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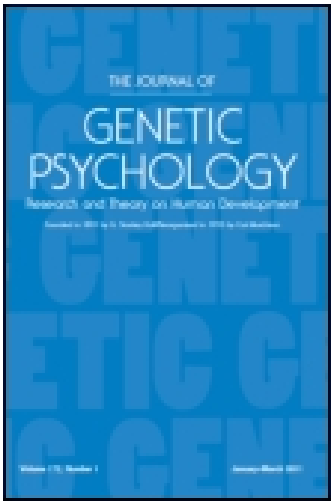

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Self-Reported Anxiety in Children and Adolescents: A Three-Year Follow-Up Study

Eleonora Gullone [a] , Neville J. King [b] & Thomas H. Ollendick [c]

[a] Department of Psychology , Monash University , Australia

[b] Faculty of Education , Monash University , Australia

[c] Department of Psychology , Virginia Polytechnic Institute and State University

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Self-Reported Anxiety in Children and Adolescents: A Three-Year Follow-Up Study

ELEONORA GULLONE
Department of Psychology
Monash University, Australia

NEVILLE J. KING
Faculty of Education
Monash University, Australia

THOMAS H. OLLENDICK
Department of Psychology
Virginia Polytechnic Institute and State University

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ABSTRACT. Anxiety may be more transient in children and adolescents than in adults. The present study involves a longitudinal design enabling the investigation of the continuity/discontinuity of self-reported anxiety in children and adolescents. A sample of 68 children was followed over 3 years. Results indicate that, on the whole, self-reported anxiety decreased over time. This was true for overall anxiety and its sub-types, with the exception of social concerns/concentration, which did not decrease over time. Consistent with past research involving normal fear, girls and younger children were found to score higher on anxiety than boys and older children did. However, those groups scoring higher at inception also demonstrated the most marked decreases over the 3-year period. In addition to the changes found over time, the data indicated continuity in anxiety such that levels of anxiety at inception were significant predictors of follow-up anxiety, although only a small amount of variance was shared. The authors concluded that adult models of anxiety cannot be applied to youth and that future research should investigate the contribution of contextual factors to the development of anxiety in children.

Key words: adolescents, anxiety, children

ANXIETY has been defined as a dysphoric, aversive feeling, similar to fear (Reed, Carter, & Miller, 1992). In fact, the terms fear and anxiety are frequently used interchangeably in the developmental literature (e.g., Campbell, 1986; Nietzel, Bernstein, & Russell, 1988; Rosen & Schulkin, 1998). However, this lack of dif-

ferentiation between the two negative affects has received criticism by some authors (Gullone, King, & Ollendick, 2000).

Fear and anxiety clearly overlap with regard to affective and physiological patterns (i.e., both involve feelings of apprehension and physiological reactions including sweating, trembling, and gastrointestinal distress; e.g., Barrios & Hartmann, 1988; Nietzel et al., 1988). However, there are data that suggest that there may be important differences between the two, particularly in relation to their cognitive composition (see Antony & Barlow, 1996; Barlow, 1988, 1991; Gullone et al., 2000). Thus, the issue of overlap versus distinction between the two constructs is far from resolved and clearly in need of more extensive investigation (Gullone et al., 2000).

Curiously, the tendency for authors to use the terms fear and anxiety interchangeably is most evident in the normative fear literature relating to children and adolescents (e.g., Anderson, 1994; Campbell, 1986; Reed et al., 1992). As stated by Laurent, Hadler, and Stark (1994), "Traditionally, research with children has used the words fear and anxiety interchangeably when in fact the emphasis has been on the developmental nature of specific fears" (p. 240). In contrast, research on children or adolescents that makes specific reference to anxiety tends to focus on pathology (e.g., Argulewicz & Miller, 1984; Crook, Beaver, & Bell, 1998; Newcomer, Barenbaum, & Pearson, 1995; Tannenbaum, Forehand, & McCombs Thomas, 1992), even though anxiety has been defined and recognized as a normal emotion. For example, Barlow (1988) described anxiety as a future-oriented mood state that, at optimal levels, has the adaptive function of enhancing performance. Others have referred to anxiety as a normal experience: For example, Lee, Piersel, Friedlander, and Colamer (1988) described it as "an emotional and behavioral experience that is common to everyone in varying degrees" (p. 429). Anderson (1994) stated, "Anxiety and fearfulness are universally experienced unpleasant states, with undoubted survival value, especially for the young child" (p. 46). Beidel and Turner (1984) noted that the differentiation of "normal" anxiety from clinical anxiety syndromes is based on the severity of the symptoms and the degree of interference the anxiety presents in the individual's everyday life.

