

Review article

# Integrating theoretical, measurement, and intervention models of youth social competence

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## Abstract

Social competence is of great interest to developmental psychopathologists and is assessed frequently in both basic and applied research. A review of the literature reveals not only significant heterogeneity in definitions of this construct but an apparent disconnect between theoretical, measurement, and intervention models of competence in youth. This paper attempts to integrate these disparate enterprises by identifying four types of predictors theorists have associated with competence – child, behavior, situation, and judge – and critiquing common models in light of these dimensions. In general, assessment and intervention approaches appear less complex than theoretical conceptualizations of competence. When considering whether to incorporate additional predictors, notably situation- and judge-level factors, into these models, researchers must weigh parsimony versus the model misspecification that results from omitting important variables. Basic research that may assist in making these decisions is identified.

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It is estimated that 1 in 10 youths in the United States suffer from some type of psychopathology (U.S. Department of Health and Human Services, 1999). The form of pathology varies — from internalizing disorders such as depression and anxiety to externalizing problems such as aggression. However, these seemingly disparate difficulties may share a common feature. Many theorists have suggested that, across the spectrum of symptoms, youth psychopathology may be strongly characterized by difficulty managing interpersonal challenges and behaving “competently.” For example, Dodge and colleagues have linked aggression in children with difficulty performing key social tasks (Dodge, McClaskey, & Feldman, 1985; Dodge, Pettit, McClaskey, & Brown, 1986), while in the internalizing domain, Rudolph et al. (2000) have demonstrated that depressive symptoms may be exacerbated by interpersonal stress created through problematic social interactions.

Given the cross-cutting nature of social competence, it is not surprising that a tremendous body of research has been devoted to developing theoretical, measurement, and intervention models of this construct. What is surprising, however, is the apparent disconnect between these enterprises. Despite several decades of work developing theoretical models of the key dimensions of social competence, the predominant methods of assessing social competence, as well as many interventions designed to promote positive social functioning, do not seem to reflect current theory in the area. The goal of this paper is to examine critically the assessment and promotion of child and adolescent social competence within a generic four-factor theoretical framework of social competence, generated from current theoretical and empirical work in the youth social competence field. This paper is not designed to provide an exhaustive review of all assessments and interventions developed to measure and enhance social functioning. Rather, we seek to organize and illuminate existing theoretical, measurement, and intervention models of social competence, and explore the value (and costs) associated with adopting a more nuanced and complex view of youth social functioning.

## 1. Conceptualization of social competence

### 1.1. Historical overview

In general, the construct of social competence refers broadly to effectiveness in interaction (Rose-Krasnor, 1997). However, there exists significant heterogeneity in definitions of the construct (Dodge, 1985). This variability cuts across many dimensions. One of the key distinctions among definitions of social competence is the locus of the construct. Historically, researchers have tended to localize competence in one of two places. The first approach, which we will term the “trait model”, assumes that social skillfulness is a property of a person’s underlying disposition.

There are advantages and disadvantages to trait-type models. As Vaughn notes, a trait conceptualization helps unify the construct of competence across the life span, thus providing a common definition which may enhance the

systematization of research efforts (Vaughn et al., 2000). On the other hand, purely trait models may have conceptual and empirical limitations. Theoretically, the logic of this approach is essentially circular (see McFall, 1982). Models of this type posit that a personality construct is responsible for socially skilled behavior; however, this construct is measured by assessing the skillfulness of a person's actions. It is therefore impossible to separate the criterion (competence) and the predictor (skillful behavior). In addition to this conceptual limitation, the trait approach has not been well supported empirically. Measures created to assess this latent construct of competence in adult populations have not been psychometrically adequate, nor have they predicted performance in natural social situations (Bellack, 1979; Curran, 1977; Hersen & Bellack, 1977).

Perhaps in response to these issues, some authors began to view social competence not as a property of the actor, but as a characteristic of the behavior being enacted. This approach, which we term the "social skills model", assumes that some behaviors are inherently prosocial (e.g., assertion) whereas others are always inappropriate (e.g., aggression; Dodge, 1985; Meichenbaum, Butler, & Gruson, 1981; Rose-Krasnor, 1997). Within this framework, children who engage in appropriate behaviors are considered socially competent (Ladd, 2005). Although ascribing competence to behaviors circumvents some of the difficulties associated with trait conceptualizations, this approach is also problematic. One notable limitation of this model is its reliance on the judgments of the researcher to define key aspects of this construct. First, the relevant behavioral domains must be chosen. Behaviors that appear critical to the outside observer may not be strongly associated with social outcomes in the population of interest and thus may lack social validity (Cavell, 1990; Gresham, 1986). Once behaviors are chosen, the researcher must select the unit of behavior to analyze (Bellack, 1982; Dodge, 1985; McFall, 1982). It is not clear whether molecular behaviors, such as eye contact or tone of voice, or more molar constructs, such as co-operation with peers, are the strongest correlates of competence. Finally, within each domain, behaviors must be classified as competent or incompetent. This classification relies on a value judgment by the researcher (Dodge, 1985), a point we turn to shortly.

### *1.2. Situation-specificity of competence*

Perhaps the most problematic aspect of the social skills definition of competence is a limitation that is shared with trait conceptualizations. Both social skills and trait models predict that competence will show a high degree of relative cross-situational generality. If skillfulness is a personal characteristic, an individual should prove more skilled than other individuals across a variety of situations (McFall & McDonel, 1986). Similarly, social skills approaches, which suggest that competence is a property of the behavior, predict that a given action will be equally effective on all occasions, at least relative to other behaviors.

The idea that either a person or a behavior will be perceived as equally competent, relative to others, across a range of social domains feels inadequate intuitively. It is difficult to conceive of people who are always skillful, relative to their peers, in all situations. Similarly, there would appear to be no behavior that is always the most effective course of action. Even actions that are considered highly prosocial, such as smiling, will be less appropriate in some contexts (e.g., when managing an interpersonal conflict). Empirical evidence supports this intuition that competence is, at least to some degree, contextually bound (see Dodge, Laird, Lochman, Zelli, & Conduct Problems Prevention Research Group, 2002). Contrary to the expectations of trait conceptualizations, individual children have been shown to demonstrate differing levels of competence across a range of important social tasks (Dodge et al., 1985). It has also been shown that information-processing patterns in one social domain (e.g., peer entry) do not predict behavior in another (Dodge et al., 1986), and that assessing children's responses to specific social situations leads to more accurate predictions of their future behavior than more general assessments of competence (Dodge et al., 1986). In contrast to the prediction of the social skills model, one study demonstrated that popular children were more likely than their less popular peers to initiate social interaction on the playground, but in the classroom lower-status children were the more frequent instigators of social contact (Dodge, Coie, & Brakke, 1982). This finding suggests that the behavior, social initiation, is not equally appropriate in all situations.

Consistent with these types of findings, social competence increasingly has been conceptualized as situation-specific. A review of the literature reveals that many of the theories of social competence advanced in the last two decades posit that competence depends, at least in part, on the situation in which a behavior is enacted (Rose-Krasnor, 1997; for examples see Cavell, 1990; Cavell & Kelley, 1992; Combs & Slaby, 1977; Dodge, 1985; Dodge et al., 1986; Dubois & Felner, 1996; Erdley & Asher, 1999; Hughes, 1989; Inderbitzen, 1994; McFall, 1982; Putallaz & Sheppard, 1992; Yeates & Selman, 1989). According to these approaches, competence is not exclusively a property of the person

or the behavior, but results from an interaction with the situation in which a person is acting. In other words, competence can be thought of as an emergent property resulting from the appropriate matching of behavior and situation. Similarly, several theorists conceptualize competence as an “organizational” construct reflecting youths’ ability to use their resources to achieve good outcomes in a range of interpersonal situations (e.g., Waters & Sroufe, 1983; Bierman, 2004). These types of trait conceptualizations are consistent with the idea that the utility of any behavior is, to some extent, tied to its social context.

