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2

A Hierarchical Model for Understanding Children's Peer-Related Social Competence

Michael J. Guralnick

Social competence emerged in recent years as a central construct in the fields of child development and early intervention (Guralnick, 1990d). Acceptance of the significance of this construct, however, has been a difficult process, as the term social competence has been used in so many different ways at so many different levels that it often has been in danger of losing its meaning and value entirely. Early attempts at a definitive consensus may have failed (Anderson & Messick, 1974), but the persistence of the construct gives testimony to its richness and potential for providing a framework for understanding a critical aspect of human development.

As emphasized throughout this chapter, perhaps the most demanding feature of social competence is that one is forced to attend to the dynamic and connected aspects of children's behavior patterns. In creating these behavior patterns, children must integrate, synthesize, and organize their knowledge and skills across sequences of social exchanges in order to solve the diverse problems of a social nature typically encountered in daily life.

Fortunately, since the 1980s, a number of methodological advances have occurred that have permitted analyses of these more dynamic aspects of interaction that characterize children's social competence, particularly peer-related social competence (Putallaz & Wasserman, 1990). First, improvements in technology have allowed

high quality audio and video recordings to be made during social interactions. The use of split-screen technology and radiotelemetry devices for transmitting speech have permitted children to move about and interact freely while virtually all aspects of their social and communicative behavior are being recorded. Subsequent detailed analyses of these audiovisual records can provide the type of perspective necessary for understanding how behavior with peers unfolds within and across sequences of social exchanges.

Second, experimental paradigms have become increasingly sophisticated through the use of analogue settings. For example, rather than simply observing the interactions of children who happen to be available in existing nursery school settings, children are carefully selected from a variety of settings and brought together to participate in extended playgroups. In other situations a contrived task is arranged, as occurs when a "guest" child is presented with the problem of entering a play situation in which two "host" children are already engaged in play. This peer entry situation as well as the creation of specific playgroups have proven to be ecologically valid experimental situations, as the behavior patterns that develop appear to be similar to those that occur in more typical settings (Asher, 1983). These analogue settings are especially valuable because, if properly contrived, they can elicit behavior patterns that do not occur spontaneously very often yet have considerable developmental significance. Moreover, these settings allow control over variables not previously possible, such as the extent to which children are acquainted with one another, their chronological age, or their developmental status.

Third, advances in statistical techniques that permit analyses of social sequences are now beginning to contribute to the understanding of social competence. These methods have been used to detect precisely the dependencies in behavior that are so essential for understanding how children solve complex social problems (Bakeman & Gottman, 1986; Sackett, 1978). Although not extensively used as yet, their application to analyses of highly dynamic and complex events, such as the formation of friendships in young children, provides important examples of the power of these techniques (Gottman, 1983).

The purpose of this chapter is to present a model designed to capture the many levels at which socially competent functioning can be analyzed, with special emphasis on the integrative and dynamic aspects of young children's social competence with their peers. Although the model can be extended to other aspects of social competence, peer-related social competence has been chosen because of the now well-established significance of peer relationships and friend-

ships to the development of young children (Ginsberg, Gottman, & Parker, 1986; Guralnick, 1986, 1990b; Hartup, 1983). The model itself is hierarchical, emphasizing the dependence of socially competent interactions upon more fundamental skills and abilities at different levels. However, one key to the model is the recognition that the peer-related social competence of children with similar skills and abilities at more fundamental levels can be vastly different at other levels. The implications of this model for assessment and intervention as well as its application to children with disabilities is presented.

THE NATURE OF PEER-RELATED SOCIAL COMPETENCE

The two features that have been part of virtually every attempt to define social competence are *effectiveness* and *appropriateness*. One working definition that encompasses these features suggests that peer-related social competence consists of "*. . . the ability of young children to successfully and appropriately select and carry out their interpersonal goals*" (Guralnick, 1990d, p.4). Competent behavior implies a high degree of successful outcomes, although success often includes some form of compromise or modification of a child's original goal. Successful outcomes are usually easy to identify, but even if success occurs, the manner in which children approach social problems, specifically the particular strategies they employ across sequences of social exchanges, will govern the degree to which children are considered to be socially competent. Ultimately, continued use of inappropriate strategies will affect not only access to groups and individual play partners but children's effectiveness as well.

