# 17

# *Social Withdrawal and Shyness*

**Kenneth H. Rubin, Kim B. Burgess, and Robert J. Coplan**

> And the Lord God said "It is not good that the man should be alone."
>
> Genesis 2:18

> I live in that solitude which is painful in youth, but delicious in the years of maturity.
>
> Albert Einstein

> There are days when solitude is a heady wine that intoxicates you with freedom, others when it is a bitter tonic, and still others when it is a poison that makes you beat your head against the wall.
>
> Colette, *Earthly Paradise*

For centuries philosophers, writers, artists, and psychologists alike have offered opinions, hypotheses, and data pertaining to the phenomenon of solitude. For many writers, solitude is viewed romantically as a phenomenon that brings safety, quiet, and escape from the "madding crowd." Solitude is viewed as a source of inspiration, as a psychological venue for quiet reflection. For others, however, solitude brings with it loneliness and suffering. In this chapter, we describe the origins, correlates, and consequences of this second vision of solitude – that which brings wariness in social company, fear of rejection, victimization, and loneliness. Thus, our focus is on the topic of *social withdrawal*.

For many years, researchers neglected the study of solitude and withdrawal from social company. In part, this neglect stemmed from assumptions that shyness (not withdrawal) was neither an accompaniment of maladaptation nor a predictor of subsequent psychological difficulty. In the past 20 years, however, a burgeoning literature has accumulated on the topic. The phenomenon has undergone definitional scrutiny, developmental examination, and theory generation.

## Defining Social Withdrawal

Prior to the contemporary research and thinking of the past decade, researchers and clinical psychologists were habitually using the following terms interchangeably: *social withdrawal (passive or solitary-passive)*, *isolation*, *shyness*, and *inhibition*. In an edited volume, Rubin and Asendorpf (1993) attempted to bring order to the perceived chaos endemic in the study of children's solitary behavior and solitude. In their leadoff chapter, they defined *inhibition* as the disposition to be wary and fearful when encountering *novel* (unfamiliar) situations. *Fearful shyness* refers to inhibition in response to novel social situations; in middle childhood, *self-conscious shyness* is reflected by the display of inhibition in response to social-evaluative concerns. Social isolation has little to do with the behavioral expression of wariness; rather the term reflects the experience of solitude that derives from peer rejection, as in being isolated (rejected) by the peer group. Finally, *social withdrawal* refers to *the consistent (across situations and over time) display of all forms of solitary behavior when encountering familiar and/or unfamiliar peers*. Simply put, social withdrawal is construed as isolating oneself from the peer group.

Unfortunately, the two constructs of passive withdrawal and solitary-passive withdrawal have created an understandable confusion in the literature. *Passive withdrawal* refers to the child's withdrawal *from* the peer group. Typically, this construct is drawn from rating scale data (e.g., Revised Class Play, Pupil Evaluation Inventory) and is illustrated by items such as "very shy," "feelings hurt easily," "rather play alone than with others." The passive withdrawal construct may be contrasted with *active isolation*, a term which suggests that the child is actively isolated by the peer group (e.g., "often left out," "can't get others to listen"). *Solitary-passive withdrawal* is ***observed*** solitary behavior that involves exploratory and constructive activity. Since we were responsible for using the term "passive" in several ways, we hereby provide a clarification and offer an apology for any possible confusion. Moreover, we fully recognize that solitary-passive withdrawal is actually not passive at all given that it consists of active exploration and construction.

Reticence is a construct embodied within social withdrawal and should not be confused with the broader construct of social withdrawal. Reticence has been operationalized as the demonstration of solitary, wary behavior. It appears to be a reflection of *shyness* in unfamiliar peer settings and social wariness among familiar peers (Coplan & Rubin, 1998; Coplan, Rubin, Fox, Calkins, & Stewart, 1994; Rubin, 1982a). Behavioral reticence stands in contrast with solitude that reflects social disinterest (e.g., solitary-passive play in *early* childhood) or social immaturity (e.g., solitary-active play in early childhood). Solitary-active play comprises sensorimotor and/or dramatic activity acted out by oneself despite being in social company (Rubin, 1982a). Social withdrawal, on the other hand, is operationalized by *all* forms of solitude across contexts of familiarity and unfamiliarity; thus, reticence and solitary-passive and -active play *together* comprise the "umbrella" construct of social withdrawal.

To this constellation of related constructs, one can now add the clinical terms *social phobia* or *social anxiety disorder*. This phenomenon is marked by a fear of saying or doing things in public that will result in humiliation and embarrassment (Beidel, Turner & Morris, 1999). This latter construct is viewed as a clinical disorder (DSM IV, 1995) and appears to share much in common with social withdrawal at the extreme.

The forms of solitude described above carry with them different psychological meanings. For instance, there may be different motivations underlying the shy or withdrawn behaviors. Children, and adults for that matter, may spend time alone because they choose to do so, even when they are amongst others (e.g., socially disinterested). In this regard they may be said to lack an approach motivation while at the same time not necessarily having the motivation to avoid others (Asendorpf, 1993). In short, when such individuals are approached by others, they do not back away and exhibit wariness and social anxiety. Instead, they welcome the approach and thereafter make the choice to continue interacting or to return to that which occupied their solitary pursuits.

Other individuals may have conflicting motivations; that is, they may be motivated to approach others whilst at the same time feel the need to avoid those in their social milieu (e.g., socially wary; Rubin & Asendorpf, 1993). For some individuals, this approach–avoidance conflict is demonstrated mainly when in the company of unfamiliar others; for others, the motivational conflict exists across time and venue, including with familiar others. Lastly, some individuals may have a high approach motive and low avoidance motive, but for one reason or another they are rejected, and thus isolated by those in their social community of peers (Rubin, LeMare, & Lollis, 1990). In short, there are various reasons for the behavioral expression of solitude or social withdrawal.

Keeping in mind the psychological meanings and definitional issues, we now elaborate and explain why social withdrawal may bring social costs and angst rather than the pleasures to which the above quotes refer.

## The Developmental Significance of Solitude and Social Withdrawal

### *Theories pertaining to social interaction*

*Piaget.* Early developmental research on social withdrawal had, as its theoretical origins, the writings of Piaget and Mead about the significance of social interaction for normal development. Piaget (1932), for example, posited that peer interaction provided a unique cognitive and social-cognitive growth context for children. He focused specifically on the relevance of disagreements with age-mates and the opportunities for negotiation arising from disagreements. These naturally occurring differences of opinion were assumed to engender cognitive conflict that required both intra- and interpersonal resolution in order for positive peer exchanges and experiences to occur. The resolution of interpersonal disputes was thought to result in a better understanding of others' thoughts and emotions, the broadening of one's social repertoire with which to solve interpersonal disputes and misunderstandings, and the comprehension of cause–effect relations in social interaction.

Support for these Piagetian notions derived from research demonstrating that peer exchange, conversations, and interactions produced intrapersonal cognitive conflict and a subsequent decline in egocentric thinking (e.g., Damon & Killen, 1982). Evidence was also offered for the associations between the *inability* to perspective-take and the demonstration of *maladaptive* social behavior (e.g., Crick & Dodge, 1994). Finally, researchers found that perspective-taking skills could be improved through peer interactive

experiences, particularly those experiences that involved role-play. In turn, such improvement led to increases in prosocial behavior and to decreases in aggressive behavior (e.g., Selman & Schultz, 1990).

*Mead.* Like Piaget, Mead (1934) emphasized the importance of the development of perspective-taking (and the corresponding decline of egocentrism) through peer interaction. In his theory of symbolic interactionism, Mead suggested that the ability to reflect on the self developed gradually over the early years of life, primarily as a function of peer interaction experiences. Participation in rule-governed games and activities with peers was believed to help children understand and coordinate the perspectives of others in relation to the self. Thus, perspective-taking experiences led to the conceptualization of the "generalized other" or the organized perspective of the social group, which in turn led to the emergence of an organized sense of self.

*Summary.* Early developmental theories and the data supportive of them (see Rubin, Bukowski, & Parker, 1998 for a review) allow the conclusion that peer interaction influences the development of social cognition and, ultimately, the expression of competent social behavior. Peer interaction also influences children's understanding of the rules and norms of their peer subcultures. It is this understanding of normative performance levels that engenders in the child an ability to evaluate her/his own competency against the perceived standards of the peer group.

If peer interaction does lead to the development of social competencies and the understanding of the self in relation to others, it seems reasonable to think about the developmental consequences for those children who, for whatever reason, refrain from engaging in social interaction and avoid the company of their peers. It is this reasonable thought that "drives" much of the current research on social withdrawal.

