates, Deviants and Outsiders. Elites excelled academically and athletically. Their greatest concerns were academic performance, plans following graduation and fears of disappointing their parents. Elites preferred sources of support who recognized and reinforced their high social status. Therefore, parents and coaches were most often cited as

significant others because they most often acknowledged Elites' accomplishments.

In contrast, Isolates, Deviants and Outsiders were all characterized as valuing helping relationships with peers more than Elites did. Indeed, Isolates, despite smaller support networks, had relationships which contained "an element of mutuality" (p. 215). Likewise, Deviants valued "helping relationships which promote[d] expression of mutual authenticity" (p. 216). While this research is limited by its small sample size and lack of females, the findings are suggestive of Type As' conflict between achievement and mutuality. It was surprising that Elites did not include teachers in their support systems. This suggests that among adults, parents and coaches are the most influential reinforcers of TABP.

It follows then that mutuality would be low among Type As, who are constantly looking for the upper hand. This is readily seen in Van Egeren's (1979) aforementioned study. Type As compared to Type Bs were more likely to compete against their opponents, give false messages of cooperation followed by winning strategies, and block overtures for cooperation. Thus, competitiveness and aggression do not foster mutuality. Of course, this lack of mutuality aborts any attempt at developing a "sense of coherence."

Based on the preceding discussion of social support the following hypotheses were tested:

Hypothesis VIII: TABP will be negatively correlated with the number of social supporters.

Hypothesis IX: TABP will be negatively correlated with emotional support.

Hypothesis X: TABP will be positively correlated with the number of adults in the social support network.

Hypothesis XI: TABP will be negatively correlated with mutuality, that is, a high TABP score will be associated with receiving more support from others than with giving support to others.

A model of TABP.

Friedman and Ulmer (1984) posited a model in which psychological factors were viewed as catalysts for pathophysiological processes. Specifically, they believed that a sense of insecurity was the basis for Type As' sense of time urgency and free floating hostility, which in turn triggered feelings of self-destruction and/or clinical CHD.

However, their model does not explain how a person adopts the TABP or what events (stressors) contribute to their sense of insecurity. It also fails to include social factors which have been linked to heart disease. For example, Lynch (1977) strongly asserts that persons low in human companionship have significantly greater chances of incurring heart disease.

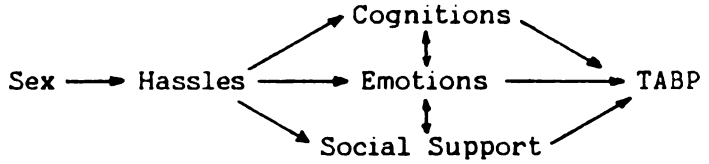
Therefore, broadening their model to include hassles, emotions, cognitions and social support variables may provide a better understanding of the mechanism of TABP. Applying this model to early adolescents may also explain the origins of TABP. Obviously these variables are incorporated into this study. However, there are several models of stress and coping which hinge on one's perception of stress (Derogatis, 1982).

For example, stimulus oriented theorists view stress as residing in the event or environment. The capacity of individual's coping compared to the severity of stress determines whether the stress will be relieved. On the other hand, response oriented theorists define stress as the individual's response to the environment. Accordingly, the same event can be stressful to some and not to others, depending on the individual's emotional and physiological characteristics. Interactional theorists criticize the above as too simplistic because they minimize the individual's role as a manipulator of his environment. Instead, they speak of cybernetic systems in which the individual's emotional, cognitive and physiological functions cope with and regulate environmental demands.

Derogatis (1982) further categorizes stress researchers into these camps by the instruments they use. For example, stimulus theorists are likely to use complex, stressful life events measures that tease out discrete environmental dimensions, such as type, severity, and recency of the event (see Perkins, 1982 for a review). Response oriented theorists are likely to utilize multidimensional self-report inventories of personality or stress response (e.g., State-Trait Anxiety Inventory, Spielberger, 1972). Finally, the interaction theorists incorporate multidimensional measures of stress, personality and environment (e.g., Jenkins Activity Survey, Jenkins, Rosenman & Friedman, 1967). Based on Derogatis' criteria the present study incorporated measures which meet the conditions for testing an interaction model.

Generic TABP model. From an interactionist perspective stressors impinge on individuals who call forth internal and external resources with the goal of reducing physical and psychological discomfort. Implicit in

this model are the impinging stimuli of hassles. They are responded to by internal (viz., emotions and cognitions) and external (viz., social support) coping strategies. Finally, individuals' sex is considered to be an endogenous variable, whose effects precede all others. This generic interactionist model is illustrated below:



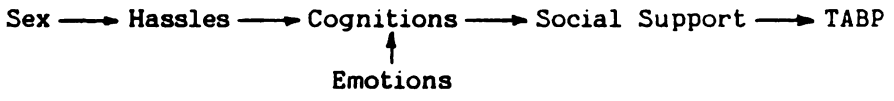
Of primary importance is the interaction between coping variables, which in the generic model have no theoretical priority. Consider the relationship between emotions and cognitions, which are viewed quite differently by various researchers, as described below.

Cognition model. Schacter and Singer (1962) posited that emotions depend on cognitive labeling, that is, recognition precedes emotions. Lazarus (1974) expanded the work of Schacter and Singer by positing an emotion response system (ERS). The ERS is essentially an internal process, through which stimuli are perceived, cognitively appraised and responded to with various emotions.

More recently, Weiner, Kun and Benesch-Weiner (1980, cited in Weiner & Graham 1984) posited that emotions are a function of cognitive development. Young children are more likely to express simple basic emotions (e.g., happy or sad) without forethought, in contrast to adults who are capable of modulating complex emotions (e.g., pride and empathy) after cognitive appraisal. Furthermore specific attribution-emotion pairs appear to be fixed with age while others vary, at least from age nine to

early adulthood (Werner, Graham, Stern & Lawson, 1982; cited in Werner & Graham, 1984). For example, 9 and 11 year olds, and college students were asked to describe a teacher's emotional and attributional responses to a student who failed an exam. Anger was found to be paired with attributions of "not trying hard enough" throughout this age span. Pity, previously undistinguished from other attributions by nine and eleven year-olds, became paired with attributions of "lack of ability" by college students.

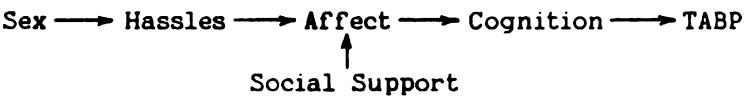
Based on the preceding discussion the generic model can be modified to emphasize the primacy of cognitions' effect on emotions. It is theoretically and temporally ordered. This conforms to Schacter and Singer's theory of cognitive primacy and emotions' role as a function of cognitions. This model also emphasizes personal coping over that of social support. Henceforth, this model is referred to as the Cognition model and is illustrated below:



<u>Affect model</u>. Alternatively, Zajonc (1980) argued that emotions take precedence over cognition. He reasoned that emotional reactions occur faster than thoughts and that thoughts come into play when we try to rationalize our emotions--through appraisal of past experiences and contextual information. He further argued they were independent, that is, emotions do not necessarily activate cognitive processes. For example, psychoanalytic repression can be understood as a process which protects

enduring emotions from change by shielding them from cognitive development (Macoby & Martin, 1983).

Other researchers have expanded Zajonc's theory by investigating affect's role in children's social competence (Sroufe, Schork, Motti, Lawroski and LaFreniere, 1984). Sroufe and colleagues have demonstrated that affect, especially positive affect, was highly correlated with social competence. They further asserted the primacy of affect's interaction with social competence over that with cognition. For example, it is not enough to "know how to act socially appropriately," but one must be motivated to do so. Similarly, children low in social or cognitive skills may be better liked than intellectually gifted children, because they may be more fun to be with. The preceding discussion is the basis for another transformation of the generic model, one which emphasizes the primary coping role of affect and its interaction with social support. It is presented below and will be referred to as the Affect model:

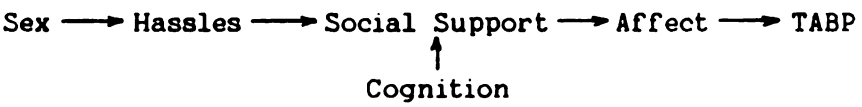


Social model. As noted earlier, there is a growing literature which suggests that psychological and physiological distress is buffered by social support (Broadhead et al, 1983). Furthermore, Killilea (1982) asserted social support may assume the role of primary coping mechanism for stressed individuals, especially in crisis situations. For example, individuals may be so embroiled in and overwhelmed by stress that personal coping strategies are rendered useless or perhaps even exacerbate the

crisis. On the other hand, outsiders may provide effective relief because of their detached perspective and accessibility to other resources.

Killilea further argued that in crisis situations cognitive resources, both individual and community-based, along with instrumental social support are more effective that affective support. She proposed a model in which community agencies assist the chronically ill by coordinating patients' personal resources (e.g., interpersonal coping style, family ties, etc.) with individual and community support networks, thus bringing to bear a multitude of support not ordinarily available to individuals.

Based on the preceding discussion a final transformation of the generic model is illustrated below, in which social support is the primary coping resource interacting with cognitions, and followed by affect. It is called the Social model and is illustrated below:



Testing models. The three models were tested using multiple regression/correlation analyses (MRC) as prescribed by Cohen and Cohen (1984). The authors demonstrated that MRC can be used to clarify complex relationships inherent in correlational data such as those collected in this study. MRC also allows the use of continuous variables without the loss of data inherent in ANOVA analyses. It provides results that indicate each variables' relationship to other variables before and after its net contribution (variance) to the predicted variable. Furthermore,

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significance tests are available for both single variables and all variables entered in to the equation at any step.

Hierarchical multiple regression was preferred over stepwise--i.e., automated regression--since the former confirms a priori models based on theoretical and/or temporal priority, whereas the latter is an a posteriori method prone to capitalization on chance findings (p. 120-125). Confirmation of the models tested was based on both total incremental variances for each model and the presence of significant interactions, which were unique to each model. For example, a significant interaction term involving social support and cognitive variables would support the social model only. Therefore, a significant interaction was crucial for the confirmation of a particular model. An example of this MRC approach was provided by Garmezy, Masten and Tellegen (1984) who reported using it to test several stress and competence models for children.

Chapter 2

HYPOTHESES

Hypothesis I: TABP will be positively correlated with academic grades.

Hypothesis II: TABP will be positively correlated with sports and extracurricular activities.

Hypothesis III: TABP will be positively correlated with prestigious career choice.

Hypothesis IV: TABP will be positively correlated with the number of hassles.

Hypothesis V: Happiness and Excitement will contribute significant variance beyond that of hassles when predicting competitiveness and achievement striving of TABP.

Hypothesis VI: Anger, Frustration and Sadness will contribute significant variance beyond that of hassles when predicting impatience, hostility and aggression of TABP.

Hypothesis VII: TABP will be related to attributions of low control, low expectancy and unfairness in response to hassles.

Hypothesis VIII: TABP will be negatively correlated with the number of social supporters.

Hypothesis IX: TABP will be negatively correlated with emotional support.

Hypothesis X: TABP will be positively correlated with the number of adults in the social support network.

Hypothesis XI: TABP will be negatively correlated with mutuality, that is, a high TABP score will be associated with receiving more support from others than with giving support to others.

Chapter 3

METHOD

Participants.

A total of 176 sixth and eighth graders participated in this research. However, five students' questionnaires were discarded due to excessive missing data or refusal to participate mid-way through the testing. Therefore, the final sample included 171 students, consisting of 32 female and 43 male sixth graders, and 36 female and 60 male eighth graders. Their mean ages by grade were 11.38 years and 13.24 years, respectively. The students were predominantly Caucasian, with a few Black and Asian students, and came from middle to upper middle class families.

Teachers rated students whom they were familiar with for Type A behavior. Each student was known well by two or three teachers. Therefore, students were randomly assigned for rating to teachers familiar with them.

Administration.

Four testers, including the author, administered the questionnaires to the students. All of the testers had masters degrees in psychology or education, and were experienced testers with this age group. Teams of two testers administered the questionnaires to groups of about 45 students. The instructions were presented verbally and with the aid of overhead projections of the questionnaires (Appendix 1). Each group testing lasted

approximately 50 minutes. All testing was completed within the school's morning session, which controlled for any collusion effects. Twenty-three students did not complete their questionnaires, either due to scheduling conflicts (they came late to the testing) or because they skipped a section. These students completed their questionnaires the following day under the supervision of a tester.

Questionnaires.

