

# **The Assessment of Normal Fear in Children and Adolescents**

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Published research into normal fear now spans more than one century. During this time, a large number of papers have been published in the area. The resulting literature has led to a detailed understanding of normal fear experiences and, in particular, the ways in which they change with maturation. Of central importance, when evaluating the documented outcomes of this work, is the soundness of the methods and tools used in assessment. It is not surprising given the large number of researchers that have been involved in this area, that the assessment methods used have varied substantially. These have ranged from the methodologically problematic technique of obtaining retrospective adult reports to the administration of psychometrically validated fear survey schedules. An extensive review of this literature reveals that, for the last two decades, the fear survey schedule has been the most widely used technique for the fear assessment. The preference that has and is being demonstrated for the fear survey schedule as an assessment tool is most likely due to its many advantages including ease of use, objectivity in scoring, and provision of a substantial amount of information in a short period. However, despite its advantages, researchers and clinicians need to be cognizant of its potential limitations and, depending on the questions being asked, may need to consider using it in combination with alternative assessment strategies.

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**KEY WORDS:** Normal fear; assessment; children; adolescents.

## **INTRODUCTION**

Normal fear, defined as an adaptive reaction to a real or imagined threat has been among the most researched emotions. This is not surprising given that it is considered to be an integral and adaptive aspect of development which warns the organism of danger and motivates escape or avoidance. A particular focus of the research into normal fear has been to establish developmental patterns with regard to fear content, frequency, and intensity.

The normative fear literature now spans over one century with the first investigation into normal fear having been published by Hall in 1897. Given the long-standing academic interest in normal fear, it is not surprising that a large and detailed literature has developed since Hall's study. This literature has

led to a detailed understanding of normal fear experiences and the ways in which they change with maturation. Differences according to demographic characteristics (e.g., sex, socioeconomic status) have also been documented. Although the focus has been on adaptive patterns of fear, the importance of this literature for clinical applications cannot be overestimated. As argued within the developmental psychopathology paradigm, it is essential to understand the normal in order to inform the abnormal and vice versa (Cicchetti & Cohen, 1995). Thus, the conclusion that an individual is displaying, reporting, and/or experiencing maladaptive or abnormal fear is fundamentally based upon comparison with what is documented as being normative.

It goes without saying that the confidence placed upon documented fear patterns, by both clinicians and researchers, is heavily dependent upon the soundness of the methods and tools used in assessment. During its long life-span, there is no doubt that

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fear research has matured markedly with regard to the assessment techniques and methodologies used. Not only has measurement become more systematic, the measures used have been scrutinized more closely with regard to their validity and reliability. The most common current practice regarding fear assessment, for both research and clinical application is, without doubt, to obtain self-reports via the administration of the fear survey schedule.

This paper provides a historical account of fear assessment strategies and instruments beginning from the late 19th Century (Hall, 1897) and proceeding to present-day work. This is followed with an evaluation of the issues relating to the variety of methods that have been used. Recent attempts to address some of these issues are discussed. Finally, a summary of the major findings that have been derived from the extensive literature are detailed and directions for future research are outlined.

## HISTORICAL OVERVIEW

Among the earliest fear studies a range of assessment methods was employed including adult retrospective reports of childhood fears (Hall, 1897; Jersild & Holmes, 1935a). Other early fear studies involved unstructured (Valentine, 1930) and structured observations (Hagman, 1932; Jersild & Holmes, 1935a; Jones & Jones, 1928), as well as parent (Hagman, 1932; Jersild & Holmes, 1935a, 1935b; Lapouse & Monk, 1959) or teacher reports of their children's fears (Cummings, 1944). A small number of early studies obtained reports from children themselves (e.g., Jersild & Holmes, 1935b; Jersild, Markey, & Jersild, 1933).

The early studies were focused primarily on the fears of young children typically age 6 years or less. Notwithstanding the limitations associated with these early data collecting techniques (as discussed in detail below), it is noteworthy that the major findings of these early studies have since been supported by the voluminous research that has followed.

A subsequent wave of studies focusing mostly on children older than 6 years involved fear assessment via child-report. Many of these studies required children to list their fears and/or worries (Angelino, Dollins, & Mech, 1956; Angelino & Shedd, 1953; Pintner & Lev, 1940; Pratt, 1945; Zelig, 1939). With the exception of Pratt (1945) whose sample included children between 4 and 16 years, the studies requiring respondents to list their fears have involved older

samples, generally older than 8 years (Angelino *et al.*, 1956; Angelino & Shedd, 1953; Nalven, 1970).

An additional method involved self-report interviews (Croake, 1967, 1969; Maurer, 1965; Winker, 1949). This is a technique that spans a much greater time span than those discussed above with studies dating back to 1933 (Jersild, *et al.*) and others having been published as recently as Slee and Cross in 1989.

Although several fear studies published during the 1970s continued to use the techniques characterizing earlier work (e.g., Derevensky, 1974; Eme & Schmidt, 1978; Nalven, 1970; Poznanski, 1973), the overwhelming majority of studies published in the 1970s, 1980s, and 1990s have used fear schedules or checklists (e.g., Bamber, 1974, 1977; Catlin, 1972; Croake & Knox, 1971; Gullone & King, 1997; Klingman & Weisner, 1982, 1983; Miller, Barrett, Hampe, & Noble, 1971, 1972; Spiegler & Liebert, 1970).

## CURRENT FEAR ASSESSMENT

Thus, recent normative fear research has predominantly incorporated the use of fear survey schedules for fear assessment. Given this predominant and extensive use of fear survey schedules, the associated literature is comprehensively reviewed. In particular, emphasis is given to considerations of validity and reliability.