### *1.3. Social competence as an evaluation*

Even within a situation-specific framework, it is possible to view competence as behavior-bound; in other words, to assume that an action is competent within a range of situations. Models of this type, frequently referred to as “molecular models” (McFall, 1982), share many of the same problems as the social skills models described earlier. Perhaps because of these limitations, the molecular approach has not been widely adopted. Instead, many have suggested that competence is not located in social behaviors; in other words, social skills and social competence are not interchangeable terms (e.g., Gresham, 1986, 2001; Hughes, 1989). Social skills are thought to be the abilities that underlie adequate performance on social tasks. Various models of competence implicate overt behaviors and cognitive processes (e.g., Dodge, 1986; Dubois & Felner, 1996; McFall, 1982), as well as emotion-regulation capabilities (e.g., Cavell, 1990; Eisenberg et al., 2003; Rose-Krasnor, 1997). Although these skills are considered necessary for competent performance, they are not sufficient. Competence is not an intrinsic property of any of these abilities. Thus, the use of these skills, even within an appropriate context, is not inherently competent.

To be considered competent, an action has to meet some external standard. Broadly speaking, two different standards have been described. Some authors suggest that competence results from the achievement of a social goal or success on a social task (e.g., Erdley & Asher, 1999). Similarly, other authors define competence in terms of the broader goal of “achieving a good developmental outcome” (Waters & Sroufe, 1983, p. 81). Others have argued that the benchmark for competence is positive evaluation by significant others (see Gresham, 2001). This criterion appears to be operationalized most frequently as acceptance within the peer group (Cavell, 1990; Dodge, 1985; Englund, Levy, Hyson, & Sroufe, 2000); however, other judges could evaluate behavior. Although it can be operationalized in slightly different ways, social competence is now frequently conceptualized as an evaluative term that refers to judgments made by important people in an individual’s environment (e.g., Dodge, 1985; Dodge et al., 1985; Gresham, 1986, 2001; Hops & Finch, 1985; Inderbitzen, 1994; McFall, 1982; Merrell & Gimpel, 1998). In addition to people in youth’s environments, this conceptualization can be construed more broadly to include the standards of society as a benchmark by which competence can be evaluated. For example, Masten et al. (1995) note that to be considered competent actions have to be considered acceptable by the standards of American society.

### *1.4. Judge-specificity of competence*

If the competence of an action lies in the evaluation of the behavior, it follows that perceptions of competence may vary as a function of the person judging the behavior (Goldfried & D’Zurilla, 1969). Thus, even within the same context, there may be a discrepancy between different people’s perceptions of the competence of an action. Disparate judgments of social behavior may translate into differential treatment of a child by the evaluator(s) and previous studies suggest that different groups of judges may use different criteria when evaluating children’s behavior. For example, previous work has demonstrated that aggressive behavior may be associated with positive relationships with peers (e.g., Cairns, Cairns, Neckerman, Gest, & Gareipy, 1988). It is likely that adults view this type of behavior more negatively. In other words, it is possible that a behavior will be differentially competent depending upon whose standards are being used to evaluate it. The relative importance of the evaluation of the different judges may vary as a function of the behavior and the situation. For some behaviors and some contexts, the negative evaluation of a particular group may be associated with such serious negative consequences that this group’s judgment becomes the standard. For example, for gang members, the repercussions of criminal behavior may make society’s judgment the most critical, even though other groups – most notably, the peer group – likely evaluate this behavior more positively. However, even in these cases, it may likely be useful to understand perceptions of the behavior from the perspectives of different groups in the social environment. Knowing whether an important “audience” considers a given behavior effective is valuable information, even if the behavior is ultimately viewed as maladaptive or inappropriate by society at large.

### 1.5. Integrative framework

Summarizing across these theoretical models, it appears that researchers have pinpointed four primary factors associated with youth social competence: child, behavior, situation, and judge. In other words, knowing something about the child of interest, the situation in which the behavior was enacted, the behavior that was selected, and the person evaluating the behavior would explain the greatest amount of variability in a child's social functioning.

Thus far, our discussion of child-specific factors has focused on the conceptualization of competence as a trait. However, other child-level predictors may influence the effectiveness of interpersonal interactions, either by influencing the behaviors in which a child engages or others' perceptions of those behaviors. For example, several studies have demonstrated that children's physical attractiveness is related to their social competence (Kleck, Richardson, & Ronald, 1974; Langlois & Stephan, 1977). Perhaps the most salient child-level variable that will influence competence is developmental level. Developmental level will affect the quality of the solutions youth generate to interpersonal difficulties, and previous research suggests that increasing age is associated with more competent strategies, as rated by adult coders (Feldman & Dodge, 1987). A child's age may also influence how others perceive their behavior. Strategies that are deemed appropriate for an elementary school child may not be judged competent when performed by an adolescent.

The contributions of child-, behavior-, situation-, and judge-level factors are well captured in the definition of social competence first proposed by McFall (1982), namely that competence is "somebody's judgment that a person's behavior in a given situation was effective" (p. 13). A statistical metaphor may be useful in imagining the relative influence of each of these factors — child, behavior, situation, and judge. In this generic four-factor model of social competence, each of these predictors would explain a unique component of the variance in children's social competence. For example, some situations are easier to manage and more likely to engender competent functioning: on average, children will be more likely to perform competently in response to a compliment than an insult. Similarly, some children will be more likely to behave competently, just as some behaviors (e.g., smiling) will, on average, be more appropriate. To extend the statistical metaphor, in addition to the main effects, the full model of social competence also includes interaction terms, such as an interaction between child and situation.

Most of the major theoretical models of social competence described in the literature are nested within this full four-factor model; that is, they include a subset of the possible predictors and interaction terms. In doing so, each model emphasizes some of the dimensions of competence, or combinations thereof, while "controlling for" or omitting the others. Consider the conceptualizations of competence we have already discussed. The trait model identifies social competence as a property of the individual. Implicitly, subscribers to this theory are arguing that child-level factors will explain the largest proportion of variance. In contrast, the social skills model emphasizes the behavioral dimension: Social competence is located in the action. Finally, the molecular model prioritizes the interaction between situation and behavior. Within this theoretical framework, some behaviors are "always" appropriate for certain contexts (e.g., school behavior).

Research on social competence has not yet reached the point where it is entirely clear which of the four classes of predictors are essential for our understanding of youth social competence. Historically, much of the attention has been focused on child and behavior variables (see Ladd, 2005). There is mounting evidence to support the utility of incorporating situational factors in our models of social functioning. For example, Wright and colleagues have published an impressive series of studies examining variability in youth responses in a variety of interpersonal contexts (e.g., Wright, Zakriski, & Drinkwater, 1999; Zakriski, Wright, & Underwood, 2005). Taken together, their results suggest that behavior that is likely to be problematic (e.g., physical aggression) varies markedly as a function of situation. For example, boys identified as having externalizing problems show higher levels of aggression only when being teased or threatened by peers, demonstrating comparable levels of aggression in other interpersonal situations (Wright et al., 1999). Data suggesting that minor changes in social situations (e.g., the identity of the peer partner) lead to disparate behavioral strategies provide further evidence for the role of situation in social functioning (e.g., Caplan, Benetto, & Weissberg, 1991; Dirks, Treat, & Weersing, submitted for publication).