Matthews Youth Test of Health (MYTH) (Matthews & Angulo, 1980) (Appendix 2). This objective, behavioral rating is comprised of seventeen items completed by a teacher familiar with the student. Sample items include "When this child plays games, he/she is competitive" and "This child interrupts others." The questions are rated along a five-point Likert scale with anchors from Extremely Uncharacteristic (1) to Extremely Characteristic (5), and with Neutral at the center. To insure the accuracy of these behavioral observations, the teacher also answers a "confidence of ratings" question. This question was scored on a five-point Likert scale with anchors from Not At All Confident (1) to Very Confident (5). MYTH item totals range from 17 to 85 where a higher score signified greater Type A behavior.

Matthews and Angulo (1980) reported the MYTH's psychometric properties on a sample of 485 kindergarten and elementary school students. The MYTH yields a total score (TYPE-A) and two factored subscales: competitiveness-achievement striving (COMPETE) and impatience-hostility-aggression (IMPAGG). It was internally consistent, yielding Cronbach alphas of .90 (MYTH), .89 (COMPETE), and .88 (IMPAGG). The correlation

between subscales was .41, indicating moderate overlap. Correlations between TYPE-A and COMPETE or IMPAGG were not reported. Three month test-retest reliabilities for the MYTH scales by grade yielded correlations ranging from .73 to .86 (p's <.001). Finally, TYPE-A scores revealed consistent sex differences for elementary school students (males' M = 52.4 and females' M = 46.7, t(483) = 6.09, p < .001).

Hassles, Emotions and Cognitions (HEC) (Appendix 3). The HEC was developed for this research as a measure of minor stressors and their concomitant emotions and attributions. Two versions of the HEC were piloted with middle school students in order to test their comprehension of it. The latest pilot involved 22 sixth grade students. They were administered a shortened version of the HEC consisting of 10 hassle items and 9 blanks for students to add their own hassles. Otherwise, the remaining questions were similar to the final version. The results of the pilot study were encouraging. The students had no problems understanding the instructions and hassles added by the students were all accounted for in the final version. The three major components of the HEC are described below:

Hassles. There were 39 hassles relating to family conflicts (items 1, 4, 6, 9, 12, 18, 32, 33 and 34), academics (items 13, 14, 16 and 22), time urgency (items 10, 11 and 38), personal thoughts (items 17, 19, 20, 28 and 30) and appearance (items 25, 26 and 27), peer relations (items 5, 15, 21, 23, 24, 29, 31, 35, 36, 37 and 39), and home chores (items 2, 3, 7 and 8). These items were reviewed by the middle school teachers and appeared to encompass the range of hassles common to this age group. Students were asked to circle only

those hassles items they experienced within the last month. This section was completed before students were allowed to view the other parts of the HEC.

Emotions. For each circled hassle, there was a concomitant range of emotional reactions, namely happy (H), excited (E), angry (A), frustrated (F), sad (S), or nothing (N). Respondents first chose the emotion corresponding to "How did you mostly feel?" by circling either H, E, A, F, S or N. Next they indicated any other emotions corresponding to "How else did you feel?" by crossing out any of the remaining emotion choices. For example, a student hassled within the last month by "Meeting people" would have circled item 29. She could have described that he "mostly felt frustrated" by circling F and that he "also felt excited and sad "by crossing out E and S. Another question asked the student "How strongly did you feel?" and was endorsed on a four-point Likert scale with anchors: Didn't Feel Much (1) and Felt Very Strongly (4).

Cognitions. For each circled hassle there were also questions concerning attributions of control, expectancy and fairness. The control question asked "Could you have done anything about it?" and measured the respondent's perceived control over a particular hassle. This question was answered on a four-point Likert scale with anchors: I Couldn't Have Done Anything (1) and I Could Have Done A Lot (4). The expectancy question asked the respondent to what degree the respondent anticipated the event. The question was also answered on a four-point Likert scale with anchors: Totally Expected (1), and Totally Unexpected (4). Finally, the fairness question asked each

respondent to assess "How fair was it to you?" for each hassle. As before, this question was endorsed on a four-point Likert scale with anchors: Totally Unfair (1), and Totally Fair (4).

Scoring. The HEC was scored for a variety of variables. First, the total circled hassles with a corresponding emotion of H, E, A, F and S, but not N (Nothing) yielded the variable HASSLES. This score reflected a quantitative dimension of stress.

Qualitative dimensions of stress, namely concomitant emotions and attributions, presented complex scoring problems owing to different theoretical views. For instance, the five emotional dimensions of hassles (happy, excited, angry, frustrated, and sad) were each scored in three ways. First, a sum score based on those hassles endorsed by a specific emotion would reflect the cumulative emotional impact of hassles for that emotion. Second, emotions could be weighted by their strength and then summed. Therefore, weighted sum scores presumably represented fine-tuned sum scores. Third, the sum score was averaged by the total number of hassles and reflected emotional response tendencies to hassles.

The conceptual differences among these scores reflected different statistical considerations. For instance, the sum and weighted sum scores were not independent of hassles, because each would increase (or decrease) with each other. On the other hand, averaged scores were independent of hassles, because hassles effects were removed by averaging. Decreasing dependency among predictor variables is an important condition for regression analysis--the method for testing Hypotheses VI and VII (Cohen & Cohen, 1984). Therefore, averaged scores may be better suited to the

present statistical analyses. Thus, emotion variables were calculated by all three methods and compared before testing relevant hypotheses.

Sum scores for each of the five emotions were calculated by totaling all of the circled or crossed-out instances for each emotion. For example, if H (Happy) were circled 3 times and crossed out 5 times, then the sum score for Happy was 8. Sum scores for other emotion variables were scored in the same manner and labeled as S-HAPPY, S-EXCITE, S-ANGRY, S-FRUSTR and S-SAD, respectively.

Weighted sum scores were calculated for each emotion by the following method. All emotions that were "mostly felt" (circled) were scored as 2. Emotions that were "also felt" (crossed-out) were scored as 1. The weighted sum scores were calculated by summing the products of each hassles' "circled or crossed-out" score by corresponding feeling strength score. For example, a hassle that was emotionally described as "mostly frustrating" (circled F) and was "felt strongly" (circled 4) would yield a product of 8 which would be summed with other frustration products to yield W-FRUSTR. Weighted sum scores for the other emotions were scored in the same manner and labeled W-HAPPY, W-EXCITE, W-ANGRY, W-SAD.

Finally, averaged emotion scores were derived by dividing sum scores by all endorsed hassles (HASSLES). This yielded A-HAPPY, A-EXCITE, A-ANGRY, A-FRUSTR and A-SAD.

Thus, emotions were scored in three ways: (1) sum scores by type of emotion (e.g., S-HAPPY); (2) weighted sum scores by type and feeling strength of emotions (e.g., W-HAPPY); (3) averaged scores (e.g., A-HAPPY).

By the same reasoning, the attributions of control, expectancy and fairness were all scored both as sums and averages. (There was no

weighted sum score for attributions because there was no measure of attribution strength.) For example, the sum score for control (S-CONTROL) was derived by summing the responses to the control questions of every hassle not endorsed by N (nothing). The same method was used to calculate an expectancy score (S-EXPECT) and a fairness score (S-FAIR). (Responses to the expectancy question were reversed scored.) Therefore, these variables were cumulative attribution effects.

Averaged scores for attributions were derived by taking the sum scores and dividing by HASSLES, yielding A-CONTROL, A-EXPECT and A-FAIR. These variables represented attributional tendencies for hassles. For all attribution scores, higher scores reflected more perceived control (or expectancy or fairness) than lower scores.

Social Support Questionnaire. (Appendix 4) This questionnaire was designed to measure social support dimensions pertinent to TABP. Respondents were first asked to list "...people who are part of your life who give you help and support often" (Appendix 4). There were spaces for a maximum of twenty-three names. Next, all of the supporters were described by answering the following questions:

A. "How do they support you?" Respondents circled any combination of the following types of support: (1) advice and information, (2) hang out with, (3) feel better, (4) do a favor, and (5) always be there.

B. "Sex [of supporter]?" Respondents circled M or F.

C. "Relationship to you?" Respondents circled one of the following: (1) parent, (2) adult relative, (3) teacher, coach,

counselor, etc., (4) other adult, (5) sister/brother, (6) relative your age, (7) classmate, (8) friend your age.

D. "How supportive is the relationship?" Respondents circled either of three choices: (1) I provide more support for this person than he/she provides for me, (2) We support each other about equally, and (3) This person provides more support for me than I provide for him/her.

Scoring. The number of listed supporters equalled a sum score of supporters (SUMSUPP). The number of female and male supporters were labeled FEMSUPP and MALESUPP, respectively. Adult support (ADULTS) was the sum of endorsements to questions 1 through 4 on the relationship question. Likewise, peer support (PEERS) was the sum of endorsements to questions 5 through 8. Finally, a mean mutuality score (MUTUAL) was calculated by summing the responses to the last question and dividing by SUMSUPP. MUTUAL scores closer to one meant the respondent was less supportive of others; whereas scores closer to three meant the respondent was more supportive of others.

Demographic Questionnaire. (Appendix 5) This questionnaire was comprised of questions asking students to describe their:

A. Age in years;

B. Sex, where (1) male and (2) female;

C. Academic Grades, where (1) mostly A's to (5) mostly E's;

D. Birth Order, where (1) 1st born or only child, (2) 2nd born, (3) 3rd born, etc.;

E. Number of Siblings;

F. Career Choice ten years from now as scored by the Hollingshead occupation scale (1976);

G. Number of Sports; and

H. Non-sports Activities.

Data management.

The raw data was coded and entered via computer by two psychology undergraduates blind to the research hypotheses. Another psychology undergraduate, also blind to the hypotheses, checked all data for accuracy.

There was less than one percent missing data for both teachers and students. Teachers noted they were unsure on one or two items on four students' MYTH ratings because these students were recent arrivals. In these cases, means were calculated from the incomplete subscales--COMPETE or IMPAGG--and substituted for the missing values. Students' missing data was handled by recontacting the student and readministering the particular items within two weeks of the testing. Failing that, the remaining missing data was substituted with an appropriate measure of central tendency (Afifi & Clark, 1984). For example, the majority of the remaining missing data was found among the cognition scales of the HEC. Since the data for these scales was ordinal level, modes based on the individual scales were substituted.

All analyses were performed on a Cyber model 750 mainframe computer. The majority of the analyses were done using the Statistical Package for the Social Sciences version 9.0 (SPSS9) (Nie, Hull, Jenkins, Steinbrenner

& Bent, 1975; Hull & Nie, 1981). The factor analyses incorporated both SPSS9 and Package (Hunter, Cohen & Nicol, 1982).

Ethical Safeguards.

This research, under the title of "The Teenage Stress Study," was approved by the University Committee on Research with Human Subjects, East Lansing Curriculum Committee and Faculty Advisory Board of the participating middle school. Approximately 325 notifications (Appendix 6) requesting student participation in the "Teenage Stress Study" were sent to parents of sixth and eighth grade students. One hundred and seventy-six parents gave their approval. Only those students who received parental permission and signed a permission form just prior to the administration were allowed to participate.

Chapter 4

RESULTS

MYTH reliability and validity.

The present MYTH scores were compared to those reported in the original study by Matthews and Angulo (1980). Table 1 lists the means and standard deviations by sex and grade for the two studies. The distribution of the two samples was clearly similar in both magnitude and direction of sex differences. Both studies yielded significant sex differences for all grades except the sixth grade. However, contrary to the findings of Matthews and Angulo, there was a significant grade effect in this study. A sex by grade ANOVA yielded main effects for sex ($F(1,167) = 7.70$, $p < .001$) and grade ($F(1,167) = 5.83$, $p < .001$).

The internal consistencies for the present MYTH scales were high. The total scale (TYPE-A), and its two subscales: competitiveness-achievement striving (COMPETE) and impatience-hostility-aggression (IMPAGG) yielded Cronbach alphas of .89, .87 and .89, respectively. These alphas were almost identical to those reported in the original study for the same scales (.90, .89 and .88, respectively). Cronbach alphas for TYPE-A, COMPETE and IMPAGG were computed for males (.87, .87 and .87, respectively) and for females (alphas = .91, .87 and .89, respectively), indicating that the MYTH was internally consistent for both sexes. In addition, the correlation between the two subscales ($r(171) = .42$) was nearly identical to that reported in the original study ($r(485) = .41$).

Table 1. A comparison of MYTH scores for males and females from the original study by Matthews and Angulo (1980) and the present study.

		Females		Males		
Study	Grade	Mean	SD	Mean	SD	*t* value
Matthews & Angulo (1980)	K	46.3 (64)	9.6	51.4 (73)	11.9	2.72**
	2	47.1 (61)	9.6	53.8 (65)	9.7	3.84***
	4	45.6 (51)	10.3	53.2 (64)	10.9	3.80***
	6	47.9 (39)	7.3	51.3 (68)	10.4	1.76
	Total	46.7 (215)	(a)	52.4 (270)	(a)	6.09***
present study	6	45.8 (43)	10.6	47.8 (32)	9.3	.85
	8	47.1 (60)	9.3	53.9 (36)	8.4	3.72***
	Total	46.5 (103)	9.8	51.0 (68)	9.3	2.99**

Note: number of children in group in parentheses

(a) Standard deviations not reported.