The empirical literature, however, does not reflect the recognition that anxiety is a normal and even adaptive experience. And although developmental patterns of normal fear have been extensively documented (Gullone, 1996, 2000), there is a virtual absence of such literature for anxiety. Similarly, researchers have investigated the relationships between normal fear and demographic variables, including sex and socioeconomic status (Gullone, 2000), but the same cannot be said for anxiety. Instead, investigations into anxiety have considered its relationship with variables such as depression (Crook et al., 1998; Newcomer et al., 1995;

Address correspondence to Eleonora Gullone, Department of Psychology, Monash University, Monash, Victoria 3800, Australia; E.Gullone@sci.monash.edu.au (e-mail).

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Tannenbaum et al., 1992), school performance, and social relationships (Laurent et al., 1994; Newcomer et al., 1995). This situation is in contrast with the literature on adults.

In fact, experimental work with adults (e.g., Lazarus, 1966; Spielberger, 1966) has led to the conceptualization that *trait* anxiety is a relatively enduring personality characteristic that is independent of the situation (Taylor, 1953). Thus, trait anxiety is considered an integral part of the individual's personality such that people who experience high levels of anxiety experience it more chronically, although not necessarily more acutely, than those who experience low levels of anxiety. The conceptualization of trait anxiety as an integral aspect of individual differences is supported by more recent work with adults, which has implicated anxiety as a core feature of negative affectivity. This construct also incorporates the major personality trait of neuroticism (e.g., Watson & Clark, 1984).

A major distinction has been drawn between trait anxiety and what has been referred to as *state* anxiety, which—in adults—is described as a temporary state of arousal brought about by an identifiable stimulus or situation (Reed et al., 1992; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). However, according to Reed et al. (1992), this distinction cannot be directly applied to children, given the complex interplay of developmental factors. This rationale is supported by the fact that there are scant empirical data to support such a conceptualization in children or adolescents.

In fact, there are indications from several empirical investigations that the ways in which personality and affect constructs operate in adulthood cannot simply be assumed to apply to childhood or adolescence. For example, regarding the construct of negative affectivity, recent research has shown that the constructs of depression and anxiety remain clearly independent in adolescents (Boyd & Gullone, 1997). Also, Wilson and Gullone (1999) demonstrated that the relationships consistently found between, respectively, positive affect and extraversion and negative affect and neuroticism appear to become consolidated in adulthood, because they are significantly weaker in children and young adolescents.

Thus, given that anxiety researchers have tended to concentrate on adults, there is clearly the need for more investigation of its developmental patterns in childhood and adolescence. Limited data suggest that anxiety does demonstrate some stability over time. For example, using the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1985), Reynolds (1981) reported a 9-month follow-up study of anxiety in a sample of 534 children in Grades 4, 5, and 6. He found the correlation between inception and follow-up anxiety self-reports to be quite substantial at .68 and interpreted the finding to support the measure as a "trait measure of anxiety" (p. 702). However, to conclude that trait anxiety is stable in childhood or adolescence (or both), as with adults, continuity needs to be demonstrated over a time period that extends significantly beyond that investigated by Reynolds (1981).

The present study is the first to examine the stability of anxiety in youth over

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a period as long as 3 years. Given the lack of normative developmental anxiety data, our hypotheses were guided by the extensive normative fear literature. This position is supported by the significant conceptual and empirical overlap between anxiety and fear (e.g., Gullone et al., 2000; King, Gullone, & Ollendick, 1992).

First, we predicted that, as with fear, self-reported anxiety would decrease over time (with an increase in age). Psychometric studies of anxiety measures have also indicated that younger children score higher than older children (e.g., Reynolds & Paget, 1983). However, on the basis of the 3-year follow-up data on fear reported by Gullone and King (1997) and Reynolds's (1981) finding, we also expected that despite an overall decrease in anxiety with maturation, there would be a positive association between inception and follow-up anxiety. Furthermore, consistent with the research on normal fear, we expected that girls would report higher levels of anxiety than boys. The latter prediction is also supported by studies of anxiety carried out primarily for the purposes of psychometrically evaluating an anxiety measure (i.e., the RCMAS; e.g., Reynolds, 1982; Reynolds & Paget, 1983; Reynolds & Richmond, 1978).

