CHILDREN'S COPING AND COGNITIVE APPRAISALS:

AN INVESTIGATION OF STRESSOR AND GENDER SPECIFICITY

by

Anne E. Fedorowicz

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Abstract

The Children's Coping Questionnaire (CCQ) was developed to address the limitations of existing self-report measures of children's coping. The purpose of this study was to establish the factorial invariance of the CCQ across gender and stressors. In addition, the construct validity of the measure was investigated by examining stressor and gender differences in children's cognitive appraisals of stress and coping strategies, and by examining the relationships among cognitive appraisals, coping, and outcome. Participants were 525 children, aged 8 to 11 years, who filled out the CCQ. Confirmatory and exploratory factor analyses showed that both the primary and secondary factor structure of the measure were invariant across gender (boys and girls) and stressors (school, peer, and family problems), with the primary factor structure representing 14 conceptually distinct coping strategies, and the secondary factor structure representing the distinction between Approach, Avoidance, and Venting. Situational differences in cognitive appraisals of stress (i.e., perceived control, threat, and blame) were also confirmed. In addition, the results showed that children's coping strategies varied by stressor type and by gender, with gender differences in coping still being evident even after controlling for problem content and cognitive appraisals of stress. Lastly, significant relationships were demonstrated among cognitive appraisals, coping strategies, and outcome (i.e., perceived coping efficacy), consistent with the contextual theory of stress and coping and previous research on children's coping. Overall, the findings from this study provided support for the construct validity and factorial invariance of the CCQ, suggesting that the CCQ is a promising measure of children's coping.

To Frank

&

To my Mother and Father

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In the last decade, there has been a proliferation of research on children's stress and coping. During this time, the link between stressful events and psychological and physical health was clearly established (Compas, 1987a). In addition, research began to demonstrate the protective role certain coping strategies played in promoting adaptive psychological and physical functioning in children and adults (Compas, 1987b; Lazarus & Folkman, 1984; Folkman, 1992a). As a result, the study of coping has flourished, with coping being studied in many different contexts and among many different populations. In the field of child clinical psychology, coping has been described as "central to theory, research, and clinical practice" (Compas, Worsham, & Ey, 1992, p. 7), and the advancement of this area of study has been identified as a "high priority" (Compas et al., 1992, p. 7).

However, the advancement of any field of research is dependent upon the strength of the methods used to study it, and in the area of child coping, numerous concerns have been raised regarding the limitations of existing measures of children's coping (Knapp, Stark, Kurkjian, & Spirito, 1991). As Spirito (1996) has stated, "there is no consensus about a 'gold standard' measure to assess [children's] coping" (p. 573), and indeed, the need for a psychometrically sound measure of children's coping has been clearly identified (Boekaerts, 1996; Compas, 1987b).

In an attempt to address some of the concerns raised about measures of children's coping, the Children's Coping Questionnaire (CCQ; Fedorowicz & Kerig, 1998) was developed, and preliminary research on the measure's reliability and factorial validity was completed. However, the psychometric integrity of any measure can only be established

through repeated demonstrations of its reliability and validity (Clark & Watson, 1995; Smith & McCarthy, 1995). Therefore, the purpose of this study was to investigate the psychometric properties of the CCQ.

In particular, a key measurement issue that has generally not been addressed in the coping literature has been the need to demonstrate the factorial stability of coping questionnaires across different groups (Endler, Parker, & Summerfeldt, 1993; Floyd & Widaman, 1995). The factor structure of a measure must be invariant across groups before mean differences between those groups can be assessed (Byrne, Shavelson, & Muthen, 1989). Therefore, in this study, the factorial stability of the CCQ was assessed across gender and across different stressors.

Secondly, coping measures have been criticized due to a lack of sufficient evidence for their construct validity (Endler et al., 1993). In the area of coping, one aspect of construct validation would require that studies using new measures of children's coping evidence findings consistent with theories of and research on stress and coping. Specifically, this would entail demonstrating the existence of relationships between cognitive appraisals of stress and coping strategies, as delineated by the contextual theory of stress and coping (Lazarus & Folkman, 1984). In addition, establishing the existence of gender and stressor differences in children's coping, as shown by previous research (e.g., Band & Weisz, 1988; Causey & Dubow, 1992), would also be necessary. These goals were pursued in the present study.

In summary, the purpose of this study was to investigate the psychometric properties of the CCQ by (a) examining the measure's factorial stability across gender and stressors, (b) exploring the relationships between children's cognitive appraisals of stress and their coping strategies, and (c) identifying gender and stressor differences in children's cognitive appraisals

and coping. In the following pages, an overview of stress and coping theory is provided, followed by a review of the limitations of existing measures of children's coping and the subsequent development of the CCQ. In addition, the issues of measurement invariance and construct validation are discussed, as well as the empirical findings of research on children's coping and cognitive appraisals.

Theory of Stress and Coping

Several theories of stress and coping have been developed (e.g., ego psychology model; trait/dispositional model; for a review, see Folkman, 1992a); however, the contextual theory of coping proposed by Lazarus and Folkman (1984) has gained the most widespread acceptance. The central tenet of this theory is that cognitive appraisals of stress and coping mediate the relationship between stress and adjustment (Folkman, 1984).

According to Lazarus and Folkman (1984), stress can be defined as a reciprocal transaction "between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 19). This definition emphasizes the transactional nature of stress and coping, thus adopting a process-oriented viewpoint. In other words, this approach underscores that the person and the environment are in a dynamic relationship that is constantly changing, and that is bi-directional in nature (Folkman, 1984).

Central to this definition of stress is the notion that the meaning of an event is defined through the process of cognitive appraisal, and that this ultimately shapes an individual's emotional and behavioural reactions to an event. In other words, the manner by which individuals construe events has important implications for whether they find a situation stressful, for how individuals will cope with a stressor, and for their subsequent levels of

distress (Lazarus, 1993). This implies that stress is relative, and that what may be perceived as stressful for one individual may be irrelevant to another, due to differences in how individuals appraise events. Lazarus and Folkman (1984) have conceptualized the appraisal process as including three components, namely, primary appraisal, secondary appraisal, and reappraisal.

When individuals encounter a problem, they engage in *primary appraisal*, a process whereby they evaluate the implications of an event to their personal well-being (Lazarus & Folkman, 1984). In particular, this process involves determining whether an event is irrelevant, benign/positive, or stressful to a particular individual. Stressful situations are further evaluated as to whether they have caused harm or loss (i.e., damage has occurred to an individual), whether they pose a threat (i.e., damage is anticipated to an individual), or whether they offer a challenge (i.e., an opportunity for personal growth). For situations that have been appraised as stressful, individuals also engage in the process of *secondary appraisal*, an evaluation of what could be done to alter the stressful situation. Individuals must assess whether they possess the resources to cope with a stressor, whether the coping options they have available to them are appropriate for the problem, and whether they can effectively implement these coping options. Emotional distress, or feelings of stress, result when there is an imbalance between the demands of a problem and an individual's ability to cope with it.

It should be noted that Lazarus and Folkman have underscored that the terms primary and secondary appraisal do not denote that one process precedes the other temporally, or that one process is more crucial than the other. Rather, both primary appraisals (e.g., perceived threat) and secondary appraisals (e.g., perceived control) have been shown to have significant effects on an individual's choice of coping strategies and on adjustment (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986).

The last stage of the appraisal process includes *reappraisal*, which "refers to a changed appraisal on the basis of new information from the environment, which may resist or nourish pressures on the person, and/or information from the person's own reaction" (Lazarus & Folkman, 1984, p. 38). Hence, an individual's level of stress, emotional reactions, and approach to coping may change based on this reappraisal of the situation. This process is integral to the transactional nature of stress and coping, reflecting that cognitive appraisals and coping may change over time, as a result of changes in the person, the environment, or both.

Through the process of cognitive appraisal, an individual's choice of coping strategies is determined. Coping is defined as "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141). According to this definition, coping is limited to effortful responses, that is, what the person actually thinks and does within a stressful situation. Unconscious responses or instinctual reflexes, for example, are excluded from this definition. By limiting coping to effortful responses, this definition avoids using coping as an all-encompassing term, which would limit its utility (Lazarus & Folkman, 1984). This definition also emphasizes that coping strategies can be used to manage both external demands (the problem) and internal demands (one's emotions). In addition, coping is described as a variable process that changes with characteristics of the situation and the person, rather than being viewed as a stable trait (i.e., dispositional coping; Folkman, 1992a, 1992b). Finally, it should also be noted that the contextual theory of stress and coping emphasizes that coping strategies should not be equated with efficacy on an a priori basis. Rather, it is only within the context of a situation that the success of a coping strategy can be judged, by evaluating its relation to an outcome (e.g., measure of depression), and/or by evaluating its goodness of fit, in

terms of the match between reality and appraisals and the match between appraisals and coping (Folkman, 1992a).

Conceptualization of coping. Coping strategies can be classified using a number of frameworks; however, the most accepted conceptualizations distinguish between (a) problem-focused and emotion-focused coping (Lazarus & Folkman, 1984) and (b) approach and avoidance coping (Moos, 1993; Roth & Cohen, 1986). With regard to the former distinction, problem-focused coping refers to efforts that are directed towards managing or changing a situation that is causing distress. For example, cognitive decision-making, or thinking about one's choices and planning how to resolve a problem, may be considered a problem-focused coping strategy. Emotion-focused coping refers to efforts directed towards the regulation of emotions or distress. An example of an emotion-focused coping strategy is positive cognitive restructuring, or thinking about a situation in a more positive way. In essence, Lazarus and Folkman (1984) distinguish coping on the basis of function, coping efforts that function to resolve a problem (i.e., problem-focused), or coping efforts that function to reduce emotional distress (i.e., emotion-focused).

In contrast, approach and avoidance coping are distinguished on the basis of focus (Ebata & Moos, 1991; Moos, 1993). Approach coping can be defined as cognitive, emotional, or behavioural activity that is focused towards a stressor (Roth & Cohen, 1986). Coping strategies such as direct problem solving and positive cognitive restructuring would be considered forms of approach coping. Avoidant coping, on the other hand, focuses an individual's cognitions, emotions, and behaviours away from a stressor (Roth & Cohen, 1986). Cognitive avoidance (i.e., attempts to avoid thinking about a stressor) and avoidant actions (i.e., attempts to physically stay away from a stressor) would both be considered examples of

avoidant coping.

It should be recognized, however, that although problem-focused and emotion-focused coping are distinguished from approach and avoidance coping, there is considerable overlap between these classification systems. In fact, in the child coping literature, problem-focused and approach coping are often referred to interchangeably, as are emotion-focused and avoidant coping (Compas et al., 1992; Fields & Prinz, 1997). For example, both cognitive decision making and direct problem solving can be classified as problem-focused coping or approach coping. Cognitive avoidance can be classified as emotion-focused coping or avoidant coping. However, other coping strategies are not interchangeable between the two classification systems. For example, positive cognitive restructuring would be classified as approach coping by Moos (1993), whereas Folkman and Lazarus (1980) would classify it as an emotion-focused coping strategy. Therefore, although there is overlap between the two classification systems, their uniqueness is still evident.

Within the child coping literature, the utility of distinguishing coping strategies according to problem-focused and emotion-focused coping (Band & Weisz, 1988; Compas, Malcarne, & Fondacaro, 1988; Forsythe & Compas, 1987), or approach and avoidance coping (Ebata & Moos, 1991; Herman-Stahl, Stemmler, & Peterson, 1995; Holohan, Valentiner, & Moos, 1995; Hubert, Jay, Saltoun, & Hayes, 1988), has been empirically demonstrated. However, researchers have also identified another class of coping strategies frequently used by children that may be conceptualized as *non-constructive* coping. Non-constructive coping, also referred to as maladpative (Aldwin, 1994; Boekaerts, 1996) or antisocial/asocial coping (Blechman, Prinz, & Dumas, 1995), includes strategies that may be used by children to relieve distress or alter a problem, but if used excessively, are more likely to be associated with

negative adaptation to a stressor.

Concern has been raised that non-constructive coping strategies are confounded with distress or psychopathology, and therefore should not be assessed as coping strategies (Stanton, Donoff-Burg, Cameron, & Ellis, 1994). However, coping is not limited to adaptive strategies, rather it includes all effortful coping behaviour, whether effective or ineffective (Boekaerts, 1996; Carpenter, 1992; Lazarus, 1993). This is especially true for children, who are still learning successful ways of coping, and can not always be expected to cope in prosocial ways. For example, physical aggression is often used in middle childhood as a crude way of dealing with anger provoking situations (Wenar, 1994), with more constructive ways of coping with anger increasing with age (Tangney, Borenstein, & Hill-Barlow, 1996). Children are also more likely to use negative cognitions/worrying (e.g., catastrophizing, self-denigration, rumination, etc.) as a way of coping with stressors. For example, one study of self-generated coping strategies found that 79% of 8- to 9-year-old children identified using this strategy, as compared to only 54% of 16- to 18-year-olds (Brown, O'Keefe, Sanders, & Baker, 1986).

Overall, numerous studies have demonstrated that children use non-constructive coping as a means of dealing with stressors (Brown et al., 1986; Causey & Dubow, 1992; Dise-Lewis, 1988; Lopez & Little, 1996; Patterson & McCubbin, 1987; Rossman, 1992; Ryan-Wenger, 1992; Spirito, Stark, Grace, & Stamoulis, 1991). Simply put, the perceived ineffectiveness of a coping strategy does not preclude it from being used by individuals to respond to a stressor. This issue appears to be especially salient for children, reflecting a developmental difference in coping between adults and children. In summary, studies of children's coping should not only conceptualize children's coping strategies according to the distinction between problem-focused and emotion-focused coping or approach and avoidance coping, but also in terms of

children's use of non-constructive coping.

The Measurement of Coping

Coping is a central concept in child clinical psychology; therefore, psychometrically sound measures are required to assess children's coping strategies. As a result of this need, researchers have developed questionnaires, interviews, observational scales, and projective measures to examine children's coping strategies. However, existing measures have been criticized for numerous developmental, conceptual, and psychometric limitations (Boekaerts, 1996; Compas, 1987b; Knapp et al., 1991). In addition, concerns raised about the integrity of adult coping measures (Folkman, 1992b; Stone & Kennedy-Moore, 1992; Parker & Endler, 1992) have provided insight into additional issues to which researchers developing children's coping measures should pay heed.

This discussion will review critical issues pertaining to the development of self-report measures of coping. Although other types of measures, such as interviews, can be useful for assessing coping (e.g., Compas, Malcarne, et al., 1988), they are labour-intensive and require extensive training for reliable use (Folkman, 1992b). Consequently, the CCQ was developed as a self-report measure of children's coping, due to the need for a convenient method to assess children's coping across different stressors. In the following sections, developmental, conceptual, and psychometric issues relevant to the construction of coping measures will be explored. Issues relevant to measurement invariance and construct validity will be reviewed later, in the discussion of the present study.

Developmental issues. Most measures of children's coping have been based on adult theories of stress and coping. Although the utility of this approach was initially questioned (Ryan-Wenger, 1992), research has demonstrated that, in general, children's coping can be

conceptualized using adult frameworks of coping (i.e., problem-focused vs. emotion-focused or approach vs. avoidance coping; e.g., Compas, Malcarne, et al., 1988; Moos, 1993). Nevertheless, children should not be regarded as smaller versions of adults, as there are still developmental issues that need to be addressed in the assessment of children's coping.

In particular, the types of events that children consider stressful differ from the events that adults believe to be stressful for children. Colton (1985) found children consistently rated stressors they experienced as more distressing than adults would. It appears that adults underestimate or minimize the impact stressful events have on children (Ellis, 1996; Waksler, 1996). Adults need to recognize that the daily hassles children experience, such as being teased by peers or yelled at by adults (Banez & Compas, 1990), are just as stressful as the daily hassles adults experience (e.g., household obligations; DeLongis, Folkman, & Lazarus, 1988). In addition, many stressors children encounter, such as conflict with parents or teachers, are beyond children's control. Thus, compared to the stressors adults face, the stressors children encounter may be more difficult to resolve by children themselves (Ryan-Wenger, 1992).

As a result of these differences in stressors, children are likely to cope differently than adults with stressful events. Consistent with this, Band and Weisz (1988) found that 40% of child-generated coping strategies could not be classified using adult coping classification schemes. For example, children stated that they coped with stressors through the use of aggressive actions, by expressing feelings (e.g., crying), or by doing nothing (i.e., no coping efforts). Furthermore, because of differences in cognitive and social skills, some adult coping strategies are less likely to be available to children (Ryan-Wenger, 1992). Specifically, it appears that problem-focused coping strategies are available to children as young as 6 years of age; however, the use of emotion-focused coping strategies generally increases with age

(Altshuler & Ruble, 1989; Band & Weisz, 1988; Compas, Malcarne, et al., 1988; Compas et al., 1992; Curry & Russ, 1985; Wertlieb, Weigel, & Feldstein, 1987).

Finally, children's developmental capabilities need to be understood and addressed in the construction of any children's measure (Peterson, Harbeck, Chaney, Farmer, & Thomas, 1990; Sullivan, Juras, Gauthier, Nguyen, & Prewitt, 1996). Although the efficacy of obtaining valid information from children has been questioned (Hetherington & Parke, 1986), accurate information can be gathered if questions are modified to suit children's developmental level (Sullivan et al., 1996). For example, the use of simple and concrete language, temporal landmarks in questioning, and visual representations of simple response categories are all useful means of obtaining valid information from children (Clark & Watson, 1995; Sullivan et al., 1996).

Conceptual issues. A number of conceptual issues have been raised in the development of coping measures. Among them are criticisms that existing measures of coping are not comprehensive enough, assessing only a few broad band coping strategies (Aldwin, 1994; Ryan-Wenger, 1992). For example, the Self Report Coping Survey (SRCS; Causey & Dubow, 1993) only assesses two coping strategies (viz., approach coping and avoidance coping). By only focusing on the assessment of a few coping strategies, as numerous measures of children's coping have done (e.g., Brodzinsky, et al., 1992; Dise-Lewis, 1988; Herman-Stahl et al., 1995; Jose, Cafasso, & D'Anna, 1994; Ryan-Wenger, 1990), the complexity and diversity of coping is not recognized (Aldwin, 1994; Schwarzer & Schwarzer, 1996). Although practicality often guides decisions regarding the number of coping strategies that are assessed within a measure, a more broad and fine-grained analysis of coping would enable researchers to better understand the impact of different coping strategies on children's adjustment (Compas, 1987b). As Stone and

Kennedy-Moore (1992) emphasize, many important coping strategies may be overlooked if a comprehensive assessment of coping does not take place. They suggest a "broad sampling" of coping strategies, by deriving items rationally, adopting items from existing scales, as well as obtaining coping items through open-ended interviews with participants.

Another concern in the development of coping measures is the overlap between coping items and between coping categories, which are intended to be conceptually distinct (Ryan-Wenger, 1992). Overlap may occur when questionnaire items have not been written clearly and/or when coping categories have not been defined clearly, resulting in ambiguity as to which coping category an item belongs (Reynolds, 1971). For example, the item "I talk about problems when they appear and do not worry about them later" (Herman-Stahl et al., 1995, p. 657) can potentially reflect several different coping strategies including direct problem solving, support-seeking, minimization, and/or positive cognitive restructuring. Such ambiguity in coping items makes research findings difficult to interpret, since it is unclear what coping strategy is being endorsed; therefore, researchers must strive for conceptual clarity in the definition of coping categories and in the writing of coping items.

When assessing children's coping strategies, the question of whether children should respond to real-life situations (e.g., Causey & Dubow, 1992) or hypothetical situations (e.g., Hoffner, 1993) also exists. Although the latter guarantees that all children will respond to the same event, there are concerns about the accuracy, honesty, and external validity of children's reports to hypothetical situations (Knapp et al., 1991; Schwarzer & Schwarzer, 1996). For example, Brown and her colleagues (1986) found that when children were asked how they would cope with an imagined event (viz., an oral injection from the dentist), a minority of children's responses could not be scored because they had never experienced such an event, and therefore

could not answer the question. Furthermore, even if a child responded to a hypothetical situation, it is not clear whether that child would actually use the coping strategies he/she suggested (Ayers, 1991). Considering these difficulties, it may be advantageous to ask children how they actually coped with real-life stressors which were personally relevant to them (Compas, 1987a).

Knapp and her colleagues (1991) have also advocated that measures of children's coping include an assessment of children's cognitive appraisals. Until recently, this aspect of the coping process was largely neglected in the child coping literature (Sheets, Sandler, & West, 1996). However, as indicated by the contextual theory of coping, individual appraisals of stress will influence how one copes (Lazarus & Folkman, 1984); therefore, it is essential to assess appraisals concurrently with coping. In particular, the following appraisals have been identified as predictive of coping strategies and psychological adjustment among children: (a) the perceived threat of a stressor (Cummings, Davies, & Simpson, 1994; Fearnow, Nicholson, & Kliewer, 1995); (b) children's perceived blame/responsibility for a stressor (Cummings et al., 1994; Grych & Fincham, 1993); (c) the perceived controllability of a stressor (Compas, Malcarne, et al., 1988); and (d) children's perceived coping efficacy (Cummings et al., 1994).

Finally, one of the prevailing issues in the coping literature centres on whether coping should be assessed as a stable disposition or as situation-specific (Aldwin, 1994). In terms of the former, the trait/dispositional or coping style approach regards coping as a stable characteristic, whereby individuals cope consistently across different stressors (Endler & Parker, 1990). Using this approach, researchers ask individuals how they usually cope with stress; therefore, situational variability in coping is not a concern. Psychometrically sound measures of children's coping styles have been developed (Ayers, Sandler, West, & Roosa, 1996), and this area of study warrants attention. However, this approach to coping assessment has been questioned in terms of

whether individuals actually cope consistently across stressors, and whether assessments of coping styles actually reflect coping behaviour within a particular situation (Aldwin, 1994; Lazarus & DeLongis, 1983). In fact, research has shown that individuals are more likely to cope consistently within similar situations (McCrae, 1992). However, when coping is compared across different stressors, variability in coping is evident among children and adults (Compas, Forsythe, & Wagner, 1988; McCrae, 1992; T. B. O'Brien & DeLongis, 1996; Spirito, Stark, Gil, & Tyc, 1995). Research has also shown that reports of individuals' coping styles are only modestly related to actual coping behaviour in specific situations (Carver, Scheier, & Weintraub, 1989), and that reports of coping styles are poor predictors of emotion or adjustment in stressful situations (Carver & Scheier, 1994).

At the other extreme, situation-specific measures of coping are explicitly designed to assess coping within a defined situation. For example, questionnaires exist to assess children's coping with night-time fears (Children's Nighttime Coping Checklist; Mooney, Graziano, & Katz, 1984) or a visit to the dentist (Child Dental Control Assessment; Weinstein et al., 1996). Since these measures are tailored to particular situations, they provide unique information on the coping process for that event. However, these types of measures are not generalizable across different stressors, and therefore can not be used to compare coping across diverse situations.

Although the coping style and the situation-specific approach to coping assessment have their limitations, both methods are valuable and informative and can complement each other in the study of coping. However, neither approach is suitable for investigating cross-situational coping, since the dispositional method ignores situational differences, and the situational approach narrowly focuses on one stressor. Recognizing this dilemma, Lazarus (1990) recommended the use of general coping measures, which could be used to assess coping across

different stressors. For example, the Ways of Coping Questionnaire (Folkman & Lazarus, 1988), an adult coping measure, was designed for this purpose. General coping measures inquire about coping behaviour in response to an identified stressor; however, the items within these measures are general enough to assess coping across a diverse range of situations.

Nonetheless, concerns regarding this approach to coping assessment have also been raised. First, general coping measures have been criticized for having inapplicable items. Research has found that some items within these measures are not applicable to all problem types; therefore, these items are unlikely to be endorsed in response to certain stressors (Stone, Greenberg, Kennedy-Moore, & Newman, 1991). Stone and Kennedy-Moore (1992) explain that "if coping items are problem-specific, then scale scores could have artificial limitations on their magnitude, which could confuse the interpretation of coping efforts across different problems" (p. 209). Nevertheless, this issue can be rectified by using "cross-situationally applicable" (p. 211) items that are relevant across different stressors (Stone & Kennedy-Moore, 1992). In addition, Lazarus (1990) has indicated that general coping measures can be modified slightly, to make them more applicable to specific stressors. Endler and Parker (1990), however, have argued that item modification could interfere with the factorial stability of a measure.

Consequently, the second concern regarding general coping measures is that of factorial instability. Existing measures have been criticized for having unstable factor structures, in comparison to measures of dispositional coping (Endler & Parker, 1990; Parker, Endler, & Bagby, 1993). However, considering that dispositional measures claim to assess stable coping styles, they should have stable factor structures, since factor analysis was developed to uncover stable underlying constructs (DeRidder, 1997). On the other hand, general measures purport to assess variability in coping; therefore, it has been argued that such measures will have a changing

factor structure across different samples (DeRidder, 1997; Latack & Havlovic, 1992; Spirito, 1996; Stone & Kennedy-Moore, 1992). As a result of this, suggestions have been made that general measures of coping may benefit from different methods of test construction, including (a) conducting separate factor analyses for different samples (Aldwin & Revenson, 1987; Spirito, 1996); (b) using a rational approach to scale development (Moos, 1993; Spirito, 1996); or (c) assessing coping constructs with more general and abstract items, rather than specific coping behaviours, so as to make the measure more suitable to factor analysis (Stone & Kennedy-Moore, 1992).

Concerns regarding the appropriateness of factor analysis in the construction of general measures of coping, however, may not be warranted. For example, the factor structure of the Ways of Coping Questionnaire appears to be robust across a multitude of situations and samples (Aldwin, 1994; Clark, Bormann, Cropanzano, & James, 1995; Folkman, 1992b; Tennen & Herzberger, 1985). Slight differences in the factor structure of this measure can be explained by variations in the factor extraction and rotation techniques used by different studies, which would ultimately affect the measure's factorial stability (Mulaik, 1972). McDonald (1985) has also explained that complete factorial invariance can not be expected across different samples, even when the same factor extraction and rotation techniques are used.

Therefore, as Folkman (1992b) has asserted, the benefits of factor analysis appear to outweigh the costs, in terms of producing empirically grounded measures. Folkman also emphasizes that more focus should be placed on developing theoretically grounded measures, where coping items represent "conceptually meaningful domains of coping" (p. 218). She states, "when anchored to theory, factor analysis can be an effective technique to assist developers of coping assessment. If factor analysis is used without a theoretical anchor, it is likely to confuse

issues rather than clarify them" (p. 219). In summary, each approach to coping assessment, dispositional, situational, and general, has its benefits and limitations, and ultimately, the purpose of one's study will determine the type of measure used

Psychometric issues. The psychometric integrity of coping measures has been repeatedly questioned, with concerns raised about methods of test construction, as well as the reliability and validity of existing measures (Boekaerts, 1996; Endler et al., 1993; Parker & Endler, 1992; Schwarzer & Schwarzer, 1996; Spirito, 1996). Issues regarding test construction have focused on whether measures of coping should be constructed using a theoretical/rational approach or an empirical approach. Using the theoretical/rational approach, items are selected on the basis of logic and face validity to represent conceptually distinct and/or theoretically derived constructs (Clark & Watson, 1995). The Coping Response Inventory-Youth Form (CRI-Y; Moos, 1993), an adolescent coping measure, was developed this way, with items selected on the basis of face validity to represent cognitive and behavioural methods of approach and avoidance coping. Empirical means of item-selection included the examination of internal consistencies and item-subscale correlations. A more rigorous method of empirical validation, such as factor analysis, was not undertaken; however, this step is necessary for establishing the unidimensionality or homogeneity of a scale (Clark & Watson, 1995). In other words, factor analysis must be used to definitively state that the items composing a scale measure the same construct. In summary, although measures created with the rational approach have considerable conceptual and theoretical clarity, their psychometric integrity is questionable due to a lack of rigorous empirical validation (Parker and Endler, 1992).