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

Finally, responses to the confidence question indicated the teachers were confident of their ratings (M = 3.87, SD = .47). On the whole, the MYTH scores in this study appeared to be highly reliable and comparable to those reported in the original study.

Demographics.

Table 2 lists correlations for TYPE-A, COMPETE and IMPAGG scores with demographic variables for females and males. There were a number of significant correlations for females only: 1) having more siblings was associated with higher IMPAGG, 2) first-born or only-children were more TYPE-A than later-born children, 3) participating in sports was associated with TYPE-A and IMPAGG.

Likewise, there were three significant correlations for males only. Males' TYPE-A and IMPAGG scores increased with age, and their low academic grades were associated with COMPETE. Finally, MYTH scores were not associated with non-sports activities or career choices for either sex. Tests of significance for differences between magnitudes of counterpart male and female correlations revealed no sex differences.

These results provided no support for Hypotheses I or III, but partially supported Hypothesis II. In the case of Hypothesis I, academic grades were in the opposite direction predicted. For Hypothesis II, the predicted relationship between sports effect and TABP was evident for females only. Finally, there was no relationship with career choice and TABP as stated in Hypothesis III for either sex.

Table 2. Correlations between TYPE A, COMPETE and IMPAGG and demographic variables by sex.

	Females (n = 103)			Males (n = 68)		
	TYPE A	COMPETE	IMPAGG	TYPE A	COMPETE	IMPAGG
Age	.03	-.03	.08	.28*	.14	.30**
Siblings	.08	-.13	.24*	.13	.15	.09
Birth order	.24*	.21	.21	.20	.10	.21
Academic grades	.01	-.17	.16	-.11	-.40***	.19
Sports	.26**	.13	.30**	-.10	-.02	-.14
Non-sports	.14	.14	.10	-.02	.05	-.08
Career choice	-.14	-.13	-.12	-.03	.10	-.14

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

Hassles.

The number of hassles (HASSLES) endorsed by the students were near normally distributed (M = 15.19; SD = 6.0; Range = 4 to 37). Females had more HASSLES than males ($F(1,169) = 8.43$, $p < .01$). Females endorsed an average of 16.25 (SD = 5.98) hassles, whereas males endorsed an average of 13.59 (SD = 5.69) hassles.

Internal consistency for the 39 item scale was moderate (Cronbach alpha = .80). The hassles were listed in Table 3 by descending order of frequency of endorsement. Other dimensions of the 39 hassles were explored by principal components factor analysis with varimax rotations and factor eigenvalues greater than 1.0 (Table 4). Four factors emerged with standard coefficient alphas of .74, .70, .53, and .48, respectively. However, the four factors accounted for only 22 percent of the common variance after rotation. Intercorrelations among the four clusters and their corresponding reliabilities revealed high interdependency. Thus, the 39 items appeared to constitute a general factor and did not resemble the separate categories listed in the Methods section. Therefore, only total item scores were used in subsequent analyses involving hassles.

Correlations among HASSLES, TYPE-A, COMPETE and IMPAGG were analyzed to test Hypothesis IV, which predicted that the number of hassles would be positively associated with TABP. Females and males were analyzed separately. HASSLES was significantly associated with the MYTH scales for males (HASSLES with: TYPE-A, $r = .44$, $p < .001$; COMPETE, $r = .28$, $p < .05$; IMPAGG, $r = .41$, $p < .001$), but not for females (HASSLES with: TYPE-A, $r = .06$, NS; COMPETE, $r = .09$, NS; IMPAGG, $r = -.06$, NS). Tests of the magnitude of the correlations by sex indicated significant differences

Table 3. Percent endorsement of HASSLES items (n = 171).

Item (No.)	Percent Endorsement
1. Homework (16)	88.9
2. Misplacing or losing something (1)	81.3
3. Taking a test (13)	72.5
4. Getting good grades (22)	64.9
5. Having to wait (10)	62.0
5. Too many things to do (12)	62.0
6. Cleaning house (3)	59.6
7. Personal appearance (25)	57.9
8. Concerns about health of a family member (32)	55.0
9. Thoughts about the future (17)	52.6
10. Wasting time (11)	52.0
11. Dealing with friends (36)	47.4
12. Dealing with parents (33)	45.0
13. Shopping (7)	43.3
13. Concerns about being liked (31)	43.3
14. Getting a ride (9)	42.1
14. Not enough money for fun (6)	42.1
14. Being on time (38)	42.1
15. Concerns about weight (27)	39.8
16. Too many responsibilities (18)	38.6
17. Gossip (5)	35.7
18. Dealing with students (15)	34.5
19. Dealing with a teacher (14)	33.3
19. Being liked by others (37)	33.3
20. Being lonely (21)	32.2
21. Preparing a meal (2)	31.0
22. Making decisions (20)	28.7
23. Meeting people (29)	28.1
24. Expressing yourself (30)	24.0
25. Concerns about health (26)	23.4
26. Family responsibilities (34)	21.1
27. Not enough money for basic needs (4)	20.5
28. Becoming a member of a school team or band or club (39)	15.2
29. Asking someone to dance	12.3
30. Not enough personal energy (28)	11.1
31. Yardwork (8)	9.9
31. Concerns about the meaning of life (19)	9.9
32. Use of alcohol (23)	8.2
33. Smoking (24)	1.8

Table 4. Factor loadings for hassles.

Hassles (item number)	Factor Loadings 1	2	3	4
Shopping (7)	.53*	.33	-.03	-.13
Having to wait (10)	.50*	-.05	-.07	.18
Preparing a meal (2)	.50*	.17	-.01	.08
Dealing with friends (36)	.41*	.35	.18	.18
Cleaning house (3)	.39*	.02	.25	.09
Taking a test (13)	.39*	.07	-.05	.01
Getting a ride (9)	.38*	.33	.08	-.10
Homework (16)	.37*	.08	.16	.12
Being on time (38)	.36*	.27	.17	.03
Meeting people (29)	.35*	.22	.07	.02
Getting good grades (22)	.34*	-.06	.11	.01
Making decisions (20)	.34*	.04	.06	.07
Concerns about the future (17)	.28*	.27	.06	-.14
Wasting time (11)	.24*	.16	.00	.00
Concerns about not being liked (31)	-.01	.58*	-.02	.16
Personal appearance (25)	.18	.53*	-.08	-.05
Being lonely (21)	.06	.50*	-.08	.11
Being liked (37)	.25	.49*	-.02	.26
Concerns about weight (27)	-.01	.40*	-.09	-.10
Dealing with parents (33)	.15	.37*	.06	.28
Expressing yourself (30)	.15	.36*	.02	.17
Gossip (5)	.27	.35*	.00	-.08
Not enough personal energy (28)	.01	.34*	.09	.22
Concerns about the meaning of life (19)	.09	.31*	.14	-.02
Concerns about health (26)	.12	.31*	.23	.02
Misplacing or loosing something (1)	.07	.19*	.14	.09
Use of alcohol (23)	.03	.02	.58*	-.26
Smoking (24)	.03	-.12	.54*	-.24
Not enough money for basic needs (4)	-.23	.21	.40*	.18
Not enough money for fun (6)	-.18	.24	.37*	.25
Dealing with students (15)	.19	.21	.31*	.16
Dealing with a teacher (14)	.24	.06	.31*	.29
Concerns about the health of a family member (32)	.02	.15	.22*	.18
Asking someone to dance (35)	.10	.02	.22*	.12
Becoming a member of a school team or band or activity (39)	.02	-.03	.17*	.01
Yardwork (8)	.06	-.05	.16*	.07
Family responsibilities (34)	.27	.13	.03	.47*
Too many responsibilities (18)	-.08	.05	.07	.47*
Too many things to do (12)	.11	.01	.01	.39*

for correlations involving TYPE-A ($t(168) = 2.59$, $p < .01$) and IMPAGG ($t(168) = 2.55$, $p < .05$). Thus, Hypothesis IV was supported for males only.

Emotions.

Prior to testing Hypotheses V and VI (viz., certain emotions will contribute significant variance beyond that of HASSLES when predicting TABP), a decision needed to be made for the type of scoring to be used for the emotion variables. Table 5 depicts three matrices for each of the different scoring methods. It was clear that weighted sum and simple sum scored emotion variables were most prone to problems of multicollinearity (i.e., high interdependence) and dependence on HASSLES. However, the averaged emotion variables were less prone to multicollinearity problems. The pattern of intercorrelations among the latter also indicated that A-HAPPY and A-EXCITE were related to each other but distinct (i.e., negatively or insignificantly correlated) from the cluster of A-ANGRY, A-FRUSTR and A-SAD. The averaged emotion variables, except for A-HAPPY were independent of HASSLES. Therefore weighted sum scoring of emotion variables was rejected leaving simple sum vs. averaged emotion variables.

Before accepting either of these two, further comparisons were made between matrices, which also included the differently scored cognition variables, the MYTH measures and HASSLES for each sex. Table 6 depicts the matrix including simple sum scored emotion and cognition variables for each sex, whereas Table 7 depicts the same variables scored by averaging. Otherwise all other variables were the same for each matrix.

Table 5. Correlation matrices for differently scored emotion variables (N = 171).

Weighted Emotion Scores		2	3	4	5	6
	1. HASSLES	.35	.45	.49	.53	.37
	2. W-HAPPY		.44	.34	.32	.12
	3. W-EXCITE			.32	.26	.19
	4. W-ANGRY				.45	.53
	5. W-FRUSTR					.61
	6. W-SAD					

Summed Emotion Scores		2	3	4	5	6
	1. HASSLES	.60	.78	.61	.67	.43
	2. S-HAPPY		.60	.13	.19	.16
	3. S-EXCITE			.39	.58	.29
	4. S-ANGRY				.77	.61
	5. S-FRUSTR					.55
	6. S-SAD					

Averaged Emotion Scores		2	3	4	5	6
	1. HASSLES	.30	.09	.01	-.03	.11
	2. A-HAPPY		.25	-.30	-.24	-.12
	3. A-EXCITE			-.12	.06	-.04
	4. A-ANGRY				.59	.46
	5. A-FRUSTR					.41
	6. A-SAD					

Table 6. Correlations among MYTH, HASSLES and sum scored emotion and cognition variables for females (n = 103) and males (n = 68).

	MYTH				Emotions					Attributions		
	1	2	3	4	5	6	7	8	9	10	11	12
1. TYPE A		.85	.89	.06	.03	.00	-.02	.07	-.03	.10	.06	.07
2. COMPETE	.76		.51	.09	.09	.01	.02	.08	-.03	.13	.08	.13
3. IMP-AGG	.82	.26		.02	-.02	.00	-.05	.04	-.03	.04	.02	.00
4. HASSLES	.44	.28	.41		.55	.79	.61	.75	.38	.88	.90	.92
5. S-HAPPY	.26	.24	.18	.67		.58	.01	.16	.04	.55	.57	.65
6. S-EXCITE	.25	.21	.18	.72	.62		.39	.61	.26	.77	.91	.78
7. S-ANGRY	.43	.13	.53	.54	.28	.29		.78	.57	.59	.58	.49
8. S-FRUSTR	.36	.17	.38	.43	.17	.39	.69		.52	.74	.78	.68
9. S-SAD	.41	.15	.48	.45	.30	.27	.64	.55		.34	.35	.27
10. S-CONTROL	.42	.28	.38	.91	.69	.64	.53	.44	.50		.90	.89
11. S-EXPECT	.36	.23	.34	.87	.70	.83	.53	.53	.49	.86		.89
12. S-FAIR	.35	31	.25	.86	.79	.72	.40	.38	.39	.87	.91	

Note: Correlations above the diagonal are for females and those below are for males.

Significance levels for males:

$r = |.23|$, $p < .05$
$r = |.30|$, $p < .01$
$r = |.38|$, $p < .001$

Significance levels for females:

$r = |.19|$, $p < .05$
$r = |.25|$, $p < .01$
$r = |.32|$, $p < .001$

Table 7. Correlations among MYTH, HASSLES and averaged emotion and cognition variables for females (n = 103) and males (n = 68).