Less is known about the importance of judge-specific factors. Inter-judge discrepancies in evaluations of youth social competence have been well documented (Renk & Phares, 2004). However, many studies use measures that do not require raters to evaluate specific youth behaviors. Rather, they evaluate the child globally (e.g., by using peer nominations), or estimate how often the child engages in behavior pre-judged to be problematic (e.g., by using rating scales). To date, almost no work has examined explicitly variability in evaluations of the competence of youth behavior

as a function of judge; however, early efforts suggest this may be a profitable avenue to explore. For example, a recent study asked elementary school children, along with their parents and teachers, to list behaviors associated with social competence. Although there was significant overlap between the groups, the adults generated many behaviors not identified by the children, such as having manners (Warnes, Sheridan, Geske, & Warnes, 2005). A second study demonstrated that three groups of judges (peers, parents, and teachers) varied in their global evaluations of youth responses to problematic interpersonal situations (Dirks, Treat, & Weersing, in preparation).

Although the field has not converged on a single definition of competence, both theory and data seem to be pointing toward the relevance of a four-way interaction to adequately describe youth social competence: child  $\times$  situation  $\times$  behavior  $\times$  judge. In the following sections, we review illustrative research in the assessment of social competence and interventions to improve youth social functioning. We highlight the ways in which research programs have or have not addressed this full four-factor model, and we discuss the potential utility of expanding current research to include this more complex view of competence. Throughout, we endeavor to weigh the value of additional explanatory power against the costs of complexity. To return to our statistical metaphor, inclusions of additional predictors and higher-order interaction inevitably explain more variability than a simpler model consisting of only main effects. However, while complexity may improve “model fit”, the value of this additional precision must be weighed against the loss of parsimony.

## 2. Assessment models of social competence

In this next section, we examine methods for assessing social competence in children in light of the generic four-factor model of competence. The goal of assessment is to capture differences in social competence among children. For this reason, assessments logically do not emphasize child-level predictors, such as demographic factors or psychological variables, which are related to but not the same as social competence. Rather, measurement models of social competence magnify or minimize the other dimensions – behavior, situation, and judge – in order to explain as much of the variability in social functioning as possible. Through the implicit or explicit treatment of these classes of predictors, assessment models of competence broadly align themselves with the theoretical conceptualizations discussed in the previous section. This section outlines how some of the major assessment strategies treat each of the three dimensions of interest. The discussion is organized by dimension; for a summary of each assessment strategy, readers are referred to Table 1. We begin by examining the extent to which common assessment measures incorporate behavioral variability in social competence.

### 2.1. Behavioral predictors

#### 2.1.1. Sociometric and nomination procedures

One common class of assessments is sociometric procedures, in which youth are asked to rate how much they like and dislike their classmates and these ratings then are combined to identify youths' social positions within their peer groups (e.g., popular, rejected, neglected; Coie, Dodge, & Coppotelli, 1982). Alternatively, youth may be asked to nominate peers for behavioral labels, such as “starts fights” or “is nice” (e.g., Masten, Morrison, & Pellegrini, 1985).

As outlined by several authors (e.g., Dodge, 1985; Bierman & Welsh, 2000), sociometric procedures do not ask raters to consider specific behaviors when they are identifying children. These measures answer the question “*is the child liked?*” rather than “*what is the child like?*” (Parker & Asher, 1987, p. 359, italics added). Nomination procedures may include more specific behavioral labels, but often ask youth to make more global designations. For example, the Revised Class Play Measure asks youth to nominate peers who are: “[a] good leader”, “someone you can trust”, or “often left out”, (Masten et al., 1985). It is not clear what children given these types of labels are doing to earn these designations. Fundamentally, both sociometric and nomination approaches leave the dimension of behavior uncontrolled and unspecified, and as a result omit the behavioral dimension from the model of social functioning.

Omission of the behavioral dimension presents difficulties. At the individual level, these assessments identify children who struggle (or succeed socially); however, they do not reveal what it is those children are doing to earn those ratings (Dodge, 1985; Bierman & Welsh, 2000). Thus, when formulating an intervention strategy, it is unclear what social skills clinicians should be targeting. Although less discussed, omission of behavioral information also presents challenges when considering data collected for nomothetic purposes. If nominations or sociometrics serve as

Table 1

Summary of assessment approaches: Examples, loci of competence, and treatment of variability along dimensions of interest

Assessment strategy	Examples of measures or approaches	Locus of competence	Treatment of variation		
			Behavior-level predictors	Situation-level predictors	Judge-level predictors
Sociometric and nomination procedures	Revised Class Play Measure (Masten et al., 1985) Coie et al., 1982	Child	Allowed to vary and omitted <sup>d</sup>	Allowed to vary and omitted	Constrained
Observations					
Predetermined set of behaviors	Weisz et al. (1995)	Child <sup>a</sup> or behavior or child <sup>b</sup> × behavior or situation <sup>c</sup> × child × behavior	Constrained and included or omitted	Allowed to vary and omitted or included <sup>c</sup>	Constrained
All behaviors	Wilton, Craig, & Pepler (2000)	Child <sup>a</sup> or behavior or child <sup>b</sup> × behavior, or situation <sup>c</sup> × behavior or situation × child × behavior	Allowed to vary and included or omitted	Allowed to vary and omitted or included <sup>c</sup> or constrained <sup>f</sup>	Constrained
Rating scales	MESSY (Matson et al., 1983); SSRS; (Gresham & Elliot, 1990); CBCL and TRF; (Achenbach & Rescorla, 2001)	Child <sup>a</sup> or behavior or situation × behavior	Constrained and included or omitted	Allowed to vary and omitted <sup>c</sup>	Constrained
Situation-based measurement strategies					
Standardized observations (analogue situations)	Underwood et al. (1999)	Child <sup>a</sup> or behavior or child <sup>b</sup> × behavior or situation <sup>c</sup> × behavior or situation × child × behavior	Allowed to vary and included or omitted or constrained	Constrained	Constrained
Frequency ratings	IPSIUA (Farrell et al., 1998)	Child <sup>a</sup> or situation	Allowed to vary and omitted	Constrained	Constrained
Difficulty ratings	TOPS (Dodge et al., 1985); CAPS (Cavell & Kelley, 1994)	Child <sup>a</sup> or situation × child	Allowed to vary and omitted	Constrained	Constrained
Role-play (i.e., child's free response)	Child Role-Play Measure (Dodge et al., 1985)	Child <sup>a</sup> or situation × behavior	Allowed to vary and included or omitted	Constrained	Constrained
Multiple-choice (i.e., child's forced choice)	MAPS (Cavell & Kelley, 1992)	Child <sup>a</sup> or situation × behavior	Constrained and included or omitted	Constrained	Constrained

<sup>a</sup>These measures locate competence in the child when a total score from the measure is used as an outcome variable (e.g., by computing scores on subscales or summing across the entire measure).

<sup>b</sup>The locus of competence in these cases depends upon how behaviors are coded. If coding categories describe behaviors, the locus of competence is in the behavior. If coding categories contain an evaluative component, then the locus of competence shifts to child × behavior, as factors associated with the child may influence ratings (i.e., the same behavior may be viewed as differentially competent, depending upon the identity of the actor).

<sup>c</sup>Researchers or clinicians may also code contexts (e.g., Wright et al., 2001) thus permitting the inclusion of situation-predictors in models of social functioning.

<sup>d</sup>Some types of nomination procedures ask raters to apply more specific behavioral labels (e.g., starts fights). In these cases, nomination procedures constrain the behavioral dimension to a predetermined set of behaviors.

<sup>e</sup>Some rating scales incorporate situation into some of the items. For example, the parent form of the SSRS contains the items "Congratulates family members on accomplishments" and "Politely refuses unreasonable requests from others." These items emphasize a situation × behavior interaction.

<sup>f</sup>Researchers or clinicians may observe responses to a particular situation (e.g., being bullied; Wilton et al., 2000), thus constraining variability along this dimension.

predictors, the exclusion of behavioral information from the model may threaten the inferences drawn by the researcher. Behavior may vary systematically with nominations and sociometric status. For example, children and adolescents who are well liked by their peers may be engaging in similar behaviors. This may also be true of unpopular youth. If behavioral strategies are correlated with the measure of social competence, then their omission from the model introduces a confounding variable: Variability attributed to performance on those measures may actually be better explained by differences in the behavioral strategies enacted. Incompetence may be attributed to the child instead of the behavior.