## Developmental Origins of Social Withdrawal

### *Biology and behavioral inhibition*

Where might social withdrawal come from? One line of thinking is that it derives from a *biological disposition* to be emotionally primed to react to novelty with wariness and fear. Drawing from the writings of Rothbart and Derryberry (1981), it has been suggested that *temperament*, or the degree to which individuals vary with regard to reactivity, frequency, intensity, and latency of response in the expression of emotions, may play a significant role in the early demonstration of *behavioral inhibition*. Supporting this premise, Kagan and Fox (e.g., Calkins, Fox, & Marshall, 1996; Kagan, Snidman, & Arcus, 1998) have identified groups of infants who display a high degree of reactivity and who are likely to express this reactivity via singular discrete emotions. Kagan and colleagues identified infants who exhibited not only a high degree of motor reactivity, but also cried when presented with novel visual and auditory stimuli. Calkins et al. (1996) singled out infants who were both highly reactive to novelty and expressed this reactivity via a high frequency of negative

affect and distress. In both instances, these infants displayed more fearfulness and behavioral inhibition as toddlers than did other children (Calkins et al., 1996).

Following from this research, it has been argued that behavioral inhibition emanates from a physiological "hard wiring" that evokes caution, wariness, and timidity in unfamiliar social and nonsocial situations (Kagan, 1997). Inhibited infants and toddlers differ from their uninhibited counterparts in ways that imply variability in the threshold of excitability of the amygdala and its projections to the cortex, hypothalamus, sympathetic nervous system, corpus striatum, and central gray (Calkins et al., 1996). Stable patterns of right frontal EEG asymmetries in infancy predict temperamental fearfulness and behavioral inhibition in early childhood. Fox and colleagues (Fox & Calkins, 1993) recorded brain electrical activity of children at ages 9, 14, and 24 months and found that infants who displayed a pattern of stable right frontal EEG asymmetry across this 15-month period were more fearful, anxious, compliant, and behaviorally inhibited as toddlers than were other infants. The findings suggest that unique patterns of anterior brain electrical activity may be involved in the expression of fear and anxiety (Schmidt, 1999) and may reflect a particular underlying temperamental type. Indeed, a profile of asymmetric resting right frontal EEG activity has consistently been associated with social fear, withdrawal, and anxiety in both adults and young children; on the other hand, left frontal EEG activity has been associated with sociability and approach (Schmidt & Schulkin, 1999).

Another physiological entity that distinguishes wary from nonwary infants/toddlers is vagal tone, an index of the functional status or efficiency of the nervous system (Porges & Byrne, 1992), marking both general reactivity and the ability to regulate one's level of arousal. Reliable associations have been found between vagal tone and inhibition in infants and toddlers (Andersson, Bohlin, & Hagekull, 1999; Garcia Coll, Kagan, & Reznick, 1984): children with lower vagal tone (consistently high heart rate due to less parasympathetic influence) tend to be more behaviorally inhibited.

Lastly, the hypothalamic–pituitary–adrenocortical (HPA) axis is affected largely by stressful or aversive situations that involve novelty, uncertainty, and/or negative emotions (Levine, 1993); and behaviorally inhibited infants evidence significant increases in cortisol as a function of exposure to stressful social situations (Spangler & Schieche, 1998). Moreover, socially wary, fearful children have shown elevated home baseline cortisol readings relative to nonwary children, suggesting that they are continually "primed" to react with wariness to novel or unsettling social situations (Schmidt, Fox, & Schulkin, in press).

*Stability of behavioral inhibition.* Those who have argued for a biological cause of behavioral inhibition point not only to the physiological concomitants and predictors of the phenomenon, but also to the reasonably consistent finding that wary, fearful behavior is stable. Kagan and colleagues have suggested that *extremely* inhibited toddlers may be characterized as inhibited with adults and peers in later childhood (Kagan, 1989; Kagan, Reznick, & Snidman, 1987, 1989; Reznick et al., 1986); and have shown that toddlers identified as extremely inhibited are likely to be similarly identified five years later (Kagan et al., 1988). Others have shown that behavioral inhibition, from early through late childhood and adolescence is stable, but only moderately so (Broberg, 1993; Hart, Hofman, Edelstein, & Keller, 1997; Rubin, Burgess, & Hastings, in press; Rubin, Nelson, Hastings, & Asendorpf, 1999; Sanson, Pedlow, Cann, Prior, & Oberklaid, 1996).

Given the modest stability of behavioral inhibition, it seems reasonable to argue that it is hardly immutable. Therefore, the interplay of endogenous, socialization, and early relationship factors might be responsible for the development, maintenance, and dissolution of inhibition and its putatively negative consequences.

### *Attachment relationships and behavioral inhibition*

According to attachment theorists, children develop an internalized model of the self in relation to others from the quality of their early parenting experiences (Bowlby, 1973). In the case of a secure parent–child relationship, the internal working model allows the child to feel confident and self-assured when introduced to novel settings. This sense of "felt security" fosters the child's active exploration of the social environment (Sroufe, 1983). *Exploration* of the social milieu allows the child to answer such *other-directed* questions as "What are the properties of this other person?", "What is she/he like?", "What can and does she/he do?" (Rubin, Fein, & Vandenberg, 1983). Once these exploratory questions are answered, the child can address self-directed questions such as "What can I do with this person?" Thus, *felt security* is viewed as a central construct in socioemotional development: it enhances social exploration, which results in interactive peer play. Peer play, in turn, plays a significant role in the development of social competence (Rubin & Rose-Krasnor, 1992).

Not all children are fortunate enough to develop internal working models of security. Approximately one third of all children develops insecure internal working models of social relationships and come to view the world as unpredictable, comfortless, and unresponsive (Sroufe, 1983). That subgroup of insecurely attached young children who refrain from exploring their social environments have typically been classified as *anxious-resistant* or "C" babies. In novel settings these infants maintain close proximity to the attachment figure; and when the attachment figure (usually the mother) leaves the paradigmatic "Strange Situation" for a short period of time, "C" babies become disturbingly unsettled. Upon reunion with the attachment figure, these infants show ambivalence – angry, resistant behaviors interspersed with proximity, contact-seeking behaviors (e.g., Greenspan & Lieberman, 1988).

Direct evidence for a predictive relation between infant temperament and insecure "C" attachment status derives from several sources. Infants who are dispositionally reactive to mildly stressful, novel social events are more likely to be classified as insecurely attached "C" (anxious-resistant) babies than their less reactive counterparts (Calkins & Fox, 1992). Spangler and Schieche (1998) reported that of 16 "C" babies they identified, 15 were rated by mothers as behaviorally inhibited.

Although support exists for a direct relation between temperament and insecure attachment, recent research indicates that this association is rather complex. It appears that when behaviorally inhibited toddlers are faced with novelty or social unfamiliarity, they become emotionally dysregulated: it is this dysregulation that seems to lead toddlers to retreat from unfamiliar adults and peers. That these youngsters become unsettled is supported by findings that confrontation with unfamiliarity brings with it increases in hypothalamic–pituitary–adrenocortical (HPA) activity (Spangler & Schieche, 1998). Interestingly, this relation

between confrontation with unfamiliarity and increases in HPA activation has been reported for insecurely attached children in the Strange Situation (e.g., Gunnar, Mangelsdorf, Larson, & Hertsgaard, 1989; Nachmias, Gunnar, Mangelsdorf, Parritz, & Buss, 1996). More to the point, this increased HPA activity is experienced by "C" babies (Spangler & Schieche, 1998).

Taken together, both insecure "C" attachment status and behavioral inhibition might predict the subsequent display of socially reticent and withdrawn behaviors among peers. Empirical support for such conjecture derives from findings that anxious-resistant ("C") infants are more whiny, easily frustrated, and socially inhibited at age 2 than their secure ("B") counterparts (Calkins & Fox, 1992); and they also tend to be rated by their teachers as more dependent, helpless, tense, and fearful (Pastor, 1981). Finally, "C" babies lack confidence and assertiveness at age 4 years (Erickson, Sroufe, & Egeland, 1985); then, at age 7 years they are observed to be socially withdrawn (Renken, Egeland, Marvinney, Sroufe, & Mangelsdorf, 1989).

It might appear that the putative consequences of disposition-based behavioral inhibition and insecure-ambivalent attachment status are identical. Indeed, some have argued that the behavior displayed by "C" babies in the Strange Situation is little more than the expression of inhibited temperament (Kagan, 1998). However, Spangler and Schieche (1998) found that the relation between behavioral inhibition and the increased production of cortisol after being observed in the Strange Situation was significant, but only for infants who had an insecure attachment relationship with their mother; for children with a secure attachment relationship, there appeared to be a buffering effect on felt or experienced stress for behaviorally inhibited babies. These data suggest that the instability of behavioral inhibition from one year to the next may well be a function of the quality of the parent–child relationship.

## *Parenting and behavioral inhibition*

Thus far, we have described factors that may be responsible for the development of behavioral inhibition, and ultimately the demonstration of social withdrawal in childhood – factors such as the child's dispositional characteristics, the quality of the parent–child attachment relationship, and the interaction between dispositional and social relationship factors. Note, however, that an insecure attachment relationship is itself predicted by maternal behavior. For example, mothers of insecurely attached "C" babies are more controlling and overinvolved than are mothers of securely attached babies (Erickson et al., 1985). It is this particular parenting style that is significant in the lives of behaviorally inhibited infants and toddlers.

