

Parental Factors Associated With Social Anxiety: Methodological Limitations and Suggestions for Integrated Behavioral Research

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The quality of social relationships is a strong predictor of later adjustment. Thus, it is crucial to identify those environmental factors that lead to appropriate versus deficient childhood social relations. Parent-child interaction is one important context to examine due to the crucial role that the family environment plays in children's social development. This article reviews the parental factors associated with social anxiety, integrating the literature from various fields within psychology. Methodological limitations of this research are discussed, pointing to ambiguous constructs, limited assessment procedures, lack of research integration, and reliance on cognitive interpretations. Finally, suggestions are made for future investigations to clarify the definition of constructs and allow for more precise specification of the parental behaviors associated with social anxiety.

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The quality of social relationships is a strong predictor of later emotional and social adjustment (Cowen, Pederson, Babigan, Izzo, & Trost, 1973; Kupersmidt & Patterson, 1991; Ollendick, Weist, Borden, & Greene, 1992; Parker & Asher, 1987). Persons who experience difficulty in social situations often demonstrate impairment in their academic, occupational, and/or social functioning. Some common problems reported by socially anxious children, as well as adults who were socially anxious as children,

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include lower school grades due to nonparticipation in classroom discussions, fear of joining clubs or athletic teams, lack of career advancement, difficulty establishing intimate relationships, depression, and alcohol use prior to and/or during social events to reduce tension (Caspi, Elder, & Bem, 1988; Kupersmidt & Patterson, 1991; Scholing & Emmelkamp, 1990; Turner, Beidel, Dancu, & Keys, 1986). To prevent the development of socially anxious behaviors, it is crucial to identify those environmental factors that lead to appropriate childhood social relations, and those that lead to deficient social competence and/or to experiencing anxiety in social situations. Parent-child interaction is one important context to examine due to the enormous amount of learning that occurs in the home, and the social isolation observed in some children as early as nursery school and kindergarten (Hinde, Easton, Meller, & Tamplin, 1983).

The purpose of this article is to review and critique the literature on parental factors related to socially anxious behavior in children. This topic, and related ones, has been addressed by researchers in many psychological fields, but minimal integration of their findings has occurred. This lack of research integration within psychology is exemplified in two widely cited literature reviews. The important "developmental" review by Putallaz and Heflin (1990) on the relation of parent-child interaction to social behavior and status did not discuss the related personality or clinical literature (e.g., parent behaviors related to shyness, affectionless control). Similarly, a recent "clinical" article on the familial antecedents of social phobia (Bruch, 1989) devoted only one sentence to developmental theories of socialization (e.g., attachment theory). Findings related to shyness, however, were included in Bruch's article. Such separateness can lead to redundant research and omission of significant parental

factors, thus limiting advancement toward a comprehensive understanding of parental influence. As all fields have much to contribute, their synthesis may identify important areas in need of further investigation and provide impetus for the cross-fertilization of work on this topic. Additionally, the current research methodologies utilized in this area are limited and could be improved by conducting more integrated behavioral investigations. Therefore, this article (a) reviews the research across various psychological specialties concerning parental influence on children's social behavior, (b) points out the methodological limitations of research in this area, and (c) provides suggestions for future investigations that are collaborative and guided by a behavioral framework.

SOCIAL ANXIETY: DEFINING A CONSTELLATION OF BEHAVIOR

Lost in Psychological Constructs

The use of different psychological language across the developmental (i.e., peer neglect, social withdrawal), personality (i.e., shyness), and clinical (i.e., social phobia, avoidant personality disorder, APD) literatures is one impediment to examining the parental antecedents of social anxiety. *Peer-neglected* children are identified by the use of sociometric measures, and are defined as those children who do not receive either negative or positive peer nominations and are largely ignored by peers (Coie, Dodge, & Copotelli, 1982). *Social withdrawal* is frequently described as staying away from the peer group (Rubin & Asendorpf, 1993), and these children are usually identified by behavioral observation. *Shyness* is often defined as anxiety and discomfort in social situations, resulting in silence, withdrawal, gaze aversion, reactions of tension, and preoccupation with self and the impression being made (Buss, 1980; Crozier, 1979; Jones, Briggs, & Smith, 1986). Finally, *social phobia* is a "persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others and fears that s/he will act in a way that will be humiliating or embarrassing" (American Psychiatric Association, 1994, p. 416), while APD is a "pervasive pattern of social inhibition, feelings of inadequacy, and hypersensitivity to negative evaluation, beginning in early adulthood and present in a variety of contexts" (American Psychological Association, 1994, p. 664).

Individuals who are classified with one of these labels seem to exhibit some common features. Similar to socially

withdrawn children, neglected children tend to engage in solitary play (Dodge, 1983) and have low rates of social interactions with their peers (Coie et al., 1982; Coie & Kupersmidt, 1983; Dodge, Coie, & Brakke, 1982). Children who are neglected or withdrawn also display behaviors similar to those displayed by individuals labeled shy, and/or diagnosed with social phobia or APD. For instance, socially neglected or withdrawn children are unassertive in their social relationships (Rubin, 1985), report that direct or assertive types of strategies will be ineffective in conflict situations (Crick & Ladd, 1993), and are described by peers as shy and socially uninvolved (Coie et al., 1982). In addition, neglected children indicate higher social anxiety than other children on verbal report instruments (La Greca, Dandes, Wick, Shaw, & Stone, 1988; La Greca & Stone, 1993), and Strauss, Lahey, Frick, Frame, and Hynd (1988) found that children with anxiety disorders were most likely to be of a neglected status as compared to conduct-disordered or nonreferred children. Finally, according to Rubin and Asendorpf (1993), the onlooking or hovering behavior often observed in withdrawn children is due to their fear of being negatively evaluated, a feature found to be a main component of shyness, social phobia, and APD (American Psychological Association, 1994; Jones et al., 1986; Turner, Beidel, & Townsley, 1990).