Although a minority of studies have involved adult (mostly mother) reports (e.g., Dollinger, O'Donnell, & Staley, 1984; Miller *et al.*, 1971), the majority of fear survey schedule investigations have involved children's self-reports. Of those investigations that have obtained child data, given the cognitive requirements, the majority have involved children age 6 years or above (e.g. Croake, 1967, 1969; Croake & Knox, 1971, 1973; Gullone & King, 1992; Moracco & Camilleri, 1983; Ollendick, 1983; Scherer & Nakamura, 1968).

Several different instruments have been used, among them, Croake's (1967) 69-item fear schedule, and Scherer and Nakamura's (1968) 80-item Fear Survey Schedule for Children (FSS-FC). Also included are several studies which employed adult fear schedules. For example, Bamber (1974) administered the Wolpe-Lazarus (1966) Fear Survey Schedule to a sample of adolescents in Northern Ireland. The questionnaires used have differed with regard to number of items (i.e., from 25 to 100 items), length of the response scales (i.e., from 3-point to 9-point

Likert scales), wording of scales (e.g., often–never, not scared–very scared), and psychometric properties (Table I).

Within this range of available instruments, that most widely used and that for which the psychometric properties are most robust remains Scherer and Nakamura's (1968) FSS-FC, albeit in its revised forms (Burnham & Gullone, 1997; Gullone & King, 1992; Ollendick, 1983). The FSS-FC is based on Wolpe and Lang's (1964) adult fear schedule and was originally developed for administration to children ages between 9 and 12 years. Respondents are required to rate the amount of fear they experience, for each of the 80 fear schedule items, on a 5-point response scale ranging from 1 (*none*) to 5 (*very much*).

Ollendick (1983) revised Scherer and Nakamura's (1968) fear schedule to enhance its validity with younger children and children with intellectual disabilities. This involved substituting the 5-point rating scale with a 3-point scale (i.e., 1 = *none*, 2 = *some*, 3 = *a lot*). The revised Fear Survey Schedule for Children (FSSC-R) was psychometrically evaluated on two samples of children ages between 8 and 11 years and shown to have adequate reliability and validity. A principal components analysis yielded a five-factor structure conceptually very similar to the eight-factor solution reported by Scherer and Nakamura (1968) (see Table I for details).

Several subsequent studies have used the FSSC-R (e.g., Ollendick, King, & Frary, 1989; Ollendick, Matson, & Helsel, 1985; Silverman & Nelles, 1988; Spence & Kennedy, 1989). These have included British (Ollendick & Yule, 1990; Ollendick, Yule, & Ollier, 1991) and Australian samples (King *et al.*, 1989).

In the 1990s Gullone and King (1992) revised the FSSC-R a second time (FSSC-II: Gullone & King, 1992, 1993). The major objective of this second revision was to update the content of the FSSC which had remained unchanged since the original scale was developed in the 1960s (Scherer & Nakamura, 1968). The need for an up-dated FSSC had also been acknowledged by others who claimed that an instrument developed during the 1960s and 1970s is likely to have questionable validity in the 1990s (Ramirez & Kratochwill, 1990). In fact, researchers have encouraged content changes in fear scales throughout the past decade (King *et al.*, 1989; Ramirez & Kratochwill, 1990).

The second revision of the FSSC includes the addition of contemporary fears (i.e., AIDS and nuclear war) as well as a rating scale modification such

that wording of the 3-point scale was changed to 1 (*not scared*) to 3 (*very scared*) (cf. Ryall & Dietiker, 1979). Given that Ollendick's FSSC-R had only been psychometrically validated for youth ranging in age from 8 to 16 years, an additional aim was to create an instrument that would be valid for administration to younger children (i.e., 7 years) and older adolescents (i.e., 18 years). A final aim of Gullone and King's (1992) revision was to strengthen the psychometric properties and measurement sensitivity of the FSSC-R.

The resulting FSSC-II differs substantially from the FSSC-R. It comprises 75 items, 28 unchanged and 19 reworded items from the original scale as well as 28 new items. Gullone and King (1992) reported adequate validity and reliability for the FSSC-II, in addition to a five-factor fear structure representative of other similar instruments (e.g., Arrindell, Pickersgill, Merckelbach, Ardon, & Cornet, 1991; Ollendick, 1983). Recently, in an American validation study of the FSSC-II, Burnham and Gullone (1997) replicated these findings (see Table I for details).

### Age-Appropriateness of Procedures and Measures

As emphasized by King, Hamilton, and Ollendick (1988), childhood development is characterized by uneven and rapid progression in a multitude of areas including, among others, cognition, perceptual-motor, social, and language. It is extremely important, then, that researchers are sensitive to such developmental processes in their assessment of fear. In particular, the cognitive and verbal abilities of the child need to be taken into account (King *et al.*, 1988; Ollendick & Hersen, 1984).

The age of the child determines the type of questions asked as well as the manner in which they are asked. Clearly, obtaining reports from adults (e.g., parents), who have extended and broad exposure to the emotional expressions of children, is one of very few methods available for examining fears in very young children (i.e., below 6 years of age). However, as discussed below, such a method is not without problems. Nevertheless, devising a better alternative remains a challenge. In contrast, older children's and adolescents' self-reports are able to provide useful and valid information (King *et al.*, 1988; Ollendick & Hersen, 1984; Ollendick & King, 1991).