*Maternal overcontrol and oversolicitousness.* The developmental course of behavioral inhibition is better understood by referring to the quality of parenting associated with it. Given that inhibited children may fail to adequately explore the social and nonsocial environment, it has been suggested that their parents may arrive at the belief that the best (if not only) way to help their children understand their "worlds" is to either manipulate their child's behaviors in a power assertive, highly directive fashion (e.g., telling the child how to

act or what to do) or to intervene and take over for the child the management of his/her interpersonal or impersonal dilemmas (see Burgess, Rubin, Cheah, & Nelson, 2001, for a review). The upside is that the child's difficulties will be solved. The downside is that for socially fearful children, the experience of such parental overcontrol is likely to maintain or exacerbate, rather than ameliorate, their difficulties. Parental overdirection will not allow the child to solve impersonal or interpersonal problems on her/his own. In controlling what their children are exposed to and how such situations are handled, these parents may prevent their children from engaging in necessary, self-initiated coping techniques. Lacking practice in behavioral self-regulation, children who are poor physiological regulators may not learn to overcome their dispositional vulnerabilities. Further, such parenting experiences may prevent the development of a belief system of self-efficacy, and likely will perpetuate feelings of insecurity within and outside the family.

Given the above scenario, is there evidence that intrusively controlling parenting is an accompaniment and/or response to behavioral inhibition? Recent studies have demonstrated that parental influence and control does appear to maintain and exacerbate children's inhibition and social withdrawal. For example, Rubin, Hastings, Stewart, Henderson, and Chen (1997) found that mothers of inhibited toddlers were "oversolicitous"; that is, they were observed to be highly affectionate and shielding of their toddlers when it was neither appropriate nor sensitive to do so. In a recent follow-up of these children, Rubin, Burgess, and Hastings (in press) found that behavioral inhibition at 2 years did predict socially reticent behavior during the preschool years; however, maternal overcontrol was a significant predictor as well. For toddlers whose mothers were highly intrusive, inhibited behavior among peers predicted subsequent reticent behaviors; but for toddlers whose mothers were *not* intrusively controlling, the relation between toddler inhibition and preschool reticence was nonsignificant.

Henderson and Rubin (1997) explored whether emotion regulation, as measured physiologically, interacted with parental behavior to predict preschoolers' socially reticent behavior among preschool peers. These researchers began with the premise that vagal tone, a marker of the tonic level of functioning of the parasympathetic nervous system (Porges & Byrne, 1992), should be associated with the display of social behavior in the peer group. For preschoolers who exhibited low resting vagal tone, observations and maternal reports of highly intrusive and critical behavior with the child were associated with observed child reticent, wary and anxious behaviors among peers; but for preschoolers with high resting vagal tone, such maternal intrusiveness and criticism were not associated with behavioral reticence.

Examining parents' behaviors toward anxious-withdrawn children (ages 2.5 to 6 years), LaFreniere and Dumas (1992) found that mothers were poor reciprocators of their own child's displays of positive behavior and positive affect. In addition, these mothers responded aversively to their child's negative behavior and negative affect. Such noncontingent responding to their children's positive behavior accompanied by punishment of negative behavior could hinder a child's development of self-worth and felt security.

Finally, in a recent examination of reported (rather than observed) parenting styles, Rubin and colleagues found that for both mothers and fathers, perceptions of their toddlers as shy and inhibited at age 2 years were (a) stable to age 4 years, and (b) predicted a lack of parental encouragement of independence at age 4 years (Rubin, Nelson, Hastings,

& Asendorpf, 1999). Parents' expressed lack of encouragement of independence, although stable from 2 to 4 years, failed to predict child shyness at age 4 years. These findings suggest that parents are responsive to child characteristics; and from the longitudinal data described above (Rubin et al., in press), it appears that those inhibited toddlers whose mothers are intrusively controlling and likely to discourage independence would be more likely to continue on a developmental trajectory of social withdrawal than those whose mothers were not inclined toward intrusiveness and overcontrol.

### *From inhibition to reticence and withdrawal*

Investigators have consistently demonstrated that inhibited toddlers are likely to remain inhibited in the early and middle years of childhood (e.g., Broberg, Lamb, & Hwang, 1990; Reznick, Kagan, Snidman, Gersten, Baak, & Rosenberg, 1986). Notably, Kochanska and Radke-Yarrow (1992) reported that social but not nonsocial toddler inhibition predicted shy, inhibited behavior at age 5 years when children played with an unfamiliar peer. Rubin et al. (in press) found that toddlers' inhibited behavior either in the company of an unfamiliar adult or an unfamiliar peer predicted subsequent preschoolers' social reticence. Thus, behaviorally inhibited toddlers are at risk for becoming socially reticent as preschoolers.

Children's shy/reticent behaviors in *unfamiliar* contexts are not strongly predictive of socially withdrawn behaviors of any form in *familiar* contexts (Asendorpf, 1990; Paquette & LaFreniere, 1994). Asendorpf (1994) has argued that the relation between children's social behaviors in familiar and unfamiliar novel settings is mediated by the quality of children's peer relationships and their internalized thoughts about these relationships, a premise that has not been well studied in the literature.

### *Social withdrawal in early childhood*

*Social withdrawal and social skills.* If socially withdrawn children fail to engage in much peer interaction, do they also fail to develop those social and social-cognitive skills that purportedly emanate from such peer experiences? In early research on the construct of social withdrawal, researchers did not distinguish between its various forms. With this understood, it was found that socially withdrawn 4 and 5 year olds differed from their more sociable counterparts in the ways that they *think about* solving interpersonal dilemmas. For example, Rubin and colleagues have reported that when 5 year olds were asked what a cartoon character might do or say to obtain an attractive object from another cartoon character, withdrawn children produced fewer alternative solutions compared to their more sociable age-mates. Moreover, when informed that the strategies suggested would be unsuccessful, withdrawn youngsters displayed more rigidity in generating alternative responses: they were more likely to persevere and repeat the first strategy when compared to their more sociable counterparts. A qualitative analysis of strategies indicated that, compared to more sociable age-mates, withdrawn children were more likely to suggest adult intervention to aid in the solution of hypothetical social problems (Rubin, 1982b; Rubin,

Daniels-Beirness, & Bream, 1984). Consistent with these findings, LeMare and Rubin (1987) reported that social withdrawal in early childhood is associated with deficits in the ability to take the perspectives of others.

Rubin and colleagues (Rubin et al., 1984) have also found that socially withdrawn 4 and 5 year olds have relatively poor interpersonal problem-solving skills when *observed* during peer interaction. These researchers focused on children's social goals, the means by which they attempted to meet these goals, and the success rates of these strategies in relation to the sociability of the child. Their findings revealed that, compared to the more sociable children: (1) The *goals* of socially withdrawn children's requests appeared less "costly"; for example, they were more likely to attempt to request attention from a playmate rather than attempt to obtain an object or elicit active behaviors from their playmates; (2) the *strategies* used by withdrawn children were less assertive and less direct; specifically, the requests of withdrawn children were less likely to be spoken in the imperative; and (3) the *outcomes* of withdrawn preschoolers' requests were more likely to result in failure despite the fact that such overtures were less costly and less direct.

This latter finding pertaining to peer rebuff and nonattainment of social goals is true not only for socially withdrawn children (identified by using *all* forms of solitude) when they are observed with *familiar* peers, but also for reticent children when observed among *unfamiliar* peers (Nelson, 2000). Importantly, this connection between peer rebuff and social withdrawal or reticence alone may be taken as an in vivo assessment of peer rejection. Note that sociometric measures of peer group rejection do not assess the personal experience of felt rejection.

The early experience of social failure as one goes about one's life in the "real world" may well give already fearful and insecure children good reason to further withdraw from their peer milieu. For example, as a result of frequent interpersonal rejection by peers, withdrawn children may begin to attribute their social failures to internal causes: they may come to believe that there is something wrong with themselves rather than attributing their social failures to other people or situations. Supporting these notions, Rubin and Krasnor (1986) found that extremely withdrawn children tended to blame social failure on personal, dispositional characteristics rather than on external events or circumstances. The combination of peer rejection and internal (dispositional) attributions for peer noncompliance could be construed as creating a feedback loop whereby an initially fearful, withdrawn child begins to believe that his/her social failures are personality based, and then these beliefs are reinforced by increasing failure of social initiatives or interactions (Rubin & Stewart, 1996). Ultimately, the consequence of such cognitions may be further withdrawal from the social environment.

### *Social withdrawal during mid-to-late childhood*

In almost all research on social withdrawal in middle childhood, a distinction is not made between reticence and solitary-passive behavior. The rationale for not doing so is drawn from the writings (and findings) of Asendorpf (e.g., 1993) who suggested that the varying types of solitude become "blended" by mid-childhood. Moreover, by middle childhood all types of social withdrawal become highly salient to the peer group (Younger, Gentile, &

Burgess, 1993). As such, the literature reviewed below is drawn from research on the "umbrella" construct of social withdrawal and not its subtypes.