### *2.1.2. Observational procedures and rating scales*

Given the challenges associated with losing behavioral information, in some circumstances, researchers may wish to capture this variability. Observational techniques provide one method of doing this. Naturalistic observations involve having trained observers watch and record children's behavior in their social environment (Pepler & Craig, 1995). If observers record all behavior, or use a coding manual developed by observing the full range of responses, then behavior is allowed to vary and then can be used to predict social functioning. Alternatively, observational techniques may constrain the behavioral dimension to a number of values, by identifying key behaviors and using variability on these levels of the factor to predict the outcome of interest, for example, if observers are counting frequencies of a predetermined set of behaviors (e.g., Weisz, Chaiyisit, Weiss, Eastman, & Jackson, 1995). Some peer nomination procedures mirror this approach by utilizing more specific labels (e.g., "teases other children too much", "loses temper easily"; Masten et al., 1985).

Behavioral rating scales, one of the more commonly used measurement models of social competence, also restrict the behavioral dimension to a subset of values. Measures such as the Social Skills Rating System (Gresham & Elliott, 1990); the Matson Evaluation of Social Skills for Youngsters (Matson, Rotatori, & Helsel, 1983); the Child Behavior Scale (Ladd & Profilet, 1996); and the Child Behavior Checklist and related Teacher Report Form (CBCL and TRF; Achenbach & Rescorla, 2001), are created by identifying youth behaviors that have predictive and descriptive validity. Knowing whether children engage (or do not engage) in the identified behaviors should reveal something about their social functioning, as well as other outcomes of interest (e.g., prognosis).

Measures capturing the behavioral dimension may be used in ways aligning them with a social skills approach to competence. For example, rating scales or observations may be used to identify problem behaviors to serve as targets of intervention. In this case, the implicit assumption is that the behavior itself is the problem. Often, these assessments are used nomothetically to assess the correlates of both good and problematic social functioning. In these cases, which have statistical inference as a primary goal, a categorical variable with many levels is an unwieldy predictor. Thus, ratings for individual behaviors are often collapsed together (Wright, Lindgren, & Zakriski, 2001). This approach essentially removes behavioral information, localizing competence in the individual, and as such is consistent with a trait model. In both cases, rating scales and observations tie social competence to behavior in a way that global peer nominations and sociometric procedures do not. For this reason, the clinical utility of these assessments will depend upon the social validity of the behaviors chosen (Gresham, 2001).

## *2.2. Situation-level predictors*

### *2.2.1. Sociometrics and rating scales*

Sociometric procedures and rating scales often do not include situational predictors in the model of youth social functioning. Generally, raters are asked to select youth who fit global descriptions or to identify those who are liked or disliked without making reference to the situations in which they are acting. Similarly, rating scales ask raters to identify the frequency with which youth engage in certain behaviors, but do not make reference to the situations which give rise to these strategies, instead emphasizing the overall frequency of a given behavior (Wright et al., 2001).

Eliminating the situational class of predictors from the model may be problematic in some circumstances. The challenges associated with this approach become evident when one considers some of the items included on behavioral rating scales and checklists. The appropriate social skills subscale of the teacher form of the MESSY contains the following items: (a) makes other people laugh; (b) asks if he/she can be of help; and (c) asks questions when talking with others (Matson et al., 1983). It is not difficult to imagine a number of social situations in which each of these behaviors would be problematic. Knowing how frequently children engage in a set of behaviors may not tell the whole story of their social functioning. Not only must youth be able to engage in the identified behaviors but they also

must know when to use them (Dubois & Felner, 1996). For this reason, incorporating contextual information into measurement models of competence may enhance their clinical utility.

Adding these additional predictors – a main effect of situation and a situation  $\times$  behavior interaction term – will increase explanatory power. However, the addition of these terms may not explain sufficiently more variability than the behavior term alone to justify the more complicated model. There likely will be a main effect of behavior such that some behaviors, on average, will be relatively more adaptive or maladaptive across a range of situations. Knowing nothing about the situation that engendered the response, it is more likely that making jokes will be a more adaptive strategy than shoving someone. Determining that a child engages in probabilistically “good” or “bad” behaviors may explain sufficient variability in their social functioning such that the addition of the remaining predictors is unnecessary. However, if situation – as a main effect or an interaction – is strongly associated with social functioning, not including these terms results in misspecification of the model. Differences in social functioning attributed to either factors associated with individual children or their behaviors may actually be caused by differences in the social situations that youth encounter (Wright et al., 2001; Wright & Zakriski, 2001). For example, urban, lower-SES youth may engage in more problematic behaviors than their more advantaged suburban peers. However, these differences may be due, at least in part, to the fact that they experience more challenging situations. If the situations these youth encounter are at least partly responsible for differences in social functioning, clinicians may need to include situational variables as an intervention target (Wright & Zakriski, 2001).

### 2.2.2. *Situation-based measurement strategies*

Practitioners have long recognized the importance of considering the situation in which a behavior is enacted. A common observational strategy is the A–B–C method, in which observers record the antecedents and consequents of an action, as well as the behavior itself (Merrell & Gimpel, 1998). Increasingly, developmental psychologists have emphasized the importance of considering situation, or task, when conceptualizing youth social competence. Measurement models aligned with this theoretical perspective capture variability in situation and include this information in the prediction of youth social functioning. One common approach to capturing the influence of situation is to constrain this dimension to a subset of its possible values. Focusing on competence with respect to important social tasks has become an important strategy among developmental researchers (Putallaz & Sheppard, 1992). These paradigms assess how youth respond to situations that have been identified as particularly important or problematic (e.g., Chung & Asher, 1996; Dodge et al., 1986; Hopmeyer & Asher, 1997; Leary & Katz, 2005; Rose & Asher, 1999), as well as moderators of those responses, including psychological and demographic factors. Researchers who adopt this approach argue that we can learn more about children’s social functioning by carefully measuring responses to these key situations, rather than obtaining more global measures of children’s social functioning (Dodge et al., 1986). Measurement models adopting the strategy of constraining the situational dimension include situation taxonomies, behavioral role-plays, and analogue situations.

### 2.2.3. *Frequency and difficulty ratings*

As described earlier, there may be a main effect of situation such that some contexts are more difficult to manage on average. Given this, knowing how often youth encounter these situations will be associated with their social functioning: Youth who confront problematic situations more frequently are more likely to struggle interpersonally. To operationalize this approach, a measure should ask raters to identify how frequently youth experience key situations. Several teams have created assessments of this type. For example, Farrell, Ampy, and Meyer (1998) used a behavioral-analytic framework (Goldfried & D’Zurilla, 1969) to generate a group of situations identified as commonly occurring, difficult, and critical by lower-income, urban youth (Interpersonal Problem Situation Inventory for Urban Adolescents; IPSIUA). The resulting self-report measure asks youth to rate how frequently each of the problematic situations occurs to them, thus the IPSIUA utilizes only situational predictors. Frequency of experiencing the identified situations was associated with higher levels of aggression, substance use, and anxiety (Farrell et al., 1998), suggesting that information about social situations can explain some variability in youth’s social functioning.

Other measures use situation inventories to obtain information about children and/or their behavior. Dodge et al. (1985) used the behavioral-analytic approach to develop a list of problematic interpersonal situations faced by elementary school children. The Taxonomy of Problematic Situations (TOPS) asks teachers to rate how often a given child has difficulty with each of the situations. Similarly, the Checklist of Adolescent Problem Situations

(CAPS; Cavell and Kelley, 1994) asks youth to rate (a) how difficult they find a situation and (b) how frequently it is encountered. The cross-product of these ratings then is used as the outcome of interest. In both cases, information about individuals is combined with knowledge about situations. Both of these measures, however, omit the behavioral dimension. Raters are asked how well youth handle a given situation, but they are not asked what the child is doing.