On the other hand, empirically derived coping measures have been largely constructed using exploratory factor analysis (e.g., Causey & Dubow, 1992; Dise-Lewis, 1988; Patterson &

McCubbin, 1987; Rossman, 1992; Wills, 1986). Exploratory factor analysis identifies the underlying factor structure of a measure when no a priori hypotheses exist regarding its factor structure (Mulaik, 1988). However, measures based solely on an empirical approach may lack conceptual and/or theoretical integrity (Schwarzer & Schwarzer, 1996). Specifically, the emergent factors from an exploratory factor analysis often lack conceptual cohesiveness, with items representative of many different coping strategies loading onto the same factor. For example, the Child Perceived Coping Questionnaire (CPCQ; Rossman, 1992) has a factor labelled "Use of Caregiver" that includes coping items reflective of parental support and direct problem solving. Conceptually distinct scales are needed, as research has demonstrated that different coping strategies have different implications for children's adjustment. For example, direct problem solving is more useful in controllable situations (Compas, Malcarne, et al., 1988), whereas support-seeking is useful in both controllable and uncontrollable situations (Lazarus & Folkman, 1984). Measures that do not recognize these distinctions will confound the results of studies on children's coping.

Another concern with exploratory factor analysis is that different factor structures can emerge for the same measure depending on (a) the type of factor extraction and factor rotation techniques used; (b) the decision criteria used for determining the number of factors to retain; (c) whether the factor analysis was conducted at the item or scale level; and (d) subjective criteria, in terms of how the researcher interprets the factor analysis (Hair, Anderson, Tatham, & Black, 1995; Gorsuch, 1983; Mulaik, 1972). For example, factor analyzed at the item-level, the Adolescent Coping Orientation for Problem Experiences (A-COPE; Patterson & McCubbin, 1987) was originally shown to have 12 factors; however, when re-factor analyzed at the scale-level, the A-COPE was found to only have two factors (Hanson et al., 1989).

Given the limitations of either approach to test construction, there has been increasing recognition that measures of coping must be both theoretically *and* empirically based (Aldwin, 1994; Carver et al., 1989; Folkman, 1992b; Schwarzer & Schwarzer, 1996). Confirmatory factor analysis has been identified as a preferred means towards achieving this goal (Endler et al., 1993; Floyd & Widaman, 1995), and has been used with success in the development of coping measures (Ayers et al., 1996). Using confirmatory factor analysis, theoretical suppositions can initially guide the development of a measure, thus enhancing its conceptual clarity. Empirical analysis can then be used to validate the theorized structure of the measure.

Finally, concerns about the reliability of coping measures have also been raised in the literature (Parker & Endler, 1992; Parker & Endler, 1996). The first concern regards the internal consistency of coping measures. Although internal consistencies of $\alpha = .70$ are required as evidence of moderate reliability (Folkman, 1992b; Kline, 1993), low internal consistencies are evident among many measures of children's coping. For example, four of the six coping scales of the CPCQ (Rossman, 1992) have internal consistencies below $\alpha = .70$. Internal consistencies on the Children's Coping Strategies Checklist (CCSC; Ayers et al., 1996) range from $\alpha = .34$ to $\alpha = .72$, with 8 of its 11 scales falling below $\alpha = .70$. Nunnally (1978) has indicated that low internal consistencies are a function of scales that contain few items, and/or scales that lack conceptual homogeneity. Secondly, disagreement also exists over the appropriateness of using test-retest reliability to evaluate measures of coping. Folkman (1992b) has indicated that test-retest reliability is inappropriate for situational measures of coping due to the changing nature of coping across stressors. However, Parker and Endler (1996) have suggested that test-retest reliability can be assessed, even with situational measures, by comparing coping across similar stressors.

Development of the Children's Coping Questionnaire

As is evident from the above-stated review, many issues need to be taken into consideration in coping assessment. Existing measures of children's coping, however, have not been able to rectify many of these concerns (Boekaerts, 1996; Knapp et al., 1991). Therefore, in an attempt to address some of these limitations, the Children's Coping Questionnaire (CCQ; Fedorowicz & Kerig, 1998) was developed. The CCQ is an 81-item comprehensive self-report measure of children's coping which assesses 14 conceptually distinct coping strategies, including: (a) cognitive decision making, (b) direct problem solving, (c) positive cognitive restructuring, (d) expressing feelings, (e) distracting actions, (f) avoidant actions, (g) cognitive avoidance, (h) support-seeking, (i) negative cognitions/worrying, (j) aggressive actions, (k) no coping effort, (l) withholding feelings, (m) wishful thinking, and (n) self-calming/affect regulation. Table 1 provides a brief definition and example of each coping category (see Appendix A for a complete list of items).

The CCQ was constructed as a general measure which could be used to assess coping in school-age children across a variety of stressors. Children respond with regard to the most troublesome stressor they have recently encountered, out of a choice of three stressors: (a) problems with school-work; (b) problems getting along with peers; or (c) problems with family members. These events have been identified as commonly occurring stressors in children's lives (Compas, 1987a; Lewis, Siegel, & Lewis, 1984; Matheny, Aycock, & McCarthy, 1993; Spirito et al., 1991; Yamamoto & Byrnes, 1984). Consequently, by limiting children's choices to three stressors, some control was retained over the range of situations children could respond to, thus allowing a comparison of coping across events. Furthermore, children were asked to respond to real-life stressors to avoid the disadvantages inherent in using hypothetical scenarios (Knapp et

al., 1991).

Questions regarding children's cognitive appraisals of stress were also included in the measure, since appraisals have been shown to influence children's choice of coping strategies and, subsequently, their adjustment (Knapp et al., 1991). Specifically, questions were included regarding children's appraisals of (a) perceived threat (i.e., one's perception of the severity of a stressor) (b) perceived blame/responsibility (i.e., one's perception of having been responsible for causing a stressor), (c) perceived control (i.e., one's perception of the changeability of a stressor), and (d) perceived coping efficacy (i.e., subjective evaluation of whether one's coping efforts were successful; Aldwin & Revenson, 1987). It should be recognized that although perceived coping efficacy is considered an appraisal, as it reflects an individual's perceptions, it is also analogous to an outcome index, since it reveals one's evaluation of success in coping (Reid et al., 1993; Reid et al., 1995; Zautra et al., 1989; Zautra & Wrabetz, 1991).

Items for the CCQ were written by the authors (Fedorowicz & Kerig, 1998), derived through semi-structured interviews with children (Kerig, 1994), and selected from existing measures of children's coping (Ayers et al., 1996; Brodzinksy et al., 1992; Causey & Dubow, 1992; Dise-Lewis, 1988; Rossman, 1992; Ryan-Wenger, 1992; Spirito et al., 1991), in order to obtain a broad-sampling of items, as suggested by Stone and Kennedy-Moore (1992). In addition, items were written or selected on the basis of their cross-situational applicability (Stone & Kennedy-Moore, 1992) and their developmental appropriateness (i.e., simple and concrete) for children aged 7 to 11 years. A pilot study on 44 children revealed that the internal consistencies for the 14 coping scales of the CCQ ranged from $\alpha = .63$ to $\alpha = .91$. Based on these analyses and feedback from children, some items were modified to increase clarity; however, in general, children as young as 7 years had little difficulty understanding the items. In addition, as suggested

by Haynes, Richard, and Kubany (1995), the content validity of the CCQ was judged by having research assistants trained in the coding of coping strategies classify the coping items according to the 14 coping strategies. Inter-rater agreement was high with Cohen's kappa ranging from .94 to .99, demonstrating that the items on the CCQ were conceptually distinct.

Psychometric properties of the CCQ. An initial investigation into the reliability and factorial validity of the measure has been conducted (Fedorowicz, 1995). Cronbach's alpha was computed for each coping scale, as an index of internal consistency/reliability. Eleven of the 14 scales had moderately high levels of internal consistency, with coefficient alpha being greater than .70, as recommended by Kline (1993). These levels of internal consistency were comparable to other measures of children's coping, and in some cases higher (e.g., Ayers et al., 1996; Causey & Dubow, 1992; Rossman, 1992).

The factorial validity of the CCQ was examined using confirmatory factor analysis. This statistical technique was used because it allows one to test a theoretical basis for a measure by specifying the number of factors anticipated, and the relationships of each item to each factor (Byrne, 1989). Therefore, a measure can be empirically validated and theoretically grounded. In addition, by using confirmatory factor analysis, it was more likely that the derived factors would be conceptually cohesive.

As hypothesized, the CCQ was found to have 14 primary factors which represented the 14 coping scales of the measure. Specifically, a confirmatory factor analysis conducted at the scale level revealed that the items within each coping scale fit a unidimensional factor model; however, the error terms for certain pairs of items were allowed to correlate within some of these models. The added error covariances captured excess variance in the error terms which appeared to reflect other undetected variables; mainly, more minor distinctions in coping

strategies. For example, within the coping scale of Wishful Thinking, two items, whose errors were allowed to correlate, distinguished themselves from other items within the scale as they also reflected praying; a coping strategy which could be evaluated independently in of itself. Nonetheless, since such minor distinctions did not warrant breaking up the scales into even finer distinctions of coping, error covariances were added to capture the excess variance within the error terms (for a review, see Byrne, 1995; Hoyle, 1995). Overall, these analyses showed that the items within each coping scale fit a unidimensional factor model, implying that the factors were unidimensional or homogeneous (meaning that the items composing the factor are all measuring the same construct) and providing evidence for the construct validity of the measure (Clark & Watson, 1995).

Secondly, confirmatory factor analysis was used to examine the higher-order/secondary factor structure of the measure. The higher-order factor structure of the CCQ was tested using two models: (a) problem-focused versus emotion-focused versus non-constructive coping; and (b) approach versus avoidance versus non-constructive coping. Both the distinctions between problem-focused and emotion-focused coping (Lazarus & Folkman, 1984) and approach and avoidance coping (Moos; 1993; Roth & Cohen, 1986) represented the conceptual frameworks of coping commonly used in the adult coping literature. However, since these frameworks did not address the developmental differences found in children's coping, non-constructive coping was also included in both models. As indicated previously, non-constructive coping has been found to be an empirically viable coping category in the children's coping literature. Within these models, the primary factors, identified through the first confirmatory factor analysis, were hypothesized to load onto these secondary factors, according to a priori relationships. However, both of these models were rejected due to a lack of fit of the hypothesized models to the actual data.

In cases where confirmatory structural models do not fit the data, Gorsuch (1997) suggests following up with exploratory factor analysis. Using exploratory factor analysis, where no a priori relationships were specified between the primary and secondary factors, it was shown that the CCQ still fit a three-factor model representing the distinction between Approach coping (cognitive decision making, direct problem solving, support seeking, positive cognitive restructuring, self-calming, and wishful thinking), Avoidance coping (avoidant actions, cognitive avoidance, distracting actions, no coping effort, and withholding feelings), and Non-Constructive coping (negative cognitions/worrying, aggressive actions, and expressing feelings). This latter analysis revealed that the coping scales loaded onto the secondary factors of Approach, Avoidance, and Non-Constructive coping, in slightly different ways than specified in the confirmatory factor analysis. Specifically, the strategy of self-calming loaded onto Approach, rather than Avoidance; the strategy of no-coping loaded onto Avoidance, rather than Non-Constructive coping; and, the strategy of expressing feelings loaded onto Non-Constructive coping, rather than Avoidance.

In consideration of the emergent factor structure, it was determined that the factor of Non-Constructive coping would best be epitomized with the term *Venting*. Since the strategy of expressing feelings now loaded onto this latter factor, it was decided that the term non-constructive coping did not accurately reflect the coping strategies within this factor; particularly, since the strategy of expressing feelings did not meet the definitional criteria for non-constructive coping. In addition, the term venting had a less negative connotation associated with it compared to the term non-constructive coping. As noted previously, Folkman (1992a) has stated that coping should not be evaluated as either good or bad on an a priori basis. Rather, it is only within the context of a stressor that the effectiveness of a coping

strategy can be evaluated, by relating it to an outcome, or by evaluating its goodness of fit. In consideration of these issues, this factor was renamed Venting, referring to the expression of emotions, whether through aggression, worrying, or catharsis.

In summary, this research revealed that the CCQ was a promising measure of children's coping, with 14 primary factors reflecting different types of coping strategies and three secondary factors differentiating between Approach, Avoidance, and Venting. However, this was only the first step in its construction, since repeated demonstrations of its reliability and validity would be needed to establish its psychometric integrity (Clark & Watson, 1995; Smith & McCarthy, 1995).

Validation of the CCQ

The purpose of the present study was to investigate the psychometric properties of the CCQ. In particular, the goals of this study were to explore the factorial stability of the measure across gender and stressors. In addition, the construct validity of the measure was investigated by (a) identifying stressor and gender differences in coping and cognitive appraisals; and by (b) examining the relationships between children's cognitive appraisals of stress and their coping strategies. Consequently, considering that research on the relationships between children's appraisals of stress and coping is sparse (Rudulph, Denning, & Weisz, 1995; Sheets et al., 1996), this research also made a unique contribution to the child coping literature in its investigation of these relationships. In the following review, issues relevant to measurement invariance and the construct validation of children's coping measures will be reviewed.

Measurement Invariance

A key measurement issue that has generally not been addressed in the child coping literature has been the need to demonstrate the factorial invariance of questionnaires across

groups. This step needs to be taken in order to establish that measures of coping assess the same constructs across different groups, and before valid comparisons of mean differences between those groups can be made (Byrne, 1995; Byrne et al., 1989; Floyd & Widamann, 1995; Horn & McArdle, 1992; Pentz & Chou, 1994; Reise, Widaman & Pugh, 1993). The significance of this issue has been adamantly stated by Hoyle and Smith (1994):

> Among the most overlooked hypotheses in clinical assessment research are those that concern measurement invariance. The question of measurement invariance concerns the degree to which a construct or a measure of a construct retains its meaning across groups. ... The issue of measurement invariance is a profound one because the comparison of means between groups ... on a measure that is not invariant is meaningless. Indeed the comparison of means where there is considerable departure from invariance is a classical example of "comparing apples and oranges." (p. 433)

Therefore, the importance of establishing the factorial invariance of a measure across groups cannot be underestimated.

When the factor structure of a measure is found to be invariant across groups, this indicates that the measure is not biased towards the groups being compared, even though the groups may be different on other statistical indices (e.g., means, correlations, etc.; McArdle, 1996). A good fit of the factor structure across groups, however, does not mean that the factor structures for all the groups need to be identical (McDonald, 1985). Hoyle and Smith (1994) have explained that, in general, the factor structures of most measures are partially variant between different groups. At minimum though, the number of factors, the general pattern of factor loadings, and the size of at least one factor loading should be the same across groups before comparisons are made (Hoyle & Smith, 1994; Byrne et al., 1989). If these minimum criteria can

not be reached, then the researcher is left with the option of constructing separate scales for each group (e.g., different coping scales for boys and girls); however, this would then preclude any further comparisons across those groups (Floyd & Widaman, 1995). Another option would be to use only the scales from the measure that were cross-validated for both groups (Floyd & Widaman, 1995).

Measurement invariance can be tested in both exploratory and confirmatory factor analysis. In exploratory factor analysis, the congruence coefficient, for example, can be computed to compare the factor structure of a measure across groups (Gorsuch, 1983). In confirmatory factor analysis, the factor structure of a measure can be tested across groups, using a variety of goodness of fit indices (Jöreskog & Sörbom, 1993). Analyses proceed from a restricted model, where the number of factors, the factor loadings, the factor correlations, and the error variances are proposed to be invariant, to a less constricted model, where these aspects of the model are allowed to differ across groups (Jöreskog & Sörbom, 1993).

Investigations of measurement invariance in the coping literature. In the coping literature, factorial invariance across gender and different stressors is particularly salient. In terms of gender, Endler and his colleagues (1993) have remarked that gender-related differences in coping have been largely ignored by researchers, even though the significance of paying heed to these differences has been established by previous studies. In the child coping literature, numerous studies have found gender differences in children's coping (Causey & Dubow, 1992; Frydenberg & Lewis, 1993; Herman-Stahl et al., 1995; P. M. Miller, Danaher, & Forbes, 1986; Ryan, 1989; Spirito et al., 1995), suggesting the importance of investigating the factorial stability of coping measures across boys and girls.

In a review of the literature, this author could only find three studies that have examined

the factorial stability of children's coping measures across gender. Causey and Dubow (1992) examined the factor structure of the Self-Report Coping Scale (SRCS) using exploratory factor analysis. They examined the factor solutions for the measure separately for boys and girls, reporting that the "resulting patterns were generally consistent with the factor patterns found for the entire sample" (p. 51); however, no statistics such as congruence coefficients were reported to empirically validate this supposition.

Brodzinsky and his colleagues (1992) compared the factor structure of the Coping Scale for Children and Youth (CSCY) across gender, by running a canonical correlation between the factor loadings of the measure for boys and girls; they found that the factor loadings were similar (i.e., the canonical correlation was significant). However, Cattell (1988) has criticized this technique, indicating that the process of correlating factor loadings is one of the "poorest" methods of examining invariance, and that the coefficient of congruence is a "better index" for comparing factor loadings.

Finally, Ayers and his colleagues (1996) used Box's M test to compare the homogeneity of the covariance matrices for boys and girls on both a dispositional (CCSC) and situational measure of coping (How I Coped Under Pressure Scale; HICUPS). The covariance matrices on the CCSC varied across boys and girls; therefore, a series of confirmatory factor analyses were performed to identify the source of invariance. Using a less constrained model of factorial invariance, these authors concluded the CCSC was invariant for gender. Box's M test was also used to compare the covariance matrices of the HICUPS for boys and girls, with results indicating that the covariance matrices did not differ as a function of gender; therefore, the authors did not follow up with a confirmatory factor analysis to examine whether the factor loadings, factor correlations, and error terms were invariant for boys and girls. In summary,

though research points to the fact that measures of children's coping should be invariant across gender, few studies have examined this issue. Those that have did not examine the issue of factorial invariance comprehensively.

A second area requiring investigation relates to the assessment of factorial invariance across different stressors. This is particularly important for general coping measures, such as the CCQ, which assess coping among different events and therefore should have a stable factor structure across those events in order to allow for meaningful and valid comparisons between stressors. In addition, given the widespread evidence for situational differences in coping (Compas, Forsythe, et al., 1988; McCrae, 1992; T. B. O'Brien & DeLongis, 1996; Reid, Dubow, & Carey, 1995; Spirito et al., 1995), it is vital to ensure that those differences are real and meaningful and not artifacts of an unstable factor structure. For these reasons the factorial invariance of coping measures across different stressors should be investigated.

Only two studies have investigated the factorial stability of coping measures across different stressors; however, these were only cursory examinations. For example, Causey and Dubow (1992) compared the factor loadings of the SRCS with regard to two events, peer stress and academic stress, and declared that the factor loadings were "similar" for both. In addition, the higher-order factor structure of the SRCS was compared across four stressors (viz., diabetes-related social situation, diabetes-related finger-prick, diabetes-related diet, and a general peer argument), with the authors finding that a two-factor solution accounted for 58% to 74% of the variance in the four situations (Reid et al., 1995). However, neither study reported any statistical indices of factorial invariance. Therefore, although it appears that children's coping measures should have the same factor structure across different stressors, a more empirically rigorous examination of this issue needs to take place.

Construct Validation

An issue which has been commonly neglected in the coping literature is that of providing sufficient evidence for the construct validity of coping measures (Endler & Parker, 1994; Parker & Endler, 1992). Construct validity reflects "the degree to which an assessment instrument measures the targeted construct" (Haynes et al., 1995, p. 239). The process of construct validation entails the empirical testing of hypothesized relationships between the construct measured by the test and other constructs, as delineated by theory and existing research regarding the construct (Cronbach & Meehl, 1955). If the test measures what it claims to, these relationships should be validated, given that the theory and research supporting the construct is well-articulated and established. However, the process of construct validation is extensive, as the meaning of a test can only be established through a series of studies (Clark & Watson, 1995).

In the study of coping, one aspect of construct validation would require that studies using new measures of coping evidence findings consistent with the contextual theory of stress and coping (Lazarus & Folkman, 1984) and with existing research on children's coping. Specifically, this would involve demonstrating that there are stressor and gender differences in cognitive appraisals of stress and coping, and that cognitive appraisals of stress are related to children's choices of coping strategies.

One consideration that must be recognized, however, is that the contextual theory of stress and coping was developed as a theory of adult coping processes. Although aspects of this theory have been validated with children, it is not clear whether all the suppositions of this theory will be substantiated in the child coping literature. However, as no theory of children's coping exists, the best guidance in this realm is provided by the contextual theory of stress and coping. In the following sections, theory and research on gender and stressor differences in cognitive

appraisals of stress and coping will be reviewed, in addition to theory and research on the relationships between cognitive appraisals and coping.

Stressor and gender differences in cognitive appraisals of stress. As outlined earlier, the meaning of an event is defined through the process of cognitive appraisal (Lazarus & Folkman, 1984). In addition, cognitive appraisals of stress determine the coping response and influence an individual's level of adjustment (Folkman, 1992a). Given the pivotal role cognitive appraisals play in the coping process, increasing attention has been devoted to studying appraisals in children, with the majority of research taking place in the last 5 years. In the child coping literature, research has been particularly focused on investigating appraisals of perceived control, perceived threat, perceived blame/responsibility, and perceived coping efficacy. Although the investigation of stressor and gender differences in cognitive appraisals has not been the primary focus of most of this research, a minority of studies have explored this matter.

According to the contextual theory of coping, it is posited that cognitive appraisals of stress will vary by the situation, just as coping does (Lazarus & Folkman, 1984; Folkman, Lazarus, Gruen & DeLongis, 1986). Research on children's cognitive appraisals has been consistent with this hypothesis, but has been limited to investigations of the cross-situational stability of perceived control. For example, perceptions of control have been shown to vary across different stressors, with perceived control being higher for academic stressors than interpersonal or peer stressors (Causey & Dubow, 1992; Compas, Malcarne, et al., 1988). On the other hand, Reid and his colleagues (1995) found that perceived control was higher for peer stressors as compared to health-related stressors such as diabetes. In the adult coping literature, research on other cognitive appraisals, such as causal attributions for stress (Compas, Forsythe, et al., 1988), as well as primary appraisals of stakes and secondary appraisals of coping options

(Folkman et al., 1986), has also shown that cognitive appraisals vary across different stressors.

In terms of gender differences in cognitive appraisals, the contextual theory of coping does not make any assumptions about this issue. Research in the adult coping literature has shown inconsistent results in this regard, with some studies documenting gender differences in appraisals (Ptacek, Smith, & Zanas, 1992), and others not finding differences between men and women (Porter & Stone, 1995). In the child coping literature, gender differences have not been documented in the majority of studies. In particular, no differences have been found between boys and girls for appraisals of threat, self-blame, control, coping efficacy, or challenge, with respect to academic or peer stressors, general stress (i.e., no specific stressor identified), and interparental conflict (Causey & Dubow, 1993; Compas, Malcarne, et al., 1988; Grych & Fincham, 1993; Halstead, Johnson, & Cunningham, 1993; Kerig, Fedorowicz, Brown, Patenaude, & Warren, in press; Mantzicopoulos, 1997; M. O'Brien, Bahadur, Gee, Balto, & Erber, 1997). However, contrary to this, research on life events, where children are asked to document the extent of major stressors and daily hassles in their lives, has shown that girls consistently rate such events to be more upsetting and stressful than boys (Kanner, Feldman, Weinberger, & Ford, 1987; Pryor-Brown & Cowen, 1988; Pryor-Brown, Cowen, Hightower, & Lotyczewski, 1986; Wagner & Compas, 1990). Therefore, it is possible that girls may differ from boys on appraisals of perceived threat, a construct similar to the ratings of stressfulness obtained in life events research.

In summary, the existing research documents the situational variability in cognitive appraisals of stress among children, with research pointing to the fact that academic stressors are more controllable. On the other hand, gender differences in cognitive appraisals of stress appear to be less common, with the exception of potential differences in perceived threat between boys

and girls.

Stressor and gender differences in coping. Numerous studies have investigated stressor and gender differences in children's coping. In terms of situational differences, the contextual theory of coping delineates that coping is situation-specific (Lazarus & Folkman, 1984); therefore, variability in coping across different stressors would be expected. This tenet of the theory has been confirmed in the child coping literature (e.g., Reid et al., 1995; Roecker, Dubow, & Donaldson, 1996; Spirito et al., 1991; Stern & Zevon, 1990). In general, research has demonstrated that coping strategies are relatively stable across similar stressors (e.g., different types of academic problems), but varied across different types of situations (e.g., health-related problems vs. academic problems; Compas, Forsythe, et al., 1988; Spirito et al., 1995).

Nevertheless, even though this general conclusion about cross-situational coping has been reached, there has still been considerable inconsistency regarding the specific types of coping strategies that vary across different stressors. For example, Causey and Dubow (1992) compared children's coping across academic and peer stressors, and found that children used more direct problem-solving and support-seeking for coping with academic stressors, whereas they used externalizing (i.e., aggressive action and expressing feelings) more often with peer stressors. Contrary to this, Brodzinsky and his colleagues (1992) found that children used support-seeking more often with peer stressors. These researchers found no other distinctions in coping between academic and peer stress, although other differences in coping were found in comparisons of academic and peer stressors to family stressors (e.g., more direct problem-solving used for academic stressors, as compared to family stressors).

To a large extent, these inconsistencies in research findings can be attributed to the use of flawed coping measures. As noted previously, existing measures of coping are limited in a

number of ways. For example, they do not assess the same types of coping strategies. As a result, it is impossible to compare the cross-situational stability of many coping strategies. In addition, many coping measures contain scales of coping that are not conceptually distinct; therefore, even though scales are named to reflect a particular coping strategy, they may in fact contain items exemplifying several different coping strategies. Consequently, this would make it impossible to validly examine differences in coping strategies across any context. In spite of this, replicated findings still point to the conclusions that coping is variable across different stressors, and that problem-focused or approach coping is favoured by children for academic stressors (Band & Weisz, 1988; Brodzinsky et al., 1992; Causey & Dubow, 1992; Compas, Malcarne, et al., 1988; Halstead et al., 1993). This latter finding is consistent with research that indicates controllable stressors, such as academic events, are more amenable to problem-focused or approach coping (Compas, Malcarne, et al., 1988).

Gender differences in coping are not addressed by the contextual theory of stress and coping. Nonetheless, this issue has been investigated in the adult coping literature, with mixed results emerging regarding the existence of differences in coping behaviour for men and women. Some researchers have suggested that men and women are socialized to cope differently due to gender role stereotypes and expectations, with men using more problem-focused coping and women using more emotion-focused coping and support-seeking (Ptacek et al., 1992; Ptacek, Smith, & Dodge, 1994). However, these assumptions have been challenged.