In addition to a fear of negative evaluation, shy individuals often exhibit physiological reactivity and avoidance behavior in response to social situations, behaviors that are also commonly seen in individuals diagnosed with social phobia and/or APD (Kagan, Reznick, & Snidman, 1988; Pilkonis, 1977a; Turner et al., 1990). Finally, although individuals with APD display more severe symptomatology than those with social phobia, both diagnostic groups report comparable distress on verbal report instruments, and exhibit increased heart rate, avoidance/escape behavior, negative self-statements, and state anxiety during simulated speech and conversation tasks (Herbert, Hope, & Bellack, 1992; Holt, Heimberg, & Hope, 1992; Masia et al., 1995; Turner, Beidel, & Townsley, 1992). In fact, the usefulness of maintaining both of these diagnostic categories has been questioned (Heimberg, Holt, Schneier, Spitzer, & Liebowitz, 1993; Widiger, 1992).

To summarize, the array of constructs (i.e., peer neglect, social withdrawal, shyness, social phobia, and APD) used in the literature denote the presence of some similar behavioral responses to social stimuli. For the pur-

pose of this article, one construct, "social anxiety," will be defined behaviorally and used as a collective term to review the relevant literature on parental factors across psychological specialties.

A Behavioral Definition of Social Anxiety

Lang (1968) defined emotion as consisting of three response systems: motor, physiological, and cognitive. Although this model has been subject to some criticism regarding the confounding of content (i.e., overt behavior, physiological, and cognitive) and method of measurement (e.g., self-report, direct observation) and the imprecise use of the cognitive mode (see Cone, 1979; Eifert & Wilson, 1991; Forsyth & Eifert, 1996), it is helpful in describing the subject matter of interest.

According to this triple response conceptualization, social anxiety is a constellation of overt, physiological, and cognitive behaviors. Specifically, overt behaviors may include freezing (e.g., inability to speak), avoiding or escaping social situations (e.g., staying home from parties or leaving early; Beidel, 1991; Beidel & Morris, 1993), hovering around the periphery of other children at play and not joining in (Dodge, Schlundt, Schoken, & Delugach, 1983; Putallaz & Gottman, 1981), and other social skill deficits (e.g., inappropriate gaze, speaking less frequently; see Beidel, Turner, & Dancu, 1985; Pilkonis, 1977b; Turner, Beidel, Dancu, & Keys, 1986). Physiological or somatic socially anxious responses may consist of increases in heart rate and blood pressure, heart palpitations, trembling or shaking, sweating, abdominal distress, and chronic muscle tension (Beidel et al., 1985; Hofmann, Newman, Ehlers, & Roth, 1995; Turner, Beidel, & Larkin, 1986). Finally, thoughts occurring prior to, during, and following social situations that often involve a negative evaluator component (e.g., "No one will like me" or "I look out of place") tend to be common cognitive behaviors of socially anxious individuals (Edelmann, 1985; Glass, Merluzzi, Biever, & Larsen, 1982; Masia et al., 1995).

We are not implying that social anxiety is a "thing" an individual has that causes anxious behaviors. Rather, social anxiety is conceptualized here as a constellation of covarying behaviors that may occur in response to social stimuli (e.g., public speaking, being introduced to unfamiliar people) due to certain learning histories (e.g., aversive conditioning or being previously punished in the presence of the stimulus). Because parent-child interactions

comprise a significant part of an individual's learning history, and there is a well-documented relation between familial variables and anxiety (see Last, 1993; Last, Hersen, Kazdin, Orvaschel, & Perrin, 1991; Reich & Yates, 1988; Silverman, Cerny, & Nelles, 1988; Turner, Beidel, & Costello, 1987; Turner, Beidel, & Epstein 1991; Weissman, 1988), examining the family context may elucidate some of the historical variables involved in the development of socially anxious behavior.

PARENTAL FACTORS ASSOCIATED WITH SOCIAL ANXIETY

Parent-Child Interaction

Infant-Caregiver Attachment. Literally hundreds of studies have been conducted on the relation between the quality of infant-caregiver attachment and children's social interactions with peers (e.g., Lieberman, 1977; Pastor, 1981; Putallaz & Heflin, 1990). Typically, these studies consist of an initial assessment of children's attachment to their caregiver (usually the mother) at approximately 12 months of age, using the "Strange Situation" laboratory-based procedure developed by Ainsworth and Wittig (1969). Infant-caregiver attachments are classified as "secure" or "insecure" depending on the infant's behavior during a series of separations and reunions with the caregiver, as well as their interactions with a stranger in the presence and absence of the caregiver (Ainsworth, Bell, & Stayton, 1971; Ainsworth & Wittig, 1969). After varying amounts of time (ranging from preschool to middle childhood age) a second assessment is conducted to evaluate children's social behavior with peers. This is accomplished through the use of verbal reports from teachers or peers and/or direct observation either in the laboratory (Booth, Rose-Krasnor, & Rubin, 1991; Renken, Egeland, Marvinney, Mangelsdorf, & Sroufe, 1989; Youngblade & Belsky, 1992) or in a more naturalistic environment, such as school or camp (Elicker, Englund, & Sroufe, 1992; Waters, Wippman, & Sroufe, 1979). In summary, these studies indicate that securely attached children are more likely than children with insecure attachments to be more popular (on sociometric measures); to demonstrate effective social skills; to be seen as leaders; to initiate peer interactions; to establish positive, reciprocal friendships; and to receive higher ratings of compliance and empathy from teachers (Cohn, Patterson, & Christopoulos, 1991; Elicker et al., 1992; Sroufe, 1983).

Some attachment studies have noted specific infant-caregiver behavioral interactions that might contribute to "secure" versus "insecure" attachment. Mothers of infants classified as "secure" as compared to "insecure" have been judged to be more warm, sensitive, and responsive (e.g., positive affect; maternal perception, interpretation, and response to infant's signals; appropriateness of responses to infant behaviors; tender handling of babies; Ainsworth et al., 1971; Ainsworth, Blehar, Waters, & Wall, 1978; Isabella, 1993); less rejecting (e.g., negative affect, interfering with infant's goals; Ainsworth et al., 1971; Isabella, 1993); more cooperative rather than interfering or controlling of their infants (e.g., observer ratings of respect for baby's autonomy and separateness; Ainsworth et al., 1971); more involved in social stimulation of their infants (Clarke-Stewart, 1973); and more likely to be accessible to their infants rather than to ignore them when not engaged in caretaking tasks (Ainsworth et al., 1971). The importance of "warmth" and "control" in parental behaviors noted in the attachment literature continues as a significant theme in the research on parenting style.