#### 2.2.4. *Role-play and multiple-choice procedures*

In contrast, role-play procedures involve presenting a problematic situation and having children indicate what they would say or do if the situation occurred to them (Inderbitzen, 1994). In addition to the TOPS, Dodge et al. (1985) created a role-play measure based on the problematic situations they generated. In this measure, youth respond to a subset of the situations identified by teachers as problematic, and these responses then are coded for competence using a manual based on the ratings of expert judges. This procedure evaluates competence with respect to the situation in which a child is acting, rather than uniformly evaluating strategies as competent or incompetent. In doing so, this type of measure emphasizes the situation  $\times$  behavior interaction. Procedurally, the behavioral dimension is allowed to vary freely, but is included in the model of social functioning, while situation is constrained to a set of empirically derived values. An alternate approach is to use a multiple-choice format, in which youth are presented several responses to a vignette and asked to choose the one closest to what they actually would do (e.g., Measure of Adolescent Social Performance; Cavell and Kelley, 1992).

The criticism commonly leveled at role-play and multiple-choice procedures is that they suffer from limited external validity (Becker & Heimberg, 1988). Seeing how children respond in their environment may yield a closer approximation of their actual behavior, and would indicate whether or not children possess the skills necessary to carry out their chosen response. For this reason, some researchers may favor an analogue-situation paradigm, in which the target child participates in structured interactions based on critical situations (Inderbitzen, 1994; Merrell & Gimpel, 1998). Several research teams have used this approach to assess youth's social behavior (e.g., Englund et al., 2000; Leary & Katz, 2005; Underwood, Hurley, Johanson, & Mosley, 1999). This strategy results in the behavioral sample most closely associated with what children would do in the "real world" and may be very useful for determining if youth are able to perform a specific skill, particularly if the behavior of interest occurs infrequently (Foster, Bell-Dolan, & Burge, 1988).

Due to length of presentation, participants usually complete only one or two analogue situations (Inderbitzen, 1994). If behavior is not cross-situational, a measure of social competence may need to include a number of important situations. Increasing the number of values along the situation-dimension may improve the fit of the model for two reasons. If the situations represented are frequently occurring, difficult, and critical, determining how youth function in these contexts may explain a substantial amount of variability in social functioning. Although there are an infinite number of situations that youth could encounter, many will not have implications for social well being. Alternatively, one could take a probabilistic approach to extrapolating from performance in one situation to another. The more situations with which youth struggle, the more likely it is that they will not be successful in a novel situation (McFall, 1982). To perform competently requires a set of cognitive and behavioral skills, and struggling in a number of situations may indicate that a child has a skill deficit.

### 2.3. *Judge-level predictors*

#### 2.3.1. *Sociometric and nomination procedures*

Nearly all measures of social competence constrain the judge-dimension to a subset of possible values by giving assessments to a specified group of raters. The utility of the measure will depend on the values chosen for each dimension. Selected judges should hold opinions that are consequential for youth's social functioning. The great strength of sociometric procedures completed by peers is their high social validity. Youth who are not liked by their peers are, by definition, struggling socially. While the opinions of peers are certainly important, other people, including parents and teachers, also are in a position to reward or punish youth behavior. These other groups may evaluate behavior quite differently than peers (Dirks et al., in preparation; Warnes et al., 2005). To avoid the consequences associated with negative evaluation by a critical evaluator, it may be helpful to assess the ways in which youth address the multiple-constraint problem that arises when important judges do not agree.

### 2.3.2. Rating scales and multiple informants

The importance of using multiple informants in the assessment of youth behavior has long been recognized (Frick & Kamphaus, 2001). For this reason, many of the measures used to examine youth social competence have rating forms for multiple informants. For example, both the CBCL (Achenbach & Rescorla, 2001) and the SSRS (Gresham & Elliot, 1990) contain forms for parents and teachers. Very often, researchers combine information from different raters. This aggregation may occur in a variety of ways. Sometimes, it takes place during the construction of composite dependent variables based on ratings from different sources (De Los Reyes & Kazdin, 2004). It also may occur as a result of the analytic model chosen. For example, Cole, Martin, Powers, and Truglio (1996) collected ratings of youth's social competence from peers, parents, and teachers, as well as self-report measures from the participants themselves. The authors then used structural equation modeling to determine how well these ratings loaded onto a latent construct. Regardless of the stage at which it occurs, combining information from different judges collapses across this dimension, removing the class of judge predictors from the model of social functioning.

When combining ratings, either through scoring or analysis, the expectation is that all evaluators are assessing the same construct and raters should converge in their evaluation of both problematic behavior (De Los Reyes & Kazdin, 2005) and competence (Renk & Phares, 2004). This expectation, and the subsequent collapsing across judges, is consistent with a trait approach. The implicit assumption is that the construct of interest, in this case, social competence, is located in the child. Thus, disagreement between the judges is viewed as error. If, on the other hand, competence is viewed as an evaluative construct, then the variability between judges should be treated at least partly as signal, rather than entirely as noise. Within this framework, differences between the judges reflect important variability, as well as error, in the judges' perceived competence of youth behavior.

### 2.3.3. Behavioral-analytic approaches

Very few measures assess competence from the vantage point of multiple judges. Those that do typically are developed using the behavioral-analytic approach (Goldfried & D'Zurilla, 1969). As discussed previously, the first step in this procedure is to have people in the population of interest generate situations that are problematic, commonly occurring, and difficult. Subsequently, a different subset of the population generates responses, which relevant judges evaluate for competence. The identity of the judges is determined by the population and the situation. For example, a response to a situation describing cheating on an exam may be evaluated by professors and parents, whereas strategies to manage conflict with a roommate may be judged by peers. This approach, then, reflects the situation  $\times$  judge  $\times$  behavior interaction. To date, these types of measures have been developed to assess competence in a variety of populations, including women diagnosed with eating disorders (McFall, Eason, Edmonson, & Treat, 1999) and typically developing high school students (Grover, Nangle, & Zeff, 2005). Although these measures frequently obtain information along the situation- and judge-dimensions, this information is often omitted, either in measure development (e.g., by only retaining items where judges' ratings converge) or in scoring (e.g., by obtaining an overall "competence" score). To more fully reflect the judge  $\times$  situation  $\times$  behavior interaction, differences in competence as a function of situation and judge should be maintained, for example, by developing manuals that evaluate competence from the perspective of different judges. These assessment strategies are more complicated, but if the additional predictors are significantly associated with social functioning their omission may introduce confounds into our measurement models. Ultimately, variability in youth social functioning should be attributed to the appropriate sources, as this will indicate the best targets for training. Following from this, we turn next to intervention models of social competence.

## 3. Implications for intervention models of social competence

Many intervention models directly target aspects of youth social functioning, such as social skills training programs for rejected children, and social skills modules are increasingly being incorporated into interventions addressing other target problems and psychiatric diagnoses, such as ADHD or aggression (Bierman, 2004). In a recent review, Weisz, Jensen Doss, and Hawley (2005) reported on a large meta-analysis assessing treatment protocols for the four primary childhood problem clusters: ADHD, conduct difficulties, depression, and anxiety. In their sample of 587 studies, 83 of these programs included social functioning as a measured outcome of treatment. Consistent with this, 20 programs utilized a social skills training treatment group, and many of the 121 cognitive behavioral programs likely contained a social problem-solving module. Across all these metrics, it is clear that treatment researchers are engaged in efforts to intervene on the complicated construct of social competence.