First, researchers have asserted that the stereotypical differences found between men and women are actually a function of gender differences in stressor experiences, rather than in coping (Lazarus, 1993; Porter & Stone, 1995). Specifically, studies have shown that men and women differ in the types of problems or stressors they identify (e.g., women report more family and

health stressors, whereas men report more work-related stressors; Folkman & Lazarus, 1980). It is also known that problem content is predictive of particular types of coping strategies (e.g., problem-focused coping more suited to work-related stressors; Folkman & Lazarus, 1980). Therefore, it has been suggested that men and women do not actually differ in the types of coping strategies they use; rather, it may only appear this way because most studies ask about coping without regards to a specific event (Porter & Stone, 1995). Hence, gender differences in stressor experiences are being confounded with gender differences in coping. Secondly, Porter and Stone (1995) have also proposed that gender differences in coping must be distinguished from gender differences in cognitive appraisals. Cognitive appraisals of stress are clearly related to an individual's choice of coping strategies. Consequently, Porter and Stone have asserted that "in order to determine whether there are gender differences in coping, gender differences in appraisal ... should be assessed and controlled" (p. 187), so that gender differences in cognitive appraisals and coping are not confounded.

In a study of these issues, Porter and Stone (1995) found numerous differences between men and women for problem content. However, only minimal gender differences were found in coping, after controlling for cognitive appraisals of stress, and with analyses being conducted separately for each problem category. Specifically, out of a comparison of nine coping strategies, across eight different problem categories, only one gender difference was found on a coping strategy (i.e., only 1 out of 72 comparisons was significant). In general, this study supported the notion that gender differences existed in problem content, not in coping strategies. Concerned with the same confounds, Ptacek and his colleagues (1994) examined gender differences in a controlled laboratory study of academic stress. Contrary to Porter and Stone, they did find gender differences in coping, with men using more problem-focused coping and women using more

emotion-focused coping and support-seeking; they did not find gender differences in cognitive appraisals of stress. They concluded that gender differences in coping existed, even when problem content was controlled for.

In the child coping literature, inconsistent results have emerged when gender differences in coping are examined across an aggregation of different stressors, or when problem content is controlled for and coping is examined with respect to an identified event. Multitudes of studies have been conducted on this issue, with the majority documenting gender differences in children's coping with regards to peer, school, family, and general stress (i.e., specific stressor not identified); however, the specific differences that emerge between boys and girls are often contradictory among various studies (Bryant, 1992; Herman-Stahl et al., 1995; Reid et al., 1995; Spirito, Stark, & Williams, 1988). In addition, a few studies have failed to find any differences between boys and girls on coping behaviour (Causey & Dubow, 1993; Compas, Malcarne, et al., 1988; Mantzicopoulos, 1997; M. O'Brien et al., 1997). As with the literature on situational differences in coping, some of the inconsistencies in these results can be attributed to the use of flawed coping measures.

Despite this concern, a few findings regarding gender differences in children's coping have emerged repeatedly, thus raising confidence in their reliability. In particular, research has shown that girls engage in more support-seeking when coping with peer, family, school, illness-related, or general stress (Bird & Harris, 1990; Brodzinsky et al., 1992; Causey & Dubow, 1992; Frydenberg & Lewis, 1991; Frydenberg & Lewis, 1993; Halstead et al., 1993; Hastings, Anderson, & Kelley, 1996; Ryan, 1989; Roecker et al., 1996; Romano, 1997; Rossman, 1992; Spirito et al., 1995; Wertlieb et al., 1987). Girls also tend to use more negative cognitions/worrying in coping with all the aforementioned stressors, except for school stress

(Brown et al., 1986; Causey & Dubow, 1992; Grant & Compas, 1995; Roecker et al., 1996). On the other hand, boys have been found to engage in more aggressive actions and avoidance (i.e., cognitive avoidance, avoidant actions, distracting actions) when coping with peer, school, or general stress (Bird & Harris, 1990; Causey & Dubow, 1992; P. M. Miller et al., 1986; Ryan, 1989; Roecker et al., 1996; Romano, 1997). However, no studies in the child coping literature have examined gender differences in coping strategies while controlling for gender differences in cognitive appraisals of stress, as has been done in the adult coping literature. This issue needs to be investigated, in order to verify that the above-stated gender differences in coping are not confounded with gender differences in cognitive appraisals.

It should also be noted that the interaction between stressor type and gender has been investigated, in order to identify whether gender differences in coping change, depending on the stressor identified by children. However, this hypothesis has not been confirmed, indicating that for children, gender differences in coping are similar across different types of stressors (Brodzinsky et al., 1992; Spirito et al., 1991).

In summary, it is clear that children's coping varies across different stressors and by gender. Specifically, it appears that children use more problem-focused or approach coping with academic stressors. In addition, girls appear to use more support-seeking and negative cognitions/worrying, whereas boys use more avoidance and aggressive actions. Furthermore, research suggests that these patterns of gender differences in coping are comparable across different stressors.

Relationships among cognitive appraisals, coping strategies, and outcome. According to the contextual theory of coping, cognitive appraisals of stress define the meaning of an event for an individual, and determine the choice of coping strategies for dealing with a stressor (Lazarus

& Folkman, 1984). The effectiveness of various coping strategies can be evaluated by examining the relationships between coping and outcome (i.e., outcome model), and by evaluating the goodness-of-fit of a coping strategy (i.e., goodness-of-fit model; Folkman, 1992a). With regard to the outcome model, coping strategies are deemed effective or adaptive when they are associated with a positive outcome (i.e., high perceived coping efficacy or low anxiety); ineffective coping strategies are those that are related to a negative outcome (i.e., low perceived coping efficacy or high anxiety). On the other hand, according to the goodness-of-fit model, the appropriateness of a coping strategy is based on the fit between reality and appraisals and the fit between appraisals and coping. In terms of the fit between reality and appraisals, appraisals should correspond to what is objectively occurring in the situation, so that an individual can cope adaptively with a stressor. For example, if a situation is incorrectly appraised as harmless when it is in fact threatening (e.g., exposure to interparental violence), an individual may decide not to take the necessary steps to cope with that event. The fit between appraisals and coping concerns the match between situational appraisals of the stressor and the types of coping strategies an individual decides to use. For example, problem-focused coping or approach coping is more appropriate for situations that are appraised as controllable.

In this study, coping was evaluated according to both the goodness-of-fit model and the outcome model. Specifically, the relationships between appraisals (i.e., perceived control, threat, and blame) and coping strategies, coping strategies and outcome (i.e., perceived coping efficacy), and appraisals and outcome were investigated, as done previously in the adult coping literature (Folkman et al., 1986). The hypotheses regarding these relationships was guided by the contextual theory of coping and by existing research on these relationships in the child and adult coping literature.

In terms of the relationships between appraisals and coping strategies, most of the research in the child coping literature has explored the link between appraisals of control and coping. According to the contextual theory of coping, when events are perceived to be controllable, problem-focused coping is most effective, whereas when events are perceived to be uncontrollable, emotion-focused coping is most adaptive (Folkman, 1984; Lazarus & Folkman, 1984). When problem-focused coping is used for situations that are uncontrollable, it is posited that an individual's coping efforts are likely to be ineffective, resulting in poorer adjustment to the stressor (Folkman, 1984). A number of studies have confirmed that perceptions of control are predictive of problem-focused or approach coping (Causey & Dubow, 1993; Ebata & Moos, 1994; Forsythe & Compas, 1987; Gamble, 1994; Reid et al., 1995; Roecker et al., 1996). However, the link between perceptions of control and emotion-focused coping or avoidant coping has not been consistently established among studies of coping in children (Compas, Banez, Malcarne, & Worsham, 1991; Compas, Malcarne, et al., 1988; Fedorowicz, Kerig, Brown, & Warren, 1995; Roecker et al., 1996).

The relationship between perceived threat and coping is such that as levels of perceived threat increase, it is theorized that problem-focused coping decreases, whereas emotion-focused coping increases (Lazarus & Folkman, 1984). In particular, Lazarus and Folkman have articulated that "the greater the threat, the more primitive, desperate, or regressive emotion-focused forms of coping tend to be" (p. 168). This implies, for example, that as levels of threat increase, children may be more likely to cope through the use of aggressive actions or negative cognitions/worrying. Consistent with the contextual theory of coping, research in the adult coping literature has established that as perceived threat increases, problem-focused coping decreases and emotion-focused coping increases (Aldwin, 1991). Only a few studies have examined this

relationship in the child coping literature; however, research has shown that higher levels of perceived threat are associated with the greater use of avoidance (Compas, Worsham, Ey, & Howell, 1996) and emotional discharge (i.e., the expression of negative feelings; Ebata & Moos, 1991).

The contextual theory of coping does not provide any direction for the relationships that should be expected between perceptions of blame/responsibility and coping strategies; however, these relationships have been examined in studies of children's coping. For example, Ebata and Moos (1994) found that adolescents who blamed themselves for the occurrence of a self-identified stressor tended to use more emotional discharge and cognitive avoidance for coping with that stressor. Kerig (1996) also found that higher levels of perceived blame were predictive of avoidant coping among girls exposed to interparental conflict. Therefore, it would appear that as levels of perceived blame increase, children are likely to deal with a stressor through avoidant or emotion-focused coping; alternatively, it would be reasonable to assume that efforts at approach coping or problem-focused coping would decrease.

The relationships between coping strategies and outcome, namely, perceived coping efficacy, have also been investigated in the child coping literature. In general, research has found that approach coping (viz., support-seeking and direct problem solving) is predictive of higher perceived coping efficacy, whereas avoidant coping and venting (viz., aggressive actions, negative cognitions/worrying, and expressing negative feelings) have been associated with lower levels of perceived coping efficacy with respect to academic, peer, and health-related stressors (Causey & Dubow, 1993; Reid et al., 1995). Aldwin (1991) has confirmed similar results in the adult coping literature, finding that problem-focused coping was associated with higher perceived coping efficacy, and emotion-focused coping was associated with lower perceived coping

efficacy.

Finally, a few studies of children's and adults' coping have also examined the relationships between cognitive appraisals of stress and outcome. In particular, Causey and Dubow (1993) found that higher levels of perceived control were associated with higher levels of perceived coping efficacy among adolescents coping with academic stressors. Research in the adult coping literature has also shown that higher levels of perceived threat were associated with lower levels of perceived coping efficacy (Aldwin, 1991; Aldwin & Revenson, 1987). Although this relationship has not been examined directly in the child coping literature, Cummings and his colleagues (1994) found that higher levels of perceived threat were associated with lower levels of adjustment for children coping with exposure in interparental conflict; therefore, it can be inferred that increased levels of perceived threat would also be associated with decreased levels of perceived coping efficacy. These researchers also found that increased perceptions of self-blame were predictive of poorer adjustment among children; therefore, it can also be reasoned that higher levels of perceived self-blame would be associated with lower levels of perceived coping efficacy.

In summary, both theory and research identify the relationships which should be expected between appraisals and coping, coping and outcome, and appraisals and outcome. In the following section, the implications of these findings will be discussed for the present study.

Present Study and Hypotheses

The purpose of this study was to investigate the factorial stability and construct validity of the CCQ. Specifically, the factorial stability of the measure was investigated across gender and across three different stressors, namely school, peer, and family stress. Both the primary factor structure of the measure, consisting of the 14 coping scales of the CCQ (see Table 1), and the

secondary factor structure of the measure, Approach, Avoidant, and Venting coping, were investigated in terms of their invariance across gender and stressors. It was expected that the factor structure of the measure would be stable across these variables, consistent with previous research.

In addition, the construct validity of the measure was investigated by examining stressor and gender differences in children's cognitive appraisals of stress and coping, and by exploring the relationships among cognitive appraisals, coping strategies, and outcome. With regards to the first issue, stressor and gender differences in cognitive appraisals of stress (i.e., perceived control, threat, blame/responsibility, and coping efficacy), it was expected that, overall, cognitive appraisals would vary across different stressors, as delineated by theory and research. Furthermore, as found previously, it was expected that perceptions of control would be higher for school stressors, as compared to family or peer stress. In general, it was not expected that gender differences in cognitive appraisals of stress would be found; however, it was hypothesized that girls would appraise stressors as more threatening than boys, given the results of research on children's ratings of the stressfulness of life events. Finally, although no previous studies have examined this issue, the interaction between gender and stressor type was explored in order to determine whether gender differences in appraisals were consistent across different stressors.

Stressor and gender differences in children's coping strategies were also investigated in this study, with hypotheses guided by the contextual theory of coping and by the research outlined earlier. Overall, it was expected that stressor differences and gender differences in children's coping strategies would emerge. Specifically, it was hypothesized that children would use approach coping (i.e., secondary factor) more often for school stressors, compared to peer or family stressors. In addition, it was proposed that girls would use more support-seeking and

negative cognitions/worrying (i.e., primary factors), and that boys would use more aggressive actions (i.e., primary factor) and avoidant coping (i.e., secondary factor) to cope with stress. The interaction between gender and stressor type was also explored to identify whether gender differences in coping were consistent across different stressors; however, as found in previous research, it was not expected that this interaction would be significant.

By examining the interaction between gender and stressors, the issue of confounding gender differences in coping with gender differences in stressor type was partially addressed. Nonetheless, as recommended by Stone and Porter (1995), gender differences in coping were also examined separately for each stressor type to further address this confound within the present study. As noted previously, concern has also been raised in the adult coping literature as to whether gender differences in cognitive appraisals are being confounded with gender differences in coping (Ptacek et al., 1994; Porter & Stone, 1995). This issue has not been addressed in the child coping literature. Therefore, one of the goals of this study was to determine whether gender differences in children's coping still existed after controlling for the effects of gender differences in children's cognitive appraisals of stress.

Finally, the last goal of this study was to explore the relationships between children's cognitive appraisals (i.e., perceived control, threat, and blame/responsibility) and coping (i.e., approach, avoidance, and venting), coping and outcome (i.e., perceived coping efficacy), and cognitive appraisals and outcome. Only the secondary factors of the CCQ were examined for this purpose, in order to keep the number of analyses under control and to avoid making an excessively conservative statistical correction for the amount of analyses conducted (i.e., Bonferroni correction). In addition, these relationships were examined separately for boys and girls, as gender differences in the relationships among coping, appraisals, and outcome have been

found (Cummings et al., 1994; Kerig, 1996; Kerig et al., in press). The hypotheses regarding these relationships were guided by the theoretical suppositions and research reviewed earlier, and the expected direction of these relationships are outlined in Table 2. Specifically, it was expected that as levels of perceived control increased, approach coping would be used more often, whereas the use of avoidance and venting would decrease. On the other hand, as levels of perceived threat and blame/responsibility rose, it was expected that children's use of approach coping would decrease, and their use of avoidant and venting coping would increase. In terms of the relationships between coping and outcome, it was hypothesized that the use of approach coping would be associated with higher levels of perceived coping efficacy. Avoidance and venting were expected to be related to lower levels of perceived coping efficacy. Finally, with regard to the relationships between cognitive appraisals and outcome, it was hypothesized that as levels of perceived control increased, so would levels of perceived coping efficacy; however, as levels perceived threat and blame/responsibility increased, it was expected that levels of perceived coping efficacy would decrease.

In summary, the hypotheses and goals of the present study were as follows:

1. Both the primary and secondary factor structure of the CCQ would be invariant across gender and across stressors.
2. In terms of stressor and gender differences in cognitive appraisals:
   a) Overall, it was expected that cognitive appraisals of stress would vary across different stressors. Specifically, it was expected that appraisals of perceived control would be higher for school stressors.
   b) Overall, gender differences in cognitive appraisals of stress were not expected. However, it was expected that girls would appraise stressors as more threatening.

c) The interaction between gender and stressor type would be investigated across cognitive appraisals of stress.

3. In terms of stressor and gender differences in coping strategies:

a) Overall, it was expected that coping would vary across stressors. In particular, it was hypothesized that approach coping would be used more often for school stressors.

b) Overall, it was expected that gender differences in coping would emerge. Specifically, girls would use more support-seeking and negative cognitions/worrying, whereas boys would use more aggressive actions and avoidant coping.

c) The interaction between gender and stressor type across coping was not expected to be significant.

d) Gender differences in coping would be explored, after controlling for the effects of gender differences in cognitive appraisals of stress.

4. As outlined in Table 2, it was expected that significant relationships would emerge between children's cognitive appraisals and coping, coping and outcome, and cognitive appraisals and outcome.

Method

Participants

The participants in this study were 545 children, ages 8 to 11 years, recruited from five schools in the Surrey school district of British Columbia. There were 282 boys (52%) and 263 girls (48%). Of these children, 183 were third-graders (34%), 180 were fourth-graders (33%), and 182 were fifth-graders (33%). Although information about ethnicity was not formally obtained, it was observed that the majority of children participating in the study were Caucasian (i.e., 80% to 90% of participants), with the minority being of Asian or East Indian

descent. Permission to conduct the study was received from the Surrey School District, and all materials and procedures were approved by the Simon Fraser University Research Ethics Review Committee. All parents were provided with information forms outlining the requirements of the study. At the school district's request, only those parents not wishing their children to participate in the study were asked to return a form indicating a refusal of consent for their children to participate.[1] After completing the study, all children, regardless of their participation or non-participation, were given a $1 gift certificate to a local fast-food restaurant. Parents were offered feedback about the results of the study upon request.

Measures

Questions About You. This measure was used to obtain demographic information (see Appendix B). It ascertained the age and gender of participants in the study.

Children's Coping Questionnaire (CCQ). As described above, the CCQ is an 81-item self-report measure of children's coping. In filling out the questionnaire, children were asked to identify the most upsetting or bothersome situation they recently coped with out of a choice of three stressors, problems with school-work, peers, or family members (see Appendix C, question 1). Children were then asked about their cognitive appraisals of perceived threat (see Appendix C, question 2), perceived blame/responsibility (see Appendix C, question 4), and perceived control (see Appendix C, question 5), rating them on a 4-point Likert scale ranging from not at all (1) to a lot (4). These questions were modelled after previous research which has used single questions to inquire into children's cognitive appraisals of stress (e.g., Band & Weisz, 1990). Children were also asked to identify how they felt regarding the stressor (see

[1]Although information regarding the exact number of refusal forms returned could not be obtained, it was observed that teachers excused only a few children (i.e., less than 1%) from participation in the study due to their parents refusal of consent.

Appendix C, question 3), as done in previous research of children's coping (Grych & Fincham, 1993).

Following this, children were asked to recall the stressor they identified, and to rate the extent to which they used each of the 81 coping strategies to deal with that stressor on a 4-point Likert scale (see Appendix D). Finally, children were asked to rate their perceived coping efficacy with respect to the identified problem on a 4-point Likert scale. Children were asked about their overall level of perceived coping efficacy (see Appendix E, question 1), their problem-focused perceived coping efficacy (i.e., their perceptions of efficacy regarding their abilities to have changed the problem; see Appendix E, question 2), and their emotion-focused perceived coping efficacy (i.e., their perceptions of efficacy regarding their abilities to have managed their feelings; see Appendix E, question 3), as done in previous research on children's coping (e.g., Cummings et al., 1994).

Procedure

Children were tested in class during the school day by three psychology graduate students or undergraduate research assistants. Before beginning each testing session, the nature of the study was described to the children; namely, that we were interested in learning what children did to make themselves feel better when something was bothering them. Children were also told that they had the option of not participating, or stopping their participation at any time, without penalty. Finally, children were informed that their questionnaires would be kept confidential and anonymous. Testing proceeded with one graduate student reading questions aloud to children, as they followed along on questionnaires of their own. Research assistants monitored the class for children who required assistance. Children who did not obtain consent for participation from their parents were provided with a package of mazes and

puzzles to occupy themselves with during the testing session, unless otherwise requested by their teacher. In total, the procedure lasted 20 to 30 minutes.

Results

Data Screening/Tests of Assumptions

Although data were collected on 545 children, 20 spoiled questionnaires were not included in the analyses. Questionnaires were deemed spoiled if children copied from each other, created unique response categories, or had special needs which interfered with their ability to fill out the questionnaires. The data set, consisting of 525 children, was then screened to find missing values, and to test the underlying assumptions of the statistical analyses to be used in this study. All analyses presented in this study were completed on SPSS 7.5 for Windows, unless otherwise specified.

Less than 1% of the data were missing on the coping scales. These values were replaced by means rounded to the whole number, derived individually for each child from the coping scale in which the missing value existed. For the appraisal questions, it was found that 1.3% of the data were missing. Since each appraisal was only assessed by one question, a mean could not be derived individually for each child; therefore, data with missing values on the appraisal questions were eliminated from analyses.

All variables were examined for univariate normality and linearity using normal and detrended quantile-quantile plots.[2] These analyses showed that the data were linear and normally

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[2]Normal quantile-quantile plots are obtained by "ranking the observed values of a variable from smallest to largest and then pairing each value with an expected normal value for a sample of that size from a standard normal distribution. ... If the observed scores are from a normal distribution, the plot should be approximately in a straight line" (Norusis, 1990, p. B-67). Detrended quantile-quantile plots are obtained by calculating "the difference between the observed point and the expected point under the assumption of normality and plot[ing] this difference for each case. If the observed sample is from a normal distribution, these differences

distributed. Multivariate normality was not examined as there are no methods readily available to test this assumption (Tabachnick & Fidell, 1996).[3] The data were also examined for univariate outliers using boxplots and for multivariate outliers using Mahalanobis distance.[4] No univariate or multivariate outliers were detected. In addition, the homogeneity of the variance/covariance matrices was examined using Box's M test across the whole sample, and across groups (i.e., by gender, by stressor, and by Gender x Stressor), for variables that would be grouped in subsequent analyses. Box's M test was non-significant across all analyses, thus validating this assumption.

Finally, since multivariate analysis of covariance (MANCOVA) was to be used for some analyses, the assumption of homogeneity of regression was tested. This assumption refers to whether the slope of the regression line between the dependent variables and covariates is equal across all groups (Tabachnick & Fidell, 1996). It is tested by fitting a model containing the main effects of the independent variable (viz., gender) and covariates (viz., perceived control, threat, and blame),[5] as well as the interaction of the independent variable with each covariate on a set of dependent variables (viz., coping scales; SPSS Inc., 1997). All the interaction terms in these analyses were non-significant, confirming the equality of the slope of the regression lines across groups.

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should be fairly close to 0 and be randomly distributed" (Norusis, 1990, p. B-68).

[3]Multivariate normality is not readily testable because "it is impractical to test an infinite number of linear combinations of variables for normality" (Tabachnick & Fidell, 1989, p. 70).

[4]Mahalanobis distance is the "distance of a case from the centroid of the remaining cases where the centroid is the point created by the means of all variables" (Tabachnick & Fidell, 1989, p. 68).

[5]Covariates must be considered reliable in order to be included in analyses. In this study, single questions assessing children's perceptions of control, threat, and blame were used as covariates. According to Tabachnick and Fidell (1996), it is assumed that individuals can report on their internal states accurately; therefore, the reliability of the covariate is assumed.

Overall, these results showed that the assumptions necessary for statistical testing were met, and that therefore, the proposed analyses could be conducted.

Descriptive Statistics

Means and standard deviations for the primary and secondary coping scales, appraisal questions, and perceived coping efficacy are reported in Tables 3 to 6, across gender and across stressors. In addition, the cross-tabulation of gender with stressors is reported in Table 7, revealing that boys were slightly more likely to choose peer stressors, whereas girls were slightly more likely to choose family stressors, as the most upsetting or bothersome problem for them, χ^2 (2, N = 525) = 6.93, $p < .03$. Finally, the cross-tabulation of gender by stressors by feelings is reported in Table 8, in order to identify the feelings girls and boys had with regards to their identified stressor. It appears that both boys, χ^2 (6, n = 271) = 44.64, $p < .000$, and girls, χ^2 (6, n = 251) = 71.65, $p < .000$, were most likely to be worried about school stressors, whereas peer and family stressors made children the most angry.

Hypothesis 1: Factorial Invariance of the CCQ Across Gender and Stressors

Primary factor structure. The factorial invariance of the primary factor structure of the CCQ was examined across gender and across stressors using confirmatory factor analysis. These analyses were completed using LISREL 8 (Jöreskog & Sörbom, 1993). Analyses were conducted at the scale level, where the items within each coping scale were hypothesized to load onto a unidimensional factor (see Appendix A for item loading specifications). The weighted least squares (WLS) method of estimation was used to fit each model. The WLS method uses weights derived from the asymptotic covariance matrix of the polychoric correlation matrix. The advantage of using this method is that the derived weight matrix is optimal, in that it provides estimates with the smallest standard errors when polychoric correlations are used (West, Finch, &

Curran, 1995). Polychoric correlations were selected for these analyses, as they are the most appropriate type of correlation to use with ordinally-scaled data (Jöreskog & Sörbom, 1993).

The invariance of the primary factor structure of the CCQ was examined using the most restrictive method, where both the factor loadings and the error variances for each model were specified to be invariant across gender and across stressors. The error terms of certain pairs of items were allowed to correlate for some of these models, as done previously for analyses on the whole sample (see Table 9 for list of error covariances); therefore, the models tested were identical for the whole sample, across gender, and across stressors. The fit of these models was assessed with two fit indices, the goodness of fit index (GFI) and the root mean square error of approximation (RMSEA), as recommended by Cole (1987).[6] A good fit between the hypothesized model and the sample data is indicated when the GFI is greater than .90 (Schumacker & Lomax, 1996) and when the RMSEA is less than .08 (Hair et al., 1995).

The fit indices and factor loadings of each model for the whole sample, across gender, and across stressors are reported in Tables 9 and 10. All the models were invariant across gender and across stressors, and the magnitude of the factor loadings for each model were comparable across all the groups. It should be noted that alternative models were tested with less restrictive specifications of measurement invariance (i.e., factor loadings and error variances were allowed to vary); however, since the fit of these models did not improve with the relaxation of the criteria, the restrictive models were chosen as the best fitting models.[7] In summary, it appeared that the

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[6]Chi-square was not used as a fit index in these analyses due to its sensitivity to sample size. When the sample size is greater than 200, chi-square is likely to be significant, even when the model fits the data. Its use is only appropriate when the sample size ranges between 100 and 200 (Cole, 1987; Hair et al., 1995).

[7]When the factor loadings were allowed to vary across gender and across stressors, the magnitude of these factor loadings was still comparable across boys and girls and across

primary factor structure of the CCQ was invariant across gender and stressors; therefore, the invariance of the secondary factor structure of the measure was examined.

Secondary factor structure. The invariance of the secondary factor structure of the CCQ was examined across gender and across stressors using exploratory factor analysis, as done in analyses on the whole sample (Fedorowicz, 1995).[8] Separate factor analyses were conducted for boys and girls, as well as for school, peer, and family stressors, in to order examine the factorial invariance of the measure across gender and across different stressors. Analyses were based on the Pearson product moment correlation matrix of the mean coping subscale scores for each group.[9] In order to make the factor solutions comparable across groups, and to the solution on the whole sample, the same criteria were specified for each factor analysis (Mulaik, 1972). Specifically, for each group analysis, a three factor solution was requested, using the maximum likelihood method of factor extraction and an oblique factor rotation (viz., direct oblimin).

The results showed that across gender, the three factor solution accounted for 50% of the variance in the data for boys and 49% of the variance in the data for girls. Across stressors, the

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school, peer, and family stressors.