Parenting Style. Baumrind (1973) and Maccoby and Martin (1983) classified parenting style along the dimensions of warmth (e.g., responsive vs. unresponsive) and control (e.g., demanding vs. undemanding). Based on these dimensions, the following categories were defined: authoritarian (more demanding than responsive), authoritative (demanding and responsive), indulgent (more responsive than demanding) and indifferent-uninvolved (undemanding and unresponsive). Authoritative parenting has been associated with higher levels of social competence in both boys and girls than any other parenting style (Baumrind, 1967, 1971; Hinde & Tamplin, 1983). One noteworthy study, conducted by Dekovic and Janssens (1992), examined the relation of parenting style to peer status (i.e., rejected and popular) using home observation of parents and children engaging in tasks requiring parental help for successful completion. Parents of popular children displayed an authoritative interaction style (e.g., explained the reasons for setting up rules, encouraged verbal give and take, engaged in joint decision making with the child, and provided support and positive reinforcement), whereas parents of rejected children were authoritarian in their interactions (e.g., criticized child's behavior, relied on direct commands and physical takeovers, and displayed less positive emotion).

Most research investigating the relation of these parenting styles to social competence has focused on popular and rejected children and/or on aggressive and delinquent behavior (Attili, 1989; Baumrind, 1967; Dishion, 1990; Olweus, 1980; Patterson, 1982). Therefore, the relation of these parenting styles to peer neglect or anxious behavior remains unclear. Readers are referred to Cohn et al. (1991) for a complete review of research on the parenting styles defined by Baumrind (1973) and Maccoby and Martin (1983).

Another parenting style defined according to the dimensions of warmth and control is referred to as affectionless control or overprotection (i.e., low warmth and high control). "Overprotection" was described in the 1960s by the following parent behaviors: (a) displaying high warmth and anxious emotional involvement (Becker, 1964), (b) being highly supervising and vigilant (Levy, 1966), (c) prolonging infantile care (Levy, 1966), (d) displaying excessive physical or social contact (Levy, 1966), (e) discouraging independent behavior (Levy, 1966), and (f) acting in a highly controlling manner (Becker, 1964; Levy, 1966). Research in this area increased rapidly following Parker's (1979) development of the Parental Bonding Instrument (PBI), which measures perceived parental characteristics as indicated by the retrospective report of adults. Two factors included on the PBI are (a) parental care versus indifference/rejection, and (b) control/overprotection versus autonomy/independence. The PBI Care scale contains items related to warmth, responsiveness, and sensitivity, and the PBI Overprotection scale has items suggesting control, overprotection, intrusion, excessive contact, infantilization, and prevention of independent behavior. The Eigna MinnenBeträffande Uppfostran (Perris, Jacobsson, Lindstrom, von Knorring, & Perris, 1980) and the Child Report of Parental Behavior Inventory (Schuldermann & Schuldermann, 1970) also contain scales relevant to rejection, emotional warmth, and overprotection, and are sometimes used to study "affectionless control."

Some research has demonstrated a relation between an affectionless control parenting style and anxiety in offspring (Arrindell, Emmelkamp, Monsma, & Brilman, 1983; Krohne & Hock, 1991; Parker, 1981). For example, adults who exhibit socially phobic behaviors rate their parents as lacking in emotional warmth/care, and as being rejective and overprotective (Arrindell et al., 1983; Arrindell et al., 1989; Parker, 1979). Similarly, Eastburg and

Johnson (1990) found that the degree of shyness (as measured on the Social Reticence scale) reported by female college students is negatively associated with perceived parental care and support and positively associated with perceived parental control. However, only the amount of perceived parental affection differentiated adult persons with APD from normal controls; no difference was found between these groups regarding perceived parental control (Arbel & Stravynski, 1991; Stravynski, Elie, & Franche, 1989). The dimensions of warmth and control have been studied more prospectively in the parent-child play interaction literature.

Parent-Child Play Interaction. Research on children ranging from 3 to 7 years old suggests that parental involvement during play is associated with social status in their current peer groups (MacDonald & Parke, 1984; Parke, MacDonald, Beitel, & Bhavnagri, 1988; Parke et al., 1989). Typically, these studies consist of direct observations and behavioral coding of parent-child play behaviors, followed by an assessment of children's play behavior with peers through either the use of observational methods and/or sociometric nominations provided by peers or teachers.

Five parent-child play behaviors, which are consistent with the theme of warmth and control, arise as correlates of social competence: (a) parent and child emotional expression (e.g., positive affect, telling child that parent is happy), (b) parent response to emotional expression (e.g., hugs, ignores), (c) amount and quality of physical play (e.g., tickling, wrestling), (d) level of parent directiveness and coerciveness (e.g., demands), and (e) length of play interactions. First, children who are more assertive, agreeable, and popular with peers have parents who are warm (observer ratings of "warm" and "remains open and accessible"; Roberts & Strayer, 1987), more positive (e.g., agreeable, exhibit positive affect; Putallaz, 1987), more focused on feelings (e.g., questions child about feelings; Putallaz, 1987), use more affective guidance (e.g., remind children of game rules while expressing positive affect; Carson, 1991), and elicit positive affect (e.g., observer ratings of laughter intensity) from their children during play (MacDonald & Parke, 1984). Second, parents who respond positively to their children's distress (e.g., cries) have children who respond positively to distress in others and more often exhibit prosocial behavior (Zahn-Waxler, Radke-Yarrow, & King, 1979). In addition, higher levels

of child competence (e.g., friendly, achievement oriented, cooperative) have been shown to be associated with moderate levels of responsiveness (e.g., encouragement of emotional expression) by their parents (Roberts & Strayer, 1987). However, the research described above included only rejected and popular children, and thus its application to neglected children needs clarification.