Assuming that these two features are essential characteristics of socially competent functioning, a technique to assess and perhaps order children along some dimension of social competence is needed. Clearly, in recognition of the complexity of peer-related social competence, multidimensional assessments involving teachers, parents, observers, and peers would be appropriate (see Ladd & Mars, 1986). Nevertheless, the approach most frequently used to index overall peer-related social competence has been to utilize the perspective of peers. Specifically, peer sociometric techniques in which children are asked to evaluate one another in terms of liking, acceptance, popularity, or friendship have proved to be of great value (see Gresham, 1986). From a theoretical perspective, social knowledge of the peer group appears to be a developmentally critical feature of social competence during the preschool years (Howes, 1988). It should be noted, however, that considerable care must be taken in the selection of peer sociometric measures (McConnell & Odom, 1986; Musen-

Miller, 1990), and their reliability and validity for preschool-age children with disabilities have yet to be established. Nevertheless, carefully selected peer sociometric techniques have proved to be reliable measures (Asher, Singleton, Tinsley, & Hymel, 1979), and to exhibit concurrent (Gresham, 1986; Ladd & Mars, 1986) and predictive validity (Parker & Asher, 1987). Consequently, with this technique, an evaluation of a child's *social status* is obtained, usually indexed in terms of one's degree of *acceptance* within the peer group. This measure can serve as a reasonable criterion for ordering many groups of children in terms of peer-related social competence.

However reliable and valid they may be, assessments of children's social status provide only global perspectives of children's social competence with their peers. Presumably, judgments by peers summarized in sociometric measures reflect observations of, and direct experiences with playmates occurring in many different situations. It is assumed that with a sufficient number of peer contacts, assessments of success and appropriateness will result in a general impression of a playmate's competence.

But it is the specific interaction patterns themselves that distinguish children differing in terms of peer-related social competence. Comparisons of the social interaction patterns of children identified by peer sociometric techniques as accepted, rejected, or neglected have revealed that substantial differences do in fact exist among these groups in terms of their responsiveness, cooperativeness, positiveness, aggressiveness, and other similar characteristics (see Hartup, 1983). Nevertheless, as important as these descriptive correlates are, they do not easily capture the dynamic nature of peer relationships, the strategies involved, or the processes that are operating. It is suggested here that a more comprehensive approach is needed to characterize adequately behavioral patterns associated with an individual child's peer-related social competence. Accordingly, a model is proposed that recognizes the contributions of more static, nonsequential approaches, as well as those of the more dynamic, sequential aspects of peer-related social competence. Assessment implications for each level of the model is emphasized in this chapter, and the literature on the peer-related social competence of children with developmental delays is organized within this model.

OVERVIEW OF THE HIERARCHICAL MODEL OF PEER-RELATED SOCIAL COMPETENCE

The hierarchical model described in this section is an attempt to provide a comprehensive framework for understanding the factors that influence young children's peer-related social competence. To accom-

plish this, different levels of analysis are proposed. The model is hierarchical in that higher levels depend upon lower ones, and that specific processes transform elements from a lower level to achieve a different meaning in terms of peer-related social competence. Although important information can be obtained at each level, the main focus of the model is its emphasis on the more dynamic features of children's social exchanges, that is, the actual sequences of strategies that are used in a given context.

The model contains two major levels (see Figure 2.1). The first focuses on specific *social/communicative skills* that are essential for child-child interaction, and includes the influences of the more fundamental developmental domains of language, cognitive, affective, and motor development. These social/communicative skills (e.g., request-