[8]Ullman (1996) has indicated that before multi-group models are fitted using confirmatory factor analysis, a baseline model must be established. As discussed previously, in analyses on the whole sample, a baseline model for the secondary factor structure of the measure could not be established using confirmatory factor analysis (Fedorowicz, 1995). Consequently, in this study, confirmatory factor analysis could not be used to examine the invariance of the secondary factor structure of the measure across groups, since no baseline model existed. Rather, exploratory factor analysis was used to derive the factor structure of the measure for each group, with indices of measurement invariance (e.g., congruence coefficient) computed on the basis of these analyses.

[9]According to Jöreskog and Sörbom (1993), continuously scaled data are defined as data with more than 15 categories; therefore, the mean coping scale scores were treated as continuous data, with Pearson's product moment correlations being the most appropriate type of correlation for these analyses.

three factor solution accounted for 45% of the variance in the data for the school stressor, 54% of the variance in the data for the peer stressor, and 49% of the variance in the data for the family stressor. The factor loadings for these solutions are listed in Tables 11 and 12. The derived factors were conceptualized as representing Approach Coping (Factor 1), Avoidant Coping (Factor 2), and Venting (Factor 3), as found in analyses on the whole sample.[10] Although the factor loadings for these solutions varied slightly across gender and across stressors (e.g., for boys, avoidant coping had a slightly higher loading on Factor 1), in general, the pattern and magnitude of the factor loadings were consistent across groups. As reviewed previously, factor solutions are not expected to be identical between groups, rather, their general pattern and magnitude should be similar (Hoyle & Smith, 1994). This appeared to be the case for the derived factor solutions, and subsequent analyses focused on providing a more rigorous test of measurement invariance across the groups.

Congruence coefficients were computed as indices of the factorial invariance of the solutions found across gender and across stressors. These analyses were completed using Mathcad 6.0. The congruence coefficient measures the degree to which pairs of factors are similar to one another (Mulaik, 1972). Mulaik has stated that factorial similarity is indicated when the congruence coefficient has a high value, preferably greater than .90.

The congruence coefficient is derived from the factor loadings of the pattern matrix of an exploratory factor analysis; however, before factors from different groups can be compared, they have to be in a common unit of measurement (Mulaik, 1972). In this study, factor analyses were completed using the correlation matrix, as required when using the maximum likelihood method

[10]The factor loadings for the three factor solution on the whole sample are included in Appendix F for reference. The intercorrelations among the factors for the whole sample and for each group are included in Appendix G.

of factor extraction. However, by using correlations, the factor solution for each group is forced into a different unit of measurement; therefore, the factor pattern matrices have to be modified in order to put them into a comparable unit of measurement. Hence, in this study, the factor pattern matrix was transformed into common units across gender, for the comparison between boys and girls, and across stressors, for the comparison between school, peer, and family stressors. These transformations were accomplished by multiplying the factor pattern matrix for a group (e.g., boys) by a diagonal matrix of the standard deviations for the respective group (e.g., boys), and then dividing by the square root of the averaged variances across the groups being compared (e.g., boys and girls).

Based on these modified factor pattern matrices, the congruence coefficient was computed across gender (see Table 13) and across stressors (see Table 14). Across gender, it was evident that the congruence coefficient was high between corresponding factors for boys and girls, but low between different factors, as would be expected. Although the congruence coefficient was not as high between some of the corresponding factors across stressors, its value was still in the moderately high range, thereby indicating factorial similarity between corresponding factors.

To further ensure that the second-order factor solutions were invariant across gender and across stressors, Box's M test and the root mean square residual (RMR) were also examined. Box's M test is used to compare the equality of the covariance matrices across groups, with non-significant results indicating that the groups are equivalent (Byrne, 1994).[11] Box's M test was computed on the covariance matrix of the primary coping scales, with results indicating that the

[11]Because of the sensitivity of Box's M test, a significance level of $p > .001$ is used (Tabachnick & Fidell, 1996). If Box's M test is greater than this level, the covariance matrices are considered equivalent across groups.

groups were invariant across stressors, F (210, 639676) = 1.12, p = .121, and across gender, F (105, 841204) = 1.36, p = .009. RMR is defined as the square root of the mean squared residuals (Hair et al., 1995). It reflects the closeness of the observed correlation matrix to the reproduced/estimated correlation matrix, with values less than .08 being preferable. Across gender, the RMR was .05 for girls and .04 for boys. Across stressors, the RMR was .05 for the school stressor, .04 for the peer stressor, and .06 for the family stressor.

Overall, these results would suggest that the secondary factor structure of the CCQ is invariant across gender and across stressors.

Hypothesis 2: Stressor and Gender Differences in Appraisals and Coping Efficacy

In order to identify whether there were gender and stressor differences in children's cognitive appraisals and coping efficacy, a 2 x 3 between subjects multivariate analysis of variance (MANOVA) was performed on two sets of dependent variables: (a) appraisals (perceived control, threat, and blame); and (b) perceived coping efficacy (overall, problem-focused, and emotion-focused). These sets of dependent variables were examined separately to reflect the fact that perceived coping efficacy was conceptualized as an outcome variable in this study. The independent variables were gender (boys or girls) and stressor type (school, peer or family).

After the omnibus MANOVA was performed using Wilk's Lambda, a series of follow-up tests were conducted, consisting of univariate F-tests, planned comparisons, and post-hoc comparisons (Tukey's honestly significant difference [HSD] method),[12] in order to investigate

[12]Tukey's HSD method tests all pairwise comparisons, while controlling the overall Type I error rate for a family of comparisons conducted on a dependent variable (Stevens, 1990); however, the Type I error rate still needs to be controlled over the number of dependent variables examined. For example, if 10 dependent variables are examined, a Bonferroni correction would be required, with α = .01 per comparison, in order to keep the Type I error

the impact of the independent variables on the individual dependent variables. For these analyses, the significance levels were set using a Bonferroni correction, in order to keep the overall Type I error rate at $\alpha = .1$ (e.g., for 3 tests, $\alpha = .1 \div 3 = .033$). A more liberal overall alpha was selected in order to keep the alpha rate per comparison at a reasonable level.

Stressor and gender differences in appraisals. Using Wilk's Lambda to test for the overall main effects and interaction, results showed that cognitive appraisals varied by stressor type, F (6, 1028) = 6.26, $p < .000$, but not by gender, F (3, 514) = 1.06, $p < .366$, consistent with the stated hypotheses. The interaction between gender and stressor type was also non-significant, F (6, 1028) = 1.31, $p < .248$.

Subsequently, univariate F-tests were used to investigate the impact of the main effects and interaction on the individual dependent variables ($\alpha = .03$/comparison). Results showed that perceived control, F (2, 516) = 6.01, $p < .003$, and perceived threat, F (2, 516) = 14.72, $p < .000$, varied by stressor type, but not perceived blame, F (2, 516) = 1.54, $p < .214$. No gender differences were found on the individual dependent variables, thereby disconfirming the hypothesis that girls would find stressors more threatening than boys, F (1, 516) = 2.50, $p < .115$. The Stressor x Gender interactions were also found to be non-significant.

In order to identify among which stressors perceived control and threat varied, a planned comparison was performed on perceived control ($\alpha = .05$/comparison), and a post-hoc comparison was performed on perceived threat ($\alpha = .03$/comparison). Results showed that children's perceived control was higher for school stressors compared to peer stressors, t (521) = 2.77, $p < .006$, and to family stressors, t (521) = 3.34, $p < .001$, consistent with the stated hypotheses (see Table 6 for mean values). In addition, children's levels of perceived threat were

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rate across all the dependent variables equivalent to $\alpha = .1$.

found to be higher for both peer stressors, M_{Diff} = .332, p < .002, and family stressors, M_{Diff} = .520, p < .000, as compared to school stressors.[13]

In summary, the findings showed that cognitive appraisals were significantly different across stressors, but not across gender, consistent with the proposed hypotheses.

Stressor and gender differences in coping efficacy. Using Wilk's Lambda to test for the overall main effects and interaction, results showed that perceived coping efficacy did not vary by stressor type, F (6, 1026) = 1.69, p < .121, contrary to the stated hypothesis. Results also showed that coping efficacy did not vary by gender, F (3, 513) = .11, p < .956. On the other hand, the interaction between stressor type and gender approached significance, F (6, 1026) = 1.99, p < .065.

Although no main effect for stressor type was found, the univariate F-test (α = .03/comparison) for overall perceived coping efficacy approached significance, suggesting a trend towards stressor differences in this individual dependent variable, F (2, 515) = 3.07, p < .047. Follow-up post-hoc comparisons (α = .03/comparison) revealed that children's level of overall perceived coping efficacy was higher for school stressors, as compared to family stressors, M_{Diff} = .245, p < .028 (see Table 6 for mean values).

Consistent with the omnibus MANOVA, results from the univariate F-tests also showed no gender differences in the individual dependent variables. However, a significant Stressor x Gender interaction was found for overall perceived coping efficacy, F (2, 515) = 3.71, p < .025 (see Figure 1), which clarified the above-stated findings for stressor differences in coping efficacy. Follow-up analyses (α = .03/comparison) showed gender differences in children's

[13]In SPSS 7.5, results from post-hoc comparisons (i.e., Tukey's HSD test) are reflected as mean difference values, abbreviated as M_{Diff} in text.

overall coping efficacy that approached significance for school and family stressors. Specifically, for school stressors, girls (M = 3.09, SD = .73) had higher levels of coping efficacy than boys (M = 2.82, SD = .87), F (1, 143) = 3.80, p < .053, whereas for family stressors, boys (M = 2.85, SD = .85) had higher levels of coping efficacy than girls (M = 2.59, SD = .96), F(1, 199) = 4.11, p < .044. In addition, boys' level of coping efficacy did not differ over the three stressors, F (2, 269) = .02, p < .983. On the other hand, girls' coping efficacy changed over the three stressors, F (2, 249) = 6.53, p < .002, with levels of efficacy being significantly higher for school stressors (M = 3.09, SD = .73) compared to family stressors (M = 2.59, SD = .96), M_{Diff} = .497, p < .001. Overall, these results suggested that boys felt equally efficacious coping with all three stressors, whereas girls felt more efficacious than boys when dealing with school stressors, but less efficacious than boys when dealing with family stressors.

In summary, the omnibus results showed that perceived coping efficacy did not significantly differ by stressor type. However, univariate analyses revealed that one of the dependent variables, overall perceived coping efficacy, varied by stressor type and by a Stressor x Gender interaction, demonstrating that gender differences in children's perceived coping efficacy may change across different stressors.

Hypothesis 3: Stressor and Gender Differences in Coping Strategies

A series of analyses was performed to investigate gender and stressor differences in children's coping. First, in order to identify whether children's coping strategies varied by gender, by stressor type, and by their interaction, a MANOVA was performed on two sets of dependent variables: (a) the primary coping scales, and (b) the secondary coping scales.[14] Second, as

[14]The primary coping scales refer to the 14 coping scales of the CCQ, which comprise the primary factor structure of the measure. The secondary coping scales refer to the 3 higher order coping scales of the CCQ, which comprise the secondary factor structure of the measure.

reviewed earlier, researchers have asserted that gender differences in coping may be confounded with gender differences in problem content; therefore, a MANOVA was performed on the two sets of coping scales, independently for each stressor, in order to identify whether gender differences in children's coping still existed after controlling for problem content. Finally, researchers have also claimed that gender differences in coping may be confounded with gender differences in cognitive appraisals; therefore, a MANCOVA was performed on the two sets of coping scales in order to identify whether gender differences in children's coping still existed after co-varying out the effects of cognitive appraisals.

Analyses consisted of an omnibus MANOVA or MANCOVA, using Wilk's criterion. Follow-up tests included univariate F-tests, planned comparisons, and post-hoc comparisons (viz., Tukey's HSD). Significance levels were set using a Bonferroni correction, so as to keep the overall Type I error rate at $\alpha = .1$. The results of these analyses are reviewed below.

Stressor and gender differences on the primary coping scales. A 2 x 3 MANOVA was performed on 14 dependent variables comprising the primary coping scales of the CCQ. The independent variables were gender (boys or girls) and stressor type (school, peer, or family). Consistent with the stated hypotheses, results from the omnibus MANOVA showed that coping varied by stressor type, $F(28, 1012) = 3.66$, $p < .000$, and by gender, $F(14, 506) = 4.59$, $p < .000$, but not by their interaction $F(28, 1012) = 1.29$, $p < .142$.

Univariate F-tests were then used to investigate the impact of the main effects (see Table 15) and interaction on the individual dependent variables. Results showed that six coping strategies (Aggressive Actions, Avoidant Actions, Cognitive Decision Making, Direct Problem Solving, Expressing Feelings, and Support Seeking) varied significantly by stressor type, and that results for one coping strategy, Distracting Actions, approached significance. Post-hoc

comparisons, listed in Table 16, identify among which stressors these coping strategies varied.

Results from the univariate F-tests also showed that six coping strategies differed significantly by gender (see Table 15). As hypothesized, planned comparisons revealed that boys used more Aggressive Actions than girls, and that girls used more Support Seeking and Negative Cognitions/Worrying than boys (see Table 3 for mean values). In addition, post-hoc comparisons showed that boys used more Distracting Actions and Withholding Feelings compared to girls, and that girls used more Wishful Thinking compared to boys.

Finally, results showed that the Stressor x Gender interaction (α = .007/comparison) was significant for No Coping Effort, F (2, 519) = 5.99, p < .003, and that it approached significance for Aggressive Actions, F (2, 519) = 4.21, p < .015. In terms of the interaction for No Coping Effort (see Figure 2), follow-up analyses (α = .03/comparison) showed gender differences in the use of this strategy that were significant for family stressors, F (1, 199) = 5.27, p < .023, and that approached significance for school, F (1, 145) = 3.40, p < .067, and peer stressors, F (1, 175) = 3.53, p < .062. Specifically, boys used more of this strategy for dealing with school and peer stressors, whereas girls used more of this strategy for dealing with family stressors (see Appendix H for mean values). In addition, girls' use of this strategy was significantly different across the three stressors, F(2, 249) = 5.76, p < .004, with levels of this coping strategy being higher for family stressors compared to school stressors, M_{Diff} = .266, p < .003. Boys' use of this strategy was relatively consistent across the three stressors, F(2, 270) = 2.71, p < .068.

In terms of the interaction for Aggressive Actions (see Figure 3), follow-up analyses (α = .03/comparison) showed significant gender differences in children's use of Aggressive Actions for school, F(1, 145) = 14.02, p < .000, and peer stressors, F(1, 175) = 4.62, p < .033, but not for family stressors, F (1, 199) = .27, p < .607. In particular, boys used Aggressive Actions to deal

with school and peer stressors more frequently than did girls (see Appendix H for mean values). In addition, girls' use of Aggressive Actions varied across the three stressors, $F(2, 249) = 16.71$, $p < .000$, being significantly higher for family stressors compared to school stressors, $M_{Diff} = .586$, $p < .000$, and compared to peer stressors, $M_{Diff} = .330$, $p < .004$. On the other hand, boys' use of Aggressive Actions was not significantly different across the three stressors, $F(2, 270) = .96$, $p < .385$.

Overall, these findings provided confirmation of the stated hypotheses, showing that children's coping strategies were significantly different across stressors and across gender. In addition, significant interaction effects on the individual coping scales clarified some of these findings, demonstrating that gender differences in coping may change across different stressors.

Stressor and gender differences on the secondary coping scales. A 2 x 3 MANOVA was performed on the 3 dependent variables comprising the secondary coping scales of the CCQ. The independent variables were gender and stressor type. As hypothesized, results from the omnibus MANOVA showed that coping varied by stressor type and by gender; however, contrary to the stated hypothesis, coping was also affected by the Stressor x Gender interaction (see Table 17).

Subsequently, univariate F-tests were conducted to determine how the main effects and interaction impacted the individual dependent variables (see Table 17). Results indicated that all the secondary coping scales (i.e., Approach, Avoidance, and Venting) varied by stressor type; therefore, planned and post-hoc comparisons were used to identify among which stressors the coping strategies varied. Planned comparisons ($\alpha = .05$/comparison) for Approach coping showed that this strategy was used more often for school stressors compared to family stressors, $t(522) = 2.06$, $p < .04$, as hypothesized (see Table 4 for mean values). Contrary to hypotheses, though, Approach coping was not used more often for school stressors compared to peer

stressors, $t(522) = -.93$, $p < .354$. Post-hoc comparisons ($\alpha = .03$/comparison) also showed that Approach coping was used to a greater degree to cope with peer stressors, compared to family stressors, $M_{Diff} = .180$, $p < .004$, whereas Avoidance was used more often to deal with peer stressors compared to school stressors, $M_{Diff} = .166$, $p < .003$. Finally, results also showed that Venting was used more often for family, $M_{Diff} = .233$, $p < .000$, and peer stressors, $M_{Diff} = .144$, $p < .015$, compared to school stressors.

Results from the univariate F-tests (see Table 17) also showed that the use of Avoidance was significantly related to gender, with boys using more Avoidance than girls, as hypothesized (see Table 3 for mean values). In terms of the interaction results (see Table 17), the Stressor x Gender interaction was significant for Avoidance and for Venting. For Avoidance (see Figure 4), follow-up analyses ($\alpha = .03$/comparison) showed significant gender differences in children's use of Avoidance for school, $F(1, 145) = 5.03$, $p < .026$, and peer stressors, $F(1, 175) = 10.68$, $p < .001$, but not for family stressors, $F(1, 199) = .109$, $p < .741$. Specifically, boys used Avoidance more often than girls to cope with school and peer stressors (see Appendix H for mean values). In addition, whereas girls' use of Avoidance was relatively consistent over the three stressors, $F(2, 249) = 2.79$, $p < .063$, boys' use of Avoidance varied over the three stressors, $F(2, 270) = 5.72$, $p < .004$. In particular, boys used Avoidance to a greater degree for peer stressors, compared to school stressors, $M_{Diff} = .190$, $p < .020$, and family stressors, $M_{Diff} = .204$, $p < .007$.

In terms of the interaction for Venting (see Figure 5), follow-up analyses ($\alpha = .03$/comparison) showed significant gender differences in children's use of Venting for family stressors, $F(1, 199) = 5.83$, $p < .017$, but not for school, $F(1, 145) = 2.15$, $p < .144$, or peer stressors, $F(1, 175) = .143$, $p < .706$. In particular, girls used Venting more frequently than boys to cope with family stressors (see Appendix H for mean values). In addition, boys' use of this

strategy did not significantly change over the three stressors, $F(2, 270) = .66$, $p < .518$, whereas girls' use of Venting varied over the three stressors, $F(2, 249) = 11.70$, $p < .000$, being significantly higher for family stressors compared to school stressors, $M_{Diff} = .368$, $p < .000$, and peer stressors, $M_{Diff} = .243$, $p < .006$.

In summary, the results demonstrated that there were significant stressor and gender differences in children's coping, as hypothesized. Significant Stressor x Gender interactions, however, showed that gender differences in coping may vary across different contexts.

Controlling for problem content: Gender differences in coping. In order to identify whether gender differences in coping still existed after controlling for problem content, a MANOVA was performed on the coping scales, independently for each stressor (i.e., school, peer, or family stressor), as done in previous research (Porter & Stone, 1995). The MANOVA was performed on two sets of dependent variables, the primary coping scales and the secondary coping scales. The independent variable was gender.

As is evident from Table 18, results from the omnibus MANOVA showed that, in general, gender differences in coping still existed after problem content was controlled. Although the results for family stress only approached significance for the primary coping scales and were non-significant for the secondary coping scales, the univariate F-tests (see Table 19) still showed gender differences on the individual coping strategies. Overall, these results suggested that, for children, gender differences in coping are evident, even after controlling for problem content.

Controlling for cognitive appraisals: Gender differences in coping. In order to identify whether gender differences in coping still existed after controlling for cognitive appraisals, as done in previous research (Porter & Stone, 1995), a MANCOVA was performed on two sets of dependent variables, the primary coping scales and the secondary coping scales. The covariates

were perceived control, threat, and blame, the cognitive appraisal variables assessed in this study. The independent variable was gender.

Using Wilk's criterion to test for the overall main effects, results showed that after controlling for cognitive appraisals, both the primary coping scales, $F(14, 504) = 4.45$, $p < .000$, and the secondary coping scales, $F(3, 515) = 5.91$, $p < .001$, still differed by gender. The univariate F-tests, listed in Table 20, identify the significant gender differences on the individual coping scales.[15] Overall, these results suggested that, for children, gender differences in coping are evident even after controlling for cognitive appraisals.

Hypothesis 4: Relationships Among Appraisals, Coping, and Outcome for Boys and Girls

The relationships among cognitive appraisals of stress (i.e., perceived blame, control, and threat) and coping strategies (i.e., Approach, Avoidance, and Venting), cognitive appraisals and outcome (i.e., perceived coping efficacy: general, problem-focused, and emotion-focused), and coping strategies and outcome were examined separately for girls and boys. The hypotheses guiding these relationships were outlined in Table 2. These relationships were examined using Pearson's product moment correlations, with the significance level set at $\alpha = .01$ for a two-tailed test of significance.[16] The results of these analyses are presented in Table 21. Although the magnitude of these correlations are relatively low, a number of significant relationships emerged.

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[15]MANCOVAs were also performed independently for each stressor (i.e., school, peer, or family), thereby controlling for problem content, as well as cognitive appraisals of stress. Overall, these analyses were consistent with the above-stated results, indicating that, for children, gender differences in coping exist after controlling for problem content and for cognitive appraisals.

[16]Since each set of relationships examined consisted of nine correlations (i.e., relationships between 3 coping strategies and 3 cognitive appraisals), the significance level was set at $\alpha = .01$, with a Bonferroni correction ($.1 \div 9 = .01$).

For girls, the majority of relationships were significant, with the direction of the correlations being consistent with the stated hypotheses. Higher perceptions of control were associated with greater levels of Approach coping, whereas higher perceptions of self-blame and threat were related to greater levels of Venting. In addition, greater use of Approach coping was associated with higher levels perceived coping efficacy (all forms). On the other hand, greater use of Venting was related to lower levels of perceived coping efficacy (all forms). Finally, higher perceptions of control were associated with higher levels of coping efficacy (all forms), whereas higher perceptions of threat were associated with lower levels of coping efficacy (all forms).

For boys, the same significant relationships emerged as those found for girls, with the following exceptions. The relationship between perceived self-blame and Venting only approached significance for boys. In addition, Venting was not associated with any form of perceived coping efficacy, and perceptions of threat were only associated with boys' emotion-focused coping efficacy. Finally, contrary to the stated hypotheses, greater use of Avoidant coping was associated with higher levels of emotion-focused coping efficacy for boys.

Fisher's Z transform test was computed to identify whether the correlations found for boys and girls were significantly different from each other. Results showed that the relationship between perceived threat and Venting was stronger for girls than boys, $z = 1.96$, $p < .025$. In addition, the relationships between Venting and overall ($z = 2.86$, $p < .002$), problem-focused ($z = 2.34$, $p < .009$, and emotion-focused ($z = 3.42$, $p < .001$) coping efficacy were stronger for girls than for boys; whereas, the relationship between Avoidance and emotion-focused coping efficacy was stronger for boys than for girls, $z = 2.43$, $p < .008$. Lastly, the relationships between perceived threat and overall ($z = 3.53$, $p < .001$) and problem-focused ($z = 2.21$, $p < .013$) coping efficacy were stronger for girls than for boys.

In order to examine the relationships among coping strategies, appraisals, and outcome more precisely, exploratory analyses were undertaken to examine the relationships between the primary coping scales and appraisals, as well as the primary coping scales and outcome (see Appendix I).[17] These analyses provided a more fine-grained analysis than described above, which utilized only the secondary coping scales of the CCQ. In general, these results were consistent with analyses using the secondary coping scales. For example, higher perceptions of threat were associated with greater use of Aggressive Actions, Expressing Feelings, and Negative Cognitions/Worrying among girls. These scales comprise the secondary coping scale of Venting, which was significantly related to perceived threat in the above-stated analyses. However, some relationships were clarified through these analyses. For example, in analyses of the secondary coping scales, Venting was significantly related to perceived blame for girls; but, in analyses of the primary coping scales, it appeared that only one of the scales comprising Venting, namely Negative Cognitions/Worrying, was significantly related to perceived self-blame. These results demonstrated the utility of examining coping at the micro-level (i.e., primary scales) rather than the macro-level (i.e., higher-order scales), as noted in the introduction.

In summary, the majority of the hypothesized relationships among coping strategies, cognitive appraisals, and outcome were confirmed, with the results showing that in some instances, the correlations among these variables were significantly different between girls and boys.

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[17]Although previous research has demonstrated that the relationships between appraisals and coping are consistent across different stressors (e.g., high perceived control is related to high Approach coping; Roecker et al., 1996), exploratory analyses were conducted in which the relationships between appraisals and coping were examined separately for each stressor. As found in previous research, the results were generally consistent across stressors, with the same significant relationships emerging as those found in analyses on boys and girls.

Discussion

This study focused on investigating the psychometric properties of a new self-report measure of children's coping, the CCQ. The goals of this study were to establish the factorial stability of the measure across gender and across stressors, and to examine the measure's construct validity. Construct validity was examined by identifying gender and stressor differences in children's coping and cognitive appraisals, as well as by exploring the relationships among cognitive appraisals, coping strategies, and outcome.

The results of this study indicated that both the primary and secondary factor structure of the CCQ were invariant across gender and across stressors, thereby showing that the construct of coping assessed by this measure maintained its meaning across the different groups, and that the measure was not biased towards any particular group. In terms of the construct validity of the measure, hypotheses concerning the existence of gender and stressor differences in children's coping and cognitive appraisals of stress were generally confirmed. In addition, a number of the hypothesized relationships among cognitive appraisals, coping strategies, and outcome were substantiated. Overall, these results provided further support for the construct validity of the CCQ.

The following discussion will focus on the results and implications of this study, in addition to outlining future directions for research and applied work using this measure.

Factorial Invariance of the Children's Coping Questionnaire

Both the primary and secondary factor structure of the CCQ were tested for invariance across gender and across stressors. Results showed that the factor structure of the measure was stable across these groups.

The stability of the primary factor structure of the CCQ was investigated using

confirmatory factor analysis, where the items within each scale were hypothesized to load onto a unidimensional factor. All the models were found to fit the data, indicating that the items within each scale loaded onto a unidimensional factor that was invariant across boys and girls and across school, peer, and family stressors. By demonstrating that the items within each scale fit a unidimensional model, the results showed that each primary factor was composed of items measuring the same construct (Hattie, 1984, 1985), and that the meaning of these constructs was identical across the different groups assessed in the study (Hoyle & Smith, 1994). With conceptually distinct or unidimensional scales, this measure can be used to validly assess coping across different contexts, without confounding the results; a problem inherent to many existing measures of coping which lack conceptually distinct coping scales (e.g., CPCQ; Rossman, 1992).

Several models were modified, though, by allowing the error terms between particular items to correlate. However, this type of model modification is warranted if the changes made to the models are theoretically justified (Breckler, 1990; Cole, 1987; Crowley & Fan, 1997; Stevens, 1996). As indicated previously, these added error covariances appeared to capture minor distinctions in the coping strategies that did not warrant breaking up the scales into even finer distinctions of coping; therefore, model modification was theoretically driven. Nonetheless, it is recommended that modified models be cross-validated on an independent sample, in order to replicate the findings from the original study, thus demonstrating their veracity (Crowley & Fan, 1997; Hoyle & Panter, 1995; Stevens, 1996). Therefore, future research on the psychometric properties of the CCQ should focus first on cross-validating its factor structure on an independent sample.