MacDonald (1987) included all three groups of children (i.e., neglected, popular, and rejected) and found significant differences between groups in their amount of physical play with parents and their regulation of stimulation. Specifically, fathers of neglected boys engaged in less affectively arousing physical play than the fathers of popular and rejected boys. In addition, neglected children were less likely to approach stimulation (e.g., initiate or intensify physical play with father) and more likely to avoid stimulation (e.g., terminate physical play with father or lower its intensity) than popular children. The lack of significant differences across groups concerning physical play with mothers may be due to the relative infrequency of physical play between mothers and their children.

With reference to parental directiveness, parents who control play interactions with coercive strategies (e.g., directives) and are demanding and disagreeable tend to have children who are less assertive, are more self-focused (e.g., make frequent "me" and "strong demand" statements) in their interaction with peers, and score lower on measures of peer competence, acceptance, and school adjustment (Burks, Carson, & Parke, 1987; Putallaz, 1987). A similar study, more specific to anxiety (Krohne & Hock, 1991), demonstrated that mothers of high-anxious girls in contrast to mothers of low-anxious girls were more likely to intervene competitively in the child's problem solving during a puzzle task (e.g., child working on puzzle alone followed by both the mother and child working), less inclined to wait for child initiations to solve the task, and more likely to keep control over the task (e.g., mother working on puzzle alone followed by both the mother and child working). These results were not found for boys. Finally, parents who play with their children for longer durations (i.e., sustained play interaction) during observed play sessions tend to have children who are more popular with their peers (Barth & Parke, 1993; Burks et al., 1987).

Child Discipline. Another important facet of parent-child interaction is discipline. Brody and Shaffer (1982)

have discussed three general categories of parental discipline: (a) induction, (b) power assertion, and (c) love withdrawal. Inductive discipline involves introducing claims and supplying rationales to support these claims (e.g., "You shouldn't call Johnny names because it hurts his feelings," "Kids like to play with other kids who aren't mean"). Power assertive disciplinary styles (e.g., physical punishment, threats), on the other hand, focus on getting the child to comply with little concern for relationship or psychological consequences. Finally, love withdrawal discipline includes the use of negative techniques that threaten the love received from the parent (e.g., ridicule, expression of disappointment, isolation of child from parent).

Much of the child-rearing research employs parent interviews to collect information on disciplinary style, and sociometric or observational measures to assess children's level of social competence. Inductive and power assertive disciplinary styles are the ones typically studied. Results indicate that inductive disciplinary styles are related to prosocial behavior and popular peer status (Hart, Ladd, & Burleson, 1990; Zahn-Waxler et al., 1979), while power assertive styles are associated with aggressive behavior and rejected peer status (Becker, 1964; Dishion, 1990; Hart et al., 1990; Hoffman, 1960; Zahn-Waxler et al., 1979).

Initial findings suggest that the love withdrawal style might be related to neurotic, inhibited behaviors (Simonds & Simonds, 1981), although there is a paucity of research on this topic. Interestingly, the behaviors delineated as "love withdrawal" are strikingly similar to the parent statements described as guilt engendering, shaming, and evaluative by adults who are shy, introverted, or socially phobic. Compared to control group reports on the PBI, introverted adults perceived more shaming and guilt induction, while less introverted adults perceived their parents as more tolerant (Stravynski et al., 1989). As assessed by the Parent Attitudes Toward Child-Rearing scale (Bruch, Heimberg, Berger, & Collins, 1989), adult persons with social phobia as compared to nondisordered individuals reported that during childhood their parents criticized them for not overcoming their fears, for embarrassing the family, and for not talking to others. They also indicated parental use of shame as a means of discipline (Bruch & Heimberg, 1994; Weilage, Beyer, & Hope, 1994). Disciplinary behaviors labeled as critical, shaming, and guilt inducing should be investi-

gated further due to these preliminary findings suggesting that parental behaviors of this type may be related to socially anxious behavior in children. Based on the literature reviewed thus far, direct interaction (e.g., play interaction, discipline) between parents and their children seems to be one means by which parents influence children's social behavior. In addition to parent-child interactions, parents may also affect children's social interactions via manipulation of the social environment.

Parent as a Facilitator of Social Interaction

Parental Control of the Social Context. Children from infancy to around age 6 depend on their parents for establishing opportunities for social interactions. Consequently, the social behavior of children can be influenced by parental behaviors that manipulate their children's social environment (e.g., create occasions for socialization with others; Bhavnagri & Parke, 1991; Ladd & Golter, 1988; Parke & Bhavnagri, 1989; Rubin & Sloman, 1984). Parental self-report of their own dependable friends (e.g., friends that are seen regularly and could be called in a crisis) and affiliation with formal organizations is related positively to their children's self-rated happiness, friendship network (e.g., number of playmates, quality of after-school activities), school adjustment (e.g., liking for school, interest in schoolwork), and level of social skills (e.g., maternal ratings of how considerate the child was and child's ability to get along with others; Homel, Burns, & Goodnow, 1987). Moreover, in a study conducted by Ladd and Golter (1988) with preschool and kindergarten children, parents who reported initiating a higher proportion of peer contacts tended to have children who possessed a larger number of different play partners and more consistent companions in nonschool settings.

Alternately, parents' social networks may be restricted due to their own anxiety in social situations, resulting in negative consequences for their children. Persons diagnosed with social phobia or APD as compared to nondisordered controls reported avoidance of social situations and less socialization by their parents. They also describe their parents as discouraging socialization within and beyond the family and seeking to isolate them (Arbel & Stravynski, 1991; Bruch & Heimberg, 1994; Bruch et al., 1989; Weilage et al., 1994). In addition to parental influence on children's social interaction by facilitating peer

contacts, parents also contribute to children's social behavior via advice concerning how to behave during social interactions.