**Table I.** Fear Survey Schedules Used in Fear Investigations with Children and Their Psychometric Properties

Study and country	Subjects		Fear survey schedule	Psychometric properties
	<i>n</i>	Age		
Croake (1967): U.S.	181	3rd, 6th, 9th grades	69-item FSS	None reported
Russell (1967): Canada	1,211	11 and 17 years and senior citizens ( <i>M</i> age ca. 70)	49-item FSS: 9-point Likert scale: 0 ( <i>not fearful</i> ) to 9 ( <i>extremely afraid</i> )	Construct validity: 11-year-old males: 3 factors; 11-year-old females: 2 factors; 17-year-old males: 6 factors; 17-year-old females: 5 factors; male senior citizens: 5 factors; female senior citizens: 3 factors. Examples of factors: disability, social alienation, helplessness, disaster, animals, dependency
Scherer & Nakamura (1968): U.S.	99	9 to 12 years	80-item FSS-FC: 5-point Likert Scale for amount of fear: 0 ( <i>none</i> ) to 5 ( <i>very much</i> )	Reliability: .94 Construct validity: 8 factors: failure & criticism; major fears; minor fears—travel; medical fears; fear of death; fear of the dark; home-school fears; miscellaneous fears. Validity: (i) Correlations between total fear scores and the Children's Manifest Anxiety Scale by age and sex: .41 to .61, (ii) A significant difference in intensity and frequency of fear for <i>low</i> and <i>high</i> anxiety groups, low and high anxiety children scored differently on 4 of 8 factors
Spiegler & Liebert (1970): U.S.	349	13 to 85 years	The FSS for adults (FSS-III; Wolpe & Lange, 1964) plus an additional 67 items	Internal consistency: .95 Social desirability: significant correlation between self-reported fears and judges' ratings of the acceptability of reporting that fear. Correlation significantly higher for males than females
Miller <i>et al.</i> (1971): U.S.	80 phobic children 236 nonclinical children	6 to 16 years 7 to 12 years	Parent reports on the Revised Louisville Checklist	Split-half reliability: .80 Construct validity: Scores differed significantly between phobic and nonphobic children
Catlin (1972): U.S.	1,776	3rd and 6th grade	71-item FSS (items rated on scale from <i>never</i> to <i>almost always</i> ; no. of points unspecified)	None reported
Miller <i>et al.</i> (1972): U.S.	78 phobic children 101 nonclinical children		Parent reports on the Louisville Fear Survey Schedule for children (81 items rated on a 3-point scale: no fear, normal or reasonable fear, unrealistic or excessive fear)	Construct validity: 3 factors; physical injury, natural & supernatural dangers, psychic stress
Sidana & Sinha (1973): India	300	6, 8, & 10 years	50-item fear checklist (endorsement of fears) administered to children and their teachers	Rank order reliability: for each age level: .85 to .91 Rank order correlations: between child and teacher at each age level: .51 to .60 Test-retest: (interval unspecified) .79 to .95

Table I. (Continued)

Study and country	Subjects		Fear survey schedule	Psychometric properties
	<i>n</i>	Age		
Simon & Ward (1974): Great Britain	336 Grammar and 336 secondary school children	12 to 15 years	100-item worries schedule	Correlations between teacher and student reports: .85 to .90
Bamber (1977): Northern Ireland	1,112	12 to 18 years	FSS-III (Wolpe & Lang, 1964)	Construct validity: 10 factors: social rejection, tissue damage, unpleas- ant things, small animals, travel- ing, social isolation, unpleasant people, stormy weather, acropho- bia, and medical treatment
Ryall & Dietiker (1979): U.S.	24 Outpatient chil- dren: emotional problems 24 Matched con- trols	4 to 12 years	48-item CFSS: Individu- ally administered, 3- point rating scale (not scared, a little scared, very scared) and two open-ended ques- tions.	Reliability: 1-week test-retest by age and sex: .79 to .91. Discriminant validity: significant dif- ference on overall fear score be- tween clinical and control group.
Klingman & Weisner (1983): Israel	491	6th to 8th grade	99-item Israeli Fear Sur- vey Schedule for Chil- dren (IFSSC) (5-point scale) adapted from Wolpe & Lang (1964)	None reported
Orton (1982): U.S.	645	5th and 6th grade	53-item worries ques- tionnaire (3-point scale: never, some- times, often)	None reported
Klingman & Weisner (1983): Israel	479 283 were at- tending secular schools and 196 religious schools	6th to 8th grade	IFSSC (see above)	Internal consistency: Kudar-Richard- son: .81
Ollendick (1983): U.S.	99 118 25 School phobic children	8 to 11 years 8 to 11 years 7 to 12 years	Revised FSS-FC (Scherer & Naka- mura, 1968) (3-point scale: none, some, a lot) 80-item FSSC-R	Internal consistency: .92 to .95 1-week test-retest: .81 to .89 3-month test-retest: .55 to .62 Convergent validity: Correlations be- tween FSSC-R and trait scale of the State-Trait Anxiety Scale for Children (STAIC; Spielberger, 1970) ranged between .31 to .56, Inverse correlations between FSSC-R and the Piers-Harris Self- Concept Scale (SCS; Piers & Har- ris, 1969), and internal locus of control on the Nowicki-Strickland Locus of Control Scale (NSLOC; Nowicki & Strickland, 1973) Discriminant validity: School phobic children scored significantly higher on the total FSSC-R than nonpho- bic children. Construct validity: 5 factors: failure and criticism, the unknown, injury and small animals, death and dan- ger, medical fears
Staley & O'Donnell (1984): U.S.	868	6 to 16 years	Louisville Fear Survey (104 items); parent re- ports	Construct validity: 5 factors: physical injury, animals, public places, night fears, school-related fears Internal consistency: Cronbach's alpha by age: .77 to .98

Table I. (Continued)