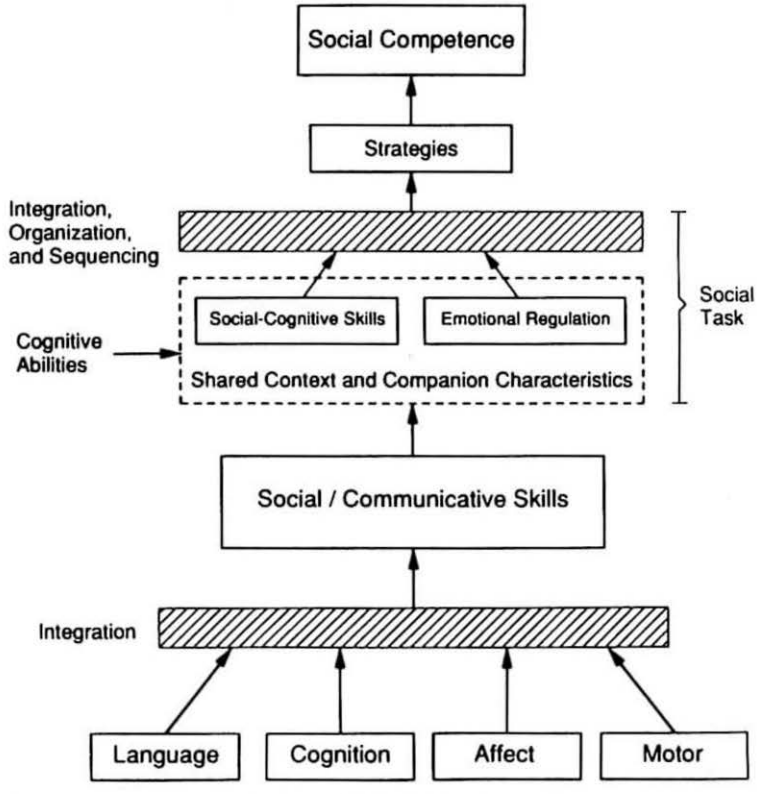

Figure 2.1. A hierarchical model depicting the major factors and processes contributing to children's social competence with their peers.

ing of or directing peers) emerge during the course of development and are dependent upon the integration of skills and abilities of the more fundamental domains. The second major level of the hierarchical model also reflects an integrative process. In this case, it is the transformation of social/communicative skills that are used to solve interpersonal problems in the context of *social tasks* that are of interest. This integration, organization, and sequencing of social/communicative skills at the second level of the model produces *strategies within a social task,* and it is these strategies that appear to be most closely associated with peer-related social competence.

Social tasks themselves (see Dodge, Pettit, McClaskey, & Brown, 1986) serve as a basis (context) for interpreting both the effectiveness and appropriateness of children's strategies. Children's efforts to enter an established playgroup is one social task that has received considerable attention. Other important social tasks include resolving various forms of conflict or establishing a friendship. Differences that may exist among children in accordance with their varying levels of peer-related social competence (as assessed by peer sociometrics) should be reflected in social interaction strategies employed during these social tasks. Presumably, it is the effectiveness and appropriateness of these strategies that constitute a primary basis for judgments of children's peer-related social competence.

In addition, the model incorporates possible *processes* that are associated with the selection of specific strategies (see dotted rectangular area in Figure 2.1). As a consequence, the identification of competent strategies and associated processes that occur during social tasks can provide a valuable framework for both assessment and intervention. In fact, it is argued in this chapter that future advances in assessment and intervention in the area of peer-related social competence for children, including those with developmental disabilities, will require an emphasis on more dynamic and comprehensive approaches that involve social tasks, social strategies, and associated processes.

It is important to note that many factors (e.g., physical attractiveness), other than how children employ strategies during social tasks, contribute to the judgments of children's social competence as assessed by sociometric status. Also, family influences, both direct and indirect (Fox, Niemeyer, & Savelle, Chapter 9, this volume; Puttalaz & Heflin, 1990), can have an important impact on the origins and maintenance of peer-related social competence. These and other related factors, however, are beyond the scope of this chapter (see Guralnick, 1990c). Nevertheless, it is *how* children go about solving social interaction problems that appears to be the primary contributor

to judgments of peer-related social competence (e.g., Dodge, 1983). Accordingly, it is these interactional sequences and processes that are the focus of the hierarchical model.

LEVEL OF SOCIAL/COMMUNICATIVE SKILLS AND DEVELOPMENTAL DOMAINS

Social/Communicative Skills

The ability to communicate with other children for social purposes develops rapidly during the preschool period (Garvey, 1984). An array of social/communicative skills emerge that children use to direct others (usually in play sequences), to obtain information, to declare a position in a dispute, or to clarify a previous statement. The rather intricate conversations of young children and their various themes have also been analyzed carefully (see Schober-Peterson & Johnson, 1989), and a number of important coding schemes have been developed to capture these social/communicative skills. As might be expected, depending on the background of the developer of the coding scheme, taxonomies of social/communicative skills have emphasized either social factors or communicative ones. A common feature of these scales is that assessments of social/communicative skills consist of important but static, primarily nonsequential characteristics of peer interactions.