	MYTH				Emotions					Attributions		
	1	2	3	4	5	6	7	8	9	10	11	12
1. TYPE-A		.85	.89	.06	.00	-.07	-.08	.00	-.09	.17	-.04	-.03
2. COMPETE	.76		.51	.09	.06	-.09	-.05	.03	-.09	.07	-.01	.06
3. IMPAGG	.82	.26		.02	-.06	-.04	-.08	.00	-.07	.06	-.05	-.10
4. HASSLES	.44	.28	.41		.24	.19	-.05	.06	.05	.06	.23	.14
5. A-HAPPY	.09	.14	.01	.37		.17	-.49	-.31	-.22	.12	.23	.45
6. A-EXCITE	.14	.02	-.22	-.06	.35		-.10	.11	.00	.23	.72	.19
7. A-ANGRY	.22	-.01	.34	.00	-.09	-.16		.57	.50	.18	.14	-.20
8. A-FRUSTR	.06	-.01	.10	-.31	-.22	-.02	.58		.44	.30	.42	.06
9. A-SAD	.30	.05	.40	.15	.01	-.12	.36	.34		.04	.15	-.21
10. A-CONTROL	.15	.15	.08	.13	.24	-.04	.17	.26	.19		.51	.46
11. A-EXPECT	-.05	-.01	-.06	.04	.37	.64	.18	.29	.20	.40		.44
12. A-FAIR	-.08	.15	-.25	.01	.48	.39	-.13	.08	.05	.44	.60	

Note: Correlations above the diagonal are for females and those below are for males.

Significance levels for males:

$r = |.23|$, $p < .05$
$r = |.30|$, $p < .01$
$r = |.38|$, $p < .001$

Significance levels for females:

$r = |.19|$, $p < .05$
$r = |.25|$, $p < .01$
$r = |.32|$, $p < .001$

For each matrix, the patterns of intercorrelations among the emotion variables, as well as among the cognition variables, were similar for both sexes. Overall, there was greater independence among these variables in Table 7 than in Table 6. Sum scoring appeared to have masked differences among the variables. Therefore, Hypotheses V, VI and VII were tested using averaged emotion and cognition variables, which operationalized these variables as emotional and cognitive response tendencies, respectively.

Hypothesis V stated that happiness and excitedness would contribute significant variance beyond that of HASSLES when predicting COMPETE. Likewise Hypothesis VI stated that anger, frustration and sadness would contribute significant variance beyond that of HASSLES when predicting IMPAGG. These hypotheses were tested by multiple regression analyses. The general formula for these regressions was HASSLES always entered first followed by one of two blocks of emotion variables. The variables within blocks were entered in a stepwise fashion. Entering HASSLES first controlled its effect on subsequent variables and entering subsequent variables within a stepwise block produced an optimal prediction equation with minimum variables (Cohen & Cohen, 1984). Therefore, when predicting COMPETE, HASSLES was followed by A-HAPPY and A-SAD block; when predicting IMPAGG, HASSLES was followed by A-ANGRY, A-FRUSTR and A-SAD block.

Separate regressions were performed for both males and females. For females, Hypotheses V and VI were not supported because no equation predicted more than one percent total variance. The males' equations also did not support Hypothesis V, but did support Hypothesis VI. Table 8 represents the regression analyses for males only. When predicting

Table 8. Hierarchical multiple regression analyses with HASSLES and emotion variables for the prediction of COMPETE and IMPAGG for males (n = 68).

Variables	R	R^2	R^2 Change	F to Enter	Overall F
COMPETE:					
HASSLES	.28	.08	.08	5.73*	5.73*
A-EXCITED	.28	.08	.00	.08	2.86
A-HAPPY	.29	.08	.00	.03	1.89
IMPAGG:					
HASSLES	.41	.17	.17	13.61***	13.61***
A-SAD	.55	.29	.12	11.05***	13.36***
A-ANGRY	.58	.34	.05	5.23**	9.32***
A-FRUSTR	.58	.34	.00	2.07	8.32***

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

COMPETE, no emotion contributed a significant amount of variance beyond that of HASSLES. When predicting IMPAGG, both A-SAD and A-ANGRY contributed substantial variance beyond that of HASSLES by increasing the total variance from 17 to 34 percent. Therefore responding to hassles with sadness and anger was predictive of impatience, hostility and aggression.

Attributions.

Internal consistencies for the attribution measures pertinent to Hypothesis VII were moderate. Cronbach alphas for A-CONTROL, A-EXPECT and A-FAIR were .78, .77 and .79, respectively.

According to Hypothesis VII, it was expected that correlations between the measures of TABP would be negatively correlated with attribution variables. Table 7 also lists correlations between the TABP measures and attributions for females and males. Only the correlation between A-FAIR and IMPAGG for males upheld this hypothesis. Impatient, aggressive males were more likely to perceive hassles as unfair than Type B males. Otherwise, attributions appeared not to be related to TABP.

Intercorrelations among the attribution variables and HASSLES revealed similar patterns for both sexes. Based on the entire sample, students perceived "very little" control (M = 2.41, SD = .44) over "somewhat unexpected" (M = 2.37, SD = .42) hassles, which were "partly unfair" (M = 2.44, SD = .53).

Social support.

The tests for Hypotheses VIII through XI are presented in Table 9. It was predicted in Hypothesis VIII that TABP would be negatively correlated with the number of social supporters. It was clear that the number of supporters (SUMSUPP) was highly correlated with TYPE-A and COMPETE for males, but not for females. However, the correlations were in the opposite direction as predicted, that is, competitive males reported having more supporters than Type B males. These correlations were significantly different from corresponding females' correlations involving TYPE-A ($t(168) = 2.31$, $p < .05$) and COMPETE ($t(168) = 2.92$, $p < .01$).

Hypothesis IX was not supported. COMPETE was positively associated--in the opposite direction as predicted--with all support types for males only. However, sex differences between corresponding correlations were found only for those involving COMPETE with ADVICE ($t(168) = 2.76$, $p < .01$). Intercorrelations among types of support were high for both sexes indicating students were likely to receive all types of support from any supporter.

Hypothesis X was also not supported, since none of the correlations between number of ADULTS in the support network and any MYTH scale reached significance for either sex. However, the number of PEERS was positively associated with all MYTH scales for males only. Significance tests of the magnitude between these correlations for females and males yielded a sex difference for the correlation between COMPETE with PEERS ($t(168) = 1.96$, $p < .05$).

It was predicted in Hypothesis XI that TABP would be negatively correlated with mutuality (MUTUAL). MUTUAL was significantly correlated

Table 9. Correlations among measures of Type A behavior and social support variables for females (n = 103) and males (n = 68).

	MYTH			Social Support								
	1	2	3	4	5	6	7	8	9	10	11	12
1. TYPE-A		.85	.89	.02	.02	-.01	.05	.05	.08	-.13	.10	-.03
2. COMPETE	.76		.51	.02	-.01	.04	.03	.05	.00	-.15	.11	-.10
3. IMPAGG	.82	.26		.02	.04	-.04	.05	.04	.14	-.08	.07	.04
4. SUMSUPP	.37	.45	.15		.76	.75	.76	.77	.53	.47	.85	.22
5. ADVICE	.34	.43	.14	.74		.60	.78	.66	.61	.32	.67	.09
6. HANGOUT	.30	.30	.19	.81	.52		.57	.68	.48	.06	.82	.29
7. FEELBET	.14	.29	-.05	.50	.58	.25		.71	.62	.42	.61	.08
8. FAVOR	.17	.31	-.02	.79	.59	.64	.61		.50	.37	.65	.07
9. ALWAYS	.28	.31	.14	.65	.65	.44	.61	.46		.15	.51	.15
10. ADULTS	-.02	.13	-.14	.28	.34	-.06	.20	.14	.33		-.06	-.25
11. PEERS	.38	.39	.23	.88	.58	.86	.41	.73	.50	-.22		.40
12. MUTUAL	.24	.25	.14	.39	.23	.50	.12	.25	.23	-.14	.47	

Note: Correlations above the diagonal are for females and those below are for males.

Significance levels for males:

$r = |.23|$, $p < .05$
$r = |.30|$, $p < .01$
$r = |.38|$, $p < .001$

Significance levels for females:

$r = |.19|$, $p < .05$
$r = |.25|$, $p < .01$
$r = |.32|$, $p < .001$

with TYPE-A and COMPETE for males only. However, the correlations were positive, indicating that greater competitiveness was associated with giving more support than receiving. Therefore, Hypothesis VI was not supported. Again this correlation was significantly different from the comparable females' correlation ($t(168) = 2.23$, $p < .01$.). Further, the internal consistency of MUTUAL was high (Cronbach alpha = .90).

Further analyses of social support variables by sex can be seen in Table 10. It was evident: 1) females reported significantly more supporters than males (SUMSUPP), 2) both sexes had significantly more same-sexed supporters (FEMSUPP, MALESUPP), 3) both sexes had virtually equal numbers of adult supporters (ADULTS), 4) females reported significantly more peer supporters (PEERS), and 5) females were more mutual than males.

On the whole, Hypotheses VIII through XI were not supported. Specifically, all hypotheses were in the opposite direction as predicted and primarily associated with COMPETE. Thus, males' competitiveness was associated with the number of supporters, although their supporters were mostly male peers. All types of support were exchanged among males, especially advice and information. Finally, competitiveness was associated with perceptions of giving more support than receiving.

Table 10. Social support variables by sex.

	Females (n=103)		Males (n=68)		
	Mean	SD	Mean	SD	F(1,169)
SUMSUPP	13.89	6.08	11.32	4.98	8.41**
FEMSUPP	9.61	4.22	3.53	2.39	116.22***
MALESUPP	4.28	3.22	7.79	4.03	39.36***
ADULTS	4.33	3.20	4.02	2.43	.48
PEERS	9.56	5.37	7.30	4.90	7.84**
MUTUAL	1.86	.24	1.75	.31	5.97*

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

Model testing

It was clear from the previous results that testing models for the total sample would be counterproductive, because the females' data would dilute the significant results found for males. Therefore, the three models were tested for only males (n = 68).

The Cognitive, Affect and Social Affect models were each tested for three dependent variables: TYPE-A, COMPETE and IMPAGG. The following are the hierarchical multiple regression equations for each model : [1]

Cognitive Model

HASSLES + FAIR + A-SAD + A-ANGER + (FAIR x A-SAD) +

(FAIR x A-ANGER) + SUMSUPP = TYPE-A or COMPETE or IMPAGG

Affect Model

HASSLES + A-SAD + A-ANGER + A-HAPPY +

(A-HAPPY x SUMSUPP) + (A-SAD x SUMSUPP) +

(A-ANGRY x SUMSUPP) + FAIR = TYPE-A or COMPETE or IMPAGG

Social Model

HASSLES + SUMSUPP + FAIR + (FAIR x SUMSUPP) +

A-SAD + A-ANGRY = TYPE-A or COMPETE or IMPAGG

For all the models HASSLES was always entered first since it was conceived of as impinging stress, and HASSLES was followed by a unique coping combination of emotion, cognition and social support variables in order of theoretical importance to the model tested. The coping

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[1] Note that there is no SEX variable in this and subsequent equations because of the restricted sample.

combinations were distinguished by their interaction terms, which always followed their individual constituent variables. For example, the Affect model employed the following interaction term: A-HAPPY x SUMSUPP, since Sroufe et al. (1984) posited that positive affect moderated socialization. This interaction term also followed separately entered variables of A-HAPPY and SUMSUPP.

All variables were selected based on the previous results as the best representatives of that class of variables. The emotion variables were A-SAD, A-ANGRY, A-HAPPY. The cognition variable was FAIR. SUMSUPP was chosen as the best representative of the highly interrelated social support variables--SUMSUPP, PEERS, ADVICE and MUTUAL--because it loaded highest with TABP.

The results of these regression equations were displayed in tables 11, 12 and 13 with respect to the dependent variable tested. Surveying each table, it was clear that Overall F's did not distinguish between models because they were mostly significant. Cumulative variances were similar due to the overlap of variables in each model.

Cohen and Cohen (1984, chap. 6) suggested two criteria for determining the amount of total variance accounted for by regression equations. The first was to sum only those incremental variances that reached an arbitrary minimal level. They suggest between .02 and .05. Selection of the level may be guided by Cohen (1977) who suggested that variances of .01 to .09 are small but meaningful for psychological research. A second, more stringent criteria for model testing was to add only significant, incremental variances as indicated by the "F to Enter" statistic (Cohen & Cohen, 1984, chap. 6).

Table 11. Three models predicting TYPE-A for males.

