Chapter 3

THE ETIOLOGY OF SOCIAL ANXIETY AND SOCIAL PHOBIA IN YOUTHS

The previous chapter covered the primary child-based characteristics of youths with social anxiety and social phobia. In this chapter, a discussion is held of the factors most pertinent to the etiology of social anxiety and social phobia in youths. Specifically, a presentation will be made of the major risk factors posited for this population, including genetics, temperament, other biological variables, cognitive characteristics, parental and familial influences, and learning experiences. These risk factors will serve as the essential building blocks for a later discussion of an integrated etiological model and a proposed developmental pathway for youths with social anxiety and social phobia.

RISK FACTORS FOR YOUTHS WITH SOCIAL ANXIETY AND SOCIAL PHOBIA

Many etiological conceptualizations of psychopathology are based to some degree on a *diathesis-stress model*, or the idea that risk factors for a mental disorder involve a biological predisposition in conjunction with environmental events or stressors that trigger or facilitate the expression of this predisposition. With respect to anxiety disorders in general, including social phobia, a common method for grouping risk factors follows Barlow's (2002) model of biological, generalized psychological, and

specific psychological vulnerabilities. Biological vulnerabilities are those predispositions that occur very early in life, generalized psychological vulnerabilities are those factors that generally pervade a person's life as he or she develops, and specific psychological vulnerabilities refer to learning what is dangerous or threatening in one's environment. The synergistic combination of these sets of vulnerabilities is thought to be highly predictive of a specific anxiety disorder in a given person. This method of distinguishing risk factors is thus adopted for this chapter.

BIOLOGICAL VULNERABILITIES

Biological vulnerabilities for those with social phobia are often thought to include genetics, temperamental qualities, and other biological variables. These are described separately next.

Genetics: Social Phobia

Various avenues of research indicate that anxiety disorders may have some moderate genetic predisposition because they seem quite familial in nature. Data to support this conclusion come largely from adult family studies indicating that family members of people with social phobia are more likely to have social phobia themselves compared to controls (Fyer, Mannuzza, Chapman, Liebowitz, & Klein, 1993; Reich & Yates, 1988; Tillfors, Furmark, Ekselius, & Fredrikson, 2001). This seems to be the case especially with respect to *generalized* social phobia (Mannuzza et al., 1995; Stein, Chartier, Hazen, et al., 1998).

Unfortunately, the presence of small sample sizes in these studies, in addition to the fact that *other* anxiety disorders and depression may also predispose some family members to social phobia, make definitive conclusions about genetic contributions difficult to make (Biederman et al., 2001; Horwath et al., 1995). In addition, adult twin studies often do not reveal large differences in concordance rates of social phobia between identical and fraternal twins (Andrews, Stewart, Allen, & Henderson, 1990; Skre, Onstad, Torgersen, Lygren, & Kringlen, 1993; Torgersen, 1983). Furthermore, linkage of social phobia to specific genes has not yet proved overly fruitful (e.g., Stein, Chartier, Kozak, King, & Kennedy, 1998).

An important exception was Kendler and colleagues (1992), who found social phobia concordance rates among identical and fraternal twins to be 24.4% and 15.3%, respectively. These authors initially determined the heritability of social phobia to be 30%, and later 51% (Kendler, Karkowski, & Prescott, 1999). Unfortunately, this particular study

evaluated only females, used DSM-III criteria, and did not differentiate generalized from nongeneralized social phobia. As such, the study's utility is limited for understanding the genetic predisposition for social phobia.

With respect to children, parents with anxiety disorders often have children with anxiety, related disorders such as depression, and behavioral inhibition (Beidel & Turner, 1997; Biederman, Faraone, et al., 2001; Last, Hersen, Kazdin, Francis, & Grubb, 1987; Last, Hersen, Kazdin, Orvaschel, & Perrin, 1991; Rosenbaum et al., 1988, 1991; 2000; Turner, Beidel, & Costello, 1987). In addition, modest genetic heritability has been demonstrated with respect to several anxiety symptoms and disorders in children (Eley, 2001). The presence of anxious parents may also contribute to poorer treatment outcome in youths with anxiety disorders (Cobham, Dadds, & Spence, 1998), suggesting a possible anxiety link for some families.

With specific respect to childhood social phobia, however, available data do not clearly support or refute a proposed genetic predisposition. For example, Rowe and colleagues (1998) found that the dopamine transporter gene (DAT1) was associated with several anxiety-related disorders in youths, including social phobia. However, this gene has been associated with many *other* disorders as well, including depression and attention deficit hyperactivity disorder. Merikangas and colleagues (1999) found that the presence of two parents with an anxiety disorder was related to diagnoses of social phobia in 36.4% of their children, compared to 12.5% if one parent had an anxiety disorder and 0.0% if neither parent had an anxiety disorder. In addition, some youths of parents with social phobia, especially adolescents, often meet criteria for social phobia (23.4%) themselves in addition to other anxiety disorders (Mancini, Van Ameringen, Szatmari, Fugere, & Boyle, 1996).

Nelson and colleagues (2000), examining adolescent twins, found additive genetic factors for social phobia to be only 28%, compared to major depression (45%) and alcohol use disorder (63%). Lieb and colleagues (2000) found that offspring of parents with social phobia had social phobia themselves (9.6%) more so than offspring of controls (2.1%). However, parental depression and panic disorder and alcohol use disorder may increase rates of social phobia and social interaction problems in offspring as well (Biederman, Faraone, et al., 2001; Lieb et al., 2000; Rende, Warner, Wickramarante, & Weissman, 1999). Turner and colleagues (1987) also found that youths of parents with anxiety disorders had poorer social adjustment, spent more time in solitary activities, and had fewer friends compared to controls.