*Self-perceptions and internalizing problems.* Previously, we have argued that the constellation of social withdrawal, social inadequacy, and peer rejection sows the seeds for internalizing problems such as low self-esteem, anxiety, depression, and loneliness (Rubin, 1993; Rubin et al., 1995; Rubin & Burgess, 2001). In fact, investigators have found that beginning in middle childhood, socially withdrawn children have negative self-perceptions of their social competence and interpersonal relationships (e.g., Hymel, Bowker, & Woody, 1993; Rubin, Hymel, & Mills, 1989). In addition to negative self-perceptions, socially withdrawn children actually do experience feelings of anxiety, loneliness, and depressed mood by mid-to-late childhood (e.g., Bell-Dolan, Reaven, & Peterson, 1993; Burgess & Younger, under review; Rubin et al., 1989). Considering the unpleasant nature of their psychological state, it would be useful to explore whether aspects of their peer relationships can exacerbate or ameliorate these negative experiences.

*Peer relationships.* The kinds of relationships that shy/withdrawn children have with peers may have an important bearing on their psychological adjustment and social-behavioral outcomes (Boivin & Hymel, 1997; Burgess, Ladd, Kochenderfer, Lambert, & Birch, 1999; Ladd & Burgess, 1999). Given the theoretical and practical significance of peer interaction for development, *and* the lack of social participation by shy/withdrawn children, one wonders about the nature of their peer relationships. Whereas much knowledge has been gained about socially withdrawn children's adjustment with respect to social and social-cognitive skills, surprisingly little is known about these children's *relationships* with peers during childhood. Yet, withdrawn children's social and psychological adjustment may partly stem from the quality of their experiences in peer relationships.

In the peer relationship literature, the prominent foci of investigators have been *friendship*, *peer acceptance/ rejection*, and *bully–victim relationships* (see Rubin, Bukowski, & Parker, 1998 for an extensive review). Although these three forms of peer relationships bear an empirical connection to each other, they have unique conceptual and operational definitions and represent distinct social experiences for children (Ladd, Kochenderfer, & Coleman, 1997; Vandell & Hembree, 1994). An argument could be made, however, that the construct of peer acceptance/ rejection does not necessarily imply that a "relationship" exists in the same way that friendship and victimization involve dyadic, mutual or reciprocated behaviors, affect, and social processes. The peer acceptance or rejection of withdrawn children is nevertheless considered here because it has typically been considered within the peer relationship domain.

*Peer acceptance/rejection and social withdrawal.* Peer acceptance or rejection refers to evidence of consensual liking or disliking, respectively, by group members for individuals in the peer group (see Asher & Coie, 1990). Consequently, if the peer group rejects a withdrawn child, it could be seen as a unilateral situation (i.e., not a reciprocal event), one in which there is not necessarily a response or effect. There may be negative effects, though, particularly for certain types of withdrawn children as opposed to others; for instance, shy or reticent children whose fear or self-consciousness drives the social decisions they make.

Based on traditional sociometric assessments, which have been utilized in numerous studies, it appears that findings pertaining to the relation between social withdrawal and peer rejection in *early* childhood are equivocal. When preschoolers' solitude was observed in the classroom, Rubin (1982a) found that reticent behavior was not associated with sociometric ratings of acceptance, but solitary-sensorimotor and solitary-dramatic behaviors were negatively associated with sociometric acceptance. In contrast, Hart et al. (2000) reported that preschoolers' reticent behavior assessed via teacher ratings was associated with sociometric peer rejection; but teacher-rated solitary-passive behavior was not. Ladd and Burgess (1999) found that teacher-rated passive withdrawal was not associated with peer rejection from kindergarten to second grade.

Evidence from *observational* studies of small peer-group interaction (Stewart & Rubin, 1995; Rubin & Borwick, 1984; Rubin & Krasnor, 1986) has shown that young withdrawn children's peers are less likely to comply with their requests or reciprocate social initiations than is the case for non-withdrawn children. Thus, peer rejection (observed noncompliance and rebuff) may actually occur in large groups and yet not be captured with general ratings of peer likeability or acceptance. Taken together, it seems that the relation between different forms of solitude and sociometric rejection may vary depending upon whether the data were derived from observed or rated behavior, who assessed the behavior (observers vs. teachers), where the behavior was observed (familiar vs. unfamiliar settings), and whether the sociometric measure was a rating or nomination scale.

With increasing age, the equivocal findings reported above become relatively congruent. Observed and peer-assessed withdrawal becomes strongly associated with sociometric measures of peer rejection or unpopularity by mid-to-late childhood (Boivin, Hymel, & Bukowski, 1995; Rubin, Chen, & Hymel, 1993). These consistent findings may be attributed to the suggestion that social withdrawal becomes increasingly noticeable as children get older. Recognizing that social solitude represents behaviors outside the norm, the peer group begins to view it as deviant (Younger et al., 1993). Also, older children are better able to perceive others' "internally driven" problems, such as anxiety and hypersensitivity, which often accompany social withdrawal. Moreover, relatively poorer social skills undoubtedly contribute to the lower likeability ratings of some withdrawn children.

*Friendship and social withdrawal.* Friendship refers to a voluntary, reciprocal, and mutually regulated relationship between a child and a peer. During childhood, friendships have been viewed as support systems that facilitate psychological and social development (Ladd, Kochenderfer, & Coleman, 1996). Several indices have evolved to represent aspects of this relationship, including the size of the child's friendship network (i.e., number of mutual friendships), participation in a very best friendship, and quality of the friendships (see Bukowski & Hoza, 1989; Parker & Asher, 1993). Unfortunately, a paucity of information exists with respect to shy, withdrawn children's friendships; and the data are limited for all ages and for all aspects of friendship. Much more is known about average and aggressive children's friendships from early childhood to adolescence.

Children with larger networks of mutual friends may receive higher levels of support; in turn, friendship network size may be associated with better psychological health (Ladd & Burgess, 2001). Whilst one might expect that withdrawn children would have fewer mutual friendships than average children because they seldom initiate exchanges with peers

and respond to peers' initiations less often (Wanlass & Prinz, 1982), Ladd and Burgess (1999) found that they had as many mutual friends as their normative counterparts. The authors speculated that even though withdrawn children interact with peers less often than average, they may still interact occasionally and engage in parallel play; and these encounters may be enough for them to nominate and be nominated as a friend. Note that this result was obtained among young children (ages 5–8) and that these withdrawn children were considered solitary-passive (asocial, disinterested) as opposed to reticent.

Being part of one very best friendship, especially a mutual positive one, may also help children's adjustment. Ladd and Burgess (1999) found that young withdrawn children were as likely to possess a mutual very best friendship as average/normative and aggressive children. But we have yet to discover whether this type of friendship could buffer withdrawn children from psychological difficulties such as low self-esteem, loneliness, and depression.

Lastly, the quality of children's friendships, also linked with psychological and school adjustment (Ladd et al., 1996), usually refers to supportive features such as validation/caring, help/guidance, and self-disclosure or to stressful features such as conflict and betrayal of trust (Parker & Asher, 1993). Again, it remains an empirical question as to whether socially withdrawn children's friendships differ in quality from those of other children.

*Victimization and social withdrawal.* Victimization has been viewed in a relationship context because it is marked by a unique and enduring pattern of interactions that occur between children and *specific* bullies or attackers (Elicker, Englund, & Sroufe, 1992; Troy & Sroufe, 1987). Being victimized by peers implies that a child is regularly exposed to abusive interactions (e.g., physical or verbal aggression), and these negative events lead to fear of classmates, and ultimately to further withdrawal from peer interaction and possibly from school-related activities.

During early childhood, socially withdrawn children do not seem to be victimized by their peers. By mid-to-late childhood, however, evidence reveals that some peers do victimize them (Boivin, Hymel, & Bukowski, 1995). Thus, similar to the findings about peer rejection, social withdrawal has not been associated with peer victimization during early childhood (Ladd & Burgess, 1999) but does seem to be related to victimization by late childhood. Perhaps with age, fearful/withdrawn children become viewed as "easy marks" to their peers; and their anxiety may render them vulnerable to peer victimization.

*Consequences of social withdrawal.* Highlighting the potential long-term outcomes of social withdrawal is a recent report which showed that a composite of observed and peer assessed social withdrawal at age 7 years predicted negative self-perceived social competence, low self-worth, loneliness, and felt peer group insecurity among adolescents aged 14 years (Rubin, Chen, McDougall, Bowker, & McKinnon, 1995). These latter findings are augmented by related research findings. Renshaw and Brown (1993) found that passive withdrawal at ages 9 to 12 years predicted loneliness assessed one year later. Ollendick, Ross, Weist, and Oswald (1990) reported that 10-year-old socially withdrawn children were more likely to be perceived by peers as withdrawn and anxious, more disliked by peers, and more likely to have dropped out of school than their well-adjusted counterparts five years later. Morison and Masten (1991) indicated that children perceived by peers as

withdrawn and isolated in middle childhood were more likely to think negatively of their social competencies and relationships in adolescence. Consequently, it appears that early social withdrawal, or its relation to anxiety, represents a behavioral marker for psychological and interpersonal maladaptation in childhood and adolescence.