Several different statistical indices were used to examine the stability of the secondary factor structure of the CCQ across gender and across stressors. First, congruence coefficients

were computed to assess the similarity between the factor structures derived for boys and girls, and to assess the similarity among the factor structures derived for school, peer, and family stressors. Results showed that congruence was very high across gender, but only moderately high across the different stressors; however, there are several factors which may explain why a lower level of congruence emerged among the stressors.

Most obvious is the fact that these analyses were based on smaller sample sizes ranging from approximately 150 to 200 subjects per stressor. According to Tabachnick and Fidell (1996), a sample size of at least 300 is preferred for the purposes of factor analysis. Although a sample of 200 subjects is considered a "fair" size (Comrey & Lee, 1992), the use of such smaller sample sizes could affect the reliability of factor analytic results (Tabachnick & Fidell, 1996). Ultimately, this could have affected the magnitude of the congruence coefficients found within this study, since the coefficients were derived from factor analytic results. If the factor analyses had been based on larger sample sizes, the magnitude of the congruence coefficients may have been higher.

Another reason for the lower magnitude of the congruence coefficients is that, statistically, a 3-factor solution did not provide the best fit of the data. In analyses conducted on the whole sample (Fedorowicz, 1995), a 4-factor solution initially appeared to be the most appropriate, as determined by the eigenvalues and scree plot. However, the RMR indices for the 4-factor and the 3-factor solution suggested that the 4-factor solution did not improve the fit of the data greatly.[18] The 4-factor solution also contained factors which had split into doublets, an unacceptable option in factor analysis (McDonald, 1985; Mulaik, 1972).[19] Furthermore, the 4-

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[18]The RMR for the 4-factor solution was .03, whereas the RMR for the 3-factor solution was .04.

[19]Doublets are unacceptable in factor analysis because they can produce solutions that are not unique, or indeterminate, meaning that different factor loadings may be derived from

factor solution did not make as much conceptual sense as the 3-factor solution, which fit the distinction between Approach, Avoidance, and Venting. For these reasons, the 3-factor solution was accepted over the 4-factor solution. Nevertheless, since the data could have fit either a 3-factor or a 4-factor solution, it may have been more difficult to achieve a high magnitude of congruence across stressors, consistent with the results of this study.

Finally, a number of researchers have argued that the factor structure of general coping measures will vary across different situations (DeRidder, 1997; Latack & Havlovic, 1992; Stone & Kennedy-Moore, 1992), thereby affecting their congruence across stressors. According to Spirito (1996), a "changing factor structure ... should not be a surprise. The categorization of a coping strategy, whether it be empirical or conceptual, cannot be separated from the situation .... [and therefore] the function or classification of a coping strategy ... does not remain identical across situations" (p. 574). For this reason, it has been recommended that coping measures be factor analyzed independently for each sample (Spirito, 1996). Practically, however, this is not a feasible solution given the sample size requirements for factor analysis. In addition, contrary to the above-stated arguments, general measures of coping have been shown to have relatively consistent factor structures across different samples (e.g., Ways of Coping Questionnaire; Tennen & Herzberger, 1985), especially if they are grounded in theory (Folkman, 1992b).

Accordingly, this study showed that a general coping measure, such as the CCQ, can have an invariant factor structure across different groups. Although the congruence coefficients

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the observed correlation matrix which could generate the same reproduced correlation matrix. In factor analysis, it is assumed that the solution should be unique, therefore, factor loadings should stay the same. Doublets can also affect the communalities of the other variables in the solution, altering the amount of variance that is accounted for in a variable by the common factors. For these reasons, researchers have argued that a factor should be comprised of at least three observed variables, and that doublets should not be retained as factors (McDonald, 1985; Streiner, 1994).

were slightly lower across stressors, the derived factor structures were conceptually based, as suggested by Folkman (1992b), fitting the distinction between Approach, Avoidance, and Venting. In addition, the pattern and magnitude of the factor loadings were similar across the different stressors, as well as across gender. Furthermore, results from both the RMR index and Box's M test indicated that the secondary factor structure of the measure was consistent across boys and girls and across school, peer, and family stressors. The findings from Box's M test are particularly noteworthy, indicating that the covariance matrices for the groups were equivalent across gender and across stressors. According to Byrne (1994), if support is found for this type of omnibus test of the equality of the covariance matrices, "the groups are considered to be equivalent, and thus tests for invariance are unjustified; group data should be pooled and all subsequent investigative work [should be] based on single-group analyses" (p. 160; see also Hoyle and Smith, 1994).

Overall, the results from this study suggest that general coping measures can be constructed to have invariant factor structures, just like dispositional coping measures, contrary to assertions otherwise (Endler & Parker, 1990; Parker et al., 1993). It appears that if coping measures are constructed to be theoretically grounded, with conceptually distinct scales, and cross-situationally applicable items (Folkman, 1992b; Stone & Kennedy-Moore, 1992), like the CCQ, the likelihood of establishing their factorial stability across groups is increased.

Furthermore, by demonstrating the factorial invariance of the CCQ across gender and stressors, this study addressed a neglected issue in measurement development. In the child coping literature, few studies have attempted to establish the factorial invariance of coping measures, and those that have have generally used insufficient and inadequate statistical methods of demonstrating invariance (e.g., Causey & Dubow, 1992; Reid et al., 1995). By confirming that

the CCQ is invariant across gender and stressors, this measure can be used to validly assess gender and stressor differences in coping, without concern that the emergent differences may be an artifact of an unstable factor structure. In other words, the measure is not biased towards a particular group. In addition, by using a measure that has an invariant, conceptually distinct, and theoretically grounded factor structure, there is a greater probability that results from future studies of children's coping will be more consistent with each other, thereby instilling some more certainty into the conclusions made about children's coping. Furthermore, with the development of psychometrically sound measures of children's coping, advancement in the field of coping is more likely. For example, progress in this area of study would entail the development of norms for children's coping (Knapp et al., 1991); an endeavour which is not possible without the availability of reliable and valid measures of coping.

In sum, the findings from this study suggest that both the primary and secondary factor structure of the CCQ were invariant across gender and stressors, thereby providing support for the measure's psychometric integrity.

Construct Validity of the Children's Coping Questionnaire

The construct validity of the measure was assessed by examining stressor and gender differences in children's coping strategies and cognitive appraisals of stress, as well as by analyzing the relationships among cognitive appraisals, coping strategies, and outcome. Overall, the findings supported the construct validity of the measure.

Stressor and gender differences in cognitive appraisals and coping efficacy. Both children's cognitive appraisals of stress and perceived coping efficacy were examined to determine whether they varied by gender and by stressor type. Hypotheses concerning stressor and gender differences in children's cognitive appraisals of stress were generally confirmed. As

postulated, omnibus results showed that children's appraisals of control, threat, and blame changed across the different stressors, but not across gender.

These results are in accordance with research and theory outlined previously (e.g., Causey & Dubow, 1993; Lazarus & Folkman, 1984; Reid et al., 1995), indicating that children's cognitive appraisals of stress change depending upon the context of the situation. In addition, these findings suggest that this facet of the contextual theory of stress and coping (Lazarus & Folkman, 1984) generalizes to children. In other words, just like adults, children recognize that different stressors vary in terms of their controllability or threat, for example. Nevertheless, longitudinal studies are required to identify how the appraisal process develops and unfolds from childhood to adulthood, in order to fully understand how appraisals influence coping and adjustment in developing youth.

Follow-up analyses on the individual variables showed that children's perceptions of control were higher for school stressors compared to both family and peer stressors, as hypothesized, and as found in other research (Causey & Dubow, 1992; Compas, Malcarne, et al., 1988). In addition, exploratory analyses revealed that children's perceptions of threat were lower for school stressors compared to family and peer stressors. No research has investigated the cross-situational variability of perceived threat in children; however, the present findings are consistent with the idea that children find school stressors to be more controllable than other stressors. Controllable stressors are less likely to evoke distress in children (Causey & Dubow, 1993), and therefore it is unlikely that children would find these types of stressors threatening. In sum, it appears that children perceive academic stressors to be more controllable and less threatening, suggesting that children may find these types of stressors to be more amenable to change than peer or family stressors.

Children's appraisals of blame, however, were not found to vary across the three stressors. This is in contradiction to research on adult populations that has shown variability in attributions of blame across different situations (Compas, Forsythe, et al., 1988). Nonetheless, attributional processes are limited by cognitive development (Allen, Walker, Schroeder, & Johnson, 1987), and research has shown that children's logic or deductive reasoning for attributions of blame/responsibility are more simplistic compared to that of adolescents and adults (Fincham & Jaspars, 1979; P. H. Miller & Aloise, 1989; Ruble & Rholes, 1981; Shantz, 1983). Potentially, this may affect children's capacity to differentiate appraisals of blame/responsibility across different stressors. However, as noted, more research is needed into the development of appraisals from childhood to adulthood, in order to determine exactly how developmental differences affect the appraisal process. On the other hand, the lack of cross-situational differences in appraisals of blame may have simply been a function of the stressors examined in this study. It may have been that if more strikingly different stressors had been compared, such as coping with exposure to marital violence and coping with a poor grade, differences in appraisals of blame would have been evident.

In terms of gender differences, children's cognitive appraisals of stress were not found to differ by gender, consistent with previous research (e.g., Compas, Malcarne, et al., 1988; Grych & Fincham, 1993). Consequently, these findings suggest that gender differences in coping may not be a function of gender differences in cognitive appraisals. For example, some researchers have found that males are more prone towards the use of problem-focused or approach coping (Davies, Myers, & Cummings, et al., 1996; Ptacek et al., 1992; Ptacek et al., 1994), which implies that males would find stressors to be more controllable than females. However, on the basis of existing research, this does not appear to be the case. The question then remains as to

what factors contribute to gender differences in coping, if those differences do not originate from gender differences in appraisals. Although research suggests that some of the gender differences in coping may be attributed to socialization and child-rearing practices (Eccles et al., 1993), more investigation is needed to identify the potential factors which mediate gender differences in coping.

Children's perceived coping efficacy was also examined to determine whether it varied by gender and by stressor type. As postulated, no gender differences were present for coping efficacy; however, contrary to hypotheses, omnibus results showed no stressor differences for coping efficacy as well. Univariate results, though, showed that overall perceived coping efficacy varied by stressor type, as found in previous research (Reid et al., 1993). A significant Stressor x Gender interaction for overall perceived coping efficacy clarified this finding further, showing that girls had higher levels of coping efficacy than boys for school stressors, but lower levels of coping efficacy than boys for family stressors.

Since children did not identify the specific types of school, peer, or family stressors they were coping with in this study, it is difficult to determine the implications of these findings. However, if we consider research on children's exposure to marital conflict, a type of family stressor, it has been shown that girls are more prone to taking responsibility for parental arguments and to subsequently feel more depressed than boys (Cummings, Vogel, Cummings, & El-Sheikh, 1989; Vuchinich, Emery, & Cassidy, 1988). Consequently, in this study, if girls were taking more responsibility for familial stressors, they may have felt less efficacious when coping with this type of stressor as compared to boys. Nevertheless, other studies have not found evidence for gender differences in children's coping efficacy for school stressors (Causey & Dubow, 1993) or familial stressors (Grych & Fincham, 1993). In consideration of this, these

findings need to be interpreted cautiously and replicated so as to ensure their veracity.

Overall, it appears that the evidence for situational differences in coping efficacy was not as strong as that found for situational differences in children's appraisals. Although perceived coping efficacy has been construed as an appraisal in previous research (Cummings et al., 1994), it may be that coping efficacy is more aptly conceptualized as an outcome variable (e.g., Reid et al., 1993; Reid et al., 1995; Zautra et al., 1989; Zautra & Wrabetz, 1991). Outcome variables are less likely to vary simply as a function of problem content. For example, it would be tenuous to propose that depression, an outcome variable, would be higher for children coping with peer problems as compared to children coping with school problems. Variations in an outcome variable are more likely to be a function of other mediating factors, such as individuals' cognitive appraisals or their coping strategies. Accordingly, if perceived coping efficacy is viewed as an outcome variable, it is less reasonable to presume that it would vary simply due to problem content. This may explain why cross-situational differences in coping efficacy were not as stark as those found for cognitive appraisals of stress, and suggests that future research would benefit from conceptualizing coping efficacy as an outcome variable.

In addition, it is intriguing that when stressor differences were found for coping efficacy, they only existed for overall coping efficacy, rather than for problem-focused or emotion-focused coping efficacy. Previous research has shown similar effects in that different patterns of results emerged depending on the type of coping efficacy variable examined (Cummings et al., 1994). This suggests that perceived coping efficacy may be a multi-faceted construct, which reflects children's perceptions of success in coping with different aspects of the stressor (e.g., problem-focused efficacy vs. emotion-focused efficacy). Consequently, it would be helpful for future research to identify precisely how children differentiate these variables. For example, by

conducting interviews, it may be possible to ascertain how children interpret these questions, thereby discovering what types of distinctions children are making among the coping efficacy questions. Furthermore, it suggests that future studies of coping should assess perceived coping efficacy as a multi-faceted construct, since it may reflect variations in the coping process.

In summary, this study found cross-situational differences in children's cognitive appraisals of stress, consistent with theory and previous research, thereby providing support for the construct validity of the CCQ. Evidence for situational differences in coping efficacy was not as definitive, potentially because coping efficacy is more appropriately conceptualized as an outcome variable.

Stressor and gender differences in coping strategies. Based on theory and previous research, it was postulated that children's coping strategies would be affected by gender and by stressor type. These hypotheses were confirmed, with omnibus results showing stressor and gender differences in the primary and secondary coping scales of the CCQ.

In terms of stressor differences, follow-up analyses on the secondary coping scales of the measure showed that: (a) Approach coping was used more frequently to deal with school and peer stressors compared to family stressors; (b) Avoidant coping was used more frequently to deal with peer stressors compared to school stressors; and (c) Venting was used more frequently to cope with family and peer stressors compared to school stressors. Analyses at the primary scale level mirrored these results, but clarified precisely which primary scales comprising the secondary scales varied by stressor type.

In particular, for scales composing Approach coping, it was found that Cognitive Decision Making was used to a greater extent to deal with peer stressors compared to family stressors, and that Direct Problem Solving and Support Seeking were used more often to cope

with school and peer stressors compared to family stressors (Brodzinsky et al., 1992; Compas, Malcarne, et al., 1988). These findings are consistent with the notion that controllable stressors, such as academic problems, are more amenable to approach or problem-focused coping strategies (Causey & Dubow, 1992; Compas, Malcarne, et al., 1988). Although it may seem inconsistent that children did not use Support Seeking as often to cope with family stressors, this finding was in accordance with research which has shown that support seeking may not be helpful for coping with familial problems (McCloskey, Figueredo, & Koss, 1995). McCloskey and her colleagues have speculated that support seeking may be ineffective for coping with familial stress because it is difficult for children to receive solace from family members, since the source of stress originates from within the family. This suggests that future research should examine the effectiveness of support-seeking across different situations in order to determine if support seeking is more or less effective for coping with familial stressors. In addition, it would be interesting to determine if the effectiveness of support-seeking varies for different types of familial stressors, such as quarrels with siblings as compared to difficulties with parents.

For the primary scales composing Avoidant coping, the results showed that Avoidant Actions were used more frequently to cope with peer and family stressors compared to school stressors (Brodzinsky et al., 1992; Stern & Zevon, 1990). For scales comprising Venting, it was found that Aggressive Actions were used more often to deal with peer and family stressors compared to school stressors, and that Expressing Feelings was used to a greater degree to cope with family stressors compared to school stressors (Causey & Dubow, 1992; Spirito et al., 1991). Since peer and family stressors were appraised as less controllable than school stressors, these findings are in agreement with both theory and research which emphasize that avoidant or emotion-focused coping strategies are most useful in uncontrollable circumstances (Altshuler &

Ruble, 1987; Compas et al., 1991; Folkman, 1984; Hoffner, 1993; Lazarus & Folkman, 1984).

Overall, these results suggest that there are cross-situational differences in coping, as postulated by the contextual theory of stress and coping (Lazarus & Folkman, 1984). Although few studies have examined cross-situational coping in children, this study and others generally indicate that children are more likely to use approach coping for dealing with controllable and less threatening stressors, such as academic problems, whereas avoidance and venting are more likely to be used for uncontrollable and threatening stressors, such as family problems. Future research now needs to determine whether children are better adjusted if they are more flexible in their coping behaviour, by adjusting their coping to the demands of the situation. Researchers have speculated that flexibility in coping behaviour is the key to successful coping (Zeidner & Saklofske, 1996); however, this area of research is yet to be investigated.

As noted previously, another important area of investigation in the field of coping would be to determine norms for children's coping with different situations. However, a dilemma which remains to be solved is how stressors should be conceptualized for this purpose. For example, should stressors be categorized according to problem content (e.g., school vs. family stressors), their chronicity or acuteness (Compas, 1987a), whether they are major life events or daily hassles (Wagner, Compas, & Howell, 1988), or on the basis of cognitive appraisals (e.g., controllable vs. uncontrollable stressors; Hoffner, 1993). Future research will have to determine how these various categorizations of stressors reflect changes in the coping process; however, most likely a combination of these categorizations of stressors will need to be used for the purpose of establishing norms of children's coping.

With regards to gender differences in coping, follow-up analyses on the secondary coping scales showed that Avoidant coping was used to a greater extent by boys than girls, as

hypothesized. Analyses on the primary scales mirrored these results, but also provided additional information on gender differences in children's coping. In particular, for scales comprising Avoidance, it was found that Distracting Actions and Withholding Feelings were used more frequently by boys than girls, consistent with other research (Causey & Dubow, 1992; Roecker et al., 1996; Ryan, 1989). As proposed, the results also showed that boys used more Aggressive Actions (Bird & Harris, 1990; Causey & Dubow, 1992; P. M. Miller et al., 1986; Romano, 1997), whereas girls used more Support Seeking (e.g., Brodzinsky et al., 1992; Causey & Dubow, 1992; Spirito et al., 1995; Wertlieb et al., 1987) and Negative Cognitions/Worrying to cope with problems (Brown et al., 1986; Causey & Dubow, 1992; Grant & Comps, 1995; Roecker et al., 1996). In addition, it was found that girls used more Wishful Thinking to cope with stressors, as found in previous research (Frydenberg & Lewis, 1991, 1993; Halstead et al., 1993).

These findings are consistent with research on socialization practices that has shown that parents are more accepting of aggressive and retaliatory behaviour from boys, whereas affiliatory and cooperative behaviour is encouraged in girls (Brody, 1985; Eccles et al., 1993; Fivush, 1991; Kuebli & Fivush, 1992; Lips, 1988). Therefore, boys are more likely to deal with problems through aggressive means, whereas girls are more likely to work through problems by seeking informational and emotional support from others (Cramer & Skidd, 1992; Hyde, 1996; Sanson, Prior, Smart, & Oberklaid, 1993; Wolchik, Sandler, & Braver, 1987). In addition, parents tend to concentrate more on discussing emotions, such as sadness, with girls than boys (Adams, Kuebli, Boyle, & Fivush, 1995), while boys tend to expect negative interpersonal consequences to the expression of emotions (Fuchs & Thelen, 1988; Zeman & Garber, 1996; Zeman & Shipman, 1997). As a result, boys are more likely to refrain from discussing problems (i.e., withholding

feelings; distracting actions), whereas girls are more likely to ruminate about problems (i.e., negative cognitions; wishful thinking; Buntaine & Costenbader, 1997; Conway, Giannopoulos, & Stiefenhofer, 1990; Fivush, 1991; Zeman & Garber, 1996).

In general, it appears that boys and girls are socialized to cope with problems differently. By recognizing this, parents and professionals can anticipate how boys and girls are likely to react to stressors, and subsequently they can intervene to facilitate more adaptive coping. For example, if boys are more likely to cope through avoidance or by withholding their feelings, it may be helpful to encourage boys to discuss problems and their feelings about them. In addition, these findings suggest that future studies need to determine how gender and situational factors (e.g., appraisal) interact to influence coping. Future research also needs to identify how children's sex-role orientation (i.e., masculine, feminine, or androgynous) influences their coping, and what the implications of more stereotypical coping are for children's adjustment. For example, do children with stereotypical sex-role orientations cope in more stereotypical ways, regardless of the demands of the situation? What are the implications of this for children's success in coping and their adjustment? These are only a few of the questions which need to be answered about children's coping behaviour.

The interaction between gender and stressor type was also analyzed, with results showing a few significant interaction effects on the coping scales. Although these findings are contrary to those reported by Brodzinsky et al. (1992) and Spirito et al. (1991), these researchers employed different coping scales (viz., CSCY and Kidcope respectively), which did not include the range of coping strategies assessed by the CCQ. Therefore, these studies may have not found interaction effects for coping because they simply did not assess a wide enough range of coping behaviour.

For the secondary coping scales, the interaction effects showed that Avoidance was used more frequently by boys than girls for school and peer stressors, but not for family stressors, whereas Venting was used more often by girls than boys for the family stressor, but not the peer or school stressor, consistent with previous research (Causey & Dubow, 1992; Roecker et al., 1996; Spirito et al., 1988). Therefore, it appears that boys are more likely to cope using Avoidance, all but for family stressors. In fact, research on exposure to marital conflict, a type of family stressor, has shown that boys tend to intervene in instances of familial conflict, rather than avoiding it (Davies et al., 1996). Alternatively, girls are more likely to cope with familial conflict through the use of venting (viz., worrying or expressing feelings; Roecker et al., 1996), as found in this study.

For the primary coping scales, the interaction effects showed that No Coping Effort was used less frequently by boys than girls to cope with familial stressors, but not with peer or school stressors. This is consistent with the above-stated research which has shown that boys are more likely to intervene in instances of familial conflict, rather than doing nothing or avoiding the conflict (Davies et al., 1996). On the other hand, Aggressive Actions were used to a greater extent by boys than girls to cope with peer and school stressors, but not with family stressors. In accordance with this, studies have documented that boys are more likely to use aggression to cope with school and peer stressors (Causey & Dubow, 1992), but no gender differences have been found in children's use of aggressive actions to deal with familial stressors (Roecker et al., 1996). Considering that familial problems can be very intense (e.g., interparental conflict; sibling rivalry; parent-child arguments), they are likely to induce more regressive forms of coping among children, such as aggressive actions. In these situations, it appears that girls are just as likely as boys to deal with the problem through the use of aggression.

In summary, this study showed that children's coping is a variable process which is affected by situational differences and by gender, consistent with previous research and theory. It should be noted, however, that although results on the primary coping scales mirrored results on the secondary coping scales, it was also evident that analyses at the primary level provided a more precise understanding of how children's coping was affected by gender and stressor differences. For example, although situational differences were found on Approach coping, only three of the primary scales comprising Approach coping, Cognitive Decision Making, Direct Problem Solving, and Support Seeking, were found to vary by stressor type. In addition, it appeared that examinations at the primary coping level clarified results which were obscured at the secondary coping level. For example, Venting was affected by a significant Gender x Stressor interaction, with results showing that girls used this strategy more often than boys for coping with familial stressors. Venting, however, is composed of three primary scales, Aggressive Actions, Negative Cognitions, and Expressing Feelings. Out of these three scales, the results showed that girls only used Expressing Feelings more often than boys for coping with familial stressors (see Table 19). This obviously paints a clearer picture of the Gender x Stressor interaction identified for Venting, and points to the importance of examining coping more finitely.

In general, it is evident that the complexity and diversity of coping might be overlooked when coping strategies are studied at only a broad level (i.e., Approach vs. Avoidance; Aldwin, 1994; Compas, 1987b; Schwarzer & Schwarzer, 1996; Spirito, 1996; Zeidner & Saklofske, 1996). However, due to statistical and practical considerations (i.e., controlling for Type I errors), researchers often choose to examine coping more broadly, rather than conducting a fine-grained analysis of coping. A partial solution to this problem may be for researchers to select several coping strategies of interest from a measure, rather than examining all the coping strategies

assessed by that measure (e.g., Hastings et al., 1996). In this manner, the magnitude of the correction required to control for Type I errors would be reduced, since only a subset of the coping strategies from a measure would be analyzed. Statistical concerns, such as this, could also be managed by selecting a more liberal alpha level, and by carrying out inductive rather than exploratory research (e.g., proposing a priori, rather than post-hoc comparisons). Using these approaches, coping processes can be examined more precisely so that a more comprehensive and accurate understanding of children's coping is reached.

In addition, the results from this study and others point to the importance of examining gender and stressor differences in coping behaviour, rather than pooling data and ignoring these types of differences (e.g., examining coping with regard to "general stress"). By ignoring gender and stressor differences in coping, it is unlikely that a clear picture of the coping process will emerge, and the external validity of such studies would appear to be questionable. Future studies of children's coping need to examine coping with regard to a specific situation and pay heed to the potential differences in boys' and girls' coping behaviour. Furthermore, if coping is examined across several different stressors, this study points to the importance of examining the interaction between stressor type and gender, since it appears that not all gender differences in coping are consistent across stressors.

In conclusion, these results have shown that children's coping behaviour varies according to gender and stressor type, consistent with theory and previous research, thereby providing additional support for the construct validity of the measure.

Controlling for problem content and cognitive appraisals: Gender differences in coping. Because researchers have contended that gender differences in coping are confounded with gender differences in problem content and in cognitive appraisals (Porter & Stone, 1995), this

study assessed whether gender differences in children's coping strategies were still present after controlling for problem content and cognitive appraisals of stress. Both omnibus and univariate results showed that gender differences in children's coping were still evident after controlling for these variables. The gender differences found and the direction of their effects were consistent with the aforementioned results on gender differences in children's coping, where problem content and cognitive appraisals were not controlled for (e.g., boys used more Aggressive Actions than girls).

Research in the adult coping literature has shown varied results on this topic, with some researchers documenting gender differences in coping, and others not, when problem content and cognitive appraisals have been controlled for (e.g., Porter & Stone, 1995; Ptacek et al., 1994). However, the results from this study are not that surprising. Children are more likely to conform to gender typical behaviour since they expect negative repercussions from their peers and parents if they do not behave in a gender-appropriate manner (e.g., a boy may be called a sissy if he expresses his feelings; Fuchs & Thelen, 1988; Lips, 1988; Zeman & Garber, 1996). Therefore, boys are more likely to deal with a peer problem, for example, through aggressive actions, whereas girls are more likely to express their feelings about the problem. However, as individuals move towards adulthood, these gender differences in behaviour decrease, or in some instances disappear (Cohn, 1991; Hobfoll, Dunahoo, Ben-Porath, & Monnier, 1994; Hyde, 1996; Lips, 1988), which may explain why gender differences in coping are less evident in adults (Porter & Stone, 1995). Nevertheless, from this study, it appears that children tend to cope in gender typical ways, even after gender differences in problem content and cognitive appraisals are controlled for.