Albano and colleagues (2003), reviewing the extant data with respect to anxiety disorders in children, concluded that a genetic risk factor may generally predispose some youths toward various anxious or depressive

disorders. However, environmental influences often help determine the direction of these psychopathologies. In addition, separating the different contributions of genetic predispositions and environmental influences is extremely difficult. Although a genetic predisposition to social phobia has not yet been clearly established, temperamental constructs *related* to social phobia do appear to have stronger heritability, and these are discussed next.

Genetics: Concepts Related to Social Phobia

Warren and colleagues (1999) examined 7-year-old twins and found that genetic influences accounted for 34% of the variance in children's *social anxiety* scores, which were likened to shy behaviors or behavioral inhibition. Relatedly, Robinson and colleagues (1992) examined twin pairs and found heritability indices for *behavioral inhibition* to be .64, .56, and .51 at age 14, 20, and 24 months, respectively. DiLalla and colleagues (1994) similarly examined 2-year-olds for behavioral inhibition and found that concordance for identical twins (.70) was substantially higher than for fraternal twins (.38). *Changes* in shy, inhibited behavior in early developmental stages also appear to be more specific to identical than fraternal twins (Matheny, 1989; Plomin et al., 1993). Other characteristics similar to social phobia, such as childhood *shyness* or *anxiety-based school refusal behavior*, also appear to have a familial or heritable link (Cooper & Eke, 1999; Daniels & Plomin, 1985; Martin, Cabrol, Bouvard, Lepine, & Mouren-Simeoni, 1999).

The heritability of other social phobia-related constructs has also been examined, though more so in adults. For example, *harm avoidance* has been found to be highly representative of first-degree relatives of people with generalized social phobia (Stein, Chartier, Lizak, & Jang, 2001). Rose and Ditto (1983) found that fears of negative social interaction, social responsibility, and dangerous places had significant genetic modulation in 14–34-year-olds. In addition, Stein and colleagues (2002) examined hundreds of twins and found that genetic influences accounted for a moderate 42% of the variance with respect to fear of negative evaluation, a cognitive construct similar to social phobia. Fear of negative evaluation was also closely linked to submissiveness, anxiousness, and social avoidance.

Other social anxiety-related constructs seem to have some genetic basis as well, including introversion, neuroticism, and anxiety sensitivity (Arbelle et al., 2003; Eaves, Eysenck, & Martin, 1989; Stein, Jang, & Livesley, 1999). Others have argued as well that social anxiety has an evolutionary-genetic basis. In essence, social anxiety may help maintain social order by inducing some people to submit to more dominant ones, thus avoiding conflict and forming clear hierarchies (Gilbert, 2001; Ohman, 1986).

Temperament: Behavioral Inhibition

A temperamental quality most often linked to general and social anxiety in youths is behavioral inhibition, or a pattern of fearfulness, timidity, avoidance, and guardedness surrounding new stimuli such as strangers or novel objects or events (Kagan et al., 1988). This temperament is usually associated with *behavioral features* such as withdrawal, close proximity to caregivers, idleness, and frequent expressions of distress, as well as *physiological features* such as increased heart rate, blood pressure, and muscle tension, among others. Behavioral inhibition has been linked to highly reactive infants who often cry and show much motor activity in response to new stimuli (Kagan, 1994, 1997). These children as toddlers tend to be shy and subdued, and as young children tend to be anxious and fearful with a highly reactive sympathetic nervous system (Kagan, 2001).

Behavioral inhibition and the related construct of shyness have been shown to be enduring characteristics in developmental stages from toddlerhood to adulthood (e.g., Caspi & Silva, 1995; Fordham & Stevenson-Hinde, 1999; Goldsmith & Lemery, 2000; Scarpa, Raine, Venables, & Mednick, 1995). As mentioned in Chapter 2, children with behavioral inhibition are more likely than controls to eventually show various fearful behaviors and anxiety and avoidant disorders, and symptoms of social anxiety and phobia have been related to adult retrospective reports of childhood behavioral inhibition. Behavioral inhibition has been linked to social anxiety in youths at various developmental levels as well, and supporting data are discussed next.

With respect to young children, for example, Biederman, Faraone, and others (2001) examined 2–6-year olds of parents with or without panic disorder and/or depression. Children identified as behaviorally inhibited (i.e., fearful and with few vocalizations, spontaneous comments, or smiles) were much more likely to be diagnosed with social anxiety disorder (defined as social phobia or avoidant disorder) (17%) than those identified as not behaviorally inhibited (5%). However, this result was largely due to the difference in avoidant disorder per se (i.e., 9% versus 1%, respectively), which is an antiquated diagnosis (see Chapter 1).

With respect to young adolescents, Schwartz and colleagues (1999) examined 13-year-olds previously identified with or without behavioral inhibition at 21 or 31 months of age. A key difference was the presence of significant social anxiety, which was quite higher in the inhibited (61%) than the uninhibited group (27%). In fact, only 20% of those with behavioral inhibition never had generalized social anxiety. In addition, youths with generalized social anxiety commonly reported related problems such as other specific fears (71%), performance anxiety (65%), and separation

fears (44%). Inhibited youths also produced less smiles and spontaneous comments than uninhibited youths. Muris, Merckelbach, Wessel, and van de Ven (1999) also found, among 12–14-year olds, that 4.8% of those self-rated as high in behavioral inhibition had social phobia. This compared to significantly lower 2.7% and 1.7% rates in youths self-rated as moderate and low behavioral inhibition, respectively.

With respect to older adolescents, Hayward and colleagues (1998) examined high schoolers over a 4-year period and eventually divided them into those with social phobia, depression, social phobia and depression, or no mental disorder. Various aspects of behavioral inhibition were also assessed, including social avoidance, fearfulness, and illness behavior. Social avoidance and fearfulness were found to predict the later development of social phobia in boys and girls. In fact, 22.3% of adolescents who were socially avoidant *and* fearful developed social phobia, compared to only 4.5% of those with neither predictor.