Variables	R	R^2	R^2 Change	F to Enter	Overall F
Cognitive model:					
HASSLES	.44	.20	.20	16.07***	16.07***
FAIR	.45	.20	.01	.55	8.25***
A-SAD	.51	.26	.05	4.60*	7.34***
A-ANGRY	.52	.27	.02	1.64	5.97***
FAIR x A-SAD	.58	.34	.07	6.18*	6.41***
FAIR x A-ANGRY	.60	.36	.02	1.47	5.62***
SUMSUPP	.63	.40	.04	4.43*	5.72***
Affect model:					
HASSLES	.44	.20	.20	16.07***	16.07***
A-SAD	.50	.25	.06	4.82*	10.91***
A-ANGRY	.52	.27	.02	1.84	7.98***
SUMSUPP	.56	.32	.04	4.00*	7.26***
A-HAPPY x SUMSUPP	.57	.32	.01	.56	5.88***
A-SAD x SUMSUPP	.58	.34	.02	1.79	5.26***
A-ANGRY x SUMSUPP	.60	.36	.02	1.45	4.75***
FAIR	.60	.36	.00	.05	4.10***
Social model:					
HASSLES	.44	.20	.20	16.07***	16.07***
SUMSUPP	.50	.25	.05	4.34*	10.61***
FAIR	.50	.25	.00	.68	7.26***
FAIR x SUMSUPP	.53	.28	.03	2.67	6.26***
A-SAD	.58	.34	.05	4.86*	6.29***
A-ANGRY	.59	.35	.01	.83	5.36***

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

Table 12. Three models predicting COMPETE for males.

Variables	R	R^2	R^2 Change	F to Enter	Overall F
Cognitive model:					
HASSLES	.28	.08	.08	5.73*	5.73*
FAIR	.32	.10	.02	1.64	3.71*
A-SAD	.32	.10	.00	.02	2.44
A-ANGRY	.32	.10	.00	.00	1.80
FAIR x A-SAD	.39	.15	.05	3.64	2.23
FAIR x A-ANGRY	.43	.18	.03	2.26	2.27*
SUMSUPP	.56	.32	.13	11.66*	3.95***
Affect model:					
HASSLES	.28	.08	.08	5.73*	5.73*
SAD	.28	.08	.00	.00	2.82
ANGRY	.28	.08	.00	.02	1.86
SUMSUPP	.47	.22	.14	11.58***	4.52**
HAPPY X SUMSUPP	.47	.22	.00	.01	3.56**
SAD X SUMSUPP	.48	.23	.01	.85	3.10*
ANGRY X SUMSUPP	.53	.28	.05	4.21*	3.39**
FAIR	.55	.31	.02	1.92	3.26**
Social model:					
HASSLES	.28	.08	.08	5.73*	5.73***
SUMSUPP	.47	.22	.14	11.53***	9.09***
FAIR	.49	.24	.02	1.63	6.65***
FAIR x SUMSUPP	.49	.24	.00	.07	4.94**
A-SAD	.49	.24	.00	.02	3.89**
A-ANGRY	.49	.24	.00	.21	3.24**

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

Table 13. Three models predicting IMPAGG for males.

Variables	R	R^2	R^2 Change	F to Enter	Overall F
Cognitive Model:					
HASSLES	.41	.17	.17	13.61***	13.61***
FAIR	.49	.24	.07	5.56*	10.05***
A-SAD	.59	.35	.11	10.87**	11.34***
A-ANGRY	.62	.39	.04	4.34*	10.04***
FAIR x A-SAD	.65	.42	.04	3.79	9.14***
FAIR x A-ANGRY	.65	.43	.00	.12	7.53***
SUMSUPP	.65	.43	.00	.00	6.35***
Affect model:					
HASSLES	.41	.17	.17	13.61***	13.61***
SAD	.54	.29	.12	11.05***	13.36***
ANGRY	.59	.34	.05	5.23*	11.23***
SUMSUPP	.59	.35	.00	.04	8.31***
A-HAPPY X SUMSUPP	.60	.36	.02	1.56	7.02***
A-SAD X SUMSUPP	.61	.38	.01	1.34	6.10***
A-ANGRY X SUMSUPP	.61	.38	.00	.07	5.15***
FAIR	.63	.40	.03	2.75	4.98***
Social model:					
HASSLES	.41	.17	.17	13.61***	13.61***
SUMSUPP	.41	.17	.00	.01	6.70**
FAIR	.49	.24	.07	5.49*	6.61***
FAIR x SUMSUPP	.54	.29	.05	4.92*	6.49***
A-SAD	.63	.40	.11	11.08***	8.24***
A-ANGRY	.66	.43	.03	3.78	7.80***

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

The models were tested by summing incremental variances that reached a minimum of .04 or a significant incremental variance as indicated by the "F to Enter" statistic, thus combining both strategies. Furthermore, significant interaction terms gave additional support for the model tested.

Referring to Table 11 and employing the above strategy, the Cognitive model accounted for more incremental variance than either the Affect or Social models (R^2s = .36, .30 and .30, respectively) when predicting TYPE-A. Variables that contributed beyond HASSLES for all models were A-SAD, SUMSUPP and FAIR x A-SAD. Moreover, only the Cognitive model had a significant interaction term. Clearly, the Cognitive model best explained Type A behavior.

When predicting COMPETE (Table 12), total incremental variances were about equal for the Cognitive, Affect and Social models (R^2s = .26, .27, and .22, respectively). Only the Cognitive and Affect models were supported by their respective interaction terms, FAIR x A-SAD and A-ANGRY x SUMSUPP. However, a review of the contributing variables for all models revealed that SUMSUPP was essential to all three. SUMSUPP contributed substantial variance no matter where it entered. The fact that it was almost equal in every model indicated that it contributed unique variance apart from the other variables. On the whole, either Cognitive or Affect models best explained competitiveness among males.

When predicting IMPAGG (Table 13), the total incremental variances for the Cognitive, Affect and Social models were: R^2s = .42, .34 and .40, respectively. Both the Cognitive and Social models were supported by their respective interaction terms, FAIR x A-SAD and FAIR x SUMSUPP.

There was no significant interaction for the Affect model. Again based on the a priori criteria, it was difficult to choose between the Cognitive and Social models. Inspection of the three models revealed that FAIR, A-SAD, and A-ANGRY--essential features of the Cognitive model--were most predictive for all three models. However, SUMSUPP--essential to the Social model--was not significant. Therefore, the Cognitive model appears to provide the best explanation of impatience-hostility-aggression.

The Cognitive model was confirmed for all dependent variables by high amounts of explained variance and meaningful interaction terms. By the same criteria, the Affect model was also predictive of COMPETE. Of the models tested a set of variables commonly appear either alone or in interactions--viz., fairness, sadness, anger and social support--which suggests their central importance to TABP. For example, the interaction terms revealed that 1) FAIR x A-SAD was essential to the Cognitive model, 2) A-ANGRY x SUMSUPP was important for the Affect model, and 3) FAIR x SUMSUPP was important for the Social model. Thus, the TABP, at least for males, is a complex phenomenon perhaps best explained by the Cognitive model.

Chapter 5

DISCUSSION

The findings of this study provided evidence for the: 1) MYTH's internal consistency and construct validity, 2) internal consistency and content validity of the new measures: Hassles, Emotions and Cognitions (HEC) and Social Support Questionnaire (SSQ); 3) crucial roles of perceptions of fairness, distress, anger and peer support among Type A adolescent males; 4) sex differences in the manifestation of Type A behavior (in fact, Type A behavior was essentially non-existent for females in this sample); and 5) qualitative differences between competitiveness-achievement striving and impatience-hostility-aggression components of Type A behavior. Each of these findings will be discussed as they pertain to the hypotheses and models tested.

MYTH reliability and validity.

The descriptive statistics of the MYTH from the original study (Matthews & Angulo, 1980) were almost identical to the results of the present study. These results confirmed the MYTH's high reliability and validity as a measure of TABP for children, and also extended its use to include early adolescents.

Particularly intriguing was the replication of no sex differences on the MYTH for sixth graders. This phenomenon may be transitory, because sex differences found for second and fourth graders in the earlier study

were also found for eighth graders in this study. From a developmental perspective, adolescence is marked by a number of transitions--e.g., cognitive (Piaget, 1983), life tasks (Erikson, 1963), socialization (Selman, 1980), puberty (Peterson & Taylor, 1980), and sex roles (Block, 1973)--which perhaps effect competitiveness and aggression.

For example, Simmons, Rosenberg and Rosenberg (1973) noted decreased self esteem among 12 and 13 year olds. They attributed this decrease to the transition from elementary (K-6th grades) to junior high school (7th-9th grades). A comparable transition occurred in this study because the sixth grade was the first year of middle school and required a transfer to a new school. Thus, the sixth grade males' low MYTH scores may be related to the transition to middle school. Their lowered status left little opportunity to successfully aggress or compete against older, larger, and more confident males. As they grow older--ascend the pecking order--their confidence is renewed and they are assured of successfully aggressing and competing against new sixth graders.

Demographics.

Academic achievement. Hypothesis I was not supported. Instead, males with high COMPETE scores tended to have lower grades. This is inconsistent with earlier findings that Type A college students had higher grade point averages (Waldron et al., 1980). Perhaps this discrepancy can be explained by age differences, that is, college students were more accurate than young adolescents in reporting grades. In fact, the college students were asked to report number of courses currently enrolled in,

daily study hours, frequency of evaluations by instructors, as well as GPA, compared to the single question asked of the students in this sample.

On the other hand, the inverse relationship between COMPETE and grades suggests other explanations: being overly competitive inhibits academic performance, or poor academic performance forces one to try harder. The first explanation is rejected on the basis of a previous study. Matthews and Volkin (1981) found that Type A children were able to solve more math problems in a given time than Type Bs, even when intelligence was controlled for. Rather, Type As stayed on task longer than Bs by ignoring subjective fatigue.

Perhaps, Type As perceived their performance as inferior to others, which supports the latter explanation. Indirect evidence for this was the tendency for Type As to compare themselves against higher standards than Bs in the absence of explicit standards (Matthews & Siegel, 1983). Furthermore, Friedman and Ulmer (1984) pointed out, contrary to popular belief, that adult Type A adults were not very successful in their careers. They posited lack of success and resulting insecurity as the driving forces behind TABP.

Sports. Hypothesis II affirmed the role of sports in TABP only for females. More aggressive and competitive females engaged in more sports than Type Bs. On the other hand, the lack of results for males may be partly due to their restricted range of responses; most males were highly active in sports. Also, the simple number of sports may not reflect the ranges of intensity with which males participate or are encouraged to participate in sports.

Career choice. Hypothesis III was not confirmed. This may have been due to the skewed response distribution toward prestigious career choices. High career aspirations are typical among students this age (Erikson, 1963) and may not reflect excessive drive.

Despite the lack of support for the first three hypotheses, the findings indicated distinct sex differences associated with the MYTH subscales, which were confirmed in subsequent analyses.

Hassles, emotions and cognitions.

Stress. Number of hassles was found to be highly related to TABP as predicted in Hypothesis IV, but only for males. The number of hassles accounted for 20% of the variance when predicting males' impatience-aggression. The lack of separate factors for hassles, compared to major life events scales for children (e.g., Sandler and Ramsey, 1980), may indicate that hassles are essentially coincidental events. This contrast between hassles and major life events may eventually differentiate areas of research. For example, hassles may be related to trait characteristics of coping, since hassles are conceptually minor, coincidental stressors that routinely occur throughout one's lifetime. In contrast, major life events may be related to state characteristics of coping, since they are conceptually transitory and infrequent, although generally more severe than hassles. The impact of major stressors may demand extraordinary coping characteristics that dissipate with the abatement of the major stress.

The use of hassles scales is becoming more frequent as evidenced by a new scale, Parenting Daily Hassles (Crnic & Greenberg, 1985). They found

that maternal hostility was highly related to both frequency and intensity of hassles (p's < .001). This finding not only supports the validity of hassles but further suggests that daily hassles contribute to the essential element of TABP, namely, hostility.

Qualitative dimensions of stress. Qualitative dimensions of hassles, namely, emotions and cognitions, contributed significant variance beyond that of hassles. However, overly complicated formulas for qualitative dimensions appear to be unnecessary and confounding as evidenced by the multicollinearity problems among weighted sum scores for emotions and cognitions. Similarly, the simple sum scores also mask differences between logically different constructs of positive and negative emotions. Therefore, scores averaged across hassles provided the best measure of emotions and cognitions.

Positive emotions. Hypothesis V was not confirmed and did not support Solomon's opponent process theory (1980) explanation for Type As' competitiveness. This finding coupled with the negative correlation between competitiveness and academic grades for males, as well as the significant interaction term involving anger when predicting competitiveness in the models tested indicates that competition is the result of negative experiences and feelings rather than exhilaration.

Negative emotions. On the other hand, Hypothesis VI was partially confirmed and does not fully support the frustration-aggression theory explanation for Type A's impatience and aggression. While anger and sadness are related to impatience and aggression, frustration is not. These findings support criticism that frustration does not necessarily result in aggression (Barker, Dembo & Lewin, 1941 cited in Parke and

Slaby, 1983). Frustration, in fact, may result in renewed efforts or withdrawal.

The relationship between anger and aggression is clear (Izard, 1977), however, the relationship between sadness and aggression is less clear. The relationship of sadness to aggression may be interpreted as distress associated with aggression. Izard (1977) notes that feelings of sadness are frequently associated with distress and anger. He defines distress as a protest, as well as an attempt to cope. Tomkins (1963) also hypothesizes that distress leads to aggression, that is, others are blamed for one's distress. Conceivably, Type A's respond to hassles with feelings of distress and anger, affix blame and then aggress against others. How Type As rationalize blame and aggression is discussed below with fairness.