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Method

Participants

The participants were recruited as part of a larger study investigating normative fear in children and adolescents (Gullone & King, 1992, 1993). Participants were recruited from regular primary and secondary schools in Victoria, Australia. In total, three primary and five secondary schools were involved in the investigation; three were Catholic schools and the remaining were government schools. Selection of the schools was guided by the aim of recruiting as representative a sample of urban Victorian (i.e., an Australian state) children as possible. Thus, socioeconomic status, birth place, and language spoken at home were taken into account in selecting the schools that participated in the study.

To determine the convergent validity of the Fear Survey Schedule for Children-II (FSSC-II), Gullone and King (1992) also administered the RCMAS to a portion (i.e., 368) of their total sample of 918 children and adolescents. Due to missing responses on the RCMAS for a small number of participants, the data of 362 children and adolescents aged between 7 and 18 years (173 boys, 189 girls) were retained.

Three years subsequent to the initial assessment, all eight schools involved were again approached to participate in a 3-year follow-up investigation of fear (Gullone & King, 1997) and anxiety. The participants in the present study represent those students still attending the schools they were attending at inception, with the exception of those who had transferred from primary to secondary school and those who had left secondary school.

In total, 68 (30 boys, 38 girls) children were involved in the follow-up assess-

ment. They ranged in age from 10 to 18 years. The numbers of respondents involved in each phase of the study, by age, are reported in Table 1. It is clear that the poorest response rates coincided with those participants aged 9, 10, 11, and 15 years at inception. When we took into account the proportion of students who, given their age at follow-up, would no longer have been attending school (i.e., 16- to 18-year-olds at inception; $n = 99$) and those who changed from primary to secondary school during the 3-year period (i.e., 9- to 11-year-olds at inception; $n = 97$) and were therefore not able to be followed up, an average of 41% of the original sample still attending school was recovered. Also, given that the legal school-leaving age in Australia is 16 years, a factor that most likely resulted in a loss at the upper end (i.e., particularly for those aged 18 years at time follow-up), some of these adolescents could have left school to seek employment. If calculated in a more conservative manner (i.e., the mean of the response rate at each age), the response rate equals 33% (see Table 1 for details).

Measures

The RCMAS (Reynolds & Richmond, 1985), subtitled "What I Think and Feel," is one of the most frequently used self-report scales and provides a general measure of manifest anxiety in children and adolescents. It was originally derived from the Manifest Anxiety Scale for Adults (Taylor, 1951) and consists of 28 anxiety items and 9 lie items. Respondents are required to answer *yes* or *no*

TABLE 1
Number of Participants at Inception and Follow-Up, by Age

Inception		Follow-up		
Age	*n*	Age	*n*	% response
7	12	10	6	50
8	27	11	14	52
9	32	12	6	19
10	32	13	2	6
11	33	14	2	6
12	24	15	5	63
13	38	16	17	45
14	28	17	10	36
15	37	18	6	16
16	38			
17	37			
18	24			
Total	362		68	

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to each item, depending on what is most true for them. Representative items include "I am nervous" and "My hands feel sweaty."

The RCMAS has been psychometrically evaluated on samples ranging in age from 6 to 19 years. The Kuder–Richardson coefficient has been reported to range between .80 (Pela & Reynolds, 1982) and .85 (Reynolds & Richmond, 1978). Test–retest reliability has also been reported to range between .97 and .68 for 3-week and 9-month retest, respectively (Pela & Reynolds, 1982; Reynolds, 1981). Published data on validity of the RCMAS have provided evidence for concurrent (Reynolds, 1980), construct (Reynolds & Richmond, 1978), and predictive validity (Reynolds, 1981). Factor analyses of the scale have been reported to yield three anxiety factors—Physiological Anxiety, Worry/Oversensitivity, and Social Concerns/Concentration—and a lie factor. Overall, research supports the reliability and validity of the RCMAS.