Although behavioral inhibition has been a very rich source of information about the development of anxiety and social anxiety in children, some important caveats must be considered. First, not all youths classified as highly reactive or behaviorally inhibited necessarily develop social anxiety disorder (Caspi, Moffitt, Newman, & Silva, 1996; Prior, Smart, Sanson, & Oberklaid, 2000). In fact, even a majority do not. Second, not all youths with anxiety disorder, including social phobia, display features of behavioral inhibition. In fact, a majority possibly do not. Third, youths with behavioral inhibition have been shown to develop depression as well as anxiety disorders other than social phobia.

Fourth, some studies of behavioral inhibition have relied heavily or exclusively on child self-report. Fifth, behavioral inhibition has been found to be a highly multifaceted, malleable, and inconsistent construct (Asendorpf, 1994; Rubin, Hastings, Stewart, Henderson, & Chen, 1997). Sixth, behavioral inhibition may operate in concert with other temperaments (e.g., neuroticism, harm avoidance, anxiety sensitivity) to help produce anxiety (Hirshfeld-Becker, Biederman, & Rosenbaum, 2004). Despite these caveats, however, some youths who are highly reactive or who show very strong features of behavioral inhibition do seem more likely to develop internalizing psychopathology compared to youths without such characteristics.

Temperament: Negative Affect, Positive Affect, Physiological Hyperarousal, and Control

The investigation of personality or temperamental qualities related to childhood anxiety disorders has also focused on *negative affect* (sometimes

linked to introversion/ neuroticism), *positive affect* (sometimes linked to extraversion), and *physiological hyperarousal* (Austin & Chorpita, 2004; Chorpita et al., 2000; Clark & Watson, 1991; Joiner, Catanzaro, & Laurent, 1996; Lonigan, Vasey, Phillips, & Hazen, 2004; Turner & Barrett, 2003). Negative affect has been linked with anxiety, low positive affect with depression, and physiological hyperarousal with fear (Chorpita, Albano, & Barlow, 1998). Examining a sample of clinically-referred youths with anxiety disorders and depression, Chorpita and colleagues (2000) found that social anxiety was significantly negatively related to positive affect but unrelated to negative affect or physiological hyperarousal. Among normal children, however, social anxiety *has* been found to be significantly related to negative affect (Chorpita, 2002).

Given that negative emotions seem intricately related to general and social anxiety in children, work has been conducted to identify which processes help produce these emotions. Several possibilities are mentioned in this chapter (e.g., family, cognitive, learning processes), but another that has received increased attention is the idea of *perceived control* over one's environment. In essence, some have proposed that one's historical sense of uncontrollability (i.e., inability to control outcomes) and unpredictability about life events represents a generalized psychological vulnerability that helps produce negative emotions and then perhaps anxiety disorders (Barlow, 2000, 2002; Chorpita & Barlow, 1998). As such, control may become a mediating factor between stressful life events and negative affect, as negative experiences of lack of control regarding these events accumulate over time and facilitate anxiety and depression. Life events most salient to this process may involve caregivers, oneself, and the world (Chorpita, 2001).

Others have contended that anxiety disorders are related to a combination of behavioral inhibition, high negative affect or neuroticism, and *poor effortful control*, the latter defined as difficulty in "self-regulation of affect through management of attention and other behaviors" (Lonigan & Phillips, 2001, p. 65). Some have argued as well that negative emotions in anxious children are largely marked by a "single temperamental risk factor" (Albano et al., 2003, p. 311) that may involve a confluence of the variables mentioned here. Unfortunately, however, work in this area remains beset by assessment differences and difficulties (Chorpita & Daleiden, 2002), and specific extensions to youths with social anxiety remain few. However, the constructs do seem to have great potential for applicability to this population. For example, children with social anxiety commonly report feelings of helplessness and futility as reasons for their negative emotions in social and evaluative situations.

Other Biological Variables

Other biological variables have been associated with social phobia and may have some bearing on the development of the disorder. In adults, for example, those with social phobia and those with other anxiety disorders or controls have been differentiated along dopaminergic, serotonergic, noradrenergic, and GABAergic brain systems (Moutier & Stein, 2001). Structural brain changes or differential activation in the amygdala, hippocampus, and various cortical areas may distinguish people with social phobia from controls as well (Birbaumer et al., 1998; Davidson, Krishnan, et al., 1993; Pine, 2001; Schneider et al., 1999; Tupler et al., 1997). Adults with social phobia, more so than controls, also have significantly more neurological disorder and peptic ulcer disease (Davidson, Hughes, et al., 1993). Adults with social phobia have also been found to have differential patterns of heart rate and blood pressure next to some, though not all, comparative samples (Beidel, Turner, & Dancu, 1985; Davidson, Marshall, Tomarken, & Henriques, 2000; Heimberg, Hope, Dodge, & Becker, 1990; Hofmann, Newman, Ehlers, & Roth, 1995; Stein, Asmundson, & Chartier, 1994). Less strong results have been found with respect to chemical challenge and peripheral abnormality studies in adults with social phobia (Argyropoulos, Bell, & Nutt, 2001; Tancer & Uhde, 2002).

Significantly less work in this area has been conducted with respect to youths with social phobia or related constructs. Elevated heart rates following evaluative stressors have been found more so among high than low test-anxious children, but less conclusive results have been reported with specific respect to maintenance of these heart rates over time and youths with social phobia (Beidel, 1989). For example, Beidel (1991; Turner, Beidel, & Epstein, 1991) found no statistically significant differences in baseline heart rate or heart rate changes following stressful tasks in youths with social phobia compared to controls. Indeed, children exposed to various stressors do not always display increased heart rate (Beidel, 1989).

Growth hormone deficiency (GHD) has been linked to children who are socially constricted, withdrawn, and isolated (Money & Pollitt, 1966), and adolescents and adults who had GHD as children have a high incidence (60%) of social phobia (Stabler et al., 1996). This may be due to both neuroendocrine and psychosocial problems. In addition, children referred for GHD treatment tend to show decreased social competence and substantial anxiety, somatic complaints, and shy/withdrawn behavior (Stabler et al., 1994).