Parental Supervision of Children's Peer Interactions: Parental Advice. Playground observations have shown that popular children are often successful in achieving entry into groups (i.e., ignored less and accepted more), which may be partly attributed to their "group-oriented" entry strategies (e.g., integrate into ongoing group activity; Putallaz & Wasserman, 1989). On the other hand, the passive entry attempts (e.g., hovering behavior, silently approaching and observing the group) often used by neglected children are usually ignored by group members, and thus they are frequently unsuccessful at entering a peer group (Putallaz & Wasserman, 1989). Due to the relevance of entry behavior to peer acceptance, Russell and Finnie (1990) observed mothers giving advice to their children about how to join in the play of two unfamiliar children. Mothers of popular children suggested preparatory instructions that were group oriented (e.g., made suggestions concerning how to integrate into the ongoing activity), whereas mothers of neglected children provided only minimal entry instructions and were more oriented to the play materials than the group (e.g., discussed what the child could do with the blocks). In a related article examining responses by parents and their children to ambiguous situations (e.g., you are approaching a group of children and they begin to laugh loudly), Dadds, Heard, and Rapee (1992) concluded that parents may influence children who are anxious to be more cautious and avoid taking social risks by modeling caution, providing information about risk, expressing doubt about their social competence, and rewarding avoidance behaviors (e.g., expressing agreement and nurturance when the child states that he/she would not attempt group entry). Such parental behavior, noted in both the developmental and clinical literature, might contribute to the passive entry strategies described above.

Parental Monitoring of Ongoing Interaction. Parents may also affect children's social interactions by their facilitation of ongoing peer interactions. For example, maternal requests to share toys with a peer increased sharing among toddlers (Levitt, Weber, Clark, & McDonnell, 1985). Additionally, Bhavnagri and Parke (1985, 1991) observed

dyads of unfamiliar children ages 2–6 playing together with and without parental facilitation. Higher social competence ratings were reported for children under conditions of parental facilitation as compared to when they interacted alone. It should be noted that the impact of parental supervision varied with age. Specifically, younger children (2–3½ years old) were less able to maintain peer interaction without parental assistance than were older children (3½–6 years old).

Critique of Research

There is ample evidence supporting a relation between parental variables and children's social functioning. First, studies discussed suggest that parental behaviors described as low in warmth and high in control may contribute to children's social impairments. In addition, socially anxious behaviors may be associated with parental behaviors that involve using love withdrawal discipline techniques, neglecting to establish and/or monitor peer interaction, providing children with ineffective instructions for social group entry, and discouraging socialization. Overall, however, research documenting the specific, functional parent behaviors contributing to the development of social anxiety is scarce, and other methodological limitations must be considered. The next section will critique the literature reviewed, pointing to four main problems: ambiguous and global constructs, limited assessment methodology, lack of research integration, and reliance on cognitive interpretations of research findings.

Ambiguous and Global Constructs. The use of ambiguous and global constructs to describe behavior and relations is one obstacle to understanding the learning histories of individuals experiencing difficulties with social relationships. Parental displays of warmth and control have been noted as crucial to quality of later social adjustment across multiple research areas (e.g., attachment, parenting style). Yet, in general, the behaviors specified by the labels "warmth" and "control" remain poorly defined, and numerous other constructs have been grouped under these two umbrella terms. For instance, "control" has been used to refer to hostile strategies, intrusiveness, overprotection, guilt, withdrawal of relations, a high frequency of parental commands, shaming, and not allowing child initiative during play. In their review, Putallaz and Heflin (1990) concluded that "gentle" control is optimal,

but "gentle" is not well defined. Additionally, the terms "indifferent" and "rejection" have been used interchangeably with reference to the care factor discussed in the affectionless control research (e.g., care vs. indifference/rejection). It seems unlikely, however, that "indifferent" behaviors are the same as "rejecting" behaviors or that they would exert equivalent effects on children's behavior. Imprecise language and global labels have limited utility for identifying specific antecedents and consequences of socially anxious behavior and thus impede the discernment of etiological factors. In addition, the development of behavioral interventions is inhibited due to an uncertainty of what parent behaviors to target for modification.

Limited Assessment Methodology. One limitation of existing procedures is the infrequent assessment of neglected children as a pure group. Most studies include only rejected and popular children or create a single "low" status group consisting of both neglected and rejected children. Due to numerous studies documenting distinct behavioral differences and outcomes for neglected and rejected children (see Hymel, Rubin, Rowden, & Lemare, 1990; Kupersmidt & Patterson, 1991; Parker & Asher, 1987), it seems reasonable to conclude that the parenting behaviors associated with each type of status may be different and therefore should be examined separately.

Additionally, most investigations employ only mothers. Research indicates that fathers play an important role in the development of peer competence (Patterson, Kupersmidt, & Griesler, 1990), and that relationships with both mothers and fathers are important for predicting children's later social adaptation (Main & Weston, 1981). In addition, the same infant may have different relationships with each parent (Main & Weston, 1981). Finally, similar behaviors might have different stimulus functions depending on their source (i.e., mother or father) and thus exert diverse effects on children's social behavior. Therefore, a thorough evaluation of the influence of parenting behaviors on children's social behavior must include both mothers and fathers (see Phares, 1996, for discussion of inclusion of fathers in research).

Another methodologic limitation is that the behaviors of both the parent and child are typically assessed only one time during the course of a study. One assessment may not provide ample opportunity to identify the controlling

external contingencies of behavior. In fact, several sessions of behavioral observation may be required to obtain accurate assessments of functional relations (Patterson, 1982). Last, information pertaining to the effect of children's problem behaviors and parental behaviors on ongoing development or long-term adjustment cannot be obtained without repeated assessment.

Moreover, with some exceptions in the attachment and parent-child play interaction research, verbal report (self- or other report instruments or interviews) is the most widely used assessment measure, and it is often collected retrospectively (Putallaz & Heflin, 1990). Data obtained solely by retrospective self-report may be unreliable due to the desire to appear socially appropriate, the need to describe parents in a "bad light" to provide a "reason" for psychological problems, difficulty remembering events, use of subjective descriptive terms, and erroneous speculations regarding the controlling contingencies of behavior (Maccoby & Martin, 1983; Putallaz & Heflin, 1990). The use of physiological recording of somatic responses, cognitive assessment, and direct observation of behavior is limited.