Study and country	Subjects		Fear survey schedule	Psychometric properties
	<i>n</i>	Age		
Bondy, Sheslow, & Garcia (1985): U.S.	127	2nd, 4th, 6th, and 8th grades	FSS-FC (Scherer & Nakamura, 1968); mother and child reports	Reliability: 1-week test-retest significantly correlated (70% overlap for 10 most common fears) and retest indices were consistently lower than initial reports, significant correlations between mother and child reports
Ollendick <i>et al.</i> (1989): U.S. & Australia	1,185 594 (U.S.) 591 (Australia)	7 to 16 years	FSSC-R (Ollendick, 1983)	Factorial invariance: Confirmation of Ollendick's (1983) factor structure in Australian and American samples Internal consistency: Overall schedule: .95, subscales: all factors except medical factor: approx. .90
Sanavio (1989): Italy	500	11 to 15 years	Italian translation of FSS-FC (Scherer & Nakamura, 1968)	Construct validity: 16 factors including travel, animals, medical procedures, traffic dangers, social disapproval, the unknown. Internal consistency: Cronbach's alpha: .95
Gullone & King (1992): Australia	918	7 to 18 years	FSSC-II: Revision of Ollendick's (1983) FSSC-R: 75-items (3-point scale: not scared, scared, very scared)	Reliability: (a) Internal consistency; Cronbach's alpha by age and sex: .96 to .96, (b) 1-week test-retest by age and sex: .85 to .94 Validity: (a) Convergent validity: correlations between the FSSC-II and the trait anxiety scale of the STAIC (Spielberger, 1970) and the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1985) ranged between .31 and .57, (b) Divergent validity; Nonsignificant correlations between the FSSC-II and the state anxiety scale of the STAIC and the Goodenough-Harris Drawing Test (Goodenough & Harris, 1963), (c) Construct validity: 5 factors: (i) Death and Danger, (ii) The Unknown, (iii) Failure and Criticism, (iv) Animals, (v) Psychic Stress—Medical fears
Burnham & Gullone (1997): U.S.	720	2nd–12th grade	75-item FSSC-II (Gullone & King, 1992), 15 reworded items	Factorial invariance: Confirmation of Gullone & King's (1992) factor structure with an American sample: 5 factors: death and danger, the unknown, animal fears, school/medical fears, failure & criticism

### Direct Observations

With preschool or elementary school children, observation has been argued to be the only viable means of data collection. For example, particularly

for preschool children, interviews may not be a viable alternative since the child's verbal skills are likely to be insufficiently developed (Barton & Ascione, 1984).

Parents as observers are the most appropriate

choice for fears that are most likely to be observed in the home, and teachers for fears most likely to occur in the school environment. However, for these observations to be reliable, parents and teachers need to be trained and retrained. On the other hand, researchers are able to employ trained observers who have been noted to be more reliable. A disadvantage of this latter strategy is that unfamiliar people are more likely to alter the situation they are observing (Miller, Barrett, & Hampe, 1974).

Moreover, informal and nonobjective observation has many limitations which have long been recognized (Hollandsworth, 1986). Unfortunately, the observational normative fear investigations that have been conducted are largely of this nature. Observations of the more rigorous kind have not been conducted. Acknowledging the limitations of this assessment strategy, King *et al.* (1988) argued that, although normative fear has been researched from infancy through adulthood, in the early months of development it is difficult to distinguish fearful behavior from that expressed as a response to other affective states. Campbell (1986), went further to argue that behavioral responses are a relatively poor index of fear even when accounting for age, and concluded that the empirical investigation of fearfulness using behavioral observation is difficult if not unreliable.

In addition, specific limitations associated with these studies require consideration. On the whole, the focus of the observations has been limited (i.e., only snakes for Jones and Jones, 1928) and the samples have been small and therefore not necessarily representative of the developmental periods examined (e.g., Valentine, 1930). Moreover, reliance only on parents' descriptions of their child's behavior (e.g., Jersild & Holmes, 1935a) is limited. Despite these damning criticisms, in retrospect, it is clear that the early observational studies did provide some valid insight into normative fear in children too young to themselves report their fears.

### Third-Party Reports

Within the context of the trimodal response system (Lang, 1977; Morris & Kratochwill, 1983b; Nietzel & Bernstein, 1981), the studies that have provided third-party reports of fear on behalf of the child are more likely to have assessed the overt behavioral channel as the responses provided are most likely to be based on the overt responses of the child. As a consequence, such reports are perhaps most reliable

for those fears that are able to be observed, namely, fears directed at concrete stimuli or situations. Whichever response system is assessed, validity is difficult to determine given the variable levels of agreement between third-party reports and child reports (Klein, 1991; Rende & Plomin, 1991).

Some insight has been provided into this issue by asking parents to report the fears of their older children or adolescents and for the children and/or adolescents to report their own fears. This has enabled determination of the degree of agreement between self- and third-party reports. For example, Lapouse and Monk (1959) examined the agreement between child and mother reports by separately interviewing a subsample of 193 mothers and their child from their total sample of 482 mothers of children between 6 and 12 years of age. A 200-item interview schedule which surveyed the behavior and adjustment of the child was employed.

The data revealed that mothers and their children disagreed mostly on the number of fears reported with mothers underestimating their child's fear by 41%. When looking at specific fear items, agreement ranged from 93% for fear of people including postmen, policemen, teachers, and tradesmen to 41% for fear of being kidnapped. Whereas, on most items, mothers underestimated their child's fear, for some items, mothers overestimated their child's fears. Such items included dirt, thunder and lightening, blood, and little cuts and bruises.

A second example is the study by Jones (1988). Data were collected by administering a 30-statement fear schedule to 66 fifth-grade children, ages an average of 10 years, and also to 47 parents. Consistent with the findings of Lapouse and Monk (1959), the children in this investigation reported significantly more fears than their parents thought they would. The three items on which parents and children disagreed most included being hurt in an accident, nuclear war, and having a loved one die.

These two investigations indicate that there is variable agreement between self- and third-party reports. Given the nature of fears exhibited by younger children (i.e., concrete phenomena in the child's immediate environment) they are perhaps more easily observed than the anticipatory and abstract fears which later replace them. Thus, the discrepancy between self- and third-party reports can reasonably be expected to be higher in older children (Jones, 1988; Lapouse & Monk, 1959). Such a proposal is further supported by the fact that older children are less likely to display their fear as overtly as younger chil-

dren do (Jersild & Holmes, 1935b). For example, research has demonstrated that the ability to mask or “fake” an emotional state is more characteristic of late than early childhood (Harris, Donnelly, Guz, & Pitt-Watson, 1986) and although older children and adolescents have less difficulty verbally expressing their fears than younger children, verbal expression too is likely to be masked in particular situations.