The FSSC-II (Gullone & King, 1992) is the most recent revision of Scherer and Nakamura's (1968) fear schedule. Gullone and King (1992) reported the development and psychometric properties of the FSSC-II. It is a 75-item schedule on which respondents are asked to rate their level of fear for each item. The response scale consists of 3 points (1 = *not scared,* 2 = *scared,* 3 = *very scared*). The FSSC-II has been reported to have high internal consistency, with a corrected item-total correlation coefficient of .96. Correlations of .90 and .82 for 1-week test–retest have been reported. Validity of the FSSC-II has been demonstrated through moderate correlations of .42 with the RCMAS (Reynolds & Richmond, 1985) and .39 with the Trait Scale of the State–Trait Anxiety Inventory for Children (STAIC; Spielberger, 1973). Divergent validity has also been demonstrated through nonsignificant correlations with the Goodenough-Harris Drawing Test of Intellectual Maturity (Goodenough & Harris, 1963) and the State Scale of the STAIC.

Construct validity has been demonstrated with a five-factor fear structure yielded from principal components analysis with varimax rotation. The five factors are Fear of Death and Danger, Fear of the Unknown, Fear of Failure and Criticism, Animal Fears, and Psychic Stress-Medical Fears (cf. Ollendick, 1983). Recently, this factor solution has been confirmed in an American sample (Burnham & Gullone, 1997).

Procedure

The RCMAS and the FSSC-II were administered to the participants in counterbalanced order. A research assistant with graduate qualifications in psychology administered the questionnaires to the students in groups in a quiet room at their regular school. The directions for completion were described to the respondents. Then they were asked to read each item carefully and to endorse the response that was most accurate for them for each item. It was emphasized that they should not spend too much time on any one item, that there were no right or

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wrong answers, and that they should not be concerned about their peers' responses. Any queries that arose were addressed by the research assistant.

Results

The results were analyzed on the basis of overall anxiety score (total RCMAS score with lie items removed) and each of the anxiety factors. Statistical analyses were conducted for these four anxiety indices in order to compare the initial test with the 3-year follow-up data. Repeated measures analyses of variance (ANOVA) were carried out to examine time, age, and gender effects. For these analyses, age was re-coded into two approximately equal-sized groups (Group 1: 10- to 14-year-olds, $n = 30$; Group 2: 15- to 18-year-olds, $n = 38$). To determine the reliability of the RCMAS, we calculated Cronbach's alpha coefficients for the overall scale at both inception and follow-up. Also, one-tailed Pearson correlations between inception and follow-up indices were calculated to examine the stability of anxiety self-reports. These were calculated for the overall sample and for each age and gender group. Finally, to determine the most important predictors of follow-up anxiety self-reports among gender, age, and time, four standard multiple regression analyses were carried out with anxiety score (i.e., total RCMAS and each of the three factors) at follow-up as the dependent variable and the corresponding anxiety score at inception (i.e., time), age, and gender as predictor variables.

Representativeness of the Participants Recovered at Follow-Up

The portion of the original cohort constituting the follow-up sample in the present study was compared with the portion of the original sample, aged 7 to 15 years, that was not recovered. The two groups were compared on inception anxiety scores (overall and the three anxiety factors) using independent groups t tests. No significant differences were found between the recovered and non-recovered groups on any of the anxiety indices: total RCMAS, $t(360) = -.53$, $p > .05$; Physiological Anxiety, $t(360) = -.56$, $p > .05$; Worry/Oversensitivity, $t(360) = -.50$, $p > .05$; and Social Concerns/Concentration, $t(360) = -.11$, $p > .05$.

To further assess the constitution of the recovered sample, we compared the total mean fear score for this sample ($M = 136.32$, $SD = 23.36$) with the norm reported by Gullone and King (1992; $M = 132.14$, $SD = 25.15$). The means for each of the FSSC-II factors were compared with those reported by Gullone and King (1997) also from the normative sample (note that factor means were not reported by Gullone and King, 1992; means reported by Gullone and King, 1997, for the normative sample are given in parentheses): Fear of Death and Danger: $M = 56.88$, $SD = 9.99$ ($M = 57.30$, $SD = 10.00$); Fear of the Unknown: $M = 31.49$, $SD = 7.27$ ($M = 32.05$, $SD = 7.15$); Fear of Failure and Criticism: $M = 20.88$, $SD = 4.25$ ($M = 20.43$, $SD = 4.47$); Animal Fears: $M = 13.03$, $SD = 3.16$ ($M = 12.92$, $SD = 3.20$); and Psychic Stress–Medical Fears: $M = 13.99$, $SD = 3.34$ ($M = 13.88$,

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SD = 3.20). It is evident from these data that the recovered sample did not differ, with regard to self-reported fear, from Gullone and King's (1992) normative fear sample.