At a basic level, these intervention efforts have met with a good deal of success. Meta-analyses of social skills interventions indicate that, in general, participants show improvement at post-test, relative to control groups. For example, a quantitative review by [Beelman, Pfingsten, and Losel \(1994\)](#) revealed a weighted effect size of 0.47 in favor of participants receiving treatment. Youth receiving active treatment showed particular improvement on measures of social cognitive skills (weighted ES=0.77) but also demonstrated gains on assessments of social interaction skills (weighted ES=0.34). An earlier meta-analysis of social skills training packages yielded similar findings, with an ES of 0.47 on measures of social interaction, social cognitive skills, peer acceptance and aggressive behaviors ([Schneider, 1992](#)). In their on-going meta-analyses, [Weisz et al. \(2005\)](#) are assessing the effects of treatments targeting youth psychopathology. Preliminary results from this work suggest groups receiving social skills training show benefits on assessments of social functioning, relative to controls (ES=0.61).

In sum, current approaches to improving social functioning have demonstrated success with some groups under some conditions. In the following section, we break down these efforts along the same dimensions as we used in analyzing methods of measuring youth social competence. As with our review of assessment techniques, we intend this review to be illustrative, rather than comprehensive. In some cases, this will involve highlighting developed programs and techniques focusing on a given predictor or interaction. Additionally, we will speculate about alternate strategies that may address dimensions, both individually and in combination, that have traditionally garnered less attention.

### *3.1. Intervention models targeting behavior-level predictors*

Historically, many training programs aiming to enhance social competence have emphasized behaviors and have been based on a skill deficit hypothesis ([Ladd, 1984](#); [Sheridan, Hungelmann, & Maughan, 1999](#)). According to this hypothesis, poor social functioning occurs when children lack the necessary skills to behave competently ([Gresham, 1986](#)). Interventions of this type are analogous to assessments that measure how frequently children engage in certain behaviors. The basic premise of these interventions is that increasing some behaviors and decreasing others will translate into improved social functioning. This type of program is consistent with a social skills model of competence, which localizes competence (or incompetence) in the behaviors themselves.

Interventions of this type assume that the targeted child does not have the skills necessary to engage in competent functioning. When these interventions are tailored to specific skill deficits, they can be quite effective ([Bierman, 2004](#)). For example, [Bienert and Schneider \(1995\)](#) identified interpersonal deficits for two groups of children and then tailored their social skills intervention to address these skills. They found that peer-rated likeability increased for children receiving training specific to their deficits, but not for those receiving the intervention designed for the other group. These results suggest that, for these youth, simply teaching “good” behaviors was insufficient. Targeting behavior in this way only conferred significant benefits for children lacking those skills.

Some youth struggling socially may not be experiencing skill deficits and these youth may be less likely to benefit from a behavior-based approach to training. Indeed, reviews of the literature suggest there may be limitations to this intervention model. Social skills training packages have been quite successful at affecting change on the targeted skills, but are not associated with strong improvements in broader indices of social functioning, such as peer nominations ([Beelman et al., 1994](#); [Schneider, 1992](#)). One reason for this limitation may be that factors other than youth behavior are associated with social functioning. [La Greca \(1993\)](#) noted the potential value in broadening the focus of our intervention models beyond the individual by considering the systems in which children are functioning (also see [Weissberg, 1989](#)). Intervention models targeting only behavior are inconsistent with a more complicated conceptualization of competence ([Bierman, 2004](#)). We turn next to discussion of intervention strategies incorporating dimensions other than behavior.

### *3.2. Interventions targeting situation-level predictors*

The first dimension we will consider is situation, which may well exert a main effect on social functioning. Some situations are more difficult to manage than others. If situation explains a substantial portion of the variability in youth social competence, then removing the problematic situations would lead to a significant improvement in social outcomes ([Wright & Zakriski, 2001](#)). A program like Moving to Opportunity ([Leventhal & Brooks-Gunn, 2003](#)) may improve social competence in this way. Youth in lower-SES neighborhoods and schools may face very difficult situations, such as community violence ([Schwab-Stone et al., 1995](#)), or being victimized by peers ([Dhami, Hoglund,](#)

Leadbeater, & Boone, 2005). By moving to safer neighborhoods, these youth may experience a significant gain in social functioning. Although not common within clinical psychology, these more macro-level interventions can have dramatic effects. For example, researchers have demonstrated an association between stricter hand-gun laws and lower rates of suicides involving fire arms (Sloan et al., 1999). This policy-level change reduced the likelihood that people were confronted with a problematic situation, which, in turn, was associated with changes in the behavior of interest.

Situation may also moderate the association between behaviors and social functioning. As we have discussed, many theorists have argued that social competence is specific to the situation in which a behavior is enacted. Given this, it will be important to teach youth the situations in which it is appropriate, or not appropriate, to engage in a certain behavior (Dubois & Felner, 1996). In the absence of this information, participants may use their newly acquired skills inappropriately, which could lead to further social rejection. In other words, we should be training skills “that are meaningful and functional in producing desirable outcomes in specific social contexts” (Sheridan et al., 1999, p. 85). Similar to assessment, a good starting point in the development of contextually sensitive interventions may be to adopt the behavioral-analytic strategy of having members of the population of interest identify situations that are commonly occurring, difficult to manage, and critical (Goldfried & D’Zurilla, 1969). The training program then could emphasize helping youth find ways to manage those situations. Although this approach does not guarantee adept performance in all situations, it will help youth manage some of the most consequential situations in their day-to-day lives.

### 3.3. Interventions targeting judge-level predictors

The final dimension theorists have suggested is related to social competence is judge. Measurement models can reflect this variability by obtaining ratings from different judges and treating them as discrete entities, rather than collapsing across these dimensions. For the creators of interventions, one method of managing the judge-level predictors is to constrain the dimension to a single value, that is, to train competence as defined by one group of judges. For example, the importance of considering the opinions of peers when training social competence has been acknowledged by many authors, who argue that it is critical for practitioners to teach youth socially valid behaviors (i.e., strategies that are valued by others in the environment; Hansen, Nangle, & Meyer, 1998; Sheridan et al., 1999). Ladd (1984) perhaps makes this point best, stating that teaching children behaviors that have “no useful function in the peer group may only increase their social inappropriateness and, consequently, place them at greater risk for peer difficulties” (p. 330). If the goal is to improve competence as perceived by peers, then children must be taught to engage in behaviors that peers evaluate positively.

Focusing on the peer group, a variety of different intervention strategies have been adapted that incorporate the evaluative nature of competence. A significant body of work has demonstrated that some peer groups may reinforce problematic behaviors (e.g., Cairns et al., 1988; Stormshak et al., 1999). In these cases, it may be beneficial to remove a child from a peer group (Wright & Zakriski, 2001). This strategy has been shown to be effective for the reduction of conduct difficulties. Huey, Henggeler, Brondino, and Pickrel (2000) demonstrated that reduced association with deviant peers at least partly mediated the relationship between multisystemic therapy (MST) and a reduction in delinquent behavior. An evaluation of the Multidimensional Treatment Foster Care Model also identified removing youth from problematic peer groups as a treatment mechanism (Eddy & Chamberlain, 2000). The nature of the peer group may also play a role in the success of other intervention strategies. For example, a recent meta-analysis revealed that group-based skills training with antisocial youth was less successful when the treatment group was composed of deviant youth (Ang & Hughes, 2001). The authors hypothesized that the power of the deviant peer group, even in the context of therapy itself, was far more powerful than the influence of the adult, therapist “judges” running the intervention.

Other interventions address peer evaluations by emphasizing the judge  $\times$  behavior interaction. A program within this framework would seek to change a group of judges’ evaluations of certain behaviors. A recent evaluation of a school based program designed to reduce physically and relationally aggressive behavior indicates that it is possible for school-based programs to modify normative beliefs among students (Van Schoiack-Edstrom, Frey, & Beland, 2003). The success of such programs will likely be moderated by a number of factors. For example, it may be more difficult to affect this type of change in schools that are situated in neighborhoods experiencing high rates of crime. Nonetheless, this approach may be of significant clinical utility in the training of social competence.