Since the majority of studies using this technique have involved children younger than 8 years of age, this problem is perhaps not as significant as it would be had the focus been primarily on older children or adolescents. Given the above considerations, if possible, it is preferable to obtain self-report data for improved validity when focusing on the fears of older children or adolescents (Miller *et al.*, 1974).

### Self-Report Interviews

Among the self-report procedures used in normative fear research, the interview has been proposed to be among the most efficient means of learning about an individual's experiences (Nietzel & Bernstein, 1981; Nietzel, Berstein, & Russell, 1988). Interview investigations have elicited information on children's fears as presently experienced and reported by the children themselves.

Given that a major component of fear is a very private and personal emotional experience, and given that self-report is the only access to it that a researcher has, the studies utilizing this assessment technique are of tremendous importance in the fear literature. Nevertheless, they too are subject to validity problems that require evaluation. This is particularly the case in the open-ended interview situation where the interviewer is likely to interpret responses within their own, rather than the respondent's, frame of reference (Abrahamson, 1983; Miller *et al.*, 1974), and for which interrater reliability is of utmost importance.

Unfortunately, none of the normative fear studies using this assessment strategy have provided validity data for their reports (see Gullone, 1993, for detailed review). Even those interview studies using a structured questionnaire (e.g., Sidana, 1967; Slee & Cross, 1989; Winker, 1949) for which evaluation is a much more straightforward exercise have not provided any such data. While the latter methodology is less susceptible to interviewer bias, it does not escape it entirely. For example, it is possible that

interviewer expectations influence responses. This phenomenon has also been referred to as “expectancy effects” (Abrahamson, 1983). Also, interview studies and assessments are more time-consuming and costly to carry out than are questionnaire-based studies or assessments.

### Self-Report Fear Lists

The fear list technique has the advantage of assessing an individual's self-reported fears. Hence problems associated with third-party reports, observational techniques, and retrospective recall are mostly overcome. However, the possibility of fear reports being biased by a variety of factors remains. These include, for example, social desirability responding, demand characteristics of the assessment situation (Bellack & Hersen, 1977; Hersen & Barlow, 1976), and client's level of awareness (Hollandsworth, 1986; Morris & Kratochwill, 1983a; Nietzel & Bernstein, 1981). It is noteworthy that these limitations are not restricted to fear list studies, but rather are generally applicable to self-reports. However, fear list studies are particularly more susceptible to the limitations noted by Graziano, DeGiovanni, and Garcia (1979), that it is not possible to determine the completeness of the fear stimuli lists nor is it possible to determine the intensity of fear associated with the listed stimuli. Moreover, it is for this technique that considerations of the cognitive and verbal abilities of the child need to be particularly taken into account (King *et al.*, 1988; Ollendick & Hersen, 1984) since making claims about the number fears experienced at different developmental stages from the number of fears reported is likely to lead to incorrect conclusions. For example, it is more likely that older children will list a greater number of fears than younger children, not because they necessarily have more fears than younger children but rather because they can remember more of their fears.

### Self-Report Schedules

That the fear survey schedule (FSS) has become the tool of choice for fear assessment is not surprising given its many advantages (provided that it has been demonstrated to be psychometrically sound). For example, the FSS is easy, convenient, and inexpensive to administer. The clinician can obtain a great amount of information in a relatively small amount of time

(Jensen & Haynes, 1986; Morris & Kratochwill, 1983a). It can be scored objectively, and therefore minimize the influence of possible assessor bias. It can also assess responses to a large variety of fear stimuli and data are generally easy to quantify. The use of FSSs has enabled the identification of the number of extreme fears, as well as the intensity, content, and categories of fears. Furthermore, data derived through the use of validated schedules are highly comparable across different subject groups.

Of course, as with other data collection techniques, self-report instruments have their disadvantages. A major concern, and one which has become the focus of recent work in the area, is the degree to which the data collected with FSSs are an accurate reflection of fear. As with other self-report techniques, potential confounding factors such as socially desirable responding and respondents' comprehension of the assessment parameters or requirements (Gullone & Lane, 1997) must be considered.

Researchers have begun to systematically examine concerns such as these. For example, McCathie and Spence (1991) questioned the validity of the consistently reported findings that children's most common fears are of stimuli such as not being able to breathe, earthquakes, falling from high places, and being hit by a car or truck. They argued that although these events would be extremely frightening were they to occur, their probability of occurring is low. Hence, the likelihood that children are frequently concerned about such events and the likelihood of them engaging in related avoidance behavior should also be low.

To examine their claim, McCathie and Spence administered standard and adapted versions of Ollendick's (1983) FSSC-R to a sample of youth ages between 7 and 13 years. Their adapted version required that each item be endorsed for frequency of fear (i.e., never, sometimes, every day) and for frequency of avoidance of the stimulus or event. Contrary to their expectation, they found no differences between the standard and adapted versions of the FSSC-R. Rather they found age and sex differences consistent with past research regardless of instructions given. They also found that, despite different instructions, the 15 most commonly reported fears were consistent with those of past research (cf. King *et al.*, 1989; Ollendick, 1983).