This suggests that in the child coping literature, gender differences in coping are not

confounded with gender differences in problem content or cognitive appraisals, and that in fact, these gender differences do appear to represent genuine distinctions in coping behaviour between boys and girls. Consequently, by recognizing that boys and girls have a proclivity for coping in gender-typical ways, stress and coping prevention/intervention programs can be designed to meet the needs of boys and girls more appropriately (e.g., helping boys talk about problems and their feelings). Longitudinal research is also needed into the developmental progression of gender differences in coping, in order to identify how gender differences in coping evolve from early childhood to adulthood. For example, questions that still need to be answered are at what developmental stages do gender differences in coping become more or less evident? Do parents model and reinforce gender-typical coping in their children? What are the factors that mediate/moderate gender differences in coping? How does gender interact with situational influences on coping behaviour? By concentrating on prospective longitudinal research and by using statistical techniques such as structural equation modeling, future investigations of children's coping can seek to answer these types of questions, and thus provide a more comprehensive and detailed understanding of children's coping behaviour.

Relationships among cognitive appraisals, coping strategies, and outcome. The relationships among appraisals, coping, and outcome were examined for boys and girls, with hypotheses guided by theory and research on children's and adults' coping. A number of these hypotheses were confirmed.

Specifically, in terms of the relationships between cognitive appraisals and coping, the results showed that for both boys and girls, perceptions of control were positively associated with Approach coping, consistent with theory and research (e.g., Causey & Dubow, 1993; Folkman, 1984; Forsythe & Compas, 1987). However, perceptions of control were not significantly

associated to either Avoidance or Venting. Theoretically, it has been postulated that since higher perceptions of control should be predictive of problem-focused or approach coping, lower perceptions of control should be predictive of emotion-focused or avoidant coping (Lazarus & Folkman, 1984; Roth & Cohen, 1986). However, as found in this study and other research (e.g., Compas et al., 1991; Compas, Malcarne, et al., 1988, Fedorowicz et al., 1995; Roecker et al., 1996), the link between perceptions of control and emotion-focused or avoidant coping has not been established in studies of children. Consequently, Compas and his colleagues (1991) have speculated that problem-focused/approach coping and emotion-focused/avoidant coping may be linked to different types of appraisals or "cues". In particular, whereas problem-focused coping may be connected to situations that are appraised as controllable, emotion-focused coping may be related to "cues of emotional distress," such as perceptions of threat (see also Folkman, 1984). Although this supposition has not been extensively explored, it would explain why in this study Approach coping was only related to perceptions of control.

Furthermore, the findings from this study supported Compas et al.'s (1991) assertion that cues of emotional distress, such as perceived threat and self-blame, are related to emotion-focused and avoidant coping, but not problem-focused/approach coping. In particular, the results showed that perceptions of threat and perceptions of self-blame were positively related to Venting for both boys and girls (Compas et al., 1996; Ebata & Moos, 1991; Mikulincer, 1989), whereas, no significant relationships were found between these appraisal variables and Approach coping. The findings also showed that the positive relationship between perceived threat and Avoidance approached significance among girls; however, the relationship between perceived blame and Avoidance was not significant, contrary to previous research (Ebata & Moos, 1994; Kerig, 1996) and the suppositions made by Compas and his colleagues (1991).

In general, though, these results are congruous with the notion that controllable or changeable aspects of a situation will elicit problem-focused/approach coping from individuals, whereas, heightened emotions or distress (e.g., threatening environments) will evoke more emotion-focused or avoidant coping responses (Compas et al., 1991; Folkman, 1984). In fact, this description is similar to Cannon's (1939) conceptualization of fight or flight reactions. If individuals realize that they can change or control a stressor, they will focus on resolving that problem (i.e., fight), whereas, distressing or threatening situations are likely to cause individuals to avoid the situation and focus largely on coping with their emotional arousal (i.e., flight). In general, these reactions to the environment would be predictive of better adjustment, since individuals are dealing with situations which are changeable, but avoiding those which are harmful (Folkman, 1984). Consequently, by understanding these mechanisms of the coping process, stress and coping intervention programs can teach individuals to not only pay attention to different aspects of the situation, but to their bodily cues as well (i.e., emotional arousal), so that the most adaptive coping response is pursued. However, future research needs to investigate how perceived threat and control interact to influence the coping process in children, so that a better understanding of this process is achieved.

In terms of the relationships between coping and outcome, Approach coping was positively associated with all forms of perceived coping efficacy for boys and girls, consistent with previous research (Causey & Dubow, 1993; Reid et al., 1995). Venting was negatively associated with all forms of coping efficacy, (Causey & Dubow, 1993; Reid et al., 1995), but this relationship was only found among girls, not boys. Lastly, contrary to previous research which has documented a negative relationship between Avoidance and coping efficacy (Causey & Dubow, 1993; Reid et al., 1995), results from this study showed that Avoidance was positively

associated with emotion-focused coping efficacy among boys, but not girls. In other words, boys who used avoidance to cope with stressors felt that they had managed their emotions better. In fact, some studies have shown that avoidance is predictive of better adjustment among children (Creasy, Mitts, & Catanzaro, 1995), especially when the stressors they are coping with are uncontrollable (Altshuler & Ruble, 1989; Hoffner, 1993). In addition, Kerig and her colleagues (in press) found that for children coping with interparental violence, an uncontrollable stressor, avoidance was predictive of better adjustment; however, this relationship was only found for boys, not girls, as with the present study. Furthermore, considering that a number of studies on children's coping have shown that boys have an inclination to deal with stressors through avoidant coping (Causey & Dubow, 1992; Roecker et al., 1996; Ryan, 1989), it seems concordant that the relationship between avoidance and coping efficacy would only manifest itself among boys. Overall, it appears that since previous studies have not aimed to examine the relationships between coping and coping efficacy independently for boys and girls, gender differences in these relationships may have been obscured in past research.

Finally, the relationships between cognitive appraisals of stress and outcome were also evaluated in this study. Results showed that perceptions of control were positively related to all forms of coping efficacy for both boys and girls, as found in past studies (Causey & Dubow, 1993). In addition, appraisals of threat were negatively associated with coping efficacy, consistent with previous research (Aldwin, 1991; Aldwin & Revenson, 1997; Cummings et al., 1994); however, among girls, perceived threat was related to all forms of coping efficacy, whereas for boys, perceived threat was only associated with emotion-focused coping efficacy. Lastly, the relationship between perceived blame and coping efficacy was not substantiated for either boys or girls, contrary to past research which has shown increased perceptions of self-blame were

predictive of poorer adjustment among children (Cummings, et al., 1994).

Overall, it appears that a number of the proposed relationships among cognitive appraisals of stress, coping strategies, and outcome were substantiated in this study. However, a number of limitations should be noted. First, the hypotheses regarding the relationships among appraisals, coping, and outcome were largely guided by the contextual theory of stress and coping (Lazarus & Folkman, 1984). This theory was originally developed to explain adult coping processes, and therefore it does not take into account developmental differences in coping between children and adults. As a consequence of this, it is unlikely that all the suppositions within the theory will explain the processes by which children cope, and this may be the reason why some of the proposed relationships among appraisals, coping, and outcome were not supported in this study. Consequently, although the contextual theory of stress and coping serves as an excellent model of the coping process, it will have to be modified to account for developmental differences in coping, if it is to be continued to be used as a guide for research on children's coping. For example, as noted previously, some adult coping strategies are unavailable to children, and children also appear to be more inclined to cope in gender stereotypic ways. These types of issues will need to be accounted for in theories of children's stress and coping. However, research on developmental differences in cognitive appraisals and coping is only in its infancy. It is likely that prospective longitudinal research on the coping process will have to be conducted, before developmental differences in the coping process are fully appreciated and can be integrated into a theoretical model of coping.

Another limitation of this study was that the magnitude of the correlations found was in the low to moderate range. The size of the correlation coefficients may have been attenuated because they were examined without reference to a particular stressor. Most studies of children's

coping have examined how children coped with regards to an identified event. For example, in a study which used the CCQ to examine coping with interparental violence, it was found that the magnitude of the correlations between children's coping and adjustment was in the moderately high range (Kerig et al., in press). By examining coping without reference to an identified event, as in this study, the error variability may have been increased, thereby obscuring the magnitude of the correlations. In fact, in follow-up analyses not included in this study, results showed that the magnitude of the correlations among appraisals, coping, and outcome increased, when the relationships were examined with reference to a particular stressor (e.g., school stressor). Therefore, it appears that future studies should endeavour to examine children's coping with reference to an identified stressor, rather than pooling data across stressors.

Nevertheless, it is interesting to note that other studies of children's coping have observed similar findings, in that the correlation coefficients from these studies were not as high as those observed in adolescent or adult studies of coping (Causey & Dubow, 1992; Compas, Malcarne, et al., 1988). This suggests that other mediating variables (e.g., gender) may be involved in these relationships among children. If these mediating variables are not assessed, the relationships among appraisals, coping, and outcome will appear weak or non-existent (see Baron & Kenny, 1986 for a review of mediator variables).

On the other hand, it is also possible that cognitive appraisals are less predictive of coping strategies among children than adults. Because of their developmental stage, children are still learning how to cope effectively with difficulties in their lives. For example, compared to adults, children are more likely to use non-constructive (e.g., aggression; negative cognitions) coping strategies to deal with problems (Brown et al., 1986; Tangney et al., 1996; Wenar, 1994). Accordingly, children may have more of a tendency to react automatically to stressors, rather than

being guided by cognitive appraisals of stress. Therefore, the link between appraisals and coping may not be as strong among children as compared to adults. Consequently, it would be helpful for future studies to examine the relationship among cognitive appraisals and coping across development (e.g., children, adolescents, and adults), so as to identify if this relationship grows stronger with maturation. As noted previously, the results of this type of research would also help refine theories of stress and coping, so that they could account for developmental differences in the coping process.

It was also apparent that, as with the results on stressor and gender differences in coping, the relationships among appraisals, coping, and outcome were clarified when the primary coping scales were analyzed, rather than the secondary coping scales. As indicated previously, conducting a more fine-grained analysis of coping provides researchers with a better understanding of the complexity and diversity of coping processes (Aldwin, 1994; Compas, 1987b; Schwarzer & Schwarzer, 1996). In addition, the findings from this study showed that the relationships among appraisals, coping, and outcome were different for boys and girls. Although many studies have neglected to examine this issue, it appears important to focus on gender differences in these relationships in future research. Finally, as with the results on stressor and gender differences in appraisals, the relationships among appraisals, coping, and efficacy varied, depending on the type of coping efficacy variable examined. As noted previously, Cummings et al. (1994) found similar effects, in that different patterns of results emerged depending on the type of coping efficacy variable that was examined. Again, this suggests that perceived coping efficacy is a multi-faceted variable, and should be treated this way in future research.

Directions for Future Research

The results of this study provided evidence of the factorial invariance of the CCQ across

gender and stressors, in addition to providing preliminary evidence for the construct validity of the measure. The CCQ appears to be a promising measure of children's coping; however, since the psychometric integrity of any measure can only be established after repeated demonstrations of its reliability and validity, more research on the measure is needed.

Foremost, there is the need to cross-validate the factor structure of the measure on an independent sample. Although cross-validation is rarely undertaken in the development of measures, this step is necessary towards establishing the reliability of the factor structure of any assessment instrument (Hoyle & Smith, 1994). It is especially important when post hoc model modifications have been made (Crowley & Fan, 1997; Hoyle & Panter, 1995; Stevens, 1996), as in this study, where error covariances were added between particular pairs of items.

In addition, although this study demonstrated the factorial invariance of the measure across stressors, it may be necessary to verify the factor structure of the CCQ if it is used to assess coping with stressors strikingly different from those assessed in this study. Specifically, the present research suggests that the factor structure of the CCQ is consistent across academic and interpersonal stressors. However, if the measure was used to assess coping with medical stressors (i.e., coping with diabetes), for example, it would be advisable to re-analyze the factor structure of the questionnaire. In addition, it may be necessary to revise or add items to the measure if it is used to assess coping with strikingly different stressors (Lazarus, 1990), in order to capture the coping strategies which may be unique to those stressors.

Furthermore, if the CCQ was to be used to assess mean differences in coping in different ethnic groups, it would be vital to demonstrate the factorial invariance of the measure across ethnicity (Volk & Flori, 1996). As stated earlier, valid mean comparisons between groups cannot be made, unless an assessment instrument is invariant across the groups of comparison (Hoyle &

Smith, 1994). Therefore, before a valid conclusion could even be reached about ethnic differences in coping, the factorial invariance of any coping measure used to assess such differences would have to be established (e.g., Jose et al., 1994).

Consequently, it may be advantageous to use EQS (Bentler, 1992; Bentler & Wu, 1993) rather than LISREL in future confirmatory factor analyses of the CCQ. Byrne (1995) has observed that compared to EQS, LISREL may provide excessively conservative estimates of model fit, thereby rejecting models that are in fact true (see also Hu, Bentler, & Kano, 1992). In consideration of this, EQS could also be used to re-analyze the secondary factor structure of this measure, in order to discover whether the secondary factor structure of the CCQ could actually be fitted using confirmatory factor analysis.

Further research is also needed on the reliability and validity of the CCQ in order to establish its psychometric integrity. Preliminary research in this arena has already taken place, with studies demonstrating the convergent validity of the CCQ with parental reports of children's coping strategies (Kerig & Fedorowicz, 1998) and with another self-report measure of children's coping (Fedorowicz & Kerig, 1998). In addition, relationships among appraisals and coping, as well as coping and adjustment, were demonstrated in a study investigating children's coping with interparental conflict and violence (Kerig et al., in press), thereby providing additional support for the construct validity of the measure. It would also be useful to conduct interviews with children, so as to identify how they differentiate the appraisal and coping efficacy questions, thereby getting an indication of the content validity of these questions.

One of the shortcomings of the CCQ is that it is a long measure, and therefore it may be cumbersome for children to complete, and too time-consuming for studies that aim to assess many different facets of children's functioning. Therefore, it would appear to be beneficial to

develop a short version of the CCQ. However, empirical testing would be required to establish its psychometric properties, since Smith and McCarthy (1995) have warned that the reliability and validity of abbreviated measures can often be attenuated. In addition, Spirito (1996) has cautioned that a substantial amount of information can be lost when abbreviated measures of coping are used. Nevertheless, in instances where only a screening of children's coping is required, abbreviated versions may still be useful with the above-stated cautions taken into consideration.

Finally, considering that this study and others (e.g., Fedorowicz, 1995; Kerig & Fedorowicz, 1998) have provided preliminary evidence of the psychometric integrity of the CCQ, it would be appropriate to use the measure in further research on children's coping. For example, the measure could be used to assess resiliency in children experiencing severe stressors (e.g., family violence, parental alcoholism, environmental disasters). In addition, it could be useful in assessing coping flexibility, the degree to which individuals are flexible enough to use different combinations of coping strategies depending on the needs of a situation; a skill which is considered to be predictive of adaptive coping (Zeidner & Saklofske, 1996).

Furthermore, considering that many schools have incorporated stress management programs into children's education (e.g., Durlak, 1995; Dubow, Schmidt, McBride, Edwards, & Merk, 1993; Grace, Spirito, Finch, Ott, 1993), it would seem worthwhile to evaluate the effectiveness of these programs with pre-evaluations and post-evaluations of children's coping strategies. This is especially important since stress management programs have been criticized for not teaching children developmentally appropriate coping strategies or stressor-specific coping strategies (Compas, Phares, & Ledoux, 1989). Lastly, the CCQ could also be used in clinical settings to evaluate how children are coping with stress. Based on this evaluation, treatment

programs could be tailored to meet individual children's needs for developing more effective coping repertoires (e.g., Frydenberg & Lewis, 1991; Moos, 1993). In addition, by using the CCQ, clinicians could evaluate children's cognitive appraisals of stress, thus identifying whether children's appraisals fit reality and whether children's coping strategies match their appraisals (Folkman, 1992a). Subsequently, cognitive-behavioural interventions could be undertaken with children whose perceptions of stress do not match reality or their coping strategies (e.g., appraisal training; Folkman et al., 1991).

In conclusion, this study has established the factorial invariance of the Children's Coping Questionnaire, and has worked towards providing evidence for the construct validity of the measure. In addition, some unique insights were provided into stressor and gender differences in children's coping strategies and cognitive appraisals, as well as the relationships among appraisals, coping, and outcome; thus, making a significant contribution to the children's coping literature. Although more research is needed into the psychometric properties of the CCQ, the existing research suggests that it is a reliable and valid measure of children's coping and cognitive appraisals.

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Appendix A

Children's Coping Questionnaire (CCQ): Item composition

Cognitive Decision Making (CDM)

1 - Think about what I could do before I do anything.

26 - Think about what would be the best thing to do.

39 - Go over in my mind different things I could do.

66 - Try to find out more about what the problem is.

72 - Think about what I should do.

75 - Try to come up with a plan before I do anything.

Direct Problem Solving (DPS)

7 - Do something to make things better.

20 - Try to make things better by changing what I do.

29 - Do something so that it will work out.

33 - Do something to solve the problem.

67 - Change something, to make it better.

71 - Do something to fix the problem.

Self-Calming/Affect Regulation (SC/AR)

21 - Remind myself to relax.

62 - Tell myself to stay calm.

68 - Count to ten.

76 - Take a deep breath.

80 - Try to calm myself down.

Wishful Thinking (WT)

14 - Wish really hard that it would end.

28 - Pray that things will change.

46 - Pray to make things better.

49 - Wish a miracle would happen.

60 - Wish with all my might that it would stop.

Positive Cognitive Restructuring (PCR)

2 - Try to see the good side of things.

8 - Tell myself it will all work out OK.

15 - Tell myself it will be over in a short time.

27 - Tell myself that things could be worse.

40 - Tell myself that things aren't that bad.

78 - Try to think only happy thoughts.

Support Seeking (SS)

3 - Talk about the problem with someone in my family.

16 - Talk about my feelings with someone.

32 - Get help from a friend.

38 - Get help from someone in my family.

41 - Talk about the problem with one of my friends.

45 - Talk to someone who could help me.

65 - Ask someone what I should do.

Avoidant Actions (AVA)

5 - Try to stay away from the problem.

18 - Try to stay away from things that make me feel upset.

30 - Avoid the people that make me feel bad.

43 - Avoid it by going to my room.

81 - Go off by myself.

Cognitive Avoidance (CA)

12 - Try to put it out of my mind.

24 - Pretend the problem never happened.

50 - Try not to think about it.

52 - Try really hard to forget about it.

63 - Refuse to think about it.

Distracting Actions (DA)

4 - Go ride my bike, skateboard, or roller blade.

11 - Listen to music or watch T.V.

17 - Play some games.

23 - Go somewhere and play.

36 - Read a book or a magazine.

44 - Play video games or a hobby.

No Coping Effort (NCE)

10 - Just let it happen.

37 - I just wait.

47 - Just stand there.

57 - I don't do anything.

59 - I can't think of anything to do.

77 - I don't know what to do.

Withholding Feelings (WF)

34 - Act like its no big deal.

53 - Do not tell anyone how I am feeling.

54 - Act as if I don't care.

70 - Act like it doesn't bother me.

74 - Keep all my feelings inside.

79 - Don't let anyone know that it bothers me.

Expressing Feelings (EF)

9 - Let all my feelings out.

22 - Cry by myself.

35 - Let out my feelings to my pet or stuffed animal.

42 - Yell to let off steam.

48 - Let off steam by hitting my pillow or bed.

73 - Yell to let my feelings out.

Negative Cognitions/Worrying (NCW)

13 - Worry about all the bad things that could happen.

25 - Think about how bad things are.

51 - Get scared that something bad might happen to me.

55 - Just worry about how bad things are.

56 - Think it might be my fault.

61 - Feel bad about myself.

Aggressive Actions (AA)

6 - Get into a fight with someone.

19 - Do something bad or cause trouble.

31 - Get mad or yell at someone.

58 - Say mean things to people.

64 - Pick on someone.

69 - Hit someone, or hurt someone.

Appendix B

Questions About You

1. When is your birthday? _____ _____ _____
DAY MONTH YEAR

2. How old are you? (Circle one)

8 9 10 11

3. Are you a girl or a boy? (Circle one)

Girl Boy

WAIT UNTIL IT'S TIME TO TURN THE PAGE!

Appendix C

Cognitive Appraisal Questions

All kids get upset or bothered by different things. There are a lot of things kids do when they are upset. This is what we're trying to learn about - What do kids do when they're upset that helps them feel better?

So we'd like to know about you, and the things that help you, when you are upset or bothered by something.

1. All kids have times when they are upset or bothered by things. What bothers you or makes you upset the most? (Pick one)

   ☐ - Problems with my school-work.
   ☐ - Problems getting along with other kids.
   ☐ - Problems at home with people in my family.

2. How much does this problem bother you or make you feel upset?

   ☐ not at all ☐ a little ☐ pretty much ☐ a lot

3. How do you feel when this problem happens? (Pick one)

   ☐ mad ☐ sad ☐ worried ☐ happy

4. How much do you think you cause this problem to happen?

   ☐ not at all ☐ a little ☐ pretty much ☐ a lot

5. Can you do something to solve this problem when it happens?

   ☐ not at all ☐ a little ☐ pretty much ☐ a lot

WAIT UNTIL IT'S TIME TO TURN THE PAGE!

Appendix D

Children's Coping Questionnaire

Think about the problem you just picked that bothered or upset you the most. Was it:

- ☐ - Problems with your school-work
- ☐ - Problems getting along with other kids
- ☐ - Problems at home with people in your family.

If you don't remember the problem you picked, you can go back to the other page and check.

When things happen that bother or upset kids, there are lots of things kids do to solve the problem, or to make themselves feel better. Here is a list of all kinds of different things kids do when something bothers them or upsets them. Let's read each one, and you can pick the answer that best describes what you do when that problem happens to you.

Remember, there are no right or wrong answers. We just want to know what you really do.

WHEN THIS HAPPENS I ...

	never	a little	pretty much	a lot
1. Think about what I could do before I do anything.	☐	☐	☐	☐
2. Try to see the good side of things.	☐	☐	☐	☐
3. Talk about the problem with someone in my family.	☐	☐	☐	☐
4. Go ride my bike, skateboard, or roller blades.	☐	☐	☐	☐
5. Try to stay away from the problem.	☐	☐	☐	☐
6. Get into a fight with someone.	☐	☐	☐	☐
7. Do something to make things better.	☐	☐	☐	☐
8. Tell myself it will all work out OK.	☐	☐	☐	☐
9. Let all my feelings out.	☐	☐	☐	☐
10. Just let it happen.	☐	☐	☐	☐
11. Listen to music or watch T.V.	☐	☐	☐	☐

WAIT UNTIL IT'S TIME TO TURN THE PAGE!

WHEN THIS HAPPENS I ...

	never	a little	pretty much	a lot
12. Try to put it out of my mind.	☐	☐	☐	☐
13. Worry about all the bad things that could happen.	☐	☐	☐	☐
14. Wish really hard that it would end.	☐	☐	☐	☐
15. Tell myself it will be over in a short time.	☐	☐	☐	☐
16. Talk about my feelings with someone.	☐	☐	☐	☐
17. Play some games.	☐	☐	☐	☐
18. Try to stay away from things that upset me.	☐	☐	☐	☐
19. Do something bad or cause trouble.	☐	☐	☐	☐
20. Try to make things better by changing what I do.	☐	☐	☐	☐
21. Remind myself to relax.	☐	☐	☐	☐
22. Cry by myself.	☐	☐	☐	☐
23. Go somewhere and play.	☐	☐	☐	☐
24. Pretend the problem never happened.	☐	☐	☐	☐
25. Think about how bad things are.	☐	☐	☐	☐
26. Think about what would be the best thing to do.	☐	☐	☐	☐
27. Tell myself that things could be worse.	☐	☐	☐	☐
28. Pray that things will change.	☐	☐	☐	☐
29. Do something so that it will work out.	☐	☐	☐	☐
30. Avoid the people who make me feel bad.	☐	☐	☐	☐
31. Get mad or yell at someone.	☐	☐	☐	☐
32. Get help from a friend.	☐	☐	☐	☐

WAIT UNTIL IT'S TIME TO TURN THE PAGE!

WHEN THIS HAPPENS I ...

	never	a little	pretty much	a lot
33. Do something to solve the problem.	☐	☐	☐	☐
34. Act like its no big deal.	☐	☐	☐	☐
35. Let out my feelings to my pet or stuffed animal.	☐	☐	☐	☐
36. Read a book or a magazine.	☐	☐	☐	☐
37. I just wait.	☐	☐	☐	☐
38. Get help from someone in my family.	☐	☐	☐	☐
39. Go over in my mind different things I could do.	☐	☐	☐	☐
40. Tell myself that things aren't that bad.	☐	☐	☐	☐
41. Talk about the problem with one of my friends.	☐	☐	☐	☐
42. Yell to let off steam.	☐	☐	☐	☐
43. Avoid it by going to my room.	☐	☐	☐	☐
44. Play video games or a hobby.	☐	☐	☐	☐
45. Talk to someone who could help me.	☐	☐	☐	☐
46. Pray to make things better.	☐	☐	☐	☐
47. Just stand there.	☐	☐	☐	☐
48. Let off steam by hitting my pillow or bed.	☐	☐	☐	☐
49. Wish a miracle would happen.	☐	☐	☐	☐
50. Try not to think about it.	☐	☐	☐	☐
51. Get scared that something bad might happen.	☐	☐	☐	☐
52. Try really hard to forget about it.	☐	☐	☐	☐
53. Don't tell anyone how I am feeling.	☐	☐	☐	☐

WAIT UNTIL IT'S TIME TO TURN THE PAGE!

WHEN THIS HAPPENS I ...

	never	a little	pretty much	a lot
54. Act as if I don't care.	☐	☐	☐	☐
55. Just worry about how bad things are.	☐	☐	☐	☐
56. Think it might be my fault.	☐	☐	☐	☐
57. I don't do anything.	☐	☐	☐	☐
58. Say mean things to people.	☐	☐	☐	☐
59. I can't think of anything to do.	☐	☐	☐	☐
60. Wish with all my might that it would stop.	☐	☐	☐	☐
61. Feel bad about myself.	☐	☐	☐	☐
62. Tell myself to stay calm.	☐	☐	☐	☐
63. Refuse to think about it.	☐	☐	☐	☐
64. Pick on someone.	☐	☐	☐	☐
65. Ask someone what I should do.	☐	☐	☐	☐
66. Try to find out more about what the problem is.	☐	☐	☐	☐
67. Change something to make it better.	☐	☐	☐	☐
68. Count to ten.	☐	☐	☐	☐
69. Hit someone or hurt someone.	☐	☐	☐	☐
70. Act like it doesn't bother me.	☐	☐	☐	☐
71. Do something to fix the problem.	☐	☐	☐	☐
72. Think about what I should do.	☐	☐	☐	☐
73. Yell to let my feelings out.	☐	☐	☐	☐
74. Keep all my feelings inside.	☐	☐	☐	☐

WAIT UNTIL IT'S TIME TO TURN THE PAGE!

WHEN THIS HAPPENS I ...

	never	a little	pretty much	a lot
75. Try to come up with a plan before I do anything.	☐	☐	☐	☐
76. Take a deep breath.	☐	☐	☐	☐
77. I don't know what to do.	☐	☐	☐	☐
78. Try to think only happy thoughts.	☐	☐	☐	☐
79. Don't let anyone know that it bothers me.	☐	☐	☐	☐
80. Try to calm myself down.	☐	☐	☐	☐
81. Go off by myself.	☐	☐	☐	☐

WAIT UNTIL IT'S TIME TO TURN THE PAGE!