*Summary.* By the time children reach the mid-to-late childhood years, social withdrawal becomes a full-fledged risk factor. Socially withdrawn children become salient to peers, and many become rejected by them. The seeming upshot of their salience and rejection is the development of negative self-perceptions of their social relationships and skills, as well as felt loneliness. In short, their internal working models of the social world comprise negative representations. Whether the existence of friends, or even a single close friendship, buffers withdrawn children from feeling negatively about themselves and their peer relationships is not yet known.

## Social Withdrawal and Gender

Only recently have researchers begun to investigate questions pertaining to sex differences in social withdrawal in its various forms. One question is whether the prevalence of withdrawal varies between boys and girls. A second question pertains to whether the concomitants and predictive outcomes of withdrawal vary between the sexes.

*Sex differences in the prevalence of social withdrawal.* Gender differences in the prevalence of behavioral inhibition and shyness have not typically been reported for young children (Mullen, Snidman, & Kagan, 1993; Rowe & Plomin, 1977; Simpson & Stevenson-Hinde, 1985). In one recent longitudinal study, however, parents rated their daughters as slightly more shy than sons at 18 and 30 months, but not subsequently at 50 months (Mathiesen & Tambs, 1999). Also, girls are not more likely than boys to be nominated by their peers as shy/anxious or socially withdrawn in preschool (Lemerise, 1997), middle childhood (Pekarik, Prinz, Leibert, Weintraub, & Neale, 1976), or late childhood (Rubin, Chen, & Hymel, 1993). Yet, in early adolescence some evidence indicates that girls tend to self-report being shy more than boys (Crozier, 1995). This is consistent with Lazarus' (1982) study of 396 fifth graders in which almost twice as many girls as boys labeled themselves "shy".

Although these latter findings cast some doubt on the notion that boys and girls do not differ in terms of shyness level, some inconsistencies in the literature may be attributed to differences in the conceptualization of the constructs (i.e., shyness, inhibition, or social withdrawal), the age of the participants, the informant source, and method of assessment (i.e., self-reports, peer reports, parental ratings, or observations). It is also possible that gender differences in children's perceptions and schemas for shyness/withdrawal are related to these findings. For example, children tend to recall information about a hypothetical peer described as socially withdrawn when that peer is a girl, and the schema for withdrawal seems to be more accessible for girls than for boys (Bukowski, 1990).

*Sex differences in the concomitants and outcomes of social withdrawal.* Evidence drawn from concurrent and predictive studies suggests that being shy, inhibited, or socially withdrawn has greater psychological costs for males than females. Shyness in girls is more likely to be rewarded and accepted by parents, whereas shyness in boys is more likely to be discouraged (Engfer, 1993; Stevenson-Hinde, 1989). Radke-Yarrow, Richters, and Wilson (1988) reported that mothers were less accepting of their shy sons, and more affectionate and tender with their shy daughters. Similarly, shy boys tend to have more negative interactions with parents while shy girls have more positive ones (Simpson & Stevenson-Hinde, 1985). A similar pattern of results has been found in the school environment, as teachers tend to praise boys for outspoken behaviors but praise girls for restraining spontaneous conversation in the classroom (AAUW Educational Foundation, 1995).

Further, evidence has accumulated to suggest that *shyness* and *withdrawal* are associated with more negative outcomes for boys than for girls. In early childhood, extremely shy preschool-aged boys have more behavior problems than extremely shy girls (Stevenson-Hinde & Glover, 1996). In middle childhood, socially withdrawn boys, but not girls, describe themselves as more lonely and as having poorer social skills than their average peers (Rubin, Chen, & Hymel, 1993). Morison and Masten (1991) reported that withdrawn adolescent boys had lower self-esteem than girls. Finally, Caspi, Elder, and Bem (1988) found that males who were shy in childhood married, became fathers, and established careers at a later age than their non-shy peers. In contrast, females who were shy in childhood did not marry or start families later than other women in the same cohort.

It seems reasonable to assume that the different outcomes associated with social withdrawal for boys may be partly attributable to differential societal or cultural expectations; in western societies, shyness/withdrawal appears to be less acceptable for boys than for girls (Sadker & Sadker, 1994). Results from recent work, however, hints that there may be subtle gender differences in underlying substrates of shyness/withdrawal for boys and girls. Henderson, Fox, and Rubin (in press) reported that negative reactivity at 9 months predicted displays of social wariness at age 4 years for boys, but not for girls.

Finally, some preliminary evidence suggests that shy boys and girls may actually differ *physiologically*. Dettling, Gunnar, and Donzella (1999) reported that shyness in preschool-aged boys, but not girls, was associated with increased cortisol level over the day at childcare. Clearly, future research is required to elucidate these provocative findings.

## Interventions for Social Withdrawal

As the psychological and social risks associated with shyness/withdrawal have become apparent, researchers have developed and implemented ameliorative intervention programs designed to benefit children. In most cases, the goal of intervention programs has been to increase the frequency of social interaction of shy and socially withdrawn children.

Many researchers have developed interventions involving concepts derived from *social learning theory*, including symbolic modeling (O'Connor, 1972) and contingent reinforcement (Hops, Walker, & Greenwood, 1977). Consistent with this theoretical position, researchers have involved *adult* figures such as teachers, adult "consultants," and parents to

prompt, praise, and reinforce social behaviors, as well as to provide direct instruction and coaching (e.g., Lindeman, Fox, & Redelheim, 1993; Storey, Smith, & Strain, 1993). Parent participation putatively improves the generalizability of intervention beyond the school setting.

Other researchers have developed interventions that make extensive use of *peers*. Most peer-mediated interventions have focused on providing peers with incentives and/or training to increase their rate of positive social interaction (Christopher, Hansen, & MacMillan, 1991). In this vein, Fantuzzo, Stovall, Schachtel, Goins, and Hal (1987) trained more sociable children to make competent social initiations to withdrawn peers as means of encouraging more positive social experiences. Sainato, Maheady, and Shook (1986) assigned withdrawn children as classroom managers for various preferred classroom activities.

Related to this approach is the concept of *peer pairing*, whereby withdrawn children are provided with opportunities to engage in joint-task activities with non-withdrawn peers (Furman, Rahe, & Hartup, 1979). The use of peer pairing may constitute a particularly effective intervention strategy for socially wary and anxious children because a sociable peer may serve as a role model, provide positive reinforcement, decrease anxiety, increase confidence, and enhance generalization (Beidel & Turner, 1998).

Perhaps the most popular intervention strategy for withdrawn children is social skills training. This type of intervention dates back over 30 years (see Conger & Keane, 1981 for a review), and involves having children learn and practice a predetermined set of identified skills that would facilitate social interaction. It has had moderate effects on increasing the social interactions of those children who have mild to moderate levels of social withdrawal (Sheridan et al., 1990; Whitehill, Hersen, & Bellack, 1980).

Although most intervention programs have demonstrated at least some success, the literature is hampered by conceptual and methodological difficulties. Conceptually, it is not enough to teach shy/withdrawn children social skills. In many cases, socially wary children *know* what they *should* do in social situations (Rubin & Krasnor, 1986), but their problem lies with "moving" thought to action; and action appears to be inhibited by withdrawn children's inability to regulate feelings of social fear or anxiety.

Methodologically, many intervention programs have involved single-subject or numerically small designs (e.g., Lindeman et al. 1993; Mastropieri & Scruggs, 1986; Sainato et al., 1986). Further, most studies do not include a control group (e.g., Lindeman et al. 1993; Sainato et al., 1986; Sheridan et al., 1990), and the few with an average control group (Hodges & McCoy, 1990; Storey et al., 1993) do not include a nontreatment control group of withdrawn children. Other problems include the sole reliance on teacher referrals to identify withdrawn children (e.g., Lindeman et al., 1993; Sheridan et al., 1990; Storey et al., 1993). Ambiguity in the definitions of social withdrawal may result in the selection of a heterogeneous treatment group that could include socially wary, socially disinterested, and actively isolated children; therefore, the results of these studies are often inconsistent among participants. Lastly, follow-up assessments are often too short term (Lindeman et al., 1993; Sainato et al., 1986), and the gains fail to generalize across settings (Hops et al., 1985; McConnell, 1987). Despite these difficulties, the interventions extant are a reasonable starting point for future ameliorative efforts.

## Conclusion

The study of the developmental course of social withdrawal has garnered an enormous amount of attention in the past decade. A glance at the dates of the cited material in this review will attest to this fact. Much work has been directed toward establishing the developmental origins of social withdrawal and its related constructs, as well as examining the contemporaneous and predictive correlates of social withdrawal at different points in childhood and adolescence. With regard to the latter, relatively few longitudinal studies exist; therefore, additional data are required to examine the premise that social withdrawal represents a risk factor in childhood and adolescence.