Test–Retest Comparisons

Table 2 provides descriptive statistics for the total RCMAS and for each of the three factors at initial test and follow-up. These statistics are provided for the overall sample and separately by gender and age group. We conducted 2 (time) × 2 (age group) × 2 (gender) repeated-measures ANOVAs for each anxiety score, to determine significant time, age, and gender differences. For these analyses, it should be noted that age and gender effects represent cross-sectional and between-subjects outcomes, whereas time effects represent longitudinal and within-subject outcomes.

For overall anxiety scores, the ANOVA revealed significant two-way interaction effects between gender and time, $F(1, 64) = 4.43$, $p < .05$, and between age group and time, $F(1, 64) = 7.48$, $p < .01$. Significant main effects were also found for time, $F(1, 64) = 7.48$, $p < .01$, and gender, $F(1, 64) = 4.70$, $p < .05$. As shown in Table 1, the time and gender effects were attributable, respectively, to the fol-

TABLE 2
Means and Standard Deviations for the RCMAS Total Score and Its Subscales for Inception and Follow-Up Assessments, by Sex and Age

	RCMAS		Physiol.		Worry		Social	
Group	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Boys								
Inception	9.83	5.10	3.97	2.44	3.57	2.30	2.30	1.82
Follow-up	9.30	5.87	3.23	2.20	3.44	2.93	2.02	1.66
Girls								
Inception	13.61	5.53	4.42	2.21	6.08	3.09	3.10	1.90
Follow-up	10.47	5.97	3.82	3.07	5.29	3.14	2.31	1.76
10–14 years								
Inception	13.03	5.97	5.23	2.37	5.13	3.03	2.67	2.01
Follow-up	8.77	6.06	3.73	2.15	3.20	2.92	1.83	1.84
15–18 years								
Inception	11.08	5.26	3.42	1.94	4.87	3.11	2.79	1.85
Follow-up	10.89	5.59	3.55	1.95	4.68	3.18	2.66	1.63
Overall								
Inception	11.94	5.63	4.22	2.31	4.99	3.03	2.74	1.91
Follow-up	9.96	5.85	3.63	2.03	4.03	3.13	2.29	1.76

Note. Physiol. = Physiological Anxiety. Worry = Worry/Oversensitivity. Social = Social Concerns/Concentration.

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low-up scores and the scores of boys being lower than inception scores and reports by girls. The interaction effect between gender and time was the result of there being a more marked decrease in anxiety over the 3-year period for girls compared with boys. The interaction effect between age group and time resulted from the decrease over time in anxiety being more marked for the 10- to 14-year-olds compared with the 15- to 18-year-olds.

The results of the ANOVA examining the physiological anxiety factor revealed no significant age or gender main effects. However, a significant interaction effect between age and time was found, $F(1, 64) = 6.12$, $p < .05$, which resulted from a decrease in physiological anxiety over time for the 10- to 14-year-olds but no change for the older age group. A significant main effect for time, $F(1, 64) = 4.87$, $p < .05$, indicated an overall sample decrease over time in physiological anxiety.

For the worry/oversensitivity factor, results revealed a significant gender effect, $F(1, 64) = 4.87$, $p < .05$, again resulting from girls scoring higher than boys. Significant interaction effects between time and age, $F(1, 64) = 5.19$, $p < .05$, as well as between time and gender, $F(1, 64) = 5.00$, $p < .05$, also were found. These interaction effects resulted from the decrease over time being more marked for girls and younger children than for boys and older children, respectively.

Finally, results for the social concerns/concentration factor revealed no significant age or gender main effects and no time main effect. The Gender × Time interaction effect approached significance, $F(1, 64) = 3.66$, $p = .06$.

Cronbach's Alpha Coefficients

Cronbach's alpha was determined to be .84 for inception reports on the overall RCMAS and .85 on follow-up anxiety reports. These results support the internal consistency of the scale.

Correlation Analyses Between Inception and Follow-Up Scores

As shown in Table 3, anxiety reports at inception were positively and moderately correlated with follow-up self-reports on the total anxiety score, the worry/oversensitivity factor, and the social concerns/concentration factor. This was the case for the overall sample as well as for each of the age and gender groups. In contrast, for the physiological anxiety factor, significant coefficients were found only for the total sample and for boys.