When observational data are collected, they typically provide gross descriptive information (e.g., frequency counts of behavior) and are based on the use of categorical, structural behavioral coding systems (e.g., control, verbal interchange, ratings of positive affect; Putallaz & Heflin, 1990). Consequently, interactional patterns or functional relations between parent and child behaviors cannot be elucidated (Eckerman & Stein, 1983; Hartup, 1979; Patterson & Reid, 1984; Putallaz & Heflin, 1990). That is, coding behavior only on the basis of its topography and in isolation of behaviors exhibited by other individuals prevents the specification of antecedents and consequences of behavior, and thus the control of behavior. For instance, questions pertaining to how relations between a mother's controlling behaviors and a child's submissive behaviors are maintained would be difficult to answer using gross observational data analyzed separately for each individual (e.g., observer ratings of mother's degree of control). In addition, it is likely that parental responses to children are partly shaped by children's early behavior patterns (e.g., parents of children who readily display fear responses to novel stimuli may be less likely to introduce such stimuli to their children). Thus, this methodological limitation is particularly problematic for the

study of social behavior since it is primarily concerned with the relation of an individual's behaviors to his or her social environment.

Lack of Integrative Research. The lack of integrative research across psychological fields has led to the parallel development of related bodies of literature. This has resulted in an array of diverse constructs, which further promotes separatism, and creates confusion concerning the characteristics of the populations being studied. For example, does someone who is identified by peers as neglected via sociometric nominations also display physiological arousal in social situations, and why? Ambiguity regarding the similarities and differences across groups hinders the identification of potentially common etiological factors and subsequent prevention efforts.

Another ramification of isolated research is the exclusion of significant factors. Children with social difficulties are often classified by measures and criteria specific to a particular field, thereby potentially neglecting other important symptomatology or impairments. For example, in the developmental literature, evaluations conducted with neglected and withdrawn children frequently incorporate behavioral observation, but often omit the assessment of cognitive and physiological symptomatology. Because social anxiety may consist of behavioral changes in more than one of these "modes" (e.g., cognitive, physiological, overt behavior), evaluation of all systems of behavior is necessary for an assessment to be complete. A thorough assessment of specific problem behaviors and their relation to each other and to environmental variables (e.g., environmental antecedents and consequences) is essential for developing appropriate, effective treatments (Scotti, Evans, Meyer, & DiBenedetto, 1991). For instance, suppose an individual was exhibiting insufficient social skills (e.g., no eye contact) and high physiological arousal (e.g., increased heart rate) when on the school playground and only the latter behaviors were assessed. Based on this evaluation, treatment may include relaxation to decrease the physiological arousal. Yet, it is likely that the individual would still demonstrate social difficulties due to the display of inadequate skills.

Moreover, clinical treatment studies typically adhere to the criteria specified in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; hereinafter *DSM-IV*; American Psychological Association, 1994), and include only

those children who meet criteria for a diagnosable anxiety disorder (e.g., Dadds et al., 1992). It is likely that there are other children (e.g., shy children) exhibiting socially anxious behaviors and social impairment who are not "diagnosable" (i.e., subclinical population), but could benefit from therapeutic intervention. However, due to an adherence to clinical measures (e.g., diagnostic interviews) and requirements (*DSM-IV* criteria), these children are typically excluded from treatment outcome studies.

Cognitive Interpretations of Research Findings. A final obstacle to advancement in etiological research is the reliance on cognitive interpretations to explain parental influence on children's social interactions. The two most prominent and influential social-cognitive theories are attachment theory (Bowlby, 1973) and social learning theory (Bandura, 1977). One common feature of these models is that parental influence on children's social behaviors is at least partly explained via the development of cognitive structures or internal representations that direct children's interactions with peers. Although it is postulated that cognitive variables originally arise from environmental events, the proximal cause of behavior is assigned to cognitions (Lee, 1992). Consequently, cognitive structures are assigned a role similar to that of traits in personality theories: Mental representations developed via parent-child interaction are something an individual has that controls his or her behaviors in all other social interactions.

Conceptual models of this type have led to some productive research and are responsible for most of the existing data on parental behavior. However, the assertion that internal variables control social behavior across situations makes conducting studies to identify controlling, contextual variables in different situations less important (Lee, 1992). In fact, researchers are calling for more extensive investigations of internal variables (e.g., parental beliefs and attributions; Ladd & Price, 1986; Mills & Rubin, 1990; Putallaz, Costanzo, & Smith, 1991; Rubin, Mills, & Rose-Krasnor, 1989). This is particularly problematic because studies of this type may not be optimal for preventing and/or altering anxious behavior; they may ignore important historical and current environmental antecedents that could be manipulated to modify socially anxious behavior.

FUTURE RESEARCH DIRECTIONS

Research advancement in this area has been impeded by the separateness of large portions of corresponding literatures, as well as by poorly defined constructs and an increasing focus on cognitive variables. Integration and collaboration across psychological fields, and research with more precise definitions of behavior and an emphasis on environmental variables are essential to the advancement of etiological research in the area of social anxiety.

Clarification of the Relation Between Psychological Constructs

The first step in improving the current body of literature is to clearly specify the subject matter being studied. That is, all constructs (e.g., anxiety, shyness) must be defined behaviorally, with an emphasis on identifying the cognitions, physiology, and overt behavior of children with different psychological labels (e.g., neglected, shy). This will require collaborative investigations using assessment techniques from different psychological specialties (e.g., sociometric nominations, diagnostic interviews, direct observation, physiological recording devices). To illustrate, in a study by Stefanek, Ollendick, Baldock, Francis, and Yaeger (1987), self-statements of withdrawn, aggressive, and popular children (classified by sociometric ratings) were examined in situations involving the initiation of interactions and the resolution of conflict. Results revealed that popular children made more facilitating than inhibiting statements than aggressive or withdrawn children. Future studies of this type might also incorporate diagnostic interviews to determine if these children warrant *DSM-IV* diagnoses, as well as include children diagnosed with social phobia to compare behaviors across groups. Conducting research in this manner may elucidate the behavioral constellations described by the different terms used within and across psychological specialties, which, based on the findings, may facilitate the collaboration of research in this area.