Control and expectancy. Attributions of control and expectancy were not related to TABP as predicted in Hypothesis VII. These findings did not support the earlier experimental research with adults (Glass, 1975; Weidner, 1980) or with children (Glass, 1977). Both found a relationship between Type A behavior and attributions of control and expectancy. However, as noted earlier, the children's study reached the opposite conclusion to the adults study, and the results for children were marginally significant. Therefore, these attributions may not be related to TABP until adulthood when real independence and personal control become feasible.

This speculation must also contain a caveat, since earlier studies employed different research designs from that of the present study. The earlier research employed experimentally controlled conditions--learned

helplessness paradigms, whereas the present investigation was non-experimental. Stress in the former was induced by novel manipulations, whereas stress in the latter was self reported incidence of naturally occurring stress.

Fairness. The attribution of fairness was significantly correlated with impatience and aggression as predicted in Hypothesis VII, again only for males. The more hassles were perceived as unfair, the more males became impatient, hostile and aggressive. Fairness was also related to control and expectancy indicating a certain amount of shared variance. However, fairness' unique contribution prompts its use in further TABP research.

The role of fairness in aggression may be a function of "reciprocal altruism" (Trivers, 1971). Altruism, is defined as caring and giving of favors among animals and humans. Altruistic acts are often performed in spite of immediate danger to the giver who might otherwise remain inactive and safe. What motivates altruism is the expectation that the giver will be repaid in kind. Thus, a bird calling out a warning, presumably for the benefit of the flock, reveals it location to the predator. It expects that others of the flock will do the same for it. However, those benefiting from an altruistic act may decide not to reciprocate, that is, to cheat. Therefore, survival depends on one's ability to detect cheating and to alter the cheater's behavior, especially through punishment. Once a cheater is detected others of the species may feel justified in seizing the cheater's goods or attacking the cheater. Hence, the attack is termed "moralistic aggression."

Support for "moralistic aggression" among humans is provided by Lagerspetz and Westman (1980). They questioned 83 adults (57 males, 23 females aged 17-68 years) about the justification for imagined aggression and level of moral reasoning. Lack of altruism was the highest justification for aggression. Aggression was also found to be associated with lower levels of moral reasoning.

Thus, Type As' hypervigilance can be conceived of as an amplification of an internalized "cheater detector." Detections of being cheated, real or imagined, are the rationalization for "moralistic aggression." This right to punish is similar to the neurotic's "claim" for justice described by Horney (1950).

> The emphasis on justice...is to make other people responsible for any adversity which overtakes them...he will --at least consciously--experience every adversity of his as an injustice... he will tend more easily to apply the law of "retributive justice" (p. 55).

How fairness relates to health is elucidated by Antonovsky (1980). He posits that having a "sense of coherence" is essential to "salutogenesis"--the maintenance of health as opposed to pathogenesis--the process of disease. An essential feature of the "sense of coherence" is a perception of "lawfulness" (p. 127), that is, a belief that events or stressors are not capricious and are guided by an omnipotent being. Having a perception of "lawfulness" maintains one's "sense of coherence" throughout the most stressful crises, as illustrated by the story of Job. Antonovsky posits that Job's endurance was due primarily to his belief that there was a "lawful" reason for his suffering. Thus successful coping with adversity not only depends on the strategies and resources one can muster, but also knowing when to relinquish control and to ride out

the storm. Type As' dogged pursuit of fairness in a world of sometimes inexplicable and uncontrollable occurrences must therefore diminish their "sense of coherence," which in turn diminishes "salutogenesis." Concomitantly, pathogenesis in the form of CHD may increase.

Sex differences, aggression and fairness. Aggression was related to fairness for males only. These findings support the widespread belief in males' greater aggressiveness (e.g., Macoby & Jacklin, 1974). However, reviewers (White, 1983; Frodi, Macaulay & Thome, 1977) have noted sex differences for aggression may be an artifact of: 1) experimental manipulation, 2) operationalization of aggression, 3) sampling bias, 4) age and culture of the subjects, as well as 5) underreporting of no sex differences in the literature. White further cautions that if there are sex differences one must cautiously interpret them within the specific confines of the study.

Considering White's admonitions, aggression as measured by the MYTH would be probably considered non-physical, that is, verbal. Aggression in this study was also measured through behavioral observations of early adolescents, in a naturalistic setting under the supervision of teachers in a moderately structured environment, that is, team teachers in open classrooms. Barrett (1979) reports a study with comparable conditions, except that the children were 5 through 8 years of age. The author found sex differences varied under different conditions of adult supervision (direct or limited) and activity (task centered or free), and that males were more physically and verbally aggressive that females. White (1983) reanalyzed these data and concluded that frequency of physical and verbal aggressive acts was greater for males only when the target was male and

the children were engaged in moderately structured activities. Otherwise, percentage of aggressive acts was not different for the sexes. A cautious extrapolation of Barrett's and White's conclusions would support the sex differences found in the present study. Furthermore, students' primarily associated in homogeneous peer groups, which enhanced males' aggression.

While the samples of the Barrett study and the present study are not equivalent for age, there is evidence that aggression would be greater for this present sample due to hormonal changes of puberty (Hays, 1981). Increased levels of testosterone have been linked to TABP (Friedman & Ulmer, 1984).

On the issue of fairness, Gilligan's (1982) distinction between male equity and female equality supports the findings of the present study. Equity is likened to the early stages of moral development which is related to aggression. For example, "eye for an eye," "might makes right" and "the letter of the law" are the basis for moral decisions at early stages. During the later stages, equality based on consideration of individual rights and freedoms is as, or more, important than "the letter of the law," which is seen as a guide rather than as dogma. Thus, "moralistic aggression" among Type A males, may reflect low moral development.

Summary. The HEC is a promising measure of stress. It appears to be a psychometrically sound instrument sensitive to both quantitative and qualitative dimensions of stress. Moreover, its separate scales have moderate to high internal consistency.

Social support.

Several variables of the Social Support Questionnaire (SSQ) were predictive of the MYTH scales, but only for males. These variables were tested by Hypotheses VIII to XI, none of which were supported. In fact all results were significant in the opposite direction predicted. Contrary to Hypotheses VIII to XI, respectively, MYTH scales were positively related to 1) number of supporters, 2) adequate emotional support, as well as other types of support, 3) number of peer supporters but not adult supporters, and 4) giving more support than than receiving.

The dimensions of the SSQ were moderately predictive of competitiveness. For example, the number of supporters alone accounted for 20% of the variance when predicting competitiveness for males. That is greater than the majority of studies reporting variances less than 10 percent for social support's effect on health and psychological adjustment (Broadhead et al, 1983). Clearly, however, the notion of social support as a buffer against stress--indicated by negative correlations--was not supported in this study. Social supports' unique relationships to TABP are described below.

Total supporters. The number of supporters was positively correlated with competitiveness. It appears that Type As maintain more extensive networks than Bs. If TABP were simply a function of number of supporters, then females would have been more Type A than males, because females had significantly more supporters than males. This, of course, was not the case. Perhaps, Type A males are more gregarious than Bs.

It is important to note that the number of supporters, although a quantitative variable, was highly correlated with other qualitative social

support dimensions. A review of the remaining hypotheses elucidates this point.

Type of support. All types of support, including emotional support, were equally available to all adolescents. The dimensions of type of support (ADVICE, HANGOUT, etc.) were all significantly correlated with competitiveness and number of supporters. The support types were also all highly intercorrelated with each other. This suggests that adolescents' support networks were comprised of support generalists rather than specialists (cf., Bogat, Caldwell, Rogosch, & Kriegler, 1985). In other words, most supporters were likely to provide a variety of support types instead of a specific type. One explanation for this finding comes from a review of the support type question's responses. The last choice "always there" may have have been interpreted literally and would therefore subsume any or all of the the previous four responses. Future research investigating the dimension of support types should involve more definitive response choices such as those used by Bogat, Chin, Sabbath and Schwartz (Note 1).

Peer influence. MYTH scales were not related to number of adult supporters. This finding can not be attributed to lack of adult support or excess of peer support, since the distribution of adult and peer supporters of each sex was comparable to those of other adolescents (Blyth et al., 1982; Blyth, Olmstead & Durant, 1985). Instead, the absence of significantly greater adult supporters for Type A's, may indicate that number of adults is not adequate to assess the role of significant others. For example, the quantity of supporters may not indicate quality of interaction.

On the other hand, number of peer supporters was related to competitiveness and aggression for males only. This affirms the importance of peer support for competitiveness among males (Gilligan, 1982). Like competitiveness, the development of aggression passes from parental influence to peer influence with entrance into elementary school. Parke and Slaby (1983) noted "Peers are active in the development of aggression by acting as reinforcing agents, elicitors of aggression, targets of hostility, and social role models" (p. 589). Another study demonstrated the power of peer influence among males over that of parental influence. Hicks (1965, cited in Parke & Slaby, 1983) demonstrated that children exposed to aggressive male peer models initiated more aggression than those exposed to aggressive female peer or adult models.

These findings do not refute the earlier findings for greater parental involvement with Type A's (Matthews, Glass & Richins, 1977; Matthews, 1977). Instead they raise the issue of parental influence augmented by increasing peer influence typical in adolescence. Perhaps male adolescents have already incorporated parental values of industry and academic excellence to the extent that they motivate each other.

Mutuality. Type As, compared to Bs, reported themselves to be more mutual, that is, giving more to others than receiving. The present findings run counter to research that young Type A children were less empathic than B's (Matthews and Angulo, 1980). Perhaps the earlier findings are a function of socio-emotional development rather than TABP. It is quite normal for young children to be more egocentric compared with adolescents who are more sociocentric (Cochran & Brassard, 1979).

Therefore, young children in general are less able to empathize than older children.

The findings that peers, not adults, influence TABP and that Type As are highly mutual may be explained, in part, as normal development among early adolescents. In a study by Hunter (1984), 180 students (12-13, 14-15, and 18-20 years old) described their relationships with parents and peers. Relationship responses were categorized as 1) unilateral (usually parent directed) or mutual, and 2) direct influence (the parent or friend tries to get the adolescent to do something) or social verification (adolescent seeks advice and guidance). As predicted, parents compared to peers were more often involved in unilateral, direct influence situations. Conversely, peers compared to parents were most often involved in mutual, social verification situations.

Type A's may also see themselves as needing to give more support in order to maintain friendships. The maintenance of large friendship networks may, in fact, be an essential feature of adolescent TABP. Friedman and Ulmer (1984) note that Type A's characteristically accumulate money, real estate, stocks, cars, etc. These tangible proofs of power are a way of demonstrating their sense of control or "security." Type A adolescents may behave quite similarly but popularity is the measure of security, especially among early adolescents who have little recourse to money or other valuable goods.

Consistent with this interpretation is the possibility that mutuality was conceived as an exchange of companionship, since MUTUAL was most related to the support type, HANGOUT. Hanging out is a visible confirmation of peer popularity and is exclusive of adults. Further, it

may require less of a commitment or expenditure of resources than other forms of support, which conceivably would be meaningful to time and resource-conscious Type A adolescents.

Summary. Thus, social support, normally conceived of as precursor to health and well-being, is an indication of Type A males' need to defend against feelings of heightened insecurity. Moreover, social support may also be a source of strain, as well as a symbol of achievement. Relationships may make demands on time, personal energy and other limited resources resulting in decreased well-being (Weiss, 1982). As Type A adolescents acquire more peer supporters, they may also feel they give more than they receive, generating more resentment.

Further considerations of sex differences.

It was clear the meaning of TABP was dramatically different for the males and females. Typically, correlations between a MYTH scale and any other variable were significant for only one sex, usually males. Indeed, there were no significant correlations between the MYTH and measures of hassles, emotions, attributions or social support for females. It is possible that because of the large number of hypotheses tested, some of the significant correlations for males were due to chance findings. However, applying a more stringent one percent rejection criterion eliminates three correlations for males relevant to the hypotheses: 1) A-FAIR and IMPAGG, 2) PEERS and IMPAGG, and 3) MUTUAL and IMPAGG. In the case of the latter two, eliminating these correlations further distinguishes between the MYTH subscales, which are discussed below.

On the other hand, the interrelationships among the measures, except for the MYTH, were similar for both sexes as evidenced by the similar intercorrelations for males and females. Thus one must conclude that TABP is essentially a different process for males than for females.

MYTH subscale differences.

It is clear that the factors of the MYTH are quite distinct from each other. The impatience-hostility-aggression dimension is clearly related only to HEC variables and not to the SSQ. Conversely, the competitive-achievement striving dimension was related mostly to SSQ variables and not the HEC. This finding will be elaborated in the discussion of the models tested.