Ollendick and King (1994) conducted a subsequent study also examining the validity of FSS data. In particular their study was concerned with determining whether the high number of fears endorsed

by adolescents on FSSs is a valid indicator of daily distress associated with reported fears. They administered a modified version of the FSSC-R to a large sample of adolescents. This version required that the adolescents rate each item of the schedule twice. The first rating related to fear of the item on the standard 3-point scale (none, some, a lot). The second rating, constituting the modification, involved the same 3-point scale but adolescents were asked to rate their level of daily interference caused by their fear of that particular item. On the whole, the adolescents' ratings for the two scales showed positive agreement. For the 10 most common fears the concordance ranged between 38% for snakes and 71% for failing a test. Thus, on the basis of these findings, Ollendick and King concluded that self-reports of fear are associated with high levels of daily interference and distress.

A more recent study by Gullone and Lane (1997) extended further on this research by administering the FSSC-II with three different sets of completion instructions (i.e., standard, on a daily basis, imagine yourself in the situation) each to three different adolescent samples. In addition, differences between fear frequency versus intensity ratings were examined. Approximately 400 adolescents ages 11 to 18 years participated in the study. Although on the whole no difference in self-reported fear was found across the different instruction types, 15- to 18-year-old female adolescents significantly discriminated between imagined and daily fear intensity, scoring higher on the former. Also, a difference was found between reports of fear intensity versus frequency on the death and danger factor of the FSSC-II. The difference resulted from fear intensity reports being significantly higher than frequency reports. These findings indicate that, on the whole, FSS reports are not largely influenced by specific instructions. Whether this can be interpreted as support for the validity of FSS reports or as demonstration of a lack of sensitivity in measurement awaits further research.

Looking only at the most commonly reported fears, Muris, Merckelbach, and Collaris (1997) asked children, on an individual basis, "What do you fear most?". They subsequently administered the FSSC-R to each child. In the free option method, the 129 children ages between 9 and 13 years primarily reported animal fears followed by fears of death and danger, medical fears, and fears of failure and criticism. Of note, in the free option method, a considerable portion of the sample reported spiders as their most intense fear. In contrast, on the FSSC-R, the

children scored highest on the death and danger factor.

In an almost identical study using the FSSC-II, Lane and Gullone (1999) asked a sample of 439 adolescents between 11 and 18 years of age to first list their three greatest fears and then to complete the FSSC-II (Gullone & King, 1992). They found that the most commonly listed items among the three greatest fears deviated from the death and danger theme. In contrast to FSSC-II generated most common fears which *were* predominantly death and danger-related, the self-generated stimuli included fears of failure, animal fears, and fears of the unknown. As in Muris *et al.*'s (1997) work, the item listed most frequently was "spiders." Lane and Gullone (1999) explained this finding as perhaps being due to a tendency of adolescents to provide *global* responses (e.g., death) in their self-generated list, thus, encompassing the majority of *specific* death-related fears included in the fear schedule (e.g., not being able to breathe, myself dying, getting a serious illness) into fewer items and allowing for other predominant fears to be listed among the three most common fears. Thus, both Muris *et al.*'s and Lane and Gullone's investigations point to a need to broaden assessment methodologies in order to obtain a more complete picture of children's fears.

These recent studies, looking beyond the data yielded by standard FSSs, have contributed further to our knowledge regarding both the usefulness and limitations of FSSs. Clearly, in comparison to other less systematic assessment methods and tools, FSSs provide the most valid and reliable data. Nevertheless, as with any assessment tool, outcomes are restricted to the parameters of the tool. As shown in the work of Muris, Gullone, and others, alternative types of fear assessment strategies should not be abandoned as a result of our strengthening confidence in the FSS. Rather, more studies should be conducted using FSSs in combination with additional methods since it appears likely that complimentary information is likely to result. Not only will such work most likely lead to additional knowledge of children's fears, it may also provide information with which to further refine the construction of the FSS.

## SUMMARY OF FEAR RESEARCH FINDINGS

It is the work of Croake (1967), and that of Scherer and Nakamura (1968) which followed soon after, that marks the beginning of the predominant

application of FSSs in normative fear research. The wide array of specific measures and techniques used prior to that time, which included very little information pertaining to their validity, should detract strongly from our confidence in the conclusions drawn by the earlier work. Paradoxically, it is the very divergence of methods that leads to increased confidence in major conclusions given the consistency of outcomes across studies, despite the variance in assessment.

It is only in recent years that the questions asked have diverged from a focus on differences associated with demographic characteristics such as age, sex, and socioeconomic status (SES). This slow progress may, in large part, be associated with the time taken for fear assessment strategies to evolve to the stage where researchers gained enough confidence in them to move onto questions which had not been systematically examined previously (universality of fears, e.g., Dong, Yang, & Ollendick, 1994; stability of fears, e.g., Dong, Xia, Lin, Yang, & Ollendick, 1995; Gullone & King, 1997). Of course this latter statement must be qualified with the acknowledgment that although most researchers today agree that the FSS is the best tool we have for assessing fear, as noted above, it is not beyond criticism nor is it fault-free. Notwithstanding the contributions made by FSS research toward gaining an insight into the continuity/discontinuity and correlates of fear as well as its cross-cultural invariance, more research is required.

In summarizing the major findings of the fear literature, it is important to acknowledge that the different assessment techniques/tools have contributed differing knowledge. Although, for the most part, the reported aims of fear studies have been to identify the content of fears, their number, and how they differ depending upon factors such as age and sex, the various studies have achieved these aims to varying degrees. For example, the reported *number* of fears in observational, fear interview, and fear list studies must be considered to be seriously limited given the many limitations associated with the methods used. Because many of these limitations have been discussed above, suffice it to say here that confounding variables such as amount and type of recall, and differing degrees of emotion expression at different maturational stages (particularly relevant to observational and third-party report studies) compromise confidence in conclusions regarding fear frequency or number.

In contrast, with regard to fear content, these studies have provided particularly valuable findings

since it can be assumed that when asked to list fears, for example, those that are most salient for the individual are most likely to be those mentioned. Observational studies have contributed most strongly to the literature by enabling some indication of the fears that children of a very young age experience. As indicated earlier, although there are limitations associated with interpretations by others (e.g., parents) that certain expressions of young children are in fact expressions of fear, the convergence of findings across studies strengthens conclusions based on observation.