Another important multispecialty investigation would be to conduct longitudinal studies to examine the developmental progression of social relationships from infancy to adolescence. For example, is behavioral inhibition and/or insecure attachment a precursor to social phobia in childhood or adolescence? Such an investigation would require a very large initial sample size to account for attrition over the years. Although obtaining the necessary sample size may be quite difficult for a single researcher, collaboration among researchers at multiple sites would

make the project more feasible. Initial phases of the project would involve conducting laboratory- and/or home-based observation of infant behavior and parent-infant interaction in order to provide classifications of temperament and attachment. Beginning in toddlerhood, parent-report measures such as the Child Behavior Checklist may be administered annually through adolescence to track internalizing and externalizing symptomatology. Once the children begin preschool, semiannual observations of peer interaction may be obtained to assess social withdrawal, while sociometric data may be obtained to assess social status in the peer group. Self-report measures, such as the Social Phobia and Anxiety Inventory for Children (Beidel, Turner, & Morris, 1995), may also be administered annually after children develop sufficient reading skills (recommended age of 8 years or older). As the peak age of onset for social phobia is in early adolescence, the course of the project should span approximately 15 years. Several research groups have addressed components of this developmental process (e.g., Asendorpf, 1991; Calkins & Fox, 1992; Kagan, Snidman, & Arcus, 1993; Rubin, Hymel, & Mills, 1989); however, measures of inhibition in infancy and early childhood have yet to be related to adolescent diagnostic status.

Specification of Parental Behaviors Associated With Social Anxiety

As is obvious from the literature reviewed, little is known about the parent-child interactions that influence the development of social anxiety. Therefore, we suggest conducting additional studies that employ direct observations of parent-child interactions in a variety of settings and situations. When performing this type of study, the first step is to decide whose interactions to examine. Samples may be drawn such that the primary selection criteria focus on children who are socially anxious or, conversely, children of parents who are socially anxious. For example, as part of a multicomponent longitudinal study being conducted by the second author, the interactions of socially anxious children and their mothers are being observed, while another study conducted by Beidel and Turner (1997) has observed the children of adult individuals diagnosed with anxiety disorders. Other investigations, as elucidated earlier, might target children who are temperamentally inhibited or who display insecure maternal-child attachment. The group of children chosen for observation, however, depends on the research questions being stud-

ied. Every effort should be made to include both mothers and fathers in observational assessments, as socialization behaviors may be related to parent gender.

Second, observations should be conducted in both laboratory and naturalistic settings. Spaulding and Morris (1997) have collected preliminary data on mother-child interactions of socially anxious and nonanxious children (classified by scores on the Social Phobia and Anxiety Inventory for Children) while engaging in a challenging block task. Although studies of this type are important in elucidating parent-child interactions, it also may be necessary to develop more socially relevant tasks to be performed in the laboratory. For example, the literature described earlier on parental monitoring of peer interaction and parental advice regarding group entry suggests that these may be important situations to simulate in a laboratory setting. The experimenter could either simply observe the parent-child interactions or actively manipulate parental behaviors (e.g., vary suggestions for peer entry) and then observe the effect on children's social behavior in these situations. Parents could be directed to perform various behaviors (e.g., tell the child to approach the group) by using a "bug in the ear" procedure similar to the one being used in parent-training programs (Hembree-Kigin & McNeil, 1995).

Parent-child interactions should also be examined in the home environment. For instance, as part of the second author's ongoing longitudinal study, home observations of parent-child interactions with socially anxious and non-anxious children are being conducted. Coded interaction behaviors (e.g., question, doubt, control) are being analyzed across groups to investigate potential differences in the frequencies of these behaviors. Sequential analyses will be conducted to identify bidirectional influences and contingent associations.

Other issues that arise when conducting observational research are determining what behaviors to examine and what behavioral coding system to implement. First, parental behaviors considered to be influential need to be defined more clearly than they have been in previous research. Operational definitions specifying molecular behaviors (e.g., the mother praised the child's behavior) should replace the use of global, observer ratings to define constructs (e.g., ratings of parental warmth on a 5-point scale). For instance, future observational research might behaviorally define parental verbal and nonverbal behaviors labeled as positive, negative, excessive care,

affectionless control, overprotection, warmth, control, love withdrawal, and guilt inducing. This might be accomplished using a system such as the Family Interaction Coding System (Reid, 1978) or the Family Anxiety Coding Schedule (Dadds, Ryan, Barrett, & Rapee, 1995) that codes behaviors, for example, as attention, threat/social, ignore, and approval. Such procedures may decrease the number of poorly defined terms and facilitate obtaining more valuable behavioral information to be used in identifying environment-behavior relations.

The relation of behavior to the environment (e.g., function of behavior) must also be revealed. Thus, behavioral observations need to be not only molecular, but also coded sequentially (e.g., child cries, mother touches child, child stops crying) in relation to other behaviors and contextual events. The use of the response or operant class (i.e., group of behaviors that covary due to similar function) as the unit of analysis provides a way to combine observational data based on the function of behavior instead of its structure. Behaviors in the same response class may be topographically dissimilar, but they all result in similar environmental consequences. For example, a parent smiling, patting a child on the back, or stating that playing together is fun, are all structurally different behaviors that may share a common consequence (e.g., the child approaches the parent). Organizing and analyzing behavioral data according to function (what it does) as compared to structure (what it is) is more useful in answering questions related to the effects of parental behavior on children and vice versa. As indicated earlier, response classes could be analyzed in the context of ongoing interaction via sequential analysis of data (see Gottman, 1987; Patterson, 1982; Patterson & Reid, 1984) in order to specify the maintaining variables of behavior. This approach will allow us to understand both child and parent behaviors in terms of their functional relation to each other, as well as to additional environmental events (Patterson & Reid, 1984).