Appendix E

Perceived Coping Efficacy Questions

Think about the problem you picked that bothered or upset you the most. Was it:

- ☐ - Problems with your school-work
- ☐ - Problems getting along with other kids
- ☐ - Problems at home with people in your family

If you don't remember the problem you picked, you can go back and check.

Think about that problem, and let's answer the following questions.

1. Think about **all the things you do** when this problem happens.
   How much do they help?

   ☐ helps a lot ☐ helps a little ☐ doesn't help ☐ makes it worse

2. Think about the things you do to **change the situation** when this problem happens.
   How much do they help?

   ☐ helps a lot ☐ helps a little ☐ doesn't help ☐ makes it worse

3. Think about all the things you do **change the way you feel** when this problem happens.
   How much do they help?

   ☐ helps a lot ☐ helps a little ☐ doesn't help ☐ makes it worse

WAIT UNTIL IT'S TIME TO TURN THE PAGE!

Appendix F

Factor Loadings for the Three Factor Solution on the Whole Sample

	Second-Order Factors		
Primary Coping Scales	Approach	Avoidance	Venting
Cognitive Decision Making	.84	.00	-.02
Direct Problem Solving	.82	.01	-.08
Positive Cognitive Restructuring	.69	.26	-.11
Self Calming	.70	.14	.07
Support Seeking	.69	-.29	.22
Wishful Thinking	.45	.15	.30
Avoidant Actions	.28	.37	.31
Cognitive Avoidance	.40	.62	-.07
Distracting Actions	.19	.32	.09
No Coping Effort	-.16	.43	.25
Withholding Feelings	-.09	.75	-.07
Aggressive Actions	-.45	.09	.53
Expressing Feelings	.07	-.07	.75
Negative Cognitions/Worrying	.22	.11	.45

Note. Underlined factor loadings identify the coping scales which were used as markers for each factor. This solution accounted for 49% of the variance in the data, with RMR = .04.

Appendix G

Table G1

Intercorrelations Among Factors for the Whole Sample

Factors	Approach	Avoidance	Venting
Approach	1.00		
Avoidance	.21	1.00	
Venting	.13	.29	1.00

Table G2

Intercorrelations Among Factors for Girls and Boys

Factors	Approach	Avoidance	Venting
	Girls		
Approach	1.00		
Avoidance	.15	1.00	
Venting	.06	.30	1.00
	Boys		
Approach	1.00		
Avoidance	.31	1.00	
Venting	.15	.26	1.00

Table G3

Intercorrelations Among Factors for School, Peer, and Family Stressor

Factors	Approach	Avoidance	Venting
	School		
Approach	1.00		
Avoidance	.13	1.00	
Venting	.17	.25	1.00
	Peer		
Approach	1.00		
Avoidance	.13	1.00	
Venting	.22	.22	1.00
	Family		
Approach	1.00		
Avoidance	.10	1.00	
Venting	.19	.41	1.00

Appendix H

Table H1

School Stressor: Means and Standard Deviations for the Primary and Secondary Coping Scales by Gender

Coping Scales	Girls M	Girls SD	Boys M	Boys SD
Primary Coping Scales				
Aggressive Actions	1.39	.40	1.77	.75
Avoidant Actions	2.51	.67	2.52	.64
Cognitive Avoidance	2.43	.71	2.42	.70
Cognitive Decision Making	2.59	.56	2.46	.66
Distracting Actions	2.39	.68	2.85	.70
Direct Problem Solving	2.75	.65	2.54	.75
Expressing Feelings	1.95	.53	1.97	.58
No Coping Effort	1.80	.46	1.94	.46
Negative Cognitions/Worrying	2.26	.77	2.18	.67
Positive Cognitive Restructuring	2.59	.64	2.30	.67
Self Calming	2.43	.76	2.26	.74
Support Seeking	2.48	.75	2.27	.73
Withholding Feelings	2.04	.60	2.19	.75
Wishful Thinking	2.69	.72	2.38	.91
Secondary Coping Scales				
Approach	2.59	.50	2.37	.57
Avoidance	2.23	.41	2.38	.40
Venting	1.87	.41	1.98	.46

Note. Higher mean scores indicate greater use of that coping strategy.

Table H2

Peer Stressor: Means and Standard Deviations for the Primary and Secondary Coping Scales by Gender

Coping Scales	Girls		Boys	
	M	SD	M	SD
Primary Coping Scales				
Aggressive Actions	1.65	.67	1.89	.77
Avoidant Actions	2.73	.66	2.81	.67
Cognitive Avoidance	2.49	.81	2.69	.74
Cognitive Decision Making	2.68	.66	2.61	.61
Distracting Actions	2.50	.65	2.90	.67
Direct Problem Solving	2.65	.77	2.65	.65
Expressing Feelings	2.09	.71	2.06	.68
No Coping Effort	1.90	.49	2.06	.60
Negative Cognitions/Worrying	2.24	.74	2.13	.68
Positive Cognitive Restructuring	2.43	.65	2.45	.65
Self Calming	2.26	.76	2.45	.66
Support Seeking	2.48	.75	2.38	.78
Withholding Feelings	2.07	.79	2.41	.72
Wishful Thinking	2.70	.81	2.65	.85
Secondary Coping Scale				
Approach	2.53	.56	2.53	.55
Avoidance	2.34	.46	2.57	.48
Venting	2.00	.55	2.03	.53

Note. Higher mean scores indicate greater use of that coping strategy.

Table H3

Family Stressor: Means and Standard Deviations for the Primary and Secondary Coping Scales by Gender

Coping Scales	Girls M	Girls SD	Boys M	Boys SD
Primary Coping Scales				
Aggressive Actions	1.98	.81	1.92	.73
Avoidant Actions	2.88	.64	2.78	.67
Cognitive Avoidance	2.45	.78	2.46	.82
Cognitive Decision Making	2.38	.69	2.47	.69
Distracting Actions	2.41	.75	2.54	.77
Direct Problem Solving	2.36	.68	2.48	.73
Expressing Feelings	2.37	.75	2.09	.62
No Coping Effort	2.06	.60	1.88	.51
Negative Cognitions/Worrying	2.37	.81	2.17	.67
Positive Cognitive Restructuring	2.32	.69	2.28	.66
Self Calming	2.22	.77	2.26	.72
Support Seeking	2.18	.79	2.08	.71
Withholding Feelings	2.16	.64	2.18	.77
Wishful Thinking	2.72	.85	2.48	.79
Secondary Coping Scale				
Approach	2.36	.56	2.34	.55
Avoidance	2.39	.44	2.37	.51
Venting	2.24	.56	2.06	.46

Note. Higher mean scores indicate greater use of that coping strategy.

Appendix I

Table I1

Correlations Among Primary Coping Scales, Cognitive Appraisals, and Outcome for Girls

	Cognitive Appraisals			Outcome		
Coping Scales	Blame	Control	Threat	PCE-O	PCE-P	PCE-E
Aggressive Actions	.13*	-.12	.36**	-.35**	-.19**	-.23**
Avoidant Actions	.16*	-.17**	.25**	-.08	-.09	-.10
Cognitive Avoidance	.07	-.03	-.03	.14*	.13*	.12
Cognitive Decision Making	.02	.17**	-.05	.32**	.35**	.21**
Distracting Actions	-.03	.05	-.02	.11	.16*	.14*
Direct Problem Solving	.08	.30**	-.16*	.44**	.23**	.30**
Expressing Feelings	.12	-.11	.31**	-.17**	-.15*	-.19**
No Coping Effort	.06	-.18**	.25**	-.30**	-.24**	-.23**
Negative Cognitions/Worrying	.18**	-.05	.34**	-.12	-.18**	-.23**
Positive Cognitive Restructuring	-.04	.22**	-.22**	.36**	.32**	.28**
Self Calming	.08	.12	-.12	.31**	.23**	.30**
Support Seeking	.00	.19**	.05	.25**	.08	.16*
Withholding Feelings	.09	-.11	.02	-.06	-.01	-.04
Wishful Thinking	.11	-.05	.25**	.02	.06	.02

Note. PCE-O = Overall Perceived Coping Efficacy. PCE-P = Problem-Focused Perceived Coping Efficacy. PCE-E = Emotion-Focused Perceived Coping Efficacy.

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

Table I2

Correlations Among Primary Coping Scales, Cognitive Appraisals, and Outcome for Boys

	Cognitive Appraisals			Outcome		
Coping Scales	Blame	Control	Threat	PCE-O	PCE-P	PCE-E
Aggressive Actions	.13*	-.11	.25**	-.22**	-.06	-.16**
Avoidant Actions	-.08	.13*	.10	.11	.05	.17**
Cognitive Avoidance	.01	.11	-.09	.17**	.13*	.29**
Cognitive Decision Making	-.12*	.17**	-.07	.27**	.18**	.24**
Distracting Actions	.02	.09	-.14*	.12*	.08	.14*
Direct Problem Solving	-.03	.27**	-.09	.29**	.23**	.28**
Expressing Feelings	.06	.11	.20**	.11	.06	.11
No Coping Effort	.09	-.15*	.10	.03	-.10	-.05
Negative Cognitions/Worrying	.09	-.03	.15*	.07	-.04	.10
Positive Cognitive Restructuring	-.05	.21**	-.12*	.33**	.21**	.31**
Self Calming	-.07	.16**	-.09	.32**	.18**	.35**
Support Seeking	-.10	.12	-.02	.23**	.11	.18**
Withholding Feelings	.04	.05	-.01	.06	.05	.10
Wishful Thinking	-.05	.01	.11	.07	.13*	.16**

Note. PCE-O = Overall Perceived Coping Efficacy. PCE-P = Problem-Focused Perceived Coping Efficacy. PCE-E = Emotion-Focused Perceived Coping Efficacy.

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

Table 1

Definitions and Examples of Coping Categories from the Children's Coping Questionnaire

Coping Category	Definition and Example
Cognitive Decision Making	Thinking about choices and consequences; planning ways to solve the problem. Example: "Think about what I should do."
Direct Problem Solving	Efforts to solve the problem by taking action to change the situation. Example: "Do something to fix the problem."
Self-Calming/Affect Regulation	Efforts to reduce one's level of distress through self-calming or relaxation strategies. Example: "Take a deep breath."
Wishful Thinking	Efforts to make things better through wishing, praying, and/or hoping. Example: "Wish a miracle would happen."
Positive Cognitive Restructuring	Efforts to think about the situation in a more positive way or to disbelieve negative aspects of it; optimistic thinking. Example: "Try to think only happy thoughts."

(table continues)

Coping Category	Definition and Example
Support-Seeking	Involving others as resources to assist in solving the problem, providing advice, information, understanding, or emotional support, listening to feelings, or eliciting affection. Example: "Get help from a friend."
Avoidant Actions	Active efforts to leave the stressful situation in order to avoid it. Example: "Go off by myself."
Cognitive Avoidance	Efforts to avoid thinking about the problem; trying to ignore it. Example: "Refuse to think about it."
Distracting Actions	Efforts to avoid thinking about or dealing with the problem by using distracting stimuli or activities; entertaining oneself. Example: "Watch T.V."
No Coping Effort	Resignation, lack of action or attempts to cope. Example: "I don't do anything."

(table continues)

Coping Category	Definition and Example
Withholding Feelings	Intentional withholding or non-expression of feelings. Includes acting brave and stoic; deciding not to let others know what one is thinking and feeling. Attempting to delude others that one is not having a difficult time. Example: "Act as if I don't care."
Expressing Feelings	Overt venting of negative feelings for cathartic purposes. Example: "Cry by myself."
Negative Cognitions/Worrying	Thinking about the problem in ways that do not result in positive cognitions, problem-solving, or decision making; worrying, fretting, or awfulizing. Example: "Worry about how bad things are."
Aggressive Actions	Cognitive, verbal, or physical actions intended to implicitly/explicitly hurt or threaten. Actions that are harmful, blaming, and non-constructive. Example: "Say mean things to people."

Note. Definitions of coping categories are derived from Kerig's (1994) content codes for child coping strategies.

Table 2

Hypothesized Direction of Relationships between Coping Strategies, Cognitive Appraisals of Stress, and Outcome

	Cognitive Appraisals			Outcome
Variables	Blame	Control	Threat	Coping Efficacy
Coping Strategies				
Approach	Negative	Positive	Negative	Positive
Avoidance	Positive	Negative	Positive	Negative
Venting	Positive	Negative	Positive	Negative
Outcome				
Coping Efficacy	Negative	Positive	Negative	

Table 3

Means and Standard Deviations for Primary and Secondary Coping Scales for Boys and Girls

Coping Scales	Girls		Boys	
	M	SD	M	SD
Primary Coping Scales				
Aggressive Actions	1.72	.72	1.87	.75
Avoidant Actions	2.73	.67	2.72	.67
Cognitive Avoidance	2.45	.77	2.54	.77
Cognitive Decision Making	2.53	.65	2.52	.65
Distracting Actions	2.43	.70	2.77	.73
Direct Problem Solving	2.55	.71	2.56	.71
Expressing Feelings	2.17	.71	2.05	.63
No Coping Effort	1.94	.54	1.96	.54
Negative Cognitions/Worrying	2.30	.78	2.16	.67
Positive Cognitive Restructuring	2.43	.67	2.35	.66
Self Calming	2.29	.77	2.33	.71
Support Seeking	2.35	.78	2.25	.75
Withholding Feelings	2.10	.68	2.27	.75
Wishful Thinking	2.70	.80	2.52	.85
Secondary Coping Scales				
Approach	2.48	.55	2.42	.56
Avoidance	2.33	.44	2.45	.48
Venting	2.07	.54	2.02	.49

Note. Higher mean scores indicate greater use of that coping strategy.

Table 4

Means and Standard Deviations for Primary and Secondary Coping Scales for School, Peer, and Family Stressors

	School		Peer		Family	
Coping Scales	M	SD	M	SD	M	SD
Primary Coping Scales						
Aggressive Actions	1.59	.63	1.79	.74	1.95	.77
Avoidant Actions	2.51	.65	2.78	.67	2.84	.65
Cognitive Avoidance	2.43	.70	2.61	.78	2.45	.80
Cognitive Decision Making	2.52	.61	2.64	.63	2.42	.69
Distracting Actions	2.63	.73	2.74	.69	2.47	.76
Direct Problem Solving	2.64	.71	2.65	.70	2.42	.70
Expressing Feelings	1.96	.56	2.07	.69	2.24	.71
No Coping Effort	1.87	.47	1.99	.56	1.98	.57
Negative Cognitions/Worrying	2.22	.71	2.17	.70	2.28	.76
Positive Cognitive Restructuring	2.44	.67	2.44	.65	2.30	.68
Self-Calming	2.35	.75	2.37	.71	2.24	.75
Support-Seeking	2.37	.75	2.42	.77	2.13	.75
Withholding Feelings	2.12	.69	2.27	.76	2.17	.70
Wishful Thinking	2.53	.84	2.67	.83	2.61	.83
Secondary Coping Scales						
Approach	2.48	.55	2.53	.55	2.35	.55
Avoidance	2.31	.41	2.48	.49	2.38	.47
Venting	1.92	.44	2.01	.54	2.16	.52

Note. Higher mean scores indicate greater use of that coping strategy.

Table 5

Means and Standard Deviations for Appraisals and Perceived Coping Efficacy for Boys and Girls

	Girls		Boys	
Variable	M	SD	M	SD
Appraisals				
Perceived Control	2.44	.95	2.42	1.01
Perceived Threat	2.63	.90	2.49	.92
Perceived Blame	1.96	.76	1.96	.77
Perceived Coping Efficacy				
Overall	2.79	.92	2.84	.85
Problem-Focused	2.71	.86	2.72	.87
Emotion-Focused	2.90	.87	2.97	.84

Note. Higher mean scores indicate greater perceptions of control, threat, blame, or coping efficacy.

Table 6

Means and Standard Deviations for Appraisals and Perceived Coping Efficacy for School, Peer, and Family Stressors

	School		Peer		Family	
Primary Coping Scales	M	SD	M	SD	M	SD
Appraisals						
Perceived Control	2.67	.91	2.37	1.01	2.32	.97
Perceived Threat	2.25	.87	2.59	.93	2.76	.87
Perceived Blame	1.94	.72	1.91	.79	2.02	.76
Perceived Coping Efficacy						
Overall	2.95	.81	2.83	.90	2.71	.92
Problem-Focused	2.85	.81	2.64	.91	2.69	.86
Emotion-Focused	2.99	.81	2.94	.85	2.88	.89

Note. Higher mean scores indicate greater perceptions of control, threat, blame, or coping efficacy.

Table 7

Cross-Tabulation of Gender by Stressor

	Gender		
Stressor	Girls	Boys	Total N
School	71 (13.5%)	76 (14.5%)	147 (28.0%)
Peers	72 (13.7%)	105 (20.0%)	177 (33.7%)
Family	109 (20.8%)	92 (17.5%)	201 (38.3%)
Total N	252 (48.0%)	273 (52.0%)	525 (100%)

Note. The numbers in each cell represent frequency counts. The percentages reported reflect the percentage of the total sample for that cell.

Table 8

Cross-Tabulation of Gender by Stressor by Feeling

	Feeling				
Stressor	Mad	Sad	Worried	Happy	Total N
			Girls[a]		
School	10 (4.0%)	11 (4.4%)	46 (18.3%)	4 (1.6%)	71 (28.3%)
Peers	31 (12.4%)	24 (9.6%)	14 (5.6%)	2 (0.8%)	71 (28.3%)
Family	71 (28.3%)	18 (7.2%)	17 (6.8%)	3 (1.2%)	109 (43.4%)
Total N (Girls)	112 (44.6%)	53 (21.1%)	77 (30.7%)	9 (3.6%)	251 (100%)
			Boys[b]		
School	23 (8.5%)	9 (3.3%)	33 (12.2%)	10 (3.7%)	75 (27.7%)
Peers	63 (23.2%)	20 (7.4%)	14 (5.2%)	7 (2.6%)	104 (38.4%)
Family	66 (24.4%)	11 (4.1%)	11 (4.1%)	4 (1.5%)	92 (33.9%)
Total N (Boys)	152 (56.1%)	40 (14.8%)	58 (21.4%)	21 (7.7%)	271 (100%)

Note. The numbers in each cell represent frequency counts.

[a]The percentages reported reflect the percentage of the total sample of girls for that cell. [b]The percentages reported reflect the percentage of the total sample of boys for that cell.

Table 9

Fit of the Unidimensional Factor Models for the Whole Sample, Across Gender, and Across Stressors

	Whole		Gender		Stressor	
Primary Coping Scales[a]	GFI	RMSEA	GFI	RMSEA	GFI	RMSEA
Aggressive Actions	.989	.066	.988	.033	.973	.025
Avoidant Actions	.995	.043	.986	.000	.992	.000
Cognitive Avoidance	.994	.044	.995	.000	.995	.000
Cognitive Decision Making	.998	.000	.985	.000	.993	.000
Distracting Actions	.995	.008	.985	.015	.980	.000
Direct Problem Solving	.993	.034	.983	.000	.989	.000
Expressing Feelings	.992	.062	.985	.020	.976	.020
No Coping Effort	.991	.039	.975	.022	.972	.033
Negative Cognitions/Worrying	.987	.062	.976	.033	.978	.021
Positive Cognitive Restructuring	.994	.020	.988	.038	.950	.027
Self-Calming	.994	.054	.988	.000	.989	.020
Support-Seeking	.998	.059	.987	.023	.974	.022
Withholding Feelings	.983	.074	.988	.047	.970	.031
Wishful Thinking	.998	.038	.997	.000	.986	.011

Note. GFI = Goodness of Fit Index; RMSEA = Root Mean Square Error of Approximation.

[a]Error covariances were added for the following scales: AVA = Items 81 & 43; EF = Items 35 & 22, 35 & 42, 42 & 73; SC = Items 76 & 68; SS = Items 41 & 32; WF = Items 53 & 79; WT = Items 46 & 28.

Table 10

Factor Loadings for the Unidimensional Factor Models for the Whole Sample, Across Gender, and Across Stressors

Primary Coping Scales	Whole	Gender[a]	Stressors[b]
Aggressive Actions			
Item 6	.66	.66	.67
Item 19	.71	.71	.75
Item 31	.75	.77	.77
Item 58	.86	.87	.88
Item 64	.87	.86	.89
Item 69	.93	.93	.94
Avoidant Actions			
Item 5	.65	.67	.64
Item 18	.72	.71	.72
Item 30	.60	.60	.61
Item 43	.38	.39	.37
Item 81	.29	.29	.27
Cognitive Avoidance			
Item 12	.68	.68	.70
Item 24	.59	.61	.61
Item 50	.74	.75	.77
Item 52	.88	.87	.88
Item 63	.53	.54	.54

(table continues)

Primary Coping Scales	Whole	Gender	Stressors
Cognitive Decision Making			
Item 1	.40	.40	.44
Item 26	.70	.73	.71
Item 39	.69	.71	.70
Item 66	.62	.61	.61
Item 72	.77	.78	.76
Item 75	.55	.55	.54
Distracting Actions			
Item 4	.56	.55	.58
Item 11	.54	.57	.55
Item 17	.79	.78	.80
Item 23	.64	.66	.67
Item 36	.51	.57	.53
Item 44	.69	.67	.69
Direct Problem Solving			
Item 7	.67	.68	.71
Item 20	.61	.61	.61
Item 29	.78	.79	.79
Item 33	.78	.78	.78
Item 67	.62	.66	.65
Item 71	.77	.78	.76

(table continues)

Primary Coping Scales	Whole	Gender	Stressors
Expressing Feelings			
Item 9	.30	.29	.31
Item 22	.40	.43	.39
Item 35	.32	.30	.31
Item 42	.75	.75	.78
Item 48	.67	.71	.67
Item 73	.70	.67	.70
No Coping Effort			
Item 10	.37	.36	.39
Item 37	.47	.46	.51
Item 47	.59	.64	.59
Item 57	.44	.41	.44
Item 59	.54	.59	.57
Item 77	.55	.57	.59
Negative Cognitions/Worrying			
Item 13	.71	.72	.74
Item 25	.60	.62	.66
Item 51	.81	.81	.85
Item 55	.75	.77	.76
Item 56	.64	.65	.66
Item 61	.72	.72	.75

(table continues)

Primary Coping Scales	Whole	Gender	Stressors
Positive Cognitive Restructuring			
Item 2	.52	.60	.57
Item 8	.71	.72	.71
Item 15	.69	.71	.74
Item 27	.40	.39	.40
Item 40	.68	.69	.72
Item 78	.67	.71	.71
Self-Calming			
Item 21	.68	.68	.71
Item 62	.78	.78	.80
Item 68	.49	.48	.50
Item 76	.71	.72	.71
Item 80	.75	.76	.77
Support-Seeking			
Item 3	.73	.72	.75
Item 16	.80	.80	.82
Item 32	.49	.51	.52
Item 38	.85	.87	.88
Item 41	.46	.47	.45
Item 45	.84	.85	.86
Item 65	.80	.82	.83

(table continues)

Primary Coping Scales	Whole	Gender	Stressors
Withholding Feelings			
Item 34	.62	.64	.61
Item 53	.48	.44	.50
Item 54	.75	.75	.79
Item 70	.72	.73	.74
Item 74	.46	.45	.47
Item 79	.62	.62	.67
Wishful Thinking			
Item 14	.71	.71	.73
Item 28	.60	.60	.65
Item 46	.59	.58	.63
Item 49	.76	.76	.76
Item 60	.80	.80	.79

[a]Factor loadings for boys and girls are identical, since the most restrictive model with invariant factor loadings was tested. [b]Factor loadings for school, peer, and family stressors are identical, since the most restrictive model with invariant factor loadings was tested.

Table 11

Factor Loadings for the Three Factor Solution by Gender

	Girls			Boys		
Primary Coping Scales	1	2	3	1	2	3
Cognitive Decision Making	.84	-.03	-.07	.84	.01	-.03
Direct Problem Solving	.80	-.05	-.09	.85	.03	-.14
Positive Cognitive Restructuring	.70	.20	-.13	.66	.31	-.14
Self Calming	.72	.09	.05	.70	.18	.06
Support Seeking	.70	-.27	.14	.69	-.28	.21
Wishful Thinking	.45	.19	.25	.49	.13	.26
Avoidant Actions	.20	.41	.31	.40	.32	.24
Cognitive Avoidance	.37	.67	-.09	.43	.56	-.07
Distracting Actions	.21	.30	.16	.21	.28	.09
No Coping Effort	-.23	.38	.33	-.06	.47	.14
Withholding Feelings	-.16	.65	-.06	-.06	.83	-.06
Aggressive Actions	-.43	.06	.66	-.40	.07	.51
Expressing Feelings	.06	-.16	.84	.18	.01	.65
Negative Cognitions/Worrying	.21	.13	.39	.27	.13	.44

Note. Factor 1 can be conceptualized as Approach Coping. Factor 2 can be conceptualized as Avoidant Coping. Factor 3 can be conceptualized as Venting. The underlined factor loadings identify the coping scales which were used as markers of each factor in analyses on the whole sample

Table 12

Factor Loadings for the Three Factor Solution Across Stressors

	School			Peer			Family		
Primary Coping Scales	1	2	3	1	2	3	1	2	3
Cognitive Decision Making	.86	-.03	.03	.77	-.04	.03	.80	.21	.03
Direct Problem Solving	.83	-.17	.02	.82	-.02	.00	.73	.32	-.11
Positive Cognitive Restructuring	.68	.14	-.08	.79	.12	-.08	.54	.40	.12
Self Calming	.72	.09	.03	.75	-.03	.09	.51	.39	.15
Support Seeking	.63	-.30	.23	.55	-.29	.37	.69	-.17	.21
Wishful Thinking	.52	.24	.13	.48	.06	.35	.28	.04	.62
Avoidant Actions	.27	.48	.18	.45	.29	.32	.09	.46	.23
Cognitive Avoidance	.35	.69	.04	.58	.45	-.10	.22	.65	.10
Distracting Actions	.04	.10	.37	.30	.32	.05	.06	.52	-.04
No Coping Effort	-.15	.35	.06	-.09	.59	.24	-.24	.17	.48
Withholding Feelings	-.04	.51	-.03	.02	.92	-.12	-.21	.70	.03
Aggressive Actions	-.51	-.05	.60	-.52	.24	.58	-.44	.10	.14
Expressing Feelings	.13	-.02	.65	.09	-.07	.79	-.10	.05	.39
Negative Cognitions/Worrying	.23	.17	.35	.18	.06	.52	.12	-.12	.85

Note. Factor 1 can be conceptualized as Approach Coping. Factor 2 can be conceptualized as Avoidant Coping. Factor 3 can be conceptualized as Venting. The underlined factor loadings identify the coping scales which were used as markers of each factor in analyses on the whole sample

Table 13

Congruence Coefficients for the Factor Solutions Found Across Gender

	Girls		
Coping Scales	Approach	Avoidance	Venting
Boys			
Approach	.98	.21	.05
Avoidance	.13	.96	.15
Venting	.00	.04	.98

Note. Underlined values identify corresponding scales, whose coefficients are expected to be high to reflect factorial similarity.