Although we have suggested a number of etiological factors that conspire to produce a socially withdrawn profile in childhood, the supportive data derive from very few developmental laboratories. The extent to which biologically based, dispositional factors interact with parenting styles and parent–child relationships to predict the consistent display of socially withdrawn behavior in both familiar and unfamiliar peer contexts needs to be established. Further, data are required to more precisely examine the consistency of socially reticent and solitary-passive behaviors across settings.

Our knowledge about the developmental course of social withdrawal is obviously constrained by the cultures in which the phenomenon has been studied. The vast majority of the published literature is derived from studies conducted in North America and Western Europe. Interestingly, though, recent research in the East indicates that behavioral inhibition and shyness are more prevalent in China and viewed as more normative than in the West (Chen, Rubin, & Li, 1997; Chen, Rubin, Li, & Li, 1999; Chen, Hastings, Rubin, Chen, Cen, & Stewart, 1998). Like all social behaviors, then, it would behoove us to examine cultural norms, the means by which such norms are socialized, and the developmental prognoses for children who, whilst perhaps displaying normative behavior in one culture, do not conform to expected behavioral norms in their own country. Certainly such a program of research will go a long way toward helping psychologists appreciate and be sensitive to cultural similarities, differences, and local definitions of normality and abnormality.

In summary, the literature we have reviewed suggests that the quality of life for socially inhibited and withdrawn children is less than pleasant. Withdrawn children are socially deferent, anxious, lonely, rejected and insecure in the company of peers. They fail to exhibit age-appropriate interpersonal problem-solving skills and tend to believe themselves to be deficient in social skills and relationships. The home lives of inhibited and withdrawn children are no more comforting: as we have noted here, they have insecure attachment relationships with their mothers and they are recipients of overcontrolling, intrusive parenting. Taken together, these characteristics do not augur well for socially withdrawn children. As such, researchers would do well to be more active in developing ameliorative, if not preventive interventions for these children.

## References

AAUW Educational Foundation (1995). *The AAUW Report: How schools shortchange girls*. New York: Marlowe.

American Psychiatric Association (1995). *Diagnostic and statistical manual of mental disorders (DSM IV)*. Washington, DC: Author.

Andersson, K., Bohlin, G., & Hagekull, B. (1999). Early temperament and stranger wariness as predictors of social inhibition in 2-year-olds. *British Journal of Developmental Psychology, 17*, 421–434.

Asendorpf, J. (1990). Beyond social withdrawal: Shyness, unsociability and peer avoidance. *Human Development, 33*, 250–259.

Asendorpf, J. (1993). Abnormal shyness in children. *Journal of Child Psychology and Psychiatry, 34*, 1069–1081.

Asendorpf, J. (1994). The malleability of behavior inhibition: A study of individual developmental functions. *Developmental Psychology, 30*, 912–919.

Asher, S. R., & Coie, J. D. (1990). *Peer rejection in childhood*. New York: Cambridge University Press.

Beidel, D. C., & Turner, S. M. (1998). *Shy children, phobic adults*. Washington, DC: American Psychological Association.

Beidel, D. C., Turner, S. M., & Morris, T. L. (1999). Psychopathology of childhood social phobia. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*, 643–650.

Bell-Dolan, D., Reaven, N. M., & Peterson, L. (1993). Depression and social functioning: A multidimensional study of the linkages. *Journal of Clinical Child Psychology, 22*, 306–315.

Boivin, M., & Hymel, S. (1997). Peer experiences and social self-perceptions: A sequential model. *Developmental Psychology, 33*, 135–145.

Boivin, M., Hymel, S., & Bukowski, W. (1995). The roles of social withdrawal, peer rejection, and victimization by peers in predicting loneliness and depressed mood in childhood. *Development and Psychopathology, 7*, 765–785.

Bowlby, J. (1973). *Attachment and loss: Separation, anxiety, and anger*. New York: Basic.

Broberg, A. G. (1993). Inhibition and children's out-of-home care. In K. Rubin & J. Asendorpf (Eds.), *Social withdrawal, inhibition, and shyness in childhood*. Hillsdale, NJ: Erlbaum.

Broberg, A., Lamb, M. E., & Hwang, P. (1990). Inhibition: Its stability and correlates in sixteen- to forty-month old children. *Child Development, 61*, 1153–1163.

Bukowski, W. M. (1990). Age differences in children's memory of information about aggressive, socially withdrawn, and prosocial boys and girls. *Child Development, 61*, 1326–1334.

Bukowski, W. M., & Hoza, B. (1989). Popularity and friendship: Issues in theory, measurement, and outcome. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relations in child development* (pp. 15–45). New York: Wiley.

Burgess, K. B., Ladd, G. W., Kochenderfer, B. J., Lambert, S. F., & Birch, S. H. (1999). Loneliness during early childhood: The role of interpersonal behaviors and relationships. In K. J. Rotenberg & S. Hymel (Eds.), *Loneliness in childhood and adolescence* (pp. 109–134). New York: Cambridge University Press.

Burgess, K. B., Rubin, K.H., Cheah, C., & Nelson, L. J. (2001). Behavioral inhibition, social withdrawal, and parenting. In W. R. Crozier & L. Alden (Eds.), *International handbook of social anxiety: Concepts, research, and interventions relating to the self and shyness* (pp. 137–158). Chichester, UK: Wiley.

Calkins, S. D., & Fox, N. A. (1992). The relations among infant temperament, security of attachment, and behavioral inhibition at 24 months. *Child Development, 63*, 1456–1472.

Calkins S. D., Fox, N. A., & Marshall, T. R. (1996). Behavioral and physiological antecedents of inhibition in infancy. *Child Development ,67*, 523–540.

Caspi, A., Elder, G. H., Jr., & Bem, D. J. (1988). Moving away from the world: Life-course patterns of shy children. *Developmental Psychology, 24*, 824–831.

Chen, X., Hastings, P. D., Rubin, K. H., Chen, H., Cen, G., & Stewart, S. L. (1998). Child-rearing practices and behavioral inhibition in Chinese and Canadian toddlers: A cross-cultural study. *Developmental Psychology, 34*, 677–686.

Chen, X., Rubin, K. H., & Li, D. (1997). Relation between academic achievement and social adjustment: Evidence from Chinese children. *Developmental Psychology, 33*, 518–525.

Chen, X., Rubin, K. H., & Li, D., & Li, Z. (1999). Adolescent outcomes of social functioning in Chinese Children. *International Journal of Behavioral Development, 23*, 199–223.

Christopher, J. S., Hansen, D. J., & MacMillan, V. M. (1991). Effectiveness of a peer-helper intervention to increase children's social interactions: Generalization, maintenance, and social validity. *Behavior Modification, 15*, 22–50.

Conger, J. C., & Keane, S. P. (1981). Social skills interventions in the treatment of isolated or withdrawn children. *Psychological Bulletin, 90*, 478–495.

Coplan, R. J., & Rubin, K. H. (1998). Exploring and assessing nonsocial play in the preschool: The development and validation of the Preschool Play Behavior Scale. *Social Development, 7*, 72–91.

Coplan, R. J., Rubin, K. H., Fox, N. A., Calkins, S. D., & Stewart, S. L. (1994). Being alone, playing alone, and acting alone: Distinguishing among reticence and passive and active solitude in young children. *Child Development, 65*, 129–137.

Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin, 115*, 74–101.

Crozier, W. R. (1995). Shyness and self-esteem in middle childhood. *British Journal of Educational Psychology, 65*, 85–95.

Damon, W., & Killen, M. (1982). Peer interaction and the process of change in children's moral reasoning. *Merrill-Palmer Quarterly, 28*, 347–378.

Dettling, A. C., Gunnar, M.R., & Donzella (1999). Cortisol levels of young children in full-day childcare centers: Relations with age and temperament. *Psychoneuroendocrinology, 24*, 519–536.

Elicker, J., Englund, M., & Sroufe, L. A. (1992). Predicting competence and peer relationships in childhood from early parent–child relationships. In R. D. Parke & G. W. Ladd (Eds.), *Family–peer relationships: Modes of linkage* (pp. 77–106). Hillsdale, NJ: Erlbaum.

Engfer, A. (1993). Antecedents and consequences of shyness in boys and girls: A 6-year longitudinal study. In K. H. Rubin & J. B. Asendorpf (Eds.), *Social withdrawal, inhibition, and shyness in childhood* (pp. 49–79). Hillsdale, NJ: Erlbaum.

Erikson, M. F., Sroufe, L. A., & Egeland, B. (1985). The relationship between quality of attachment and behavior problems in preschool in a high risk sample. In I. Bretherton & E. Waters (Eds.), *Growing points of attachment theory and research. Monographs of the Society for Research in Child Development, 50* (Nos. 1–2, Serial No. 209).

Fantuzzo, J. W., Stovall, A., Schachtel, D., Goins, C., & Hal (1987). The effects of peer social initiations on the social behavior of withdrawn maltreated preschool children. *Journal of Behavior Therapy and Experimental Psychiatry, 18*, 357–363.