Multiple Regression Analyses

Four standard multiple regression analyses (i.e., enter method) were calculated in order to determine the predictive value of inception anxiety scores, age, and gender (coded as 0 = male, 1 = female) for follow-up anxiety scores. The

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TABLE 3
Pearson Correlations Between Inception and Follow-Up Anxiety Scores (Total and Subscale) for the Overall Sample and by Sex (One-Tailed)

RCMAS	Age group (years)		Sex		Overall
	10–14	15–18	Boys	Girls	
Total	.33*	.40**	.36*	.27*	.32**
Physiological Anxiety	.24	.22	.30*	.14	.23*
Worry/Oversensitivity	.35*	.43**	.44**	.29*	.37**
Social Concerns	.29*	.28*	.31*	.29*	.29*

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

TABLE 4
Four Regression Analyses for Follow-Up Reports of Total Anxiety Score and Each of the RCMAS Factors, With the Corresponding Inception Anxiety Score, Age, and Sex as Predictor Variables

Dependent variable	ΔR^2	F	Significant predictor	r	$S\beta$	β	t
Total RCMAS	.13	4.38**	RCMAS	.32	.13	.38	3.09**
			Age	.20	.25	.27	2.27*
Physiological Anxiety	.01	1.25	None				
Worry/Oversensitivity	.17	5.50**	Worry/Oversensitivity	.37	.13	.39	3.19**
			Age	.25	.13	.26	2.32*
Social Concerns/ Concentration	.14	4.51**	Social Concerns/ Concentration	.29	.11	.32	2.75**
			Age	.27	.07	.29	2.54*

Note. All *df*s 3, 64.
*$p < .05$. **$p < .01$.

follow-up total anxiety score and the three anxiety factors each constituted a dependent variable per analysis. The inception anxiety score corresponding to the dependent anxiety score was entered into each regression analysis as a predictor. For example, for the regression analysis examining total follow-up anxiety as the dependent variable, the total inception anxiety score was entered as a predictor. Likewise, for the follow-up physiological anxiety regression analysis, the inception physiological anxiety variable was entered as the predictor. The outcomes of these analyses are reported in Table 4.

From the total of four regression analyses, three yielded significant results. The physiological anxiety analysis did not reach significance. This finding is not surprising, given that the test–retest correlation analyses for this factor were also largely nonsignificant. For the significant analyses, the age and the inception anx-

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iety score explained between 13% (overall anxiety) and 17% (worry/oversensitivity) of the variance in follow-up anxiety.

Discussion

Given limited research into the developmental patterns of normal anxiety, in the present study we investigated the continuity/discontinuity of manifest anxiety over a 3-year period. At inception, the sample included a total of 362 children and adolescents, aged 7 to 18 years, recruited as part of a larger normative sample. At follow-up, the sample consisted of 68 children and adolescents ranging in age from 10 to 18 years. Because approximately 41% of the inception sample was followed-up, it was important to establish the representativeness of the follow-up sample. Analyses confirmed that there were no significant differences in reports of anxiety at inception between the recovered and non-recovered portions of the sample. This fact was demonstrated for overall anxiety as well as for each of the RCMAS subscales. It was also demonstrated that on other available information (i.e., normal fear self-reports), the sample was similar to the normative sample. These findings confirmed the sample's representativeness of a nonclinical community group.

Comparison of initial self-reports with follow-up reports indicated that, for overall anxiety, there was a significant decrease over the 3-year period. The magnitude of this decrease was different depending on sex and age. Specifically, the decrease over time was greater for girls than for boys and for the 10- to 14-year-olds compared with the 15- to 18-year-olds. These findings are consistent with longitudinal findings reported in the normal fear literature. For example, Gullone and King (1997) also reported that there was an overall decrease in self-reported normal fear in children and adolescents over a 3-year period and that this decrease became smaller with an increase in age. The findings are also consistent with the cross-sectional data available for anxiety, which have indicated that compared with self-reports of younger children, self-reports of anxiety are lower for older children (Reynolds & Paget, 1983). Also, consistent with our predictions and with normative data, girls scored higher than boys on anxiety (Reynolds, 1982; Reynolds & Paget, 1983; Reynolds & Richmond, 1978).

Examination of the RCMAS subscales, which assess specific types of manifest anxiety, yielded findings largely consistent with those for general anxiety. Physiological anxiety decreased over time for the younger age group but not for the older age group. However, unlike overall anxiety, no gender difference was found.