The major advantage of the FSS self-report assessment strategy is the standardization factor. Because different samples are being assessed in an identical way, we are able to derive conclusions, for example, about *comparative* or *relative* numbers of fears, intensity of fear, and most common fears. Particularly relevant for conclusions that can be derived regarding fear content, it must be noted that such are restricted by the tool's parameters. For example, it is not possible to report fears other than those listed on the FSS. Thus, it must be concluded that FSSs are most advantageous in determining the average number of fears experienced by different populations, the associated intensity of such fears (within the limits of the response scale), and the fears among those listed in the schedule which are most commonly reported. Thus, the major findings of the normative fear research must be considered and evaluated in the light of the assessment strategies used.

### Age and Sex Differences in Fear Content

Beginning from infancy, young children have been reported to be fearful of stimuli in their immediate environment such as loud noises or loss of support (e.g., Scarr & Salapatek, 1970). A robust finding, documented in the broader developmental literature but relevant to this review, is the finding that toward the end of the first year of life there is an increase in fear of strange persons, strange objects, and also of heights (e.g., Kagan, 1978; Scarr & Salapatek, 1970). Also derived from broader developmental research is the finding that at around 7 or 8 months of age there is the emergence of separation anxiety. In contrast to earlier fears, those expressed toward the end of the first year require cognitive maturation including the capacity to remember and to distinguish the novel from the familiar. Beyond infancy but still in the early years of life, around the preschool years, children

show fear of being alone and of darkness. Animal fears are also prominent at this age (e.g., Jersild & Holmes, 1935a; Pratt, 1945).

The fears of these early years are concrete in nature. They are also fears that are immediately being experienced. Various studies have indicated that these fears which typically relate to animals, supernatural phenomena, and darkness (e.g., Derevensky, 1974; Draper & James, 1985; Gullone & King, 1993, 1997; Hall, 1897; Jersild & Holmes 1935a; Sidana, 1975) become less prominent as children mature.

In contrast, fears of later years are characteristically of an imaginary, abstract, or anticipatory nature (Campbell, 1986). This is a finding demonstrated particularly through the findings that at older ages (i.e., 6 to 12 years), fears of evaluative or social situations, bodily injury, illness, and school become more characteristic (e.g., Angelino *et al.*, 1956; Bauer, 1976; Gullone & King, 1993, 1997; Hall, 1897; Jersild & Holmes, 1935a; King *et al.*, 1989; Pratt, 1945). Further, reflecting maturation of cognitive processes, global fears including economic and political concerns appear to be more characteristic of older adolescents (Angelino & Shedd, 1953). Finally, a finding which has been strongest among the FSS literature is that death and danger-related fears are consistently among those most commonly reported from early childhood right through to late adolescence (e.g., Burnham & Gullone, 1997; Gullone & King, 1992, 1993; King *et al.*, 1989; Mizes & Crawford, 1986; Ollendick, 1983).

Study outcomes relating to differences in fear content according to sex are less clear than those associated with age. Some of the earlier studies reported that girls are more fearful of the dark, strange sights, sounds, objects or persons, being kidnapped, robbed, or killed, snakes, dirt, and animals. In contrast, boys have been reported to be more fearful of stimuli such as harm, bodily injury, school, failure, nightmares, and imaginary creatures (Bamber, 1974, 1979; Cummings, 1946; Jersild & Holmes, 1935a; Jersild *et al.*, 1933; Lapouse & Monk, 1959; Poznanski, 1973; Pratt, 1945; Winker, 1965).

Very few studies using FSSs have examined fear content sex differences apart from differences in the most common fears. One exception is the study carried out by Gullone and King (1993) in which the data of 918 youth between 7 and 18 years, yielded the findings that girls scored higher than boys on all five fear factors of the FSSC-II (i.e., death and danger, the unknown, failure and criticism, animals, psychic-stress-medical). However, the items that most

strongly discriminated between boys and girls included rats, spiders, snakes, mice, creepy houses, being alone, and having bad dreams. Girls scored higher on each of these items. It has been proposed that differences in fearfulness between boys and girls are influenced by gender-role stereotyping. Gullone and King's (1993) findings provide some support for this proposal given that girls reported more fear than boys for stimuli most relevant to the female gender stereotype. Clearly, however, sex-based content differences require further research.

### Age and Sex Differences in Fear Frequency and Intensity

When age differences in the frequency and/or intensity of fears have been found, they have mostly indicated a decrease with age (e.g., Burnham & Gullone, 1997; Gullone & King, 1992, 1997). However, it is noteworthy that several FSS investigations did not find age differences in the number nor intensity of fears (e.g., Ollendick, 1983; Russell, 1967; Sidana, 1967). A few studies have reported a peak in the number of fears in early adolescence and a subsequent decline (e.g., Angelino *et al.*, 1956; Angelino & Shedd, 1953; Hall, 1897). However, this latter finding is problematic in that it is primarily based on the fear list technique.

The early observational studies provided some indication of fear intensity. For example, Jersild and Holmes (1935a) reported that the level of children's fear tends to decrease with age. Similar results have been reported for research involving parent or teacher reports (e.g., Cummings, 1946; Jersild & Holmes, 1935b). However, given age-related differences in emotion expression, a decrease in the level of fear exhibited is not necessarily an indication of a decrease in fear intensity.

Where age differences in fear intensity based on self-reports have been found, younger children (i.e., 8–10 years) have tended to score higher than older children (i.e., 11–13 years) or adolescents (i.e., 14–16 years) (King *et al.*, 1989). Despite the more systematic recording of fear intensity in FSS studies, the lack of consistency across these studies, particularly with regard to the way in which fear intensity has been defined and determined, makes comparison across studies somewhat problematic. For example, Bamber (1974) referred to the total number of all items rated with the highest 2 points on the 5-point scale as being indicative of high intensity, however, Scherer and

Nakamura (1968) and others (e.g., King *et al.*, 1989; Ollendick, 1983) have calculated the same index by adding together the scores for all items.