From a communicative perspective, Dore (1986), for example, has organized "conversational acts" into major categories such as questions; requests (including requests for action, permission, attention, or suggestions or invitations); providing information (including facts about the external world, feelings, evaluations, and/or claims); and responses to the questions or actions of others. It is important to note at this point that the grammatical forms used to convey these conversational acts can vary widely since children are capable of making suggestions or asking questions in a number of different ways. Directives can be quite explicit (e.g., "Do it!"), or they can be presented in ways that place less of a demand on the companion to respond (e.g., "Would you do this for me?"). The various forms of communicative acts are discussed later in this chapter in the context of social tasks, and relate more closely to analyses at the level of strategies children use than to analyses at the level of social/communicative skills.

Alternatively, from a social development perspective, White and Watts (1973), for example, have developed a scale (subsequently modified by Doyle, Connolly, & Rivest, 1980, and Guralnick & Groom, 1987) with categories that include the use of peers as resources or

leading peers in activities. The actual definitions of these categories closely correspond to communicative acts involving questions addressed to peers (using as a resource) and requesting others to carry out an action (directing others). These and other scales derived from communicative or social development frameworks do differ in many respects, but it is their similarities that are, perhaps, most interesting. That is, these scales appear to be tapping similar features of peer interactions. Although investigators from different fields have tended to work in parallel with one another, it is likely that a complete understanding of peer-related social competence will benefit from the convergence of knowledge and methods derived from many disciplines. The close association between social and communicative skills further highlights the integrative nature of the processes associated with children's peer relationships (see Gallagher & Prutting, 1983).

Developmental Domains

As indicated in Figure 2.1, social/communicative skills depend upon more fundamental processes associated with a child's major developmental accomplishments. Skills and abilities associated with these developmental domains are integrated to enable children to understand and use specific social/communicative acts. First, the emergence of language is perhaps most salient during the preschool period as children achieve an extraordinary command of its structural aspects (see Wells, 1985). Both receptive and expressive elements are important, as control over both obvious and subtle aspects of language are mastered. Second, cognitive abilities not only provide the primary basis for establishing a child's developmental level but also serve as a framework for considering the more specific aspects of cognitive development, including an array of information processing events (e.g., integrating information), as well as the more basic skills associated with memory and categorization of objects and events. Third, the ability to recognize and display affect is, of course, another critical domain that must be considered in the context of social/communicative skills. Both of these abilities have been linked to social competence with peers (Walden & Field, 1990). Fourth, the child's general level of motor development, particularly mobility and skills associated with gesturing, will affect how effectively social/communicative skills can be performed.

The contribution of each of these developmental domains to a child's social/communicative skills should not be underestimated. Limitations in one or more areas or subdomains can have a substantial influence on the understanding and expression of social/communicative skills. This is, of course, of special concern for chil-

dren with disabilities, not only because of the possibility of substantial developmental delays or deficits in these domains, but also because of the unevenness in development that results. Yet at the same time, it must be recognized that children are remarkably resilient, capable of compensating for delays or deficits in specific developmental areas, and can integrate available abilities in developmental domains to create an impressive array of social/communicative skills.

Implications for Assessment

Within the framework of the level of social/communicative skills, what information should be included in an assessment instrument that can be meaningful to educators and clinicians? Typically, clinicians have tended to rely more on global measures that provide minimal information (Guralnick & Weinhouse, 1983). Yet, despite the fact that assessments derived from analyses at the level of social/communicative skills are primarily nonsequential and are based on observations obtained from numerous contexts, they nevertheless can provide potentially important characterizations of children's interactions with their peers. Accordingly, in the following sections brief descriptions of areas that warrant assessment at the level of social/communicative skills are presented. The intent here is to identify domains to be included in a comprehensive approach to assessment at the level of social/communicative skills that could be used for *clinical purposes*. Moreover, an effort is made to firmly ground these domains in existing research, particularly where it has been demonstrated that these assessments are sensitive to children's social status. These assessment domains are based in part on the *Assessment of Peer Relations* (Guralnick, 1990a), an instrument that considers both the level of social/communicative skills and the level of social strategies and social tasks.

Purpose, Frequency, and Success of Initiations An assessment of peer-related social competence at the level of social/communicative skills must include measures of the extent to which children engage in interactions with their peers. Although simple frequencies of interacting tell us little about peer-related social competence (Asher, Markell, & Hymel, 1981), the tendency to initiate social bids and the purposes of those social bids can provide useful indices of a child's orientation to and involvement with peers. The goals or purposes of an initiation are especially important and, as noted earlier, the *selection* of an interpersonal goal has been included as a component of the definition of peer-related social competence. Children who continually elect to pursue goals that are associated with acquiring the toys and materials of companions or