Of course, peer evaluations of youth competence may be based on more than the behaviors in which they engage. There may be a behavior  $\times$  child interaction, such that the perceived competence of a behavior is moderated by the

identity of the actor. For example, some children are funnier than others, and the former group's attempt at humor may be more likely to be viewed as competent than the latter's. There may also be an interaction between child and judge. This possibility was incorporated into a very successful intervention by [Bierman and Furman \(1984\)](#). These authors argued that children's reputations with their peers may be resistant to change, even after a child develops more appropriate skills. Thus, reputation, a child-level predictor not entirely collinear with behavior, may be associated with youth's peer-perceived competence.

Based on this theory, [Bierman and Furman \(1984\)](#) developed a training program combining skills training with peer interaction under superordinate goals. This second component of the training program required targeted youth to work in small groups with more socially successful classmates. Participation in the peer interaction program, compared to receiving only social skills coaching or no treatment at all, significantly improved sociometric ratings. Furthermore, youth who received both coaching and peer involvement continued to show significant gains at follow-up. The success of this program at increasing peer acceptance suggests the potential utility of explicitly addressing factors other than pure behavior. By addressing reputation, this intervention emphasizes the child  $\times$  judge interaction, as well as the behavioral dimension. In doing so, their program resulted in significant gains in social competence.

### 3.3.1. Multiple judges

In general, school-based programs that focus on the social environment, in addition to the child, are likely to be more effective ([Weissberg, Caplan, & Harwood, 1991](#)). Of course, peers are not the only group of judges in the social milieu who may consequence youth behavior. Many other people in children's lives will shape their behavior through their implicit and explicit treatment of behavior. The most obvious group of judges is parents. [Bierman \(2004\)](#) notes that parents can foster positive social functioning by demonstrating appropriate behaviors and helping children generate strategies for managing problematic interpersonal situations. If parents are not teaching appropriate strategies, it may be difficult to maintain positive behaviors.

Increasingly, intervention models are incorporating multiple judges into their intervention strategies. Fast Track is a program designed to reduce aggression and promote positive social functioning ([Conduct Problems Prevention Research Group, 2002](#)). All participants receive skill-based training, including social problem-solving training and training in behaviors that promote friendship. Youth identified as high-risk receive additional modules. In particular, their parents are provided training in developing appropriate expectations for their child's behavior, as well as parenting skills. Similarly, a recent intervention involved parents by sending them newsletters explaining the social problem-solving training their children were completing, and inviting them to try activities ([Fraser et al., 2005](#)).

These types of programs are large-scale efforts that intervene at the level of the judges to modify evaluations of behaviors that may contribute to social functioning that is problematic in some way. On a smaller scale, it may be possible to teach individual youth to negotiate inter-judge discrepancies in evaluations of social behavior present in their social milieu. A variety of intervention models may help children manage the variability in evaluations of competence that exists in the social environment. There are likely responses to many interpersonal situations that satisfy the multiple constraints imposed on children by inter-judge discrepancies. For example, a child who engages in retaliatory physical aggression when provoked could be taught to be verbally assertive in these situations. This response may help them maintain their status among their peers and would likely be viewed as more competent by the teachers than physical aggression. It may also be possible to teach youth not to engage in behaviors that are viewed extremely negatively by an important group of judges.

A second approach would be to teach youth how to choose an appropriate consequence and when to switch between consequences. In some situations, the negative outcomes associated with being evaluated negatively by a teacher will be so great that it may be worth choosing a strategy viewed as ineffective by peers. When the consequences of teacher disapproval are less severe, it may be more acceptable to engage in behaviors that are valued only by the peer group. Children may need to be taught to discriminate between these types of situations and modify their actions accordingly.

## 4. General conclusions

Social competence is one of the most frequently studied variables in the developmental psychopathology literature. Historically, there has been tremendous variability in definitions of social competence ([Dodge, 1985](#)), heterogeneity still evident today. However, over the past 30 years, there have been basic trends in the conceptualization of the construct. Some theorists have conceptualized competence as a property of the person, whereas others have localized

competence in behavior. As reviewed eloquently by McFall (1982), and Dodge (1985) and these approaches have been challenged both conceptually and empirically. Given the difficulties associated with these theories, researchers developed increasingly complex models of competence by incorporating both situation- and judge-dimensions into definitions of competence. This additional theoretical complexity significantly increases the challenges of measurement. Incorporating the additional situation- and judge-specific parameters into our measurement models will necessitate increasingly longer and more complex assessments. When developing a measurement model, researchers aim to capture as much variability in the outcome of interest as possible, while being mindful to strike a balance between explanatory power and parsimony. On the one hand, researchers should not incorporate parameters that do not significantly improve the fit of the measurement model, particularly given the costs in efficiency. On the other hand, however, researchers must avoid excluding predictors strongly associated with variability in social functioning. Misspecifying the measurement model by omitting important variables may pinpoint the locus of competence in the wrong place by misattributing at least some of the variability in the construct of interest to the wrong dimension.

A measurement model that captured variation along all four dimensions might assess the effectiveness of youth behavior in important situations from the perspective of multiple relevant judges. At an idiographic level, such a strategy would involve assessing a child's behavior in important situations and then obtaining ratings of the efficacy of the behavioral strategies from the perspective of the people most likely to reward or punish that behavior (e.g., peers, parents, and teachers). Many clinicians may utilize this approach; however, it is not a strategy that is often undertaken by researchers. To conduct this type of assessment nomothetically, a researcher might use the behavioral-analytic framework to generate relevant situations and a representative sample of possible responses. Evaluations of the effectiveness of these responses could be obtained from multiple relevant judges, such as groups of teachers, parents, and peers. Rather than aggregating the effectiveness ratings across classes of judges, separate coding manuals could be created based on the ratings of each group. These manuals would allow for the assessment of competence in each situation from the potentially differing perspective of multiple relevant judges. Researchers could build child-level factors into this measurement strategy by varying predictors of interest when obtaining ratings. For example, judges might be asked to rate the effectiveness of behaviors enacted by both boys and girls. Alternatively, child-level factors could be constrained by specifying the values along this dimension (e.g., stating the age of the youth being evaluated).

Intervention models also are aligned with various theoretical models of competence, depending upon their implicit or explicit treatment of the dimensions of interest. Initially, intervention models focused on behaviors, aligning themselves with a social skills approach to competence. Increasingly, there is recognition that focusing exclusively on the behavioral dimension may not be sufficient to achieve significant change in all cases. Intervention models targeting additional dimensions of competence (e.g., judge- and child-level predictors) have been developed, and these types of programs have been successful at improving children's peer relations (e.g., Bierman & Furman, 1984) or changing very problematic functioning (Henggeler et al., 1999). A variety of intervention models may address all four dimensions of interest. One strategy would be to develop a multi-component intervention that targets child-, behavior-, situation-, and judge-factors separately. For example, a universal program may help targeted children add to their behavioral repertoire, while simultaneously intervening with the peer group to change behavioral norms and reduce the occurrence of problematic situations (e.g., bullying). Alternatively, it may be possible to develop an intervention strategy focused exclusively on the target child that addresses predictors at each of these levels. For example, a clinician may work with an individual child to develop strategies for managing key situations that are perceived as competent from the perspective of each relevant consequator in the social environment. In other words, the goal of therapy would be to help youth solve the multi-constraint problems presented when their actions in a situation are being evaluated by different groups holding varying perceptions of competence.

#### 4.1. *Research agenda*

Both assessments and interventions addressing multiple dimensions of competence likely will necessitate more components and thus will be more difficult and expensive to develop and implement. For this reason, including additional predictors should markedly increase clinical utility. The four-dimensional theoretical framework described in this paper is highly complex, and it will not be possible to conduct a single study that definitively establishes the incremental utility of the inclusion of all four relevant factors and their interactions, particularly once potential child-specific moderators are taken into account. Rather, converging evidence across many studies investigating different

aspects of the framework will inform judgments of its validity and utility. The framework also should be evaluated in terms of its generativity: Simultaneous consideration of these four dimensions and their interactions should facilitate the organization of existing knowledge and provide insight into additional predictors of interest when developing measurement and intervention strategies.