TABP models.

Of the three models tested, it appears TABP is the result of complex interactions and best explainable by the Cognitive model. Generally, the Cognitive model's unique ordering and combination of variables accounted for greater amounts of variance than the other models. However, the difference of a few percentage points is hardly enough to reject the other models or place sole reliance on the Cognitive model (Berbaum, 1985). Clearly the TABP is a complex process which, like other psychological concepts, defies a complete explanation.

For example, Lewis, Sullivan and Michalson (1984) posit that complex psychological phenomenon are like fugues. Fugues have demonstrable and separate themes which interweave to form the enriched whole. Separation of the themes not only destroys the fugue, but may be misleading. A

simple melody can not encompass the fugue nor distinguish it from another, despite its essential role in the original fugue. However, separation of the themes for structural analysis does have its merits--e.g., from a composer's perspective--so long as the analysis does not ignore the dynamic qualities of the gestalt.

Likewise, the results of the model testing confirm the major themes of the TABP, namely, unfairness, anger, distress, and peer support by males. Depending on which dimension of the TABP one wishes to investigate, one model will seemingly fit better than the other. (It is also conceivable that different models are needed for different ages, populations, etc.) The interweaving nature of TABP can be seen in the interaction terms (FAIR x A-SAD, A-ANGRY x SUMSUPP, FAIR x SUMSUPP), which incorporate the same basic themes, that is, variables. Apparently, distress interacts with perceptions of unfairness to fuel TABP. Peer support interacts with both anger and unfairness to further fuel competitiveness and aggression, respectively.

Anger's interaction with peer support to foster a competitive spirit may be analogous to football players "psyching themselves up" before a game. They mentally rehearse techniques and plays, while imagining devastating opponents. Anger builds and adrenalin flows diverting blood to the muscles, heart and brain in preparation for battle--a physical state clearly associated with TABP (Friedman & Ulmer, 1984).

Similarly, Izard (1977) asked students to imagine and later describe an angry situation. He found that anger was repeatedly associated with feelings of disgust and contempt, which were collectively termed the "hostility triad" (p. 332). Students were then asked to describe each of

these feelings after viewing facial expressions depicting each. The majority of students, when describing anger, felt misled, betrayed, used, disappointed and hurt by others; when describing disgust, they felt "sick of something," repelled; and when describing contempt, they felt superior.

Given the analogy of "psyching up" before meeting an opponent, feelings of contempt--i.e., superiority--are likely to predominate. After all, the winning edge is often said to be only psychological among top athletes. On the other hand, the feelings of being misled, betrayed, etc. are likely related to the anger-fairness process--that is, "moralistic aggression." Thus, TABP may be seen as an escalating cycle of extreme competitiveness generating the "hostility triad," which in turn, fuels Type A's impatience, hostility and aggression. Winning the battle and vanquishing enemies ensures its continued practice.

The verb "fuels" has been repeatedly used in the foregoing discussion with good reason. Eliot and Breo (1984) describe the psychophysiological process of some Type As as "hot reacting," that is, reacting to stress with extreme alarm and vigilance, often out of proportion to the stressor. As noted previously, both hypereactivity and hypervigilance are characteristics of Type A adults (e.g. Friedman & Ulmer, 1984) and children (e.g. Matthews, 1977). Alarm has already been described as the fight reaction that produces adrenalin. Vigilance is the chronic response to perceived loss of control. During vigilance the body begins to shut down, preparing itself for long term survival. In the process it produces cortisol.

Both adrenalin and cortisol raise blood pressure, solidify fat deposits in narrowing arteries, while weakening artery walls. Repeated

alarm and vigilance reactions increase the risk for CHD and coronary artery disease (CAD). However, Eliot and Breo note that not all Type As are "hot reactors," which may explain the lack of findings in some TABP research. For example, MacDougall, Dembrowski, Dimsdale and Hackett (1985) found that a measure of global TABP was unrelated to CAD among 126 male patients undergoing angiography. On the other hand, suppressed hostility and anger during daily activities were related to CAD. The latter finding supports the essential role of anger posited in this study, as well as the relevance of daily hassles.

Implications.

The foregoing discussion of a TABP model depicts the extreme Type A personality. It does not mean to suggest that any of the students in this study exhibited TABP to this extent. Instead, it suggests that early adolescence is a crucial period for the formation of behaviors relevant to adult TABP. Furthermore, adolescent males are generally quite healthy with little likelihood of coronary disease. In fact, recent research suggests that physical fitness may reduce the risk of CHD among Type A men (Lake, Suarez, Schneiderman & Tocci, 1985).

From a developmental perspective, these findings along with previous research have important implications for the acquisition and reinforcement of Type A behavior among children. First, maleness appears to be essential. The major components of Type A behavior, aggression and competition, are strongly identified as male attributes with both genetic and sex role factors. Parental modeling at early ages appears to initiate children's aggression; likewise heightened reinforcement for children's

achievement fosters competition. Later, male peer influence supersedes the parental influence, at least by early adolescence. According to Erikson (1963), the early adolescent has passed through a stage of "industry versus inferiority" into a stage of "identity versus role confusion."

The earlier stage prepares the adolescent to "...become an eager and absorbed unit of a productive situation...[which] teaches him the pleasure of work completion by steady attention and persevering diligence" (p. 259). However, Erikson, as if aware of the dangers of TABP, warned of a "...fundamental danger, namely man's restricting of himself and constriction of his horizons to include only his work..." (pp. 260-261).

The latter stage is crucial, since the major tasks of identity formation and its threatening feelings of insecurity and anger through frustration are at the heart of TABP (Friedman & Ulmer, 1984).

Future Research.

The subscales of HEC and SSQ were found to be internally consistent. Further research is required to establish the HEC and SSQ's test-retest reliability and concurrent validity with other constructs, outcome measures, and populations. Of course the present research should be cross validated.

The dearth of findings for females does not mean the scales are for males only since the pattern of correlations among the scales' variables were the same for both sexes. Rather future research using these scales should investigate other outcome measures perhaps more pertinent to female adolescents, such as depression (Weiner, 1980).

The role of family environment in the "nurturance" of TABP is a promising area of investigation. For instance, the Family Environment Scale (Moos & Moos, 1974) has been used by Billings & Moos (1982) to categorize families into seven distinct typologies. Each typology has been shown to have a unique combination of levels of stress, social support, psychological and physiological symptoms. Of particular interest are two family types classified as Achievement and Conflict Oriented. Both of these family types presumably would provide prime environments for raising Type A children.

Of course the preceding studies could be enhanced with a developmental perspective. A longitudinal study is the best proof for a developmental trend in TABP. However, such a study would require an extremely long time. A cross-sectional study is more feasible.

Ultimately, all of this research needs to be utilized in an ecological model of the TABP as proposed by Margolis et al. (1983). The implications of such research are bound to impact with the hard driving American lifestyle, which has been shown to be more conducive to CHD than those of Japan (Cohen, 1977) and old world American subcultures (Wolf, 1981). Those studies suggest a decrease in TABP may be achieved by promoting values of 1) cooperation over competition, 2) harmony with nature instead of mastery of the environment, 3) judicious acquisition based on quality not quantity, 4) work balanced with leisure instead of single-minded entrepreneurism, and 5) mutual interdependence among family and friends in place of extreme independence.

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APPENDICES

Appendix 1

TEST PROTOCOL

TEST PROTOCOL

1. Be sure all students are seated as close to the front as possible so that they can see the overhead projector.

2. Impress upon them the importance of paying attention to all directions.

3. Pass out the forms. Read the persmission form and have them sign it. Collect these forms.

4. The following are instructions for the administration of:

Hassles, Emotions and Cognitions (HEC)

This questionnaire is divided into three sections. We are going to do only the <u>first</u> section now. The first section is on the two long white sheets with blue squares and green dots. OK, let's read the directions together:

DO NOT OPEN THE OTHER PART OF THIS SHEET
UNTIL YOU ARE TOLD TO DO SO.

This questionnaire deals with hassles that happen to most people. Hassles can be small problems, challenging situations or fairly major problems. Not all people react to hassles the same way.

Listed below and on the next page are hassles. Please circle only those hassles that happened to you in the last month. See the example below. Explain the example like this:

Let's say that a person named Chris filled out the examples. What hassles were circled by Chris? That's right, A and C. Chris was hassled by A, walking the dog, and C, forgetting his books, but NOT by B, coming late to class.

Now look down the list of hassles and circle those that happened to you in the last month. Remember to look down the list on both pages. Work as quickly as possible, and when you are finished put your pencils down. Wait for the next set of instructions.

REMEMBER, DO NOT OPEN THE OTHER PART OF YOUR WHITE SHEETS UNTIL I TELL YOU. OK, you may begin to circle hassles now.

Turn off the lights and turn on the overhead projector and say:

Look up at the screen and pay close attention. This is what you will see when you've opened both white sheets. Before reading this together let's look over it quickly. There are six questions that I want you to answer for only those hassles that you've circled. They are:

1) How did you mostly feel at that time (point to the question and point down the column)

2) How else you feel at that time (point to the question and point down the column)

3) How strongly did you feel (point to the question and down the column)

4) Could you have done any thing about it (point to the question and point down down the column)

5) Did you expect it (point to the question and point down the column)

Now let's read the questions together on your forms. Carefully open both white sheets, the ones with blue tabs and light green circles. (turn on the lights)

WELL DONE! You have finished circling only those hassles that occurred in the last month. Now, for each circled hassle only, please answer the questions from (1) through (6). They are:

(1) circle how you mostly felt at that time,

(2) cross out as many other feelings that you felt at the time,

(3) circle how strongly you felt at that time,

(4) circle how much you could have done about it,

(5) circle how expected the hassle was,

(6) circle how fair it was to you.

Let's look at question #1. (1) How did you mostly feel? (circle one) The choices are:

H for Happy,

E for Excited,

A for Angry,

F for Frustrated,

S for Sad,

N for Nothing.

Let's go back to our example. Chris mostly felt Frustrated because the F is circled. How did Chris mostly feel about "Forgetting his books"? That's right, Chris felt Angry since he circled the A. Are there any questions about scoring this question?

Question 2 asks "How else did you feel?" (Cross out as many as you felt) The choices are the same as for question 1. Chris also felt Happy about walking the dog since he crossed out the H. How else did Chris feel about "forgetting his books"? That's right, Chris felt Excited and Frustrated since he crossed out both the E and the F. Are there any questions about scoring this question?

Question 3 asks "How strongly did you feel?" (circle one) The answers are:

1. Didn't feel much.

2. felt something.

3. Felt strongly.

4. Felt very strongly.

Chris Felt Something when walking the dog because the 2 is circled. How strongly did he feel about forgetting his books? That's right, Chris Felt Very Strongly since he circled 4. Are there any questions about scoring this question?

Question 4 asks "Could you have done anything about it?" (Circle one) The choices are;

1. I couldn't have done anything

2. I could have done very little

3. I could have done something

4. I could have done a lot

Chris thought that he "could have done very little" about walking the dog, since he circled 1. What about "forgetting his books"? That's right, Chris felt he could have done something about it since he circled 3. Are there any questions about scoring this question?

Question 5 asks "Did you expect it? (circle one) The choices are:

1. Totally expected

2. Somewhat expected

3. Somewhat unexpected

4. Totally unexpected

Chris thought that walking the dog was somewhat unexpected since he circled 3. What about forgetting his books. That's right Chris thought that forgetting his books was totally expected since he circled 1. Are there any questions about scoring this question?

Question 6 asks "How fair it was to you?" (circle one) The choices are:

1. Totally unfair

2. partly unfair

3. Partly fair

4. Totally fair

Chris thought that walking the dog was totally fair since he circled 4. How fair did Chris think forgetting his books was? That's right, Chris thought that it was Partly unfair because he circled 2. Are there any questions about scoring this question?

Very good! you all seem to understand how to answer the questions. Did you notice that Chris didn't answer any questions about "Coming late to class"? Why? That's right, because it didn't happen to him, at least not in the last month.

OK. You can now begin to answer the questions about your hassles. Remember that there are no right or wrong answers just be accurate about how you felt or what you thought. Work quickly. When you are finished please turn your paper upside down and wait until I tell you to start the next section.

5. These are the instructions for administering the:

Social Support Questionnaire (SSQ)

We are now ready to begin the second section, which is the yellow sheet.
DO NOT OPEN THE OTHER PART OF THIS SHEET UNTIL YOU ARE TOLD TO DO SO.
This is a questionnaire about people who are part of your life who give you help and support often.
Please write the names of those people who quickly come to mind on the lines below. You do not have to fill in every line.
Use only their first names and their last initial.