Using this type of methodology, the influence of the child's behaviors on the parent's behavior should also be included in observational investigations. For example, a mother may be less likely to encourage a child to approach a group if she knows that this will lead to the child crying. Whether or not the warm parent behaviors displayed in parent-child interaction studies are contingent on child behavior has not yet been empirically determined. This behavior-environment relation is important to examine

considering the finding that, in nonhuman primates, long-term exposure to contingent (controllable) reinforcement (i.e., appetitive stimulation), starting at approximately 2 months of age, increased exploratory reactions in novel environments and reduced fear reactions to moderately fear-provoking situations (Mineka, Gunnar, & Champoux, 1986). Moreover, some preliminary research has noted a possible relation between anxiety and inconsistent parent responses involving fluctuating contingencies (e.g., same behavior sometimes reinforced and sometimes punished) and lack of "say-do" correspondence (e.g., "my mother promises me a reward and then later forgets it"; Kohlmann, Schumacher, & Streit, 1988). Additional investigations exploring the effect of inconsistent parent behaviors on children are needed.

Further specification of the emotional expression and/or response to emotion by parents with socially anxious children also would be beneficial. This is an important area to study due to the large role that positive emotional expression, control of negative emotion, and ability to recognize and respond to emotional behavior play in the proficiency of social skills. Additionally, as indicated by previous researchers (Gerwitz, 1972; Gerwitz & Pelaez-Nogueras, 1992; Thompson & Limber, 1990), environmental stimuli such as a parent's emotional behavior (e.g., fearful expression in the presence of an unfamiliar individual) may set the occasion for socially anxious responses. Thus, the environmental factors that lead to the establishment of certain parental behaviors as discriminative stimuli for anxious responses should be investigated in order to be able to prevent these type of relations from being established.

In addition, because acquisition of fear via language or information giving has been noted (Ost, 1985; Rachman, 1977), additional controlling variables may be revealed by conducting more fine-grained analyses of the content (e.g., coding of exact parent statement vs. parent expresses encouragement) and function (e.g., the effect of parental statement on child's behavior) of parental verbal behavior. Future studies might investigate whether adding words (e.g., speech) to a stimulus class (e.g., conversation, school, parties) with fear-provoking functions will produce anxious responses to new words as well as modify performance in corresponding behavioral tasks (e.g., giving a speech) that were not initially fear provoking. Other investigations could manipulate parental rules (e.g., vary their content)

to their children before different behavioral tasks (e.g., joining group, giving speech, maintaining a conversation) and observe the effects on children's performance.

Based on the literature indicating that parental skills (e.g., advice, ability to initiate social contacts) may affect the quality of children's social relationships, it is important to conduct assessments of parental symptomatology. Parents of socially anxious children also may display social skills deficits and avoid social situations. Few studies have investigated the social skills or prevalence of social anxiety in parents of children who are neglected or socially anxious. This is an essential area to study since the social ability of parents may affect the frequency of social contacts and the quality of social advice and monitoring of interactions. Some of these questions may be answered by performing diagnostic interviews with parents, having parents self-monitor the frequency of attempts to establish play dates and other social contacts, conducting direct observations of parental skills in simulated social situations, and collecting parents' verbal reports of the obstacles faced in facilitating the socialization of their children. Parents also can monitor the level of their anxiety symptoms when having to engage in social situations with their children.

Intervention With Family and Peer Systems

In addition to research on etiological processes, there is a need for research on the implementation of educational and skills training programs for children and their families, that focus on the enhancement and modification of parent-child interaction (e.g., the use of effective discipline, how to be a facilitator of social interaction for your child) and provide education to parents on how their behaviors may affect their children's behavior (e.g., explain modeling, operant conditioning). These programs could be evaluated through the use of sociometric interviews, self-reports of teachers, children, and parents, and direct observations of parent-child and peer interactions.

Social Effectiveness Therapy for Children (SET-C; Beidel, Turner, & Morris, 1994) is a multicomponent behavioral treatment program for children with social phobia that incorporates family and peer systems. The components of SET-C include parent education, social skills training, peer generalization experiences, graduated in vivo exposure, and programmed practice. An NIMH-funded investigation of the efficacy of SET-C is in

progress, and initial results are quite promising (Beidel, Turner, & Morris, 1997). Another treatment program, Family Anxiety Management (FAM), focuses on parental management of child anxiety (see Dadds et al., 1992, for a full description). Although FAM was not designed specifically for the treatment of social anxiety, preliminary results for children with various anxiety disorders have been promising. Of the seven children who received FAM, five of them no longer met criteria for an anxiety disorder, while all seven children in the wait-list condition still had a diagnosable anxiety disorder (Dadds et al., 1992). Further research also should be conducted comparing the efficacy of providing an intervention to children only versus to children and their parents. Outcome variables could include maintenance of treatment gains, frequency of social contacts, and improvements in the quality of social skills.

Finally, in the future, the interventions discussed here should be conducted with clinical and nonclinical populations (i.e., children who are exhibiting socially anxious behaviors, but do not meet the full criteria for a *DSM-IV* diagnosis). Children who display impairment in their social functioning, but are not "diagnosable" (i.e., sub-clinical population), would likely benefit from therapeutic intervention. In fact, individuals with social phobia and APD often describe their social anxiety and isolation as lifelong and persistent (Arbel & Stravynski, 1991; Scholing & Emmelkamp, 1990). Treating children when they first begin to exhibit socially anxious behaviors may prevent the occurrence of more severe symptomatology and long-term consequences (e.g., lack of career advancement). Morris, Messer, and Gross (1995), for instance, have reported initial results demonstrating improvement in both the positive interaction rate and sociometric status of neglected children following an intervention consisting of increased social interaction with popular children.

In conclusion, this article calls for future investigations that are integrated and employ multimodal, multimethod assessments, delineating precise behaviors to replace the use of vague constructs, and specifying the environmental contingencies contributing to the development and maintenance of socially anxious behaviors. It is expected that research of this type will facilitate the identification of controlling parent-child interactions and other important contextual variables, and thus lead to the development of effective prevention and intervention programs.

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