Many studies of youth social functioning explore only a subset of the main effects and interactions included in the theoretical framework, such as child, behavior, and child  $\times$  behavior. Although it is not possible to move immediately to the full model containing all four main effects and associated interactions, our understanding of youth social competence may benefit from the systematic inclusion of additional factors, as main effects or interactions. For example, incorporating the situation-dimension in models focused on child- and behavioral-level factors would indicate (a) if there were some situations that were particularly difficult to manage; (b) if some children struggled more in particular contexts; (c) if some behaviors were more or less effective in different contexts. All of this information is potentially relevant for clinicians.

Previous research programs have identified the importance of some of the four dimensions and their interactions. Building on these prior studies will provide further information about the importance of adding additional complexity to the model. For example, in an elegant series of studies, Shoda, Mischel, and colleagues have demonstrated that youth behavior varies reliably as a function of the antecedent situation (e.g., Shoda, Mischel, & Wright, 1994). This work establishes the importance of contextual predictors, at least for the behaviors they have chosen to study. Future work could incorporate judge-level predictors by adding an evaluation component. Such studies would determine (a) if judges differed in their ratings of the appropriateness of these responses; (b) if situation were associated with differences in evaluations; and (c) if situation moderates differences between judges in their evaluation of behavior. Initially, it might be helpful to focus these investigations on behaviors that are likely to be perceived differently depending upon the context in which they are enacted and the person who is evaluating. Physically aggressive behavior may provide a useful starting point, for example. The association between physically aggressive behaviors and sociometric status is not clear, with only some physically aggressive youth experiencing peer rejection (see Chang, 2004). Furthering our understanding of the contexts in which aggression occurs and differences in perceptions of aggression as a function of those contexts may help to elucidate this link. For example, experimental work has demonstrated that youth who engage in aggression in response to provocation are liked more than youth who engage in these behaviors unprovoked (Willis & Foster, 1990).

A central piece of this research agenda will be the development of measurement and intervention models that more closely reflect this complex theoretical model of competence. Creating assessment strategies that incorporate situation- and judge-level predictors associated with youth social functioning will provide a means of assessing the incremental utility of the incorporation of each dimension. For some populations, existing measures may already capture the situation-dimension. As described earlier, several teams have developed inventories of problematic interpersonal situations (e.g., Cavell & Kelley, 1992; Farrell et al., 1998). These measures can be used to assess the importance of incorporating situation information by examining responses to different situations, rather than obtaining a total score. To evaluate the judge-dimension, the behavioral-analytic approach (Goldfried & D'Zurilla, 1969) could be used to assess the competence of responses to important situations from the perspective of all of the groups in a position to reward or punish behavior in that context. These ratings can be used to develop manuals which evaluate behavior from the perspective of each group of judges, thus providing a feasible means of assessing the judge-specificity of youth social functioning. Developing intervention models incorporating additional dimensions will provide researchers with a method of testing the clinical utility associated with more nuanced models of functioning. As with assessments, many current intervention models incorporate multiple dimensions of competence. A starting point may be to examine these programs using research designs that assess the gain associated with the addition of each component.

Although a model of social competence that incorporates all four dimensions is highly complex, existing lines of inquiry provide an excellent framework from which researchers can build more complicated models. Furthermore, a significant body of evidence generated by psychologists, as well as sociologists (e.g., Anderson, 1999), points to where the troubling situations and judge-discrepancies may lie. When choosing where to focus research investigations, it will be important to consider how different characteristics of the population of interest may moderate the relative importance of each dimension to variation in youth social functioning. Theoretical and empirical evidence may point towards groups of youth for whom each of the dimensions may be more or less relevant. One factor that will moderate the importance of each dimension is developmental level. For preschoolers, who are still learning social behaviors and skills, the situation- and judge-dimensions may be less relevant. Knowing the types of behaviors in which young children are engaging may explain sufficient variability in their social functioning. For older children, fitting behaviors

to social context may become more important. This notion of the increasing importance of situation in the understanding of youth behavior as a function of age is reflected in Hay's model of prosocial development, a theory that has received some empirical support (see Hay, Castle, Davies, Demetriou, & Stimson, 1999). Hay suggests that overall rates of sharing behavior may decline with age, as children increasingly recognize the conditions under which this behavior is most appropriate (e.g., when a peer asks to see a toy). The idea that fewer dimensions of competence may be necessary in younger populations is also reflected in the work of Vaughn and colleagues on the conceptualization and measurement of social competence among preschoolers (e.g., Bost, Vaughn, Washington, Cielinski, & Bradbard, 1998; Vaughn, 2001). This program of research identifies social competence as an individual differences variable, suggesting that knowledge about the child will explain sufficient variability in social functioning.

A second factor that may moderate the relative importance of each of the four dimensions is socioeconomic status (SES). Previous empirical work in several disciplines suggests that the judge-dimension may be of particular relevance in this population (see Coie & Jacobs, 1993; Luthar & Burack, 2000). For example, Luthar and McMahon (1996) found that among inner-city adolescents, a reputation for physical aggression may be associated with enhanced peer status. Similarly, work with parents suggests that lower-income mothers are more likely to endorse physical aggression than their more advantaged peers (Dodge, Pettit, & Bates, 1994). Although some groups may evaluate this type of behavior positively, others, such as teachers, may not. If this is the case, youth in these environments may find themselves confronting situations in which aggressive behavior may be evaluated differently by three groups who are all in a position to judge their actions. This potential inter-judge discrepancy hinted at by previous work suggests that the incorporation of judge-level predictors into models of social competence may be especially fruitful when developing measurement and intervention strategies for economically disadvantaged youth.

#### *4.2. Relevance of models of social competence to clinical practice*

The measures and intervention strategies described in the preceding sections are often used in large-scale research projects. However, many of these approaches may be useful for individual clinicians hoping to improve the social functioning of their clients. Our understanding of the role of situation- and judge-factors in the social competence of youth is still too underdeveloped to make firm recommendations to clinicians. Eventually, it would be helpful to generate a research synthesis for clinicians that indicated how child-, behavior-, situation-, and judge-level predictors influenced the social functioning of different populations with whom they may work.

It is noteworthy that many clinicians are already sensitive to the contextualized nature of social functioning and utilize assessment and intervention techniques that incorporate the children's social environment into their understanding of their clients' actions. For example, practitioners in some settings (e.g., clinic, school) may use functional analysis to determine the antecedents and consequences of youth behavior. The information gathered in these assessments can then be used to develop a treatment plan that addresses these contextual factors. For example, the practitioner may help parents to structure the social environment to minimize the problematic situations. Although many clinicians may incorporate some situation- and judge-level predictors, these explorations may not be systematic. For this reason, practice would likely benefit from the development of measurement and intervention strategies reflecting this more complex conceptualization of competence.

### **5. Conclusion**

The development of measurement and intervention models that reflect more fully and systematically the four types of predictors associated with social functioning can be seen as an attempt to strike a balance between the rich, contextual information gathered by clinicians and the standardization required for the generalizable conclusions that are the goal of research programs (see Wright & Zakriski, 2001). No single study can provide the definitive answer regarding the relative importance of child-, behavior-, situation-, and judge-level factors. However, systematic investigations of these classes of predictors in the relevant populations that build upon the already existing theoretical and empirical literature will help to evaluate the potential utility of these additional factors in our understanding of youth social functioning. Given the challenges of administering measures and implementing interventions, we do not want to add unnecessary complications. However, to the extent that we are failing to target all of the relevant challenges children face in their social environment, we will not be doing as much as we can to understand and help youth struggling socially.

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