In the first example our imaginary friend, Chris has listed two people Mary C. and John R. Remember, first names and last initials only. You have 5 minutes to make your list. When you are finished turn your papers upside down. OK. Begin.

(Begin the next set of instructions when the five minutes is up or every one is ready. Signal when 4 minutes is up by saying "You have one minute left.")

Now lets carefully open the yellow sheets and read the instructions together.

WELL DONE! Now for each person please describe:

(A) HOW THEY SUPPORT YOU, that is:

1) who you can count on for advice and information (for example, on religion, personal matters, help with schoolwork, repair something, etc.)

2) who you hang out or spend time with

3) who makes you feel better when you're upset

4) who will do you a favor for you (for example, lend you a quarter, help with a chore, borrow a record, etc.)

5) who you can count on to always be there for you

(B) WHAT THEIR SEX IS

(C) WHAT THEIR RELATIONSHIP IS TO YOU

(D) HOW SUPPORTIVE IS THE RELATIONSHIP

Please do not begin until you follow the example below.

Question A asks "How they support you?" (circle as many as apply) Your choices are:

1. advice and information

2. hang out with

3. feel better

4. do better

5. always be there

Mary C. is a person that Chris gets "advice and information" from, "feels better" with and will "always be there" for Chris. We know this because Chris circled 1, 3 and 5. Remember you can circle as many as apply. How does John R. support Chris? That's right he hangs out with Chris and does him a favor, since he circled 2 and 4.

Question B asks what "sex?" each person is. Mary C is female since F is circled. John R. is male since M is circled.

Question C asks what their "relationship is to you?" (circle only one) The choices are:

1. parent

2. adult relative

3. teacher, coach, counselor, etc.

4. other adult

5. sister/brother

6. relative your age

7. classmate

8. friends your age

Mary C. is Chris' mother since Chris circled 1 for parent. What relationship is John R. to Chris? That's right, he is a classmate since Chris circled 7.

Question D asks "How supportive is the relationship? (circle only one) The choices are:

1. I provide more support for this person than he/she provides for me.

2. We support each other about equally.

3. This person provides more support for me than I provide for him/her.

Chris feels that he and Mary C. provide each other about equal support. What does Chris feel about John R.? That's right, Chris feels that John R. provides more support for him than he does in return.

Very good! You all seem to understand how to answer the questions. OK. You can now begin to answer the questions about those people you have listed. Remember that there are no right or wrong answers; just give the most accurate answer. Work quickly. When you are finished the you can go on and finish the last page. The instructions are easy to follow. If you have any questions just raise your hand and I will help you. Please sit quietly when you are finished.

Appendix 2

MATTHEWS YOUTH TEST FOR HEALTH (MYTH)

MATTHEWS YOUTH TEST FOR HEALTH (MYTH)

Name of child _____ Grade _____

Rater _____

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

Extremely Uncharacteristic	Uncharacteristic	Average	Characteristic	Extremely Characteristic
1	2	3	4	5

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 to get the child 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
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 or she.	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 a long time.	1	2	3	4	5

14.	It is important for this child to win, rather than to have fun.	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

****

18. How confident are you of the above ratings?

1	2	3	4	5
extremely unconfident	unconfident	neutral	confident	extremely confident

Thank You

Appendix 3

HASSLES, EMOTIONS AND COGNITIONS (HEC)

HASSLES, EMOTIONS AND COGNITIONS (HEC)

DO NOT OPEN THE OTHER PART OF THIS SHEET UNTIL YOU ARE TOLD TO DO SO.

This questionnaire deals with hassles that happen to most people. Hassles can be small problems, challenging situations or fairly major problems. Not all people react to hassles in the same way.

Listed below are hassles on the next two pages. Please circle only those hassles that happened to you in the last month. See the example below.

WELL DONE! You have finished circling only those hassles that occurred in the last month. Now, for each circled hassle only, please answer the questions from (1) through (6).

(1) circle how you mostly felt at that time,
(2) cross out as many other feelings that you felt at that time,
(3) circle how strongly you felt at the time,
(4) circle how much you could have done about it,
(5) circle how expected the hassle was,
(6) circle how fair it was to you.

Before starting look at the example on the board and below.

Example	(1) How did you mostly feel? (circle one) Happy, Excited, Angry, Frustrated, Sad, Nothing. (2) How else did you feel? (Cross out as many as you felt) H E A F S N	(3) How strongly did you feel? (circle one) 1. Didn't feel much 2. Felt something 3. Felt strongly 4. Felt very strongly	(4) Could you have done anything about it? (circle one) 1. I couldn't have done anything 2. I could have done very little 3. I could have done something 4. I could have done a lot	(5) Did you expect it? (circle one) 1. Totally expected 2. Somewhat expected 3. Somewhat unexpected 4. Totally unexpected	(6) How fair was it to you? (circle one) 1. Totally unfair 2. Partly unfair 3. Partly fair 4. Totally fair
A. Walking the dog	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
B. Coming late to class	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
C. Forgetting your books	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
1. Misplacing or losing something	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
2. Preparing a meal	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
3. Cleaning house	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
4. Not enough money for basic needs	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
5. Gossip	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
6. Not enough money for fun	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
7. Shopping	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
8. Yardwork	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
9. Getting a ride	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
10. Having to wait	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
11. Wasting time	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
12. Too many things to do	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
13. Taking a test	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
14. Dealing with a teacher	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
15. Dealing with student(s)	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
16. Housework	H E A F S N	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

DO NOT OPEN THE OTHER PART OF THIS SHEET UNTIL YOU ARE TOLD TO DO SO.

Remember, circle only those hassles that happened to you in the last month.

(1) How did you mostly feel? (circle one)

Happy
Excited
Angry
Frustrated
Sad
Nothing

(2) How else did you feel? (Cross out as many as you felt)

(3) How strongly did you feel? (circle one)

1. Didn't feel much
2. Felt something
3. Felt strongly
4. Felt very strongly

(4) Could you have done anything about it? (circle one)

1. I couldn't have done anything
2. I could have done very little
3. I could have done something
4. I could have done a lot

(5) Did you expect it? (circle one)

1. Totally expected
2. Somewhat expected
3. Somewhat unexpected
4. Totally unexpected

(6) How fair was it to you? (circle one)

1. Totally unfair
2. Partly unfair
3. Partly fair
4. Totally fair

	(1)	(2)	(3)	(4)	(5)	(6)
17. Thoughts about your future	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
18. Too many responsibilities	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
19. Concerns about the meaning of life	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
20. Making decisions	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
21. Being lonely	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
22. Getting good grades	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
23. Use of alcohol	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
24. Sexing	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
25. Personal appearance	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
26. Concerns about health	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
27. Concerns about weight	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
28. Not enough personal energy	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
29. Meeting people	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
30. Expressing yourself	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
31. Concerns about not being liked	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
32. Concerns about the health of a family member	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
33. Dealing with parents	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
34. Family responsibilities	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
35. Asking someone to dance	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
36. Dealing with friends	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
37. Being liked by others	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
38. Being on time	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
39. Becoming a member of a school team or band or club	H E A F S N		1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

Appendix 4

SOCIAL SUPPORT QUESTIONNAIRE (SSQ)

SOCIAL SUPPORT QUESTIONNAIRE (SSQ)

DO NOT OPEN THE OTHER PART OF THIS SHEET UNTIL YOU ARE TOLD TO DO SO.

This is a questionnaire about people who are part of your life who give you help and support often.

Please write the names of those people who quickly come to mind on the lines below. You do not have to fill in every line.

Use only their first names and their last initial.

See the example below.

WELL DONE! Now for each person please describe

(A) HOW THEY SUPPORT YOU, that is:

1) who you can count on for advice and information (for example, on religion, personal matters, help with schoolwork, repair something, etc.)
2) who you hang out or spend time with,
3) who make you feel better when you're upset
4) who will do a favor for you (for example, lend you a quarter, help with a chore, borrow a record, etc.)
5) who you can count on to always be there for you

(B) WHAT THEIR SEX IS

(C) WHAT THEIR RELATIONSHIP IS TO YOU

(D) HOW SUPPORTIVE IS THE RELATIONSHIP

Please do not begin until you follow the example below.

(C) RELATIONSHIP TO YOU?

1. parent
2. adult relative
3. teacher, coach, counselor, etc.
4. other adult
5. sister/brother
6. relative your age
7. classmate
8. friends your age

(D) HOW SUPPORTIVE IS THE RELATIONSHIP?

1. I provide more support for this person than he/she provides for me.
2. We support each other about equally.
3. This person provides more support for me than I provide for him/her.

	(A) HOW DO THEY SUPPORT YOU? (circle as many as apply) advice and inform.	hang out with	feel better	do a favor	always be there	(B) SEX? Male or Female	(C)	(D)
Mary C. (example)	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
John R. (example)	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3
______	1	2	3	4	5	M F	1 2 3 4 5 6 7 8	1 2 3

Appendix 5

DEMOGRAPHIC QUESTIONNAIRE

DEMOGRAPHIC QUESTIONNAIRE

Directions: Please fill in the blank or circle the correct answer.

1. How old are you (in years)? _____

2. What is your sex? A. male B. female

3. How many brothers and sisters do you have? _____

4. What is your birth order?

   A. Only child
   B. first born
   C. second born
   D. third born
   E. fourth born
   F. fifth born
   G. other (please specify) _____

5. What are your grades like?

   A. mostly A's
   B. mostly B's
   C. mostly C's
   D. mostly D's
   E. mostly E's or F's

6. Ten years from now what job will you probably doing?

   (please describe _____

   _____

7. Are you active in the following areas? (check as many as apply)

____ student council	____ science club	____ school sport
____ intramural sport	____ church group	____ 4-H
____ chearleading	____ scouts	____ swimming
____ art club	____ newspaper route	____ computer club
____ culture/lang. club	____ band boosters	____ music club
____ drama club	____ dance	____ riding club
____ gymnastics	____ break dancing	____ year book
____ Students Offering Service		

____ other (specify) _____

____ other (specify) _____

____ other (specify) _____

____ other (specify) _____

Appendix 6

PARENT LETTER

PARENT LETTER

January 4, 1985

Dear Parent or Guardian,

We would like your son(s) and/or daughter(s) to participate in a Teenage Stress Study concerning middle school students' perception of and reaction to daily minor stress. This study will also look at the ways young adolescents utilize family and peer support to buffer stress. It is our goal to increase our understanding of the ways in which young adolescents most effectively reduce the stresses of everyday life.

The Teenage Stress Study has been examined by the East Lansing School District and Research Review Committee and approved by the director of Instruction and Professional Development, as well as by the Advisory Committee of MacDonald Middle School.

Participating students will be asked to complete three (3) questionnaires concerning their views on stress, friendships and extra-curricular activities, all of which can be easily completed in one class period on Wednesday morning, January 16th, 1985. Teachers will also complete a short behavioral checklist for each participating student. The student questionnaire and teacher ratings will be administered and collected separately under strict confidentiality. After matching questionnaires to teacher ratings (within 2 days of last testing), all identification will be destroyed, insuring complete anonymity. Thus, individual results are impossible to obtain, but group results will be made available to participating parents at their request either by mail or in person. We realize that some parents may have specific concerns about stress and their child(ren) and we are willing to individually discuss your concerns outside of the scope of this study.

We also recognize the importance of stress preventation early in adolescent development, a time of increasing pressures to do well academically, socially and physically. In fact stress has been linked to numerous diseases (especially heart disease) in later life. To this end, we will offer two evening workshops on recognizing and alleviating stress in appreciation for your school's participation. These workshops are free of charge and are available to students, teachers and parents regardless of participation in this study. Times for these workshops will be announced by letters sent home with your child(ren).

We thank you, in advance, for your interest in this study and do hope that your son and/or daughter will participate. If there are any further questions, feel free to contact either Dr. John Paul McKinney (353-8813) or Raymond J. Chin at (353-7124). In any case, please indicate your response on the accompanying Permission Form and return it to your child's home room teacher through your son or daughter by Friday, January 11th, 1985.

Sincerely,

Dr. John Paul McKinney,
Professor of Psychology
and Human Medicine

Boku Hendrickson,
Acting Principal of
MacDonald Middle School

Raymond J. Chin,
Director of the
Teenage Stress Study

Permission Form

I have read the attached description of the Teenage Stress Study and I understand that:

1) participation in the study is voluntary,

2) there is no penalty for not participating,

3) students may stop at any time,

4) there are no specific benefits guaranteed to any participants,

5) the two evening workshops are opened to any parent or student regardless of participation,

6) all questionnaires are held in the strictest confidence and anonymity will be ensured.

_____ I agree to allow my child to participate in this study.

_____ I do not agree to have my child participate in this study.

_____ _____
Parent or Guardian's Signature Date

_____
Student's signature

Please complete and return this Permission Form to your child's home room teacher via your child by Friday, January 11th, 1985.