For the worry/oversensitivity factor, a gender difference consistent with overall anxiety was found, and the direction was consistent with our prediction that girls would score higher than boys. Also, consistent with overall anxiety self-reports, there was a significant decrease over time, which was more marked for younger children and for girls than for older children and boys, respectively.

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In contrast to the aforementioned findings for the RCMAS scores, the social concerns/concentration factor yielded no significant age, gender, or time differences. This factor is the one most closely associated with the psychic stress–medical fears factor of the FSSC-II (Gullone & King, 1992), which primarily assesses social evaluative fears. Interestingly, for this fear factor, Gullone and King (1997) also did not find a decrease over time as they did for other types of fears. Rather, they found an increase over time.

Nevertheless, these findings demonstrate that, on the whole, girls and younger children score higher on anxiety than boys and older children. Consistent with self-reports of normal fear, age and gender differences can be argued to reflect, in part, response bias such that boys and older children may be less likely to admit to their anxiety experiences (Gullone, 2000). Furthermore, although anxiety was found to decrease over time regardless of age and gender, it was for those who scored higher at inception (i.e., girls and younger children) that the decrease over time was most marked. Although this finding may, to some extent, reflect regression to the mean, it also suggests that there may be an optimal or "normal" level of anxiety, which is arrived at through maturation.

Despite the change over time that was found, our data also indicated that there is a significant degree of continuity in anxiety over time. This was true to the extent that, for all types of anxiety with the exception of physiological anxiety, the inception anxiety score was a better predictor of the corresponding follow-up anxiety score when compared with age and gender. In fact, gender was not found to be a significant factor in predicting follow-up anxiety. Here, too, our findings are consistent with follow-up studies of normal fear, in which it has been reported that an underlying stability is apparent such that even with maturation, individual differences continue on a long-term basis (cf. Gullone & King, 1997). Indeed, in our 3-year follow-up study of normal fear, test–retest correlations were comparable (i.e., approximately .40) to those found for anxiety in the present study. This finding is also consistent with that reported by Reynolds (1981) in a 9-month follow-up study in which stability was demonstrated.

These findings make an important contribution to our knowledge about developmental patterns of anxiety in a representative, nonclinical sample of children and adolescents. Nevertheless, two limitations of the present study should be mentioned. First, the size of the sample was relatively small, particularly when considering the age and sex breakdown. This small sample size undoubtedly compromised statistical power levels for certain analyses. Thus, the findings require replication with a larger sample. Second, the present data are based on self-report using only one anxiety instrument (i.e., the RCMAS). Future research should investigate whether the present findings can be replicated using alternative methods and measures.

The conceptualization that has been applied to adult models of anxiety (e.g., Lazarus, 1966; Spielberger, 1966) as a relatively enduring personality characteristic has been supported only in part by our data. Given the significant changes in

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anxiety over time demonstrated in the present sample, it appears that anxiety in youth may be more transient than is the case in adulthood. In contrast, the fact that follow-up anxiety scores could be significantly predicted by inception anxiety scores does support the notion of continuity purported in adult models. However, this latter statement is qualified by the finding that, although inception scores were significant predictors of follow-up scores, only a small amount of variance was accounted for (i.e., between 13% and 17%), suggesting that other factors, perhaps more central, contributed to the anxiety levels reported at follow-up.

In this study, we examined only individual factors. Research has consistently demonstrated significant relationships between self-reported psychological well-being (including anxiety and depression) and contextual factors such as family environment and parenting styles (de Ross, Marrinan, Schattner, & Gullone, 1999; Gullone, 1996; Rapee, 1997). It is increasingly becoming recognized that family relationships have a significant impact on individual competence, resilience, and well-being (Basic Behavioral Task Force of the National Advisory Mental Health Council, 1996). In particular, two aspects of parenting have been identified as important for children's emotional development. The first of these is characterized by warmth, nurturance, and acceptance. The second involves the amount of control, structure, and involvement that caregivers display toward their children. The second aspect has been differentiated in terms of effective, empathic, and developmentally appropriate management versus manipulative or punitive caregiving, especially involving power assertion. Research has also shown that specific family environment characteristics are important (e.g., de Ross et al., 1999). These include levels of family conflict and cohesion. Thus, future longitudinal research could shed further light on the development of anxiety by incorporating contextual factors such as family environment and parenting styles.

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