Table 14

Congruence Coefficients for the Factor Solutions Found Across Stressors

	Peer			School		
Coping Scales	Approach	Avoidance	Venting	Approach	Avoidance	Venting
Family						
Approach	.92	-.21	.02	.96	-.05	-.02
Avoidance	.59	.76	.04	.45	.75	.22
Venting	.30	.26	.77	.32	.41	.61
Peer						
Approach				.98	.29	.11
Avoidance				-.05	.82	.17
Venting				.16	.08	.91

Note. Underlined values identify corresponding scales, whose coefficients are expected to be high to reflect factorial similarity.

Table 15

Univariate F-Tests for Primary Coping Scales by Stressor Type and by Gender

	Stressor[a]		Gender[b]	
Coping Scale	F	p level	F	p level
Aggressive Actions[c]	11.34	.000***	8.67	.003*
Avoidant Actions	10.71	.000***	.01	.920
Cognitive Avoidance	2.20	.112	1.04	.308
Cognitive Decision Making	5.28	.005***	.44	.509
Distracting Actions	4.88	.008	28.01	.000**
Direct Problem Solving	6.26	.002***	.25	.615
Expressing Feelings	7.04	.001***	2.74	.099
No Coping Effort	2.08	.126	.70	.404
Negative Cognitions/Worrying[c]	.66	.519	4.05	.045*
Positive Cognitive Restructuring	2.85	.059	3.06	.081
Self Calming	1.48	.230	.10	.748
Support Seeking[c]	8.49	.000***	4.19	.041*
Withholding Feelings	1.21	.300	7.28	.007**
Wishful Thinking	1.19	.305	7.26	.007**

Note. For planned comparisons with gender, the significance level was set at $\alpha = .05$. The remaining post-hoc comparisons for gender were completed at $\alpha = .009$ ($.1 \div 11$). Post-hoc comparisons with stressors were completed at $\alpha = .007$ ($.1 \div 14$). Means for coping scales are listed in Tables 3 and 4.

[a]For univariate F-tests by stressor type, df = 2, 519. [b]For univariate F-tests by gender, df = 1, 519.

[c]Planned comparisons for gender differences.

*$p < .05$. **$p < .009$. ***$p < .007$.

Table 16

Post-Hoc Comparisons for Primary Coping Scales by Stressor Type

Comparison	Mean Difference	p level	Direction of Effect
Aggressive Actions			
School - Peer	-.205	.028	S < P
School - Family	-.366	.000*	S < F
Peer - Family	-.161	.076	
Avoidant Actions			
School - Peer	-.263	.001*	S < P
School - Family	-.324	.000*	S < F
Peer - Family	-.061	.644	
Cognitive Decision Making			
School - Peer	-.117	.239	
School - Family	.100	.328	
Peer - Family	.217	.003*	P > F
Distracting Actions			
School - Peer	-.108	.360	
School - Family	.162	.089	
Peer - Family	.270	.001*	P > F
Direct Problem Solving			
School - Peer	-.008	.994	
School - Family	.224	.009*	S > F
Peer - Family	.232	.004*	P > F
Expressing Feelings			
School - Peer	-.111	.290	
School - Family	-.277	.000*	S < F
Peer - Family	-.166	.039	
Support Seeking			
School - Peer	-.050	.823	
School - Family	.240	.010*	S > F
Peer - Family	.290	.001*	P > F

Note. Post-hoc comparisons were completed using Tukey's HSD method. Only comparisons based on significant univariate F-tests are listed. For each comparison, the significance level was set at $\alpha = .01$ ($.1 \div 7$). S = School; P = Peer; F = Family. Means for the coping scales are listed in Table 4.

*$p < .01$.

Table 17

Omnibus MANOVA and Univariate F-Tests for Secondary Coping Scales

Effect	df	F	p-level
	Omnibus MANOVA[a]		
Stressor	6, 1034	6.51	.000*
Gender	3, 517	7.29	.000*
Stressor x Gender	6, 1034	3.35	.003*
	Univariate F-Tests		
Stressor			
Approach[b]	2, 519	5.35	.005*
Avoidance	2, 519	4.08	.017*
Venting	2, 519	9.09	.000*
Gender			
Approach	1, 519	2.78	.096
Avoidance[b]	1, 519	9.04	.003*
Venting	1, 519	.09	.768
Stressor x Gender			
Approach	2, 519	1.97	.141
Avoidance	2, 519	3.91	.021**
Venting	2, 519	3.77	.024**

Note. The significance level for planned comparisons was set at $\alpha = .05$. Post-hoc comparisons for gender and stressors were completed at $\alpha = .05$ per contrast, for each family of comparisons ($.1 \div 2$). Post-hoc comparisons for the Stressor x Gender interaction were completed at $\alpha = .03$ ($.1 \div 3$). Means for coping scales are listed in Tables 3 and 4

[a]Omnibus MANOVA was performed using Wilk's criterion at $\alpha = .05$. [b]Planned comparisons for stressor and gender differences.

*$p < .05$. **$p < .03$.

Table 18

Omnibus MANOVA for Gender Differences on the Primary and Secondary Coping Scales for School, Peer, and Family Stressors

Stressor	df	F	p-level
Primary Coping Scales			
School	14, 132	2.71	.002*
Peer	14, 162	2.67	.002*
Family	14, 186	1.68	.062
Secondary Coping Scales			
School	3, 143	6.05	.001*
Peer	3, 173	4.61	.004*
Family	3, 197	2.05	.108

Note. Omnibus MANOVA was performed using Wilk's criterion at $\alpha = .05$.

*$p < .05$.

Table 19

Univariate F-Tests for Gender Differences on the Primary and Secondary Coping Scales for School, Peer, and Family Stressors

	School[a]		Peer[b]		Family[c]	
Coping Scale	F	p-level	F	p-level	F	p-level
Primary Coping Scales						
Aggressive Actions	14.02	.000**	4.62	.033	.27	.607
Avoidant Actions	.00	.956	.50	.479	1.08	.300
Cognitive Avoidance	.01	.932	2.93	.089	.02	.895
Cognitive Decision Making	1.80	.181	.48	.488	.82	.365
Distracting Actions	16.00	.000**	16.25	.000**	1.50	.222
Direct Problem Solving	3.53	.062	.00	.963	1.45	.231
Expressing Feelings	.05	.823	.11	.746	7.90	.005**
No Coping Effort	3.40	.067	3.53	.062	5.27	.023
Negative Cognitions/Worrying	.44	.506	1.12	.292	3.39	.067
Positive Cognitive Restructuring	6.92	.009**	.02	.895	.14	.713
Self Calming	1.91	.169	3.14	.078	.16	.691
Support Seeking	3.13	.079	.62	.432	.92	.340
Withholding Feelings	1.73	.191	9.02	.003**	.04	.836
Wishful Thinking	5.03	.026	.13	.714	4.25	.041
Secondary Coping Scales						
Approach	6.25	.014*	.00	.995	.07	.787
Avoidance	5.03	.026*	10.68	.001*	.11	.741
Venting	2.15	.144	.14	.706	5.83	.017*

Note. For post-hoc comparisons with the primary coping scales, the significance level was set at α = .007 (.1 ÷ 14); with the secondary coping scales, the significance level was set at α = .03 (.1 ÷ 3). Means for coping scales are listed in Appendix H.

[a]School stressor, df = 1, 145. [b]Peer stressor, df = 1, 175. [c]Family stressor, df = 1, 199.

*$p < .03$. **$p < .007$

Table 20

Univariate F-Tests for Gender Differences on the Primary and Secondary Coping Scales with Cognitive Appraisals as Covariates

Coping Scale	F	p-level
Primary Coping Scales		
Aggressive Actions	9.05	.003**
Avoidant Actions	.00	.968
Cognitive Avoidance	1.16	.283
Cognitive Decision Making	.02	.899
Distracting Actions	27.79	.000**
Direct Problem Solving	.00	.958
Expressing Feelings	2.90	.089
No Coping Effort	.43	.511
Negative Cognitions/Worrying	3.30	.070
Positive Cognitive Restructuring	2.43	.120
Self Calming	.25	.616
Support Seeking	1.85	.174
Withholding Feelings	7.19	.008
Wishful Thinking	5.03	.025
Secondary Coping Scales		
Approach	1.19	.276
Avoidance	8.78	.003*
Venting	.04	.848

Note. For univariate F-tests, df = 1, 517. For post-hoc comparisons with the primary coping scales, the significance level was set at $\alpha = .007$ ($.1 \div 14$); with the secondary coping scales, the significance level was set at $\alpha = .03$ ($.1 \div 3$). Means for coping scales are listed in Table 3.

*$p < .03$. **$p < .007$

Table 21

Correlations Among Cognitive Appraisals, Coping Strategies, and Outcome for Girls and Boys

	Coping Strategies			Cognitive Appraisals		
Variables	Approach	Avoidance	Venting	Blame	Control	Threat
			Girls			
Cognitive Appraisals						
Blame	.06	.11	.19**			
Control	.21**	-.12	-.13*			
Threat	-.05	.13*	.46**			
Outcome						
PCE - Overall	.37**	-.03	-.29**	.04	.28**	-.40**
PCE - Problem	.27**	.01	-.23**	.07	.30**	-.26**
PCE - Emotions	.27**	-.01	-.29**	.01	.23**	-.23**
			Boys			
Cognitive Appraisals						
Blame	-.09	.02	.14*			
Control	.20**	.08	-.02			
Threat	-.05	-.03	.29**			
Outcome						
PCE - Overall	.32**	.15*	-.04	.00	.20**	-.09
PCE - Problem	.22**	.07	-.03	-.11	.23**	-.07
PCE - Emotions	.32**	.20**	.01	.00	.20**	-.25**

Note. The significance level was set at $\alpha = .01$. PCE = Perceived Coping Efficacy. Underlined coefficients identify which correlations were significantly different between boys and girls, as determined by Fisher's Z transform test.

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

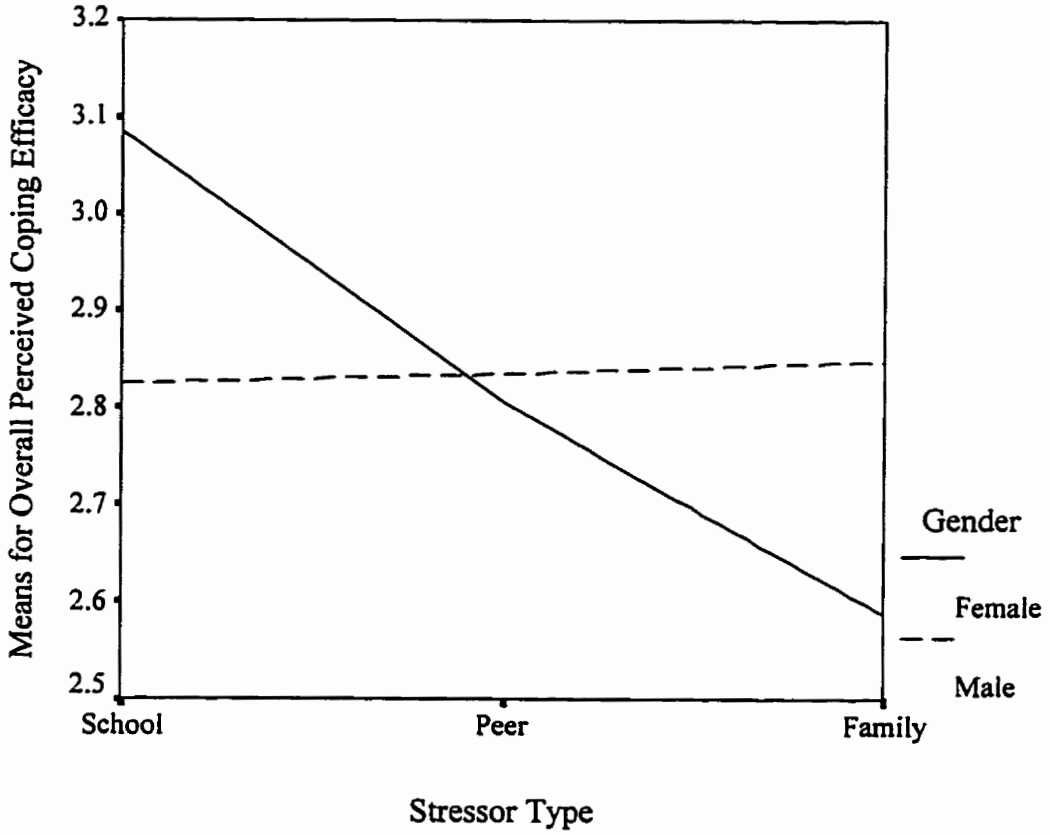


Figure 1. Interaction Between Stressor Type and Gender for Overall Perceived Coping Efficacy.

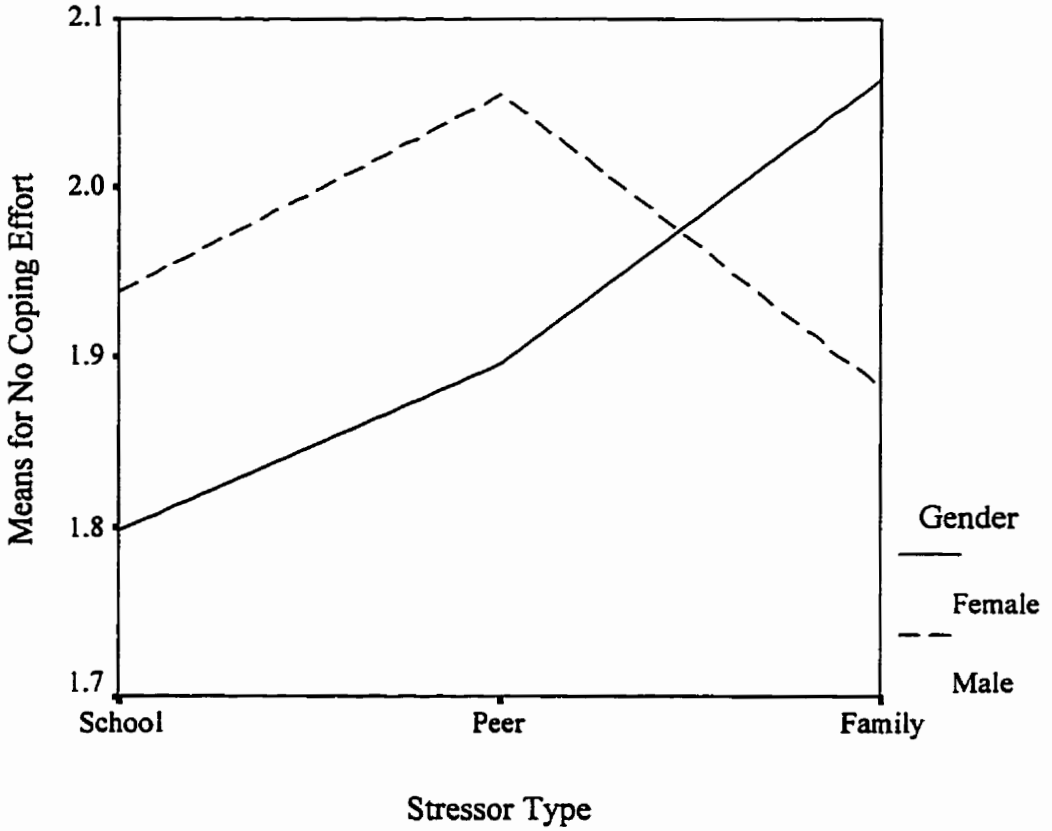


Figure 2. Interaction Between Stressor Type and Gender for Primary Coping Scale of No Coping Effort.

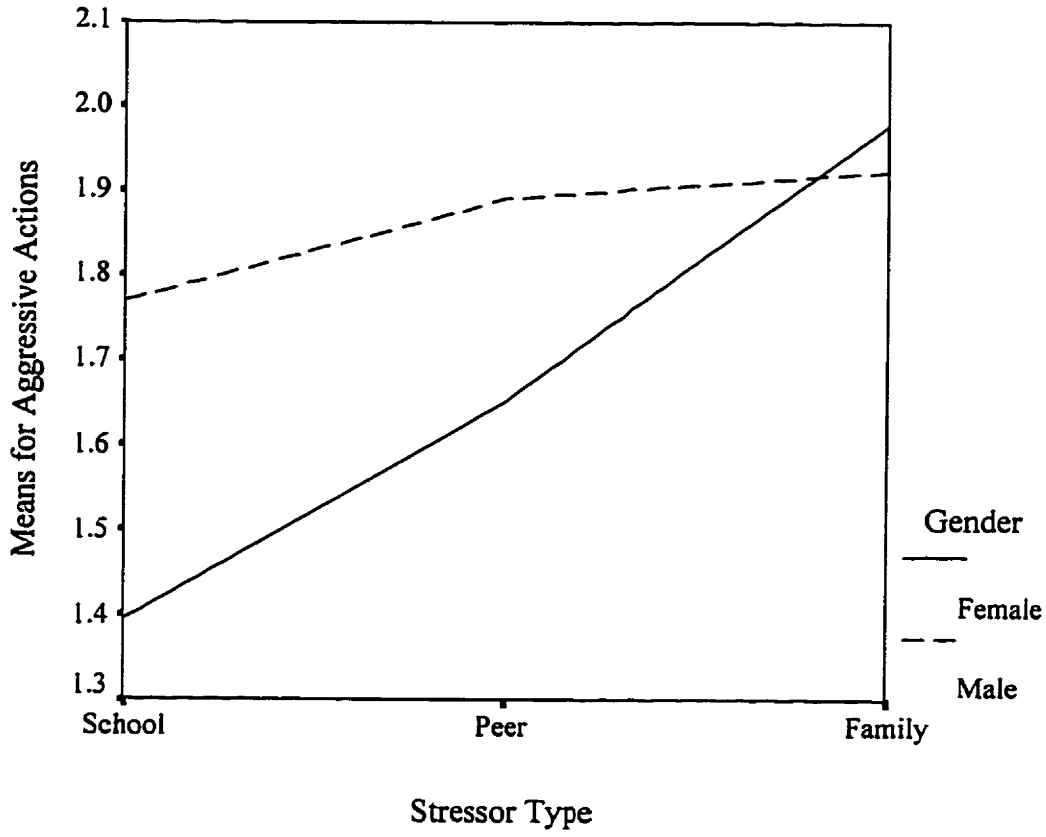


Figure 3. Interaction Between Stressor Type and Gender for Primary Coping Scale of Aggressive Actions.

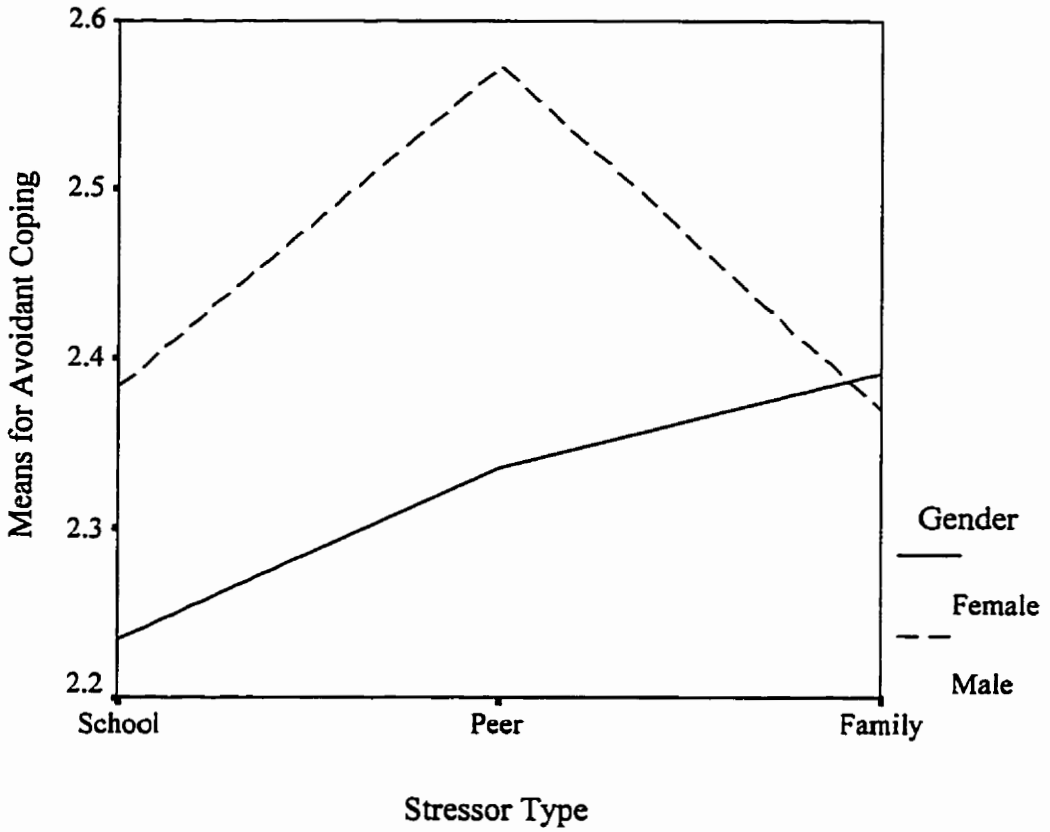


Figure 4. Interaction Between Stressor Type and Gender for Secondary Coping Scale of Avoidant Coping.

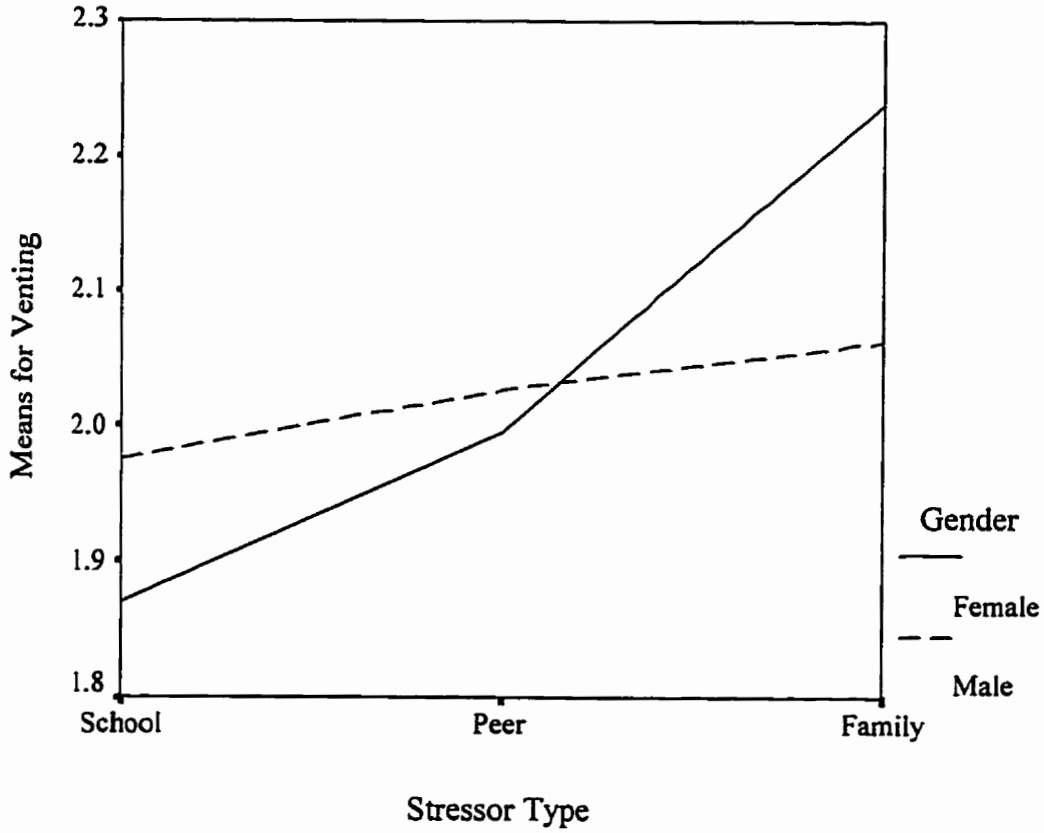
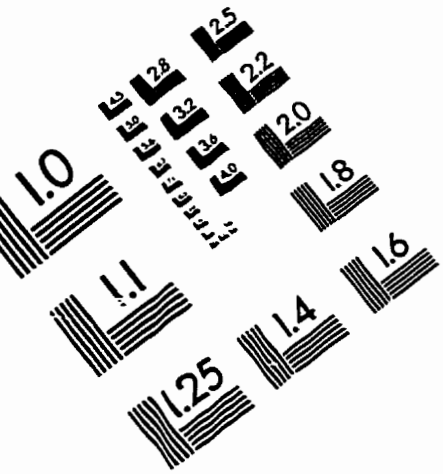
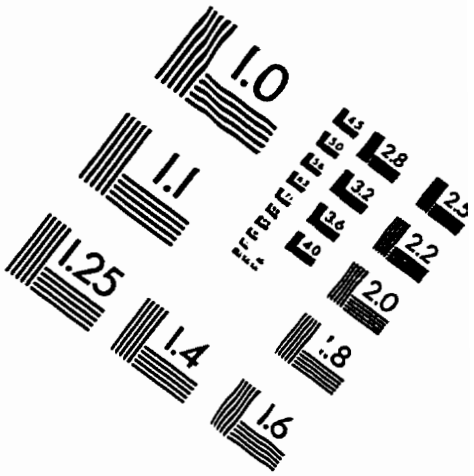
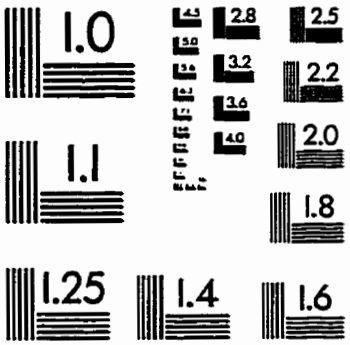


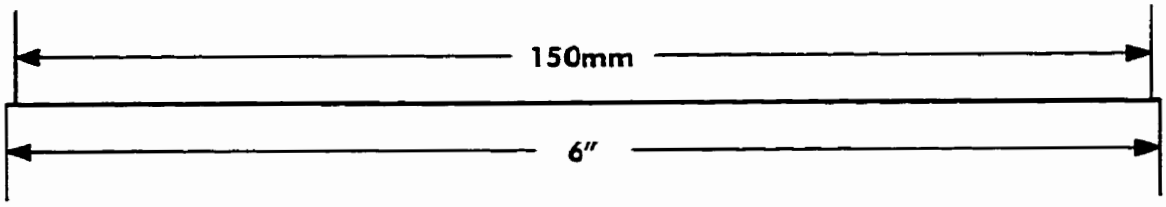
Figure 5. Interaction Between Stressor Type and Gender for Secondary Coping Scale of Venting.

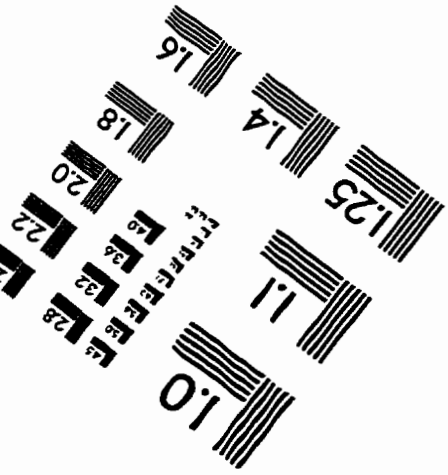
IMAGE EVALUATION TEST TARGET (QA-3)











APPLIED IMAGE, Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989