Finally, with respect to behavioral inhibition, Kagan (1997) hypothesized that hypersensitivity of the amygdala and related brain connections may be responsible for its presence. In addition, behavioral inhibition

or high reactivity in children has been linked to increased 3-methoxy-4-hydroxy phenylglycol (MHPG), cortisol, heart rate and sympathetic nervous system activity, right frontal activation, and right frontal electroencephalograph asymmetry (Fox, Henderson, Rubin, Calkins, & Schmidt, 2001; Kagan et al., 1988; 2001; McManis, Kagan, Snidman, & Woodward, 2002). However, the physiological study of youths with social phobia remains in its infancy.

GENERALIZED PSYCHOLOGICAL VULNERABILITIES

Recall that generalized psychological vulnerabilities for mental disorder are those factors that generally pervade a person's life as he or she develops. With respect to childhood social phobia, these factors include cognitive characteristics, parental and familial influences, and learning experiences. These factors are discussed separately next.

Cognitive Characteristics

As mentioned in Chapter 2, youths with social phobia are commonly described as excessively (1) self-conscious, (2) self-focused with respect to their arousal level, (3) sensitive to indicators of negative evaluation by others, (4) overestimating threat from others and underestimating personal social competence, and/or (5) contemplative of negative outcomes, self-deprecation, embarrassment, and ridicule, rejection, and negative evaluation by others. However, data from recent empirical studies indicates that definitive conclusions regarding these descriptions are not yet available.

Epkins (1996b), for example, found that children with social anxiety had many more cognitive distortions compared to controls but not more than youths with dysphoria. One important difference that did emerge, however, was that socially anxious and not dysphoric children had more cognitive distortions of overgeneralization and personalization compared to controls. Although the presence of dysphoria heavily confounded the cognitive biases in socially anxious children, the latter result led the author to conclude that socially anxious children's biases tend to be future-oriented and attentive toward "threat cues with an exaggerated estimate of vulnerability" (Epkins, 1996b, p. 96). Epkins (1996a), drawing from the same sample, also found that socially anxious children tended to perceive social rejection by others and that, when combined with dysphoria, experienced excessive social problems with actual peer rejection (p. 466).

Spence and colleagues (1999), using social-evaluative role-play and reading tasks, found that youths with social phobia expected to feel more

anxious prior to these tasks, and expected to be less successful than peers on these tasks, than controls. Indeed, these youths were reportedly more anxious following the tasks although their actual performance was no different than controls. In addition, youths with social phobia were less likely to expect the presence of positive social events, but *no* significant difference was found with respect to expectations of negative social events. Furthermore, youths with social phobia did report the presence of more negative cognitions, but *no* significant difference was found with respect to positive cognitions. No differences were found as well with respect to self-performance ratings following the tasks. The authors concluded that youths with social phobia tend to have many negative expectancies and thoughts, but that these cognitions may be justified given their poor level of social skill (see Chapter 2).

Others have also found tepid or mixed results in this area. For example, Bogels and Zigterman (2000) examined 15 children with anxiety disorders, 6 of whom had social phobia as a primary or comorbid diagnosis, as well as clinical and nonclinical control groups. Nine stories were presented to the children that contained ambiguous themes of possible separation, social, or generalized anxiety. Childrens' responses to the stories were evaluated by examining positive, negative, and neutral cognitions as well as overestimations of danger and underestimations of competence and coping abilities. Results indicated that anxious children interpreted these stories in a negative manner significantly more so than the clinical control group but *not* the nonclinical control group, and did *not* differ from controls with respect to positive interpretations. In addition, anxious children had more dysfunctional cognitions and underestimations of competency.

Data regarding overestimations of danger were mixed, as anxious children did not differ from other groups with respect to number of such cognitions but did judge the stories as more dangerous when answering specific questions about them compared to controls. Anxious children also saw themselves as significantly less influential in these situations compared to nonclinical but *not* clinical controls. Although the authors concluded that anxious children do "have a cognitive bias for threat" (p. 210), the use of a small sample size, the mixed results, and the decision not to separately analyze youths of different diagnostic categories makes the study difficult to extrapolate to youths with social phobia.

Muris, Merckelbach, and Damsma (2000) examined a large sample of youths defined as socially anxious but not phobic, and controls. Youths listened to 5-sentence stories of common social situations that were either ambiguous (6) or threatening (1), and identified the point at which they found they story to be scary. Ratings of threat were also obtained. Results

indicated that socially anxious youths, compared to controls, determined a story to be scary in less time, more often perceived threat during the stories, more often viewed the stories as threatening in general, and reported more negative emotions and cognitions. The authors concluded that the data provided strong support for a threat perception and interpretation bias in this population, but their heavy reliance on child self-report and examination of a nonclinical sample does not necessarily support such a conclusion for youths with social phobia.

Other, related studies have shown even more tepid results. For example, children with high test anxiety tend to have more negative self-evaluations and off-task thoughts compared to youths with low test anxiety but *also* high frequencies of on-task and coping thoughts (Prins, Groot, & Hanewald, 1994; Zatz & Chassin, 1985). In addition, Beidel (1991) found that youths with social anxiety tended to have more negative cognitions compared to controls, though this finding was not statistically significant. Youths with social anxiety did, however, rate themselves as less cognitively competent than controls. Chansky and Kendall (1997) found that social anxiety but not self-perceived social competence was predictive of negative social expectations among children with general anxiety disorders (see also Bogels, Snieder, & Kindt, 2003; Kindt, Bogels, & Morren, 2003; Rheingold, Herbert, & Franklin, 2003).

Furthermore, Perrin and Last (1997) found that anxious children, including some with social phobia, worried more about social evaluation than nonclinical but *not* clinical controls. Magnusdottir and Smari (1999) found that adolescent social anxiety correlated significantly with measures of perceived general and social threat to oneself, but only at .17 and .38, respectively. Finally, Field and colleagues (2003) found that positive or negative information given to normal youths about different social situations had *no* effect on social fear beliefs. In fact, negative information given about a public speaking situation actually *reduced* fear beliefs.