The same problems of definition obviously also apply to the reported sex differences in fear intensity. Notwithstanding such limitations, it has been consistently found that girls report a greater fear intensity than boys (e.g., Bamber, 1974; Gullone & King, 1993, 1997; Ollendick, 1983; Ollendick *et al.*, 1985; Scherer & Nakamura, 1968). Also, girls report or express a greater number of fears than boys (e.g., Bamber, 1974, 1979; Burnham & Gullone, 1997; Gullone & King, 1993; King *et al.*, 1989; Lapouse & Monk, 1959; Scherer & Nakamura, 1968) with few exceptions (e.g., Derevensky, 1974; Miller *et al.*, 1971; Nalven, 1970). This conclusion is particularly relevant for older children. In contrast, such a conclusion is much more tentative for preschool and elementary school children (e.g., Draper & James, 1985; Jersild & Holmes, 1935a).

### Socioeconomic Status Differences

With regard to SES differences in fear content, fears such as those of animals, strange people, being abandoned by parents, death, violence, and policemen have been demonstrated to be more characteristic of lower SES children, while fears of heights and ill health have been reported to be more characteristic of middle or upper SES children (e.g., Angelino *et al.*, 1956; Bamber, 1974; Jersild & Holmes, 1935a; Jersild *et al.*, 1933; Nalven, 1970). As noted by Graziano *et al.* (1979), the fears of lower SES children tend to suggest that they perceive their immediate environments as more hostile and dangerous places than is the case for their middle or upper SES peers. Such fears suggest an immediacy and reality basis for the reported fears of lower SES children. As with sex, SES differences suggest that there is a socially determined component to the content and level of fear.

Regarding fear frequency, research has documented that children and adolescents of lower SES report more fear than their middle or upper SES peers (e.g., Croake, 1969; Croake & Knox, 1973; Sidana, 1975). Although the greater number of fears may be an indication that lower SES youths perceive their environments to be less safe than do middle or upper SES youths, this finding may also be a reflection of the tendency for lower SES children to report

specific fears as opposed to generic categories (Graziano *et al.*, 1979; Nalven, 1970).

### The Structure of Fear

The structure or major types of fears have been determined through both post hoc conceptual classification of reported fears and, more recently, through the application of statistical procedures such as principal components analysis (e.g., Burnham & Gullone 1997; Gullone & King, 1992; Ollendick, 1983). It is noteworthy that the different classification methods have resulted in highly comparable fear structures. For example, the conceptual classification reported by Jersild *et al.*, (1933) included categories relating to bodily injury and physical danger, animals, and being alone. That by Croake (1967) included animals, future, supernatural phenomena, natural phenomena, personal appearance, personal relations, school, home, safety, and political fears. On the whole, predominant categories have included bodily injury, personal relations, animals, physical danger, school, economic and political situations, supernatural and natural phenomena.

Likewise, principal component solutions have been reported for samples of varying ages with highly consistent outcomes. For example, Russell (1967), who reported separate solutions for adolescents, adults and senior citizens reported factors relating to disability and cold war, the macabre (e.g., ghosts, spiders, darkness), social alienation (e.g., being wrong), religion-superstition, animals, and rational dangers. Scherer and Nakamura (1968) reported an eight-factor solution including failure and criticism, major fears (e.g., bombing attacks—being invaded, earthquakes), minor fears-travel (worms or snails, ghosts or spooky things), medical fears, death, the dark, home-school, and miscellaneous (e.g., thunderstorms, nightmares, loud sirens). (See Table I.)

More recently, Ollendick (1983) reported a five-factor solution for the revised FSS-FC, and in a cross-national investigation, Ollendick *et al.* (1989) examined the factorial invariance across Australian and American samples and found a similar factor structure for respondents from the two countries with the exception of the “medical fears” factor. On this factor Australian respondents included items normally loading onto the “failure and criticism” factor. Also using an Australian sample, for the second revision of the FSS-FC (i.e., FSSC-II), Gullone and King (1992) found a five-factor solution including factors almost

identical to those reported by Ollendick (1983). Gullone and King’s solution has since been replicated with an American sample (Burnham & Gullone, 1997) (see Table I for details regarding factor analysis solutions).

Thus, both conceptual and statistical classification methods have resulted in fear item clusters that have similar underlying dimensions including social rejection (i.e., failure and criticism), death and danger (tissue damage), animals, medical treatment, psychic stress, and fear of the unknown (agoraphobic fears). These dimensions of fear have received further support from a review including 25 studies with adults which was reported by Arrindell *et al.* (1991); the authors reported that over 90% of the first-order factors identified could be assigned to one of four major a priori defined categories including (1) interpersonal events or situations, (2) death, injuries, illness, blood, and surgical procedures, (3) animals, and (4) agoraphobic fears.

### CONCLUSION

Normative fear assessment has differed substantially throughout the past century ranging from the methodologically problematic retrospective reporting of childhood fears by adults to the administration of psychometrically validated FSSs. Despite the predominance in use of the FSS in recent times and its increased acceptance as the preferred assessment tool, some researchers have questioned its validity and have more closely scrutinized the information it provides. The outcomes of such scrutiny have been, for the most part, encouraging. Thus, the preferred assessment tool remains the self-report FSS. Clearly this assessment strategy has contributed significantly to our knowledge in the area of children’s normative fears. However, despite its many advantages, as recent research has indicated, researchers and clinicians must also be cognizant of the potential limitations of this assessment tool and, depending on the questions being asked, may need to consider using it in combination with alternative assessment strategies.

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