Fox, N. A., & Calkins, S. D. (1993). Pathways to aggression and social withdrawal: Interactions among temperament, attachment, and regulation. In K. Rubin & J. Asendorpf (Eds.), *Social withdrawal, inhibition, and shyness in childhood*. Hillsdale, NJ: Erlbaum.

Furman, W., Rahe, D. F., & Hartup, W. W. (1979). Rehabilitation of socially withdrawn preschool children through mixed-age and same-age socialization. *Child Development, 50*, 915–922.

Garcia-Coll, C., Kagan, J., & Reznick, J.S. (1984). Behavioral inhibition in young children. *Child Development, 55*, 1005–1019.

Greenspan, S. I., & Lieberman, A. F. (1988). A clinical approach to attachment. In J. Belsky & T. Nezworski (Eds.), *Clinical implications of attachment* (pp. 387–424). Hillsdale, NJ: Erlbaum.

Gunnar, M., Mangelsdorf, S., Larson, M., & Herstgaard, L. (1989). Attachment, temperament, and adreno-cortical activity in infancy: A study of psychoendocrine regulation. *Developmental Psychology, 25*, 355–363.

Hart, C. H., Yang, C., Nelson, L. J., Robinson, C. C., Olsen, J. A., Nelson, D. A., Porter, C. L., Jin S., Olsen, S. F., & Wu, P. (2000). Peer acceptance in early childhood and subtypes of socially withdrawn behavior in China, Russia, and the United States. *International Journal of Behavioral Development, 24*, 73–81.

Hart, D., Hofman, V., Edelstein, W., & Keller, M. (1997). The relation of childhood personality types to adolescents' behavior and development: A longitudinal study of Icelandic children. *Developmental Psychology, 33*, 195–205.

Henderson, H. A., & Rubin, K. H. (1997, April). Internal and external correlates of self-regulation in preschool aged children. Poster presented at the Biennial Meetings of the Society for Research in Child Development, Washington, DC.

Henderson, H. A., Fox N. A., & Rubin, K. H. (in press). Temperamental contributions to social behavior: The moderating roles of frontal EEG asymmetry and gender. *Journal of the American Academy of Child and Adolescent Psychiatry*.

Hodges, J. B., & McCoy, J. F. (1990). Effects of coaching and per utilization procedures on the withdrawn behaviors of preschoolers. *Child and Family Behavior Therapy, 12*, 25–47.

Hops, H., Walker, H. M., & Greenwood, C. R. (1977). *PEERS: A program for remediating social withdrawal in the school setting: Aspect of a research and development process. Report #3.* Center at Oregon for Research in the Behavioral Education of the Handicapped. Eugene, OR: University of Oregon.

Hymel, S., Bowker, A., & Woody, E. (1993). Aggressive versus withdrawn unpopular children: Variations in peer- and self-perceptions in multiple domains. *Child Development, 64*, 879–896.

Kagan, J. (1989). Temperamental contributions to social behavior. *American Psychologist, 44*, 668–674.

Kagan, J. (1997). Temperament and the reactions to the unfamiliarity. *Child Development, 68*, 139–143.

Kagan, J. (1998). *Three seductive ideas*. Cambridge, MA: Harvard University Press.

Kagan J., Reznick, J. S., & Snidman, N. (1987). The physiology and psychology of behavioral inhibition in children. *Child Development, 58*, 1459–1473.

Kagan J., Reznick, J. S., & Snidman, N. (1988). Biological basis of childhood shyness. *Science, 240*, 167–171.

Kagan, J., Snidman, N., & Arcus, D. (1998). Childhood derivatives of high and low reactivity in infancy. *Child Development, 69*, 1483–1493.

Kochanska, G., & Radke-Yarrow, M. (1992). Early childhood inhibition and the dynamics of the child's interaction with an unfamiliar peer at age five. *Child Development, 63*, 325–335.

Ladd, G. W. & Burgess, K. B. (1999). Charting the relationship trajectories of aggressive, withdrawn, and aggressive/withdrawn children during early grade school. *Child Development, 70*, 910–929.

Ladd, G. W., & Burgess, K. B. (2001). Do relational risks and protective factors moderate the linkages between childhood aggression and early psychological and school adjustment? *Child Development, 72*, 1579–1601.

Ladd, G. W., Kochenderfer, B. J., & Coleman, C. C. (1996). Friendship quality as a predictor of

young children's early school adjustment. *Child Development, 67*, 1103–1118.
Ladd, G. W., Kochenderfer, B. J., & Coleman, C. C. (1997). Classroom peer acceptance, friendship, and victimization: Distinct relational systems that contribute uniquely to children's school adjustment? *Child Development, 68*, 1181–1197.
LaFreniere, P. J., & Dumas, J. E. (1992). A transactional analysis of early childhood anxiety and social withdrawal. *Development and Psychopathology, 4*, 385–402.
Lazarus, P. J. (1982). Incidence of shyness in elementary-school age children. *Psychological Reports, 51*, 904–906.
LeMare, L., & Rubin, K. H. (1987). Perspective-taking and peer interactions: Structural and developmental analyses. *Child Development, 58*, 306–315.
Lemerise, E. A. (1997). Patterns of peer acceptance, social status, and social reputation in mixed-age preschool and primary classrooms. *Merrill-Palmer Quarterly, 43*, 199–218.
Levine, S. (1993). The influence of social factors on the response to stress. *Psychotherapy and Psychosomatics, 60*, 33–38.
Lindeman, D. P., Fox, J. J., & Redelheim, P. S. (1993). Increasing and maintaining withdrawn preschoolers' peer interactions: Effects of double prompting and booster session procedures. *Behavior Disorders, 11*, 54–66.
Mastropieri, M. A., & Scruggs, T. E. (1986). Early intervention for socially withdrawn children. *Journal of Special Education, 19*, 429–441.
Mathiesen, K. S., & Tambs, K. (1999). The EAS temperament questionnaire: Factor structure, age trends, reliability, and stability in a Norwegian sample. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 40*, 431–439.
McConnell, S. R. (1987). Entrapment effects and the generalization and maintenance of social skills training for elementary school students with behavioral disorders. *Behavioral Disorders, 12*, 252–263.
Mead, G. H. (1934). *Mind, self, and society*. Chicago: University of Chicago Press.
Morison, P., & Masten, A. (1991). Peer reputation in middle childhood as a predictor of adaptation in adolescence: A seven-year follow-up. *Child Development, 62*, 991–1007.
Mullen, M., Snidman, N., & Kagan, J. (1993). Free-play behavior in inhibited and uninhibited children. *Infant Behavior and Development, 16*, 383–389.
Nachmias, M., Gunnar, M., Mangelsdorf, S., Parritz, R. H., & Buss, K. (1996). Behavioral inhibition and stress reactivity: the moderating role of attachment security. *Child Development, 67*, 508–522.
Nelson, L. J. (2000). Social and nonsocial behaviors, and peer acceptance: A longitudinal model of the development of self-perceptions in children ages 4 to 7 years. Unpublished doctoral dissertation, University of Maryland, USA.
O'Connor, R. D. (1972). The relative efficacy of modeling, shaping, and combined procedures. *Journal of Abnormal Psychology, 79*, 327–334.
Ollendick, T. H., Ross, W. G., Weist, M. D., & Oswald, D. P. (1990). The predictive validity of teacher nominations: A five-year followup of at-risk youth. *Journal of Abnormal Child Psychology, 18*, 699–713.
Paquette, D., & LaFreniere, P. J. (1994). Are anxious-withdrawn children inhibited in a new social context? *Canadian Journal of Behavioral Science, 26*, 534–550.
Parker, J. G., & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology, 29*, 611–621.
Pastor, D. (1981). The quality of mother–infant attachment and its relationship to toddler's initial sociability with peers. *Developmental Psychology, 17*, 326–335.
Pekarik, E., Prinz, R., Leibert, C., Weintraub, S., & Neale, J. (1976). The Pupil Evaluation Inven-

tory: A sociometric technique for assessing children's social behavior. *Journal of Abnormal Child Psychology, 4*, 83–97.

Piaget, J. (1932). *The moral judgment of the child*. Glencoe, IL: Free Press.

Porges, S. W., & Byrne, E. A. (1992). Research methods for measurement of heart rate and respiration. *Biological Psychology, 34*, 93–130.

Radke-Yarrow, M., Richters, J., & Wilson, W. E. (1988). Child development in a network of relationships. In R. A. Hinde & J. Stevenson-Hinde (Eds.), *Relationships within families: Mutual influences* (pp. 48–67). Oxford, England: Clarendon Press.

Renken, B., Egeland, B., Marvinney, D., Sroufe, L.A., & Mangelsdorf, S. (1989). Early childhood antecedents of aggression and passive withdrawal in early elementary school. *Journal of Personality, 57*, 257–281.

Renshaw, P. D., & Brown, P. J. (1993). Loneliness in middle childhood: Concurrent and longitudinal predictors. *Child Development, 64*, 1271–1284.