Alfano and colleagues (2002), in a thorough review of the literature, concluded that "research on the cognitive aspects of childhood anxiety has produced divergent and confusing findings" (p. 1230). This statement seems particularly relevant to findings regarding social phobia in youths. In particular, several caveats regarding the literature were discussed, including methodological and definitional differences across studies, incomplete assessments, failure to examine processes behind cognitive content findings, and failure to attend more closely to developmental differences. The authors even suggested that assuming that cognitive therapy is a necessary component of treating anxious children is not yet fully warranted.

Daleiden and Vasey (1997), in a widely cited paper, provided a sample framework to understand the cognitive processes that may underlie

findings relevant to anxious children. In their *information-processing perspective*, the authors proposed that anxious children selectively attend to, focus on, and become distracted by threatening stimuli in their environment. As such, anxious children may tend to view even ambiguous stimuli as threatening, assume negative attributions and outcomes, and see themselves as unable to cope with threats and accompanying anxiety. As these children process information in such a negative way over time, they may overpractice strategies of escape and avoidance to enhance personal safety and thus fail to accurately evaluate their thoughts in anxiety-provoking situations. Although not tied directly to youths with social anxiety, such a model does help explain the common descriptions made of this population in the literature (see above and Chapter 2). In addition, such a model provides an excellent starting point for understanding the automatic processes that underlie cognitive content as well as why such content is maintained over time. Such a model, which is also sensitive to developmental differences (Vasey & McLeod, 2001), may also help provide a framework for organizing disparate information in this area.

Parental and Familial Characteristics

Specific parental or familial characteristics might also be related to the familial aggregation of social phobia. These characteristics include parenting style and family environment, attachment, and modeling of social anxiety and avoidance. These are discussed separately next.

Parenting Style and Family Environment

Parents of anxious children are often described as controlling, partial, meddling, affectionless, overprotective, demanding, encouraging of avoidant behaviors, discouraging of proactive or prosocial behaviors, and/or anxious, withdrawn, avoidant, and socially isolated themselves (Barrett, Rapee, et al., 1996; Dadds, Barrett, Rapee, & Ryan, 1996; Dumas, LaFreniere, & Serketich, 1995; Krohne & Hock, 1991; Lindhout et al., 2003; Rapee, 1997; Woodruff-Borden, Morrow, Bourland, & Cambron, 2002). With respect to *social anxiety-related constructs*, maternal expressed emotion seems related to behavioral inhibition in youths (Hirshfeld, Biederman, Brody, Faraone, & Rosenbaum, 1997), shyness is evident in adoptive parents and their adoptive children (Daniels & Plomin, 1985), and lack of authoritative (e.g., authoritarian) parenting has been linked to peer rejection and lower levels of social competence in children (Dekovic & Janssens, 1992).

With respect to social phobia *per se*, adult retrospective studies implicate several parental or familial practices that may have facilitated the development of social anxiety:

- isolating a child from social activities (Bruch, Heimberg, Berger, & Collins, 1989)
- overemphasizing the opinions and negative evaluations of others (Bruch & Heimberg, 1994; Bruch et al., 1989)
- poor family sociability and avoidance of social situations (Bruch & Heimberg, 1994; Bruch et al., 1989)
- less warmth and caring and greater overprotectiveness of the child (Arrindell, Emmelkamp, Monsma, & Brilman, 1983; Arrindell et al., 1989; Parker, 1979)
- rejection of the child (Arrindell et al., 1983, 1989)
- general instability, characterized by separation from or lack of close relationships with adults, marital conflict in parents, parental history of mental disorder, moving frequently, involvement with the legal system, running away from home, physical and sexual maltreatment, school failure and dropout, and need for special education (Chartier, Walker, & Stein, 2001; Wittchen et al., 1999)

A serious problem with these retrospective studies is bias, of course, as accurate recall can be affected by many factors such as depression (Parker et al., 1997). However, some have evaluated youths with social or test anxiety and their *current* family environment. For example, Caster and colleagues (1999) found that adolescents with high levels of social anxiety, compared to controls, viewed their parents as overconcerned about the opinions of others, ashamed of the youths' shyness and poor performance, and focused on isolating the youths. In addition, high socially anxious adolescents perceived themselves and their parents as less socially active than controls. However, parental perceptions of the families did not differ between the two groups.

Other findings with specific respect to socially anxious children have been more tepid. In particular, Bogels and colleagues (2001) examined how socially anxious children aged 8–18 years perceived their current family environment. Although maternal social anxiety did predict child social anxiety, parental warmth and rejection were *not* closely related to child social anxiety unless the child's level of social anxiety was extreme. In addition, maternal overprotectiveness was found only somewhat related to child social anxiety, and family sociability among socially anxious children was less than normal children but no different from a clinical control group. The tepid findings were further underscored by the fact that parents of socially anxious children emphasized the opinions of others less than parents

of normal controls. The authors also found that first or only children tended to have less social anxiety, a finding opposite others (Bruch, 1989).

Melfsen and colleagues (2000) also found that mothers of socially anxious children differed little with respect to facial expressions compared to mothers of non-socially anxious children. One key exception, however, was that mothers of socially anxious children generally showed less intense facial expressions of emotions, leading the authors to conclude that the children of these parents could have great difficulty modeling facial expressions in key social situations and thus fail to interact appropriately with others.

Lieb and colleagues (2000) also found that higher parental overprotectiveness and rejection were associated with increased rates of social phobia in children, though other mental disorders (e.g., depression, alcohol use disorder) were *also* found to be related to these parenting variables. In addition, Peleg-Popko and Dar (2001) found that increased social anxiety was positively correlated with family cohesion or overprotectiveness. With respect to children with test anxiety, Peleg-Popko (2002) found these youths to generally have families with reduced communication, encouragement of personal growth, and system maintenance (i.e., highly inconsistent parental behavior). Fathers of youths with test anxiety also tend to have more obsessive-compulsive symptoms than controls (Messer & Beidel, 1994).

Attachment

Parent-child attachment problems, such as an insecure or disorganized or anxious ambivalent attachment style, may also be related to childhood anxiety and related problems (Cowan, Cohn, Pape-Cowan, & Pearson, 1996; Manassis, 2001; Radke-Yarrow et al., 1995; Rosenstein & Horowitz, 1996; Van IJzendoorn & Bakermans-Kranenburg, 1996). In addition, attachment problems may be related to later social anxiety. Warren and colleagues (1997), for example, identified infants with anxious/resistant, avoidant, and secure attachments and reexamined 172 at age 17.5 years. Of 26 adolescents who later had developed an anxiety disorder, 28.1% were of the anxious/resistant attachment type, 16.2% were of the avoidant attachment type, and 11.6% were of the secure attachment type. The most frequent anxiety disorder was social phobia (38.5%). Attachment type was also found to be a better predictor of anxiety disorder than temperament or maternal anxiety. Conversely, securely attached infants, or those with warm, responsive caregivers, tend later to be more popular, socially effective, interactive with peers, and viewed by others as socially positive compared to insecurely attached infants (Masia & Morris, 1998).

Parental Modeling of Social Anxiety and Avoidance and Other Parental Practices

Parents of anxious children do appear to model and reinforce anxious, avoidant behaviors in their children (Chorpita et al., 1996; Dadds et al., 1996; Kashdan & Herbert, 2001). Little work has been done in this regard with specific respect to youths with social phobia, but older children and adolescents would seem likely to model behaviors consistent with this disorder (Dadds, Davey, & Field, 2001). Modeled behaviors most likely include avoidance and statements of fear, dangerousness, threat, difficulty coping, and uncontrollability regarding social and evaluative situations (Barrett et al., 1996; Ollendick, Vasey, & King, 2001). With respect to social competence and status in children, these are greatly affected by positive (e.g., less controlling) parent-child play experiences, appropriate (e.g., inductive) disciplinary practices, opportunities for early socialization, parental social support, and useful social information conveyed to a child (e.g., about entering a play group) (Masia & Morris, 1998).

These variables may thus be instructive for understanding the development of social anxiety in some youngsters. For example, youths with social anxiety may be likely to have parents who are socially anxious themselves, who are more controlling, who are harsh or critical in their discipline, who shelter youths from socialization experiences, and who consistently warn their children of danger even in ambiguous play and other social and evaluative situations. Some have theorized that a combination of (1) parental modeling of anxiety and avoidance, overcontrol and overprotection, and reduction of socialization experiences, (2) child inhibition and shyness, distress, and demands for close proximity to and comfort from caregivers, and (3) insecure attachment lead to an anxious-coercive parent-child relationship that spurs the development of anxiety disorders, perhaps including social phobia, in youths (Dadds & Roth, 2001).

Learning Experiences

Common pathways for learning fear in childhood involve modeling, information transfer, and direct conditioning (Rachman, 1977). When fears develop in older childhood and adolescence, as is the case for many social and evaluative fears, the mechanism of learning is often modeling and information transfer (Dadds et al., 2001). As mentioned above, parents may be excellent models of socially phobic behavior, and information from parents is often integral to shaping play and other social behaviors in children. In addition, adults with social phobia do report that modeling and information transfer were directly responsible for the onset of their disorder

(Ost & Hughdahl, 1981). Of course, memory bias in this regard must be considered as well.

Direct conditioning may also help spur the acquisition and maintenance of social and evaluative fears in children. With respect to acquisition, traumatic or stressful events may facilitate the disorder via classical conditioning, and many adults with shyness or social phobia indeed link their condition to specific negative social events (Ishiyama, 1984; Ost & Hughdahl, 1981). This may be particularly true for people with specific social phobia, although 20% of people *without* social phobia also report traumatic social experiences (Stemberger et al., 1995).

As mentioned in Chapter 2, children with social phobia often experience negative and possibly traumatic peer interactions as well (Beidel & Turner, 1998), although the direction of causality among these factors remains unclear. For example, children with social phobia may have certain temperaments (e.g., shyness, behavioral inhibition) or cognitive biases that lead them to withdraw from many socialization opportunities and thus *later* experience peer rejection, neglect, or humiliation as well as underdeveloped social skills. Indeed, childhood learning experiences are typically linked in the literature to temperamental and other vulnerabilities when describing the onset of social phobia in youths (e.g., Dadds et al., 2001). In essence, some children may be more particularly predisposed to learn to fear social and evaluative situations than others.

With respect to maintenance of social and evaluative fears in children, several learning possibilities are evident. First, parents may inadvertently or deliberately reinforce socially anxious behavior in their children via ongoing praise, sympathy, or acquiescence to child requests to avoid key socialization experiences (Eisen & Kearney, 1995). Second, a child may continually avoid or escape social and evaluative situations, and subsequent fear reduction may thus serve to negatively reinforce the withdrawn behavior. Subsequent approach toward a nonthreatening place (e.g., home, caregiver position) may serve to positively reinforce withdrawn behavior as well (Delprato & McGlynn, 1984; Mowrer, 1960). Third, punishment of approach responses toward social and evaluative opportunities, especially incompetent approaches that involve deficient social skills, may suppress such responses in the future (Vasey & Dadds, 2001).

Fourth, rule-governed behavior and extensive stimulus generalization could extend fearful behavior to other social contexts (McNeil, Lejuez, & Sorrell, 2001). Fifth, ongoing learning experiences with stressors could help prevent a child from overcoming developmentally appropriate fears that should normally fade over time, prevent him or her from exposure to fearful socialization experiences and thus habituation to them, and/or prevent satisfactory development of social skills (Vasey & Dadds, 2001).

Learning experiences may also lead a youth to view internal sensations or social/evaluative situations as dangerous, thus creating a *specific psychological vulnerability*. These maintaining processes likely intersect with other vulnerabilities mentioned in this chapter. However, learning processes with respect to socially anxious children remain highly speculative and require more empirical work.

AN INTEGRATIVE MODEL AND DEVELOPMENTAL PATHWAY OF SOCIAL ANXIETY DISORDER

Having described the major biological and psychological vulnerabilities posited for social anxiety disorder, attention is turned next to an etiological model and a developmental pathway that integrates these vulnerabilities. This is done at the adult level to illustrate a global etiological picture, and then at the youth level to illustrate more detailed pathways.

Adults

One widely cited and highly comprehensive etiological model for adult social phobia is that espoused by Hofmann and Barlow (2002) (see Figure 3.1). In this model, generalized biological and psychological

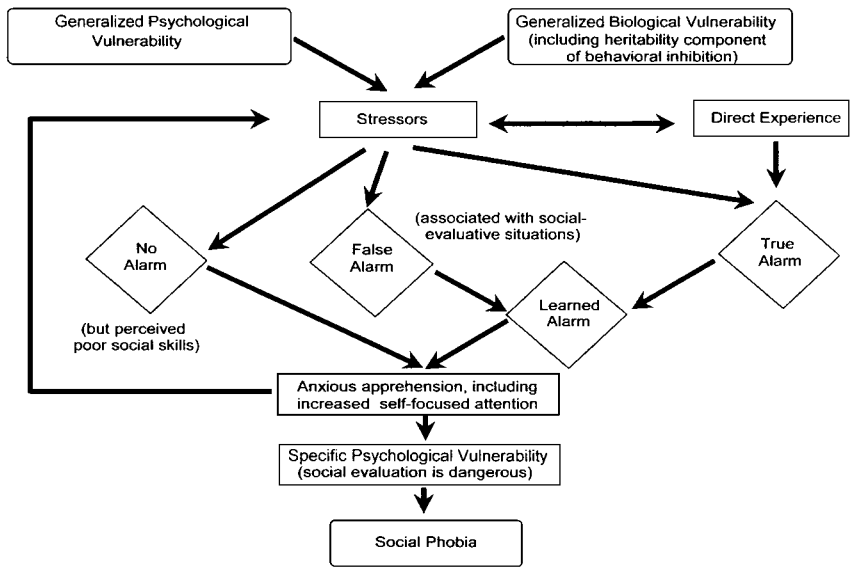

FIGURE 3.1. A model of the etiology of social phobia. (Used with permission).

vulnerabilities for anxious apprehension intersect with negative life events and direct social/evaluative experiences. For some people, particularly those with specialized social phobias (e.g., of public speaking or other circumscribed situations), a fear reaction or panic attack(s) may develop following particularly stressful, traumatic, or highly embarrassing social/evaluative situations (i.e., *true alarm*). An example might be a person who develops intense fear during or shortly after a disastrous public speaking engagement.

For other people, particularly those with generalized social phobia, a more diffuse anxiety response with feelings of embarrassment and shame may develop. This anxiety response may lack a specific alarm reaction, but could still be associated with intense anxious apprehension about perceived deficits in one's social skills. The development of social phobia is less likely in this pathway unless the previously mentioned vulnerabilities are strongly present (Barlow, 2000). In addition, the anxiety response could be associated with Barlow's notion of *false alarms*, which involve fear or panic largely in the absence of a specific, provoking stimulus but which, in this case, follow generally stressful social/evaluative situations. This pathway likely becomes ingrained over time as feelings develop of lack of control in social/evaluative situations and as one comes to believe that such situations are potentially dangerous and threatening.

Each of these pathways can be maintained by several variables such as self-focused attention and cognitive processing errors. This may help explain why many cases of social phobia in adults strongly persist over time. One should note, however, that other etiological models of adult social phobia have been proposed and are based more heavily on biological (Pine, 2001), representational or cognitive (Roth & Heimberg, 2001), or behavioral/learning variables (Beidel & Turner, 1998).

Youths

With respect to youths, the development of integrated etiological models of social phobia has been largely eschewed in favor of exploring potential developmental pathways to the disorder. This is not to say that overall models have been neglected altogether, and those that have been proposed are generally more inclusive of family and peer relationships than adult models. Morris (2001), for example, noted that social phobia likely reflects a combination of temperamental qualities, family processes, peer relationships, performance inhibition, and social skills deficits. Albano and Hayward (2004) added that any model of social phobia in youths must include the intermingling of biological vulnerabilities with

contextual variables such as parenting style, peer interactions, academic settings, and culture. Specific developmental pathways to childhood social phobia would involve variations of these risk factors.

Many developmental pathways can, of course, lead to social phobia and related outcomes and psychopathologies in youths. Indeed, several authors have proposed developmental pathways or links that apply to the development of childhood social phobia (Albano et al., 2003; Beidel et al., 1999; La Greca & Lopez, 1998; Morris, 2001; Neal & Edelmann, 2003; Ollendick & Hirshfeld-Becker, 2002; Rubin et al., 1990; Stemberger et al., 1995; Vasey & Dadds, 2001). Rather than separately explicating each of these pathways, an amalgam is presented here that involves one general pathway with many distinct parts and subpaths. Protective and ameliorating factors are presented subsequently as well.

Most proposed developmental pathways for childhood social phobia begin with biological vulnerabilities such as predispositions toward autonomic overarousal, behavioral inhibition, high negative affect, and/or low positive affect. In essence, some children do seem innately geared toward excitability, fear, and withdrawal from different situations, especially novel or interactive situations. As these infants develop, they may be exposed to parents who are temperamentally anxious, inhibited, or unresponsive themselves. This scenario could lead to:

- poor child-parent attachment
- parental confusion or ineptitude about how to care for a child who is fussy, clingy, fearful, and demanding
- an underdeveloped child-parent social relationship

In essence, the stage may be set quite early for some children to falter in social situations. As these children enter toddlerhood and the early preschool period, for example, they may engage in excessive self-reliance or self-isolation (e.g., playing in a corner by themselves) that is encouraged or not discouraged by others. In addition, these children may be isolated *by parents* from social situations that are potentially embarrassing for the parents (e.g., "What if he throws a fit at the birthday party? I'd rather not have to deal with it"), or that the parent worries may be too stressful for the child ("She can't handle this right now"). The results of this process may involve:

- initial modeling of poor strategies for addressing social situations (e.g., avoidance, withdrawal, verbal complaints, conflict, feigned illness as an excuse for escape)
- reduced opportunities to build and practice effective social skills and to receive and appropriately process feedback from others

- increased anxiety and inhibition in social situations and less desire to be in these situations
- poor mastery of social fears and loss of opportunities for habituation or beneficial emotional processing
- coping strategies marked more by avoidance than by seeking support from others

These outcomes may be especially pertinent to children not enrolled in preschool or in other social activities where adults other than the child's parents can supervise and help develop his or her social skills and mastery of social situations.

As these children enter and proceed through elementary school, various social, academic, athletic, and other demands are made of them. For children with biological and psychological predispositions toward social withdrawal in infancy and toddlerhood, these increased demands may serve as highly aversive experiences that interact with their vulnerabilities. Although direct conditioning experiences may occur (e.g., direct peer rejection), vicarious experiences or episodes of negative information transfer may occur as well. For example, a child could see another child rejected or assaulted or be told by parents or peers that interacting with certain (or many) children is dangerous and should be avoided. As such, the following may occur:

- anxiety may increase as a child begins to perceive social and evaluative situations, particularly those involving unfamiliar peers, to be dangerous, threatening, unpredictable, and uncontrollable; such perceptions may be reinforced by family members as well
- even in the absence of a specific anxiety-provoking event, anxiety symptoms themselves could become viewed as highly uncomfortable, uncontrollable, dangerous, and expected
- even in the presence of mildly stressful social or evaluative events, intense anxiety and avoidance/escape may occur, leading to failures to habituate, engage in beneficial emotional processing, master anxiety, and/or modify relevant erroneous beliefs and cognitive distortions
- as avoidance/escape becomes a more frequently used strategy, social skill development may remain arrested due to limited opportunities for practice
- a cycle may become well-ingrained over time of anxiety and inhibition in social/evaluative situations that leads to avoidance and subsequent worry about future social/evaluative situations

One should note as well that many children who are *strongly* predisposed to social retraction (e.g., via genetics, temperament, attachment) may

not experience highly stressful social/evaluative events but may *still* develop social phobia or go on to have problems in peer relationships or social withdrawal (see Chapter 1). Other psychopathologies may develop as well, most notably depression and/or generalized anxiety, separation anxiety, or panic disorders. Conversely, some children may be *weakly* predisposed toward social retraction but still experience highly negative episodes of social interaction and evaluation and, via learning mechanisms, later develop social anxiety or related disorders.

As these children enter middle and high school, ongoing practices of self-isolation and avoidance/escape/withdrawal from social/evaluative situations may facilitate more ingrained problems with peers. As noted in Chapter 2, for example, peer exclusion, ridicule, and rejection are intimately tied to a child's social anxiety and avoidance. For example, both the child and his or her peers may perceive the other party as unfriendly, mean-spirited, or snobbish. As such, the child may engage in even more solitary activities, spend more time with family members, eschew development of close friendships, and view himself or herself as socially incompetent. Perhaps these behaviors, which may be continually reinforced by family members, serve to foster social worry and distress, increase negative self-evaluation, further impair development of social skills and friendships, produce fewer opportunities for socialization, and extend an anxious, depressive, fearful, and avoidant cycle in social and evaluative situations.

In such a complicated pathway, biological factors intersect with family factors, and this combination later intersects with negative peer experiences. Along the way, several practices serve to cement the pathway and increase the likelihood of social phobia or other psychopathology. These practices most likely involve cognitive and behavioral avoidance, poor skill development, erroneous beliefs and cognitive distortions, destructive parent/family responses (e.g., overprotectiveness, reinforcement of anxiety and avoidance), and peer rejection and hostility. As children in this pathway age, risk factors compound and deviation from the pathway likely becomes more difficult. However, particular patterns of risk factors and when they occur along the pathway would certainly lead to very different effects for individual children. For example, youths with multiple, early risk factors and negative family and peer experiences in early childhood would seem to be more likely to develop social anxiety-related problems compared to youths with fewer risk factors and whose problems with family members and peers do not present until adolescence.

Several general factors may also protect certain children from fully progressing along this hypothetical pathway. Examples include less intense biological predispositions, supportive parenting, ongoing and positive exposures to socialization experiences, parental initiation of these experiences ("Yes, you are going to the soccer game"), good development

of social and coping skills and friendships, realistic thinking patterns, and early intervention. More specific protective factors were described in Chapter 2 as well.

As mentioned earlier, this hypothesized pathway represents an amalgam of what has been proposed in the literature. Although perhaps a bit unwieldy, the pathway covers different risk factors that children typically face and how such risk factors may produce social phobia. However, extensive empirical support remains necessary, and may be derived from longitudinal prospective, twin, adoption, and intervention studies (Ollendick & Hirshfeld-Becker, 2002). In addition, investigations are sorely needed with respect to alternative pathways, how children are derailed from these pathways, how one might prevent such pathways from occurring, how cultural variables influence these pathways, and why some youths experience many risk factors but do *not* develop psychopathology or social problems. Regarding the latter, protective factors identified via developmental research (e.g., resilience) may be instructive.

FINAL COMMENTS

The pathways to childhood social phobia are likely as diverse and numerous as the characteristics of these children. Not to be lost in all of this information, however, is the fact that childhood social phobia is a potentially crippling form of mental disorder that can lead to devastating consequences. This fact necessitates the development of effective assessment and treatment strategies for this population, and the remainder of the book is thus devoted to these strategies.