Reznick, J. S., Kagan, J., Snidman, N., Gersten, M., Baak, K., & Rosenberg, A. (1986). Inhibited and uninhibited children: A follow-up study. *Child Development, 57*, 660–680.

Rothbart, M. K., & Derryberry, D. (1981). Development of individual differences in temperament. In M. E. Lamb & A. L. Brown (Eds.), *Advances in developmental psychology* (Vol. 1). Hillsdale, NJ: Erlbaum.

Rowe, D. C., & Plomin, R. (1977). Temperament in early childhood. *Journal of Personality Assessment, 41*, 150–156.

Rubin, K. H. (1982a). Non-social play in preschoolers: Necessary evil? *Child Development, 53*, 651–657.

Rubin, K. H. (1982b). Social and cognitive developmental characteristics of young isolate, normal, and sociable children. In K. H. Rubin & H. S. Ross (Eds.), *Peer relationships and social skills in childhood*. New York: Springer-Verlag.

Rubin, K. H. (1993). The Waterloo Longitudinal Project: Correlates and consequences of social withdrawal from childhood to adolescence. In K. H. Rubin & J. B. Asendorpf (Eds.), *Social withdrawal, inhibition, and shyness in childhood* (pp. 291–314). Hillsdale, NJ: Erlbaum.

Rubin, K. H., & Asendorpf, J. B. (1993). *Social withdrawal, inhibition, and shyness in childhood*. Hillsdale, NJ: Erlbaum.

Rubin, K. H., & Borwick, D. (1984). The communication skills of children who vary with regard to sociability. In H. Sypher & J. Applegates (Eds.), *Social cognition and communication*. Hillsdale, NJ: Erlbaum.

Rubin, K. H., Bukowski, W., & Parker, J. (1998). Peer interactions, relationships, and groups. In W. Damon (Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology. Vol. 3: Social, emotional, and personality development* (5th ed., pp. 619–700). New York: Wiley.

Rubin, K. H., & Burgess, K. B. (2001). Social withdrawal and anxiety. In M. W. Vasey & M. R. Dadds (Eds.), *The developmental psychopathology of anxiety* (pp. 407–434). New York: Oxford University Press.

Rubin, K. H., Burgess, K. B., & Hastings, P. D. (in press). Stability and social-behavioral consequences of toddlers' inhibited temperament and parenting behaviors: *Child Development*.

Rubin, K. H., Chen, X., & Hymel, S. (1993). The socio-emotional characteristics of extremely aggressive and extremely withdrawn children. *Merrill-Palmer Quarterly, 39*, 518–534.

Rubin, K. H., Chen, X., McDougall, P., Bowker, A., & McKinnon, J. (1995). The Waterloo Longitudinal Project: Predicting adolescent internalizing and externalizing problems from early and mid-childhood. *Development and Psychopathology, 7*, 751–764.

Rubin, K. H., Coplan, R. J., Fox, N. A., & Calkins, S. D. (1995). Emotionality, emotion regulation, and preschoolers' social adaptation. *Development and Psychopathology, 7*, 49–62.

Rubin, K. H., Daniels-Beirness, T., & Bream, L. (1984). Social isolation and social problem solv-

ing: A longitudinal study. *Journal of Consulting and Clinical Psychology, 52*, 17–25.

Rubin, K. H., Fein, G., & Vandenberg, B. (1983). Play. In E. M. Hetherington (Ed.), *Handbook of child psychology: Vol 4. Socialization, personality, and social development*. New York: Wiley.

Rubin, K. H., Hastings, P. D., Chen, X., Stewart, S. L., & McNichol, K. (1998). Intrapersonal and maternal correlates of aggression, conflict, and externalizing problems in toddlers. *Child Development, 69*, 1614–1629.

Rubin, K. H., Hymel, S., & Mills, R. S. (1989). Sociability and social withdrawal in childhood: Stability and outcomes. *Journal of Personality, 57*, 237–255.

Rubin, K. H., & Krasnor, L. R. (1986). Social cognitive and social behavioral perspectives on problem-solving. In M. Perlmutter (Ed.), *Minnesota Symposia on Child Psychology* (Vol. 18, pp. 1–68). Hillsdale, NJ: Erlbaum.

Rubin, K. H., LeMare L. J., & Lollis, S. (1990). Social withdrawal in childhood: Developmental pathways to rejection. In S. R. Asher & J. D. Coie (Eds.), *Peer rejection in childhood* (pp. 217–249). New York: Cambridge University Press.

Rubin, K. H., Nelson, L. J., Hastings, P., & Asendorpf, J. (1999). Transaction between parents' perceptions of their children's shyness and their parenting styles. *International Journal of Behavioral Development, 23*, 937–957.

Rubin, K. H., & Rose-Krasnor, L. (1992). Interpersonal problem-solving and social competence in children. In V. B. van Hasselt & M. Hersen (Eds.), *Handbook of social development: A lifespan perspective*. New York: Plenum.

Rubin, K. H. & Stewart, S. L. (1996). Social withdrawal and inhibition in childhood. In E. Mash & R. Barkley (Eds.), *Child psychopathology* (pp. 277–307). New York: Guilford Press.

Sadker, M., & Sadker, D. (1994). *Failing at fairness: How America's schools cheat girls*. New York: Charles Scribner.

Sainato, D. M., Maheady, L., & Shook, G. L (1986). The effects of a classroom manager role on the social interaction patterns and social status of withdrawn kindergarten students. *Journal of Applied Behavior Analysis, 19*, 187–195.

Sanson, A. V., Pedlow, R., Cann, W., Prior, M., & Oberklaid, F. (1996). Shyness ratings: Stability and correlates in early childhood. *International Journal of Behavioral Development, 19*, 705–724.

Schmidt, L. A., (1999). Frontal brain electrical activity in shyness and sociability. *Psychological Science, 10*, 316–320.

Schmidt, L. A., Fox, N. A. & Schulkin, J. (in press). Behavioral and psychophysiological correlates of self-presentation in temperamentally shy children. *Developmental Psychobiology*.

Schmidt, L. A., & Schulkin, J. (Eds.) (1999). *Extreme fear, shyness, and social phobia: Origins, biological mechanisms, and clinical outcomes*. New York: Oxford University Press.

Selman, R, L., & Schultz, L. H. (1990). *Making a friend in youth: developmental theory and pair therapy*. Chicago: University of Chicago Press.

Sheridan, S. M., Kratochwill, T. R., & Elliott, S. N. (1990). Behavioral consultation with parents and teachers: Delivering treatment for socially withdrawn children at home and school. *School Psychology Review, 19*, 33–52.

Simpson, A. E., & Stevenson-Hinde, J. (1985). Temperamental characteristics of three- to four-year-old boys and girls and child-family interactions. *Journal of Child Psychology and Psychiatry, 26*, 43–53.

Spangler, G., & Schieche, M. (1998). Emotional and adrenocortical responses of infants to the Strange situation: The differential function of emotional expression. *International Journal of Behavioral Development, 22*, 681–706.

Sroufe, L. A. (1983). Infant-caregiver attachment and patterns of adaptation in preschool: The roots maladaptation and competence. In M. Perlmutter (Ed.), *Minnesota Symposium in Child Psy-*

*chology, 16*. Hillsdale, NJ: Erlbaum.
Stevenson-Hinde, J. (1989). Behavioral inhibition: Issues of context. In J. S. Reznick (Ed.), *Perspectives on behavioral inhibition* (pp. 125–138). Chicago: University of Chicago Press.
Stevenson-Hinde, J., & Glover, A. (1996). Shy girls and boys: A new look. *Journal of Child Psychology and Psychiatry, 37*, 181–187.
Stewart, S. L., & Rubin, K. H. (1995). The social problem-solving skills of anxious-withdrawn children. *Development and Psychopathology, 7*, 323–336.
Storey, K., Smith, D. J., & Strain, P. S. (1993). Use of classroom assistants and peer-mediated intervention to increase integration in preschool settings. *Exceptionality, 4*, 1–16.
Troy, M., & Sroufe, L. A. (1987). Victimization among preschoolers: Role of attachment relationship history. *Journal of the American Academy of Child and Adolescent Psychiatry, 26*, 166–172.
Vandell, D. L., & Hembree, S. E. (1994). Peer social status and friendship: Independent contributors to children's social and academic adjustment. *Merrill-Palmer Quarterly, 40*, 461–477.
Wanlass, R. L., & Prinz, R. J. (1982). Methodological issues in conceptualizing and treating childhood social isolation. *Psychological Bulletin, 92*, 39–55.
Whitehill, M. B., Hersen, M., & Bellack, A. S. (1980). Conversation skills training for socially isolated children. *Behaviour Research and Therapy, 18*, 217–225.
Younger, A. J., Gentile, C., & Burgess, K. B. (1993). Children's perceptions of social withdrawal: Changes across age. In K. Rubin & J. Asendorpf (Eds.), *Social withdrawal, inhibition, and shyness in childhood* (pp. 215–235). Hillsdale, NJ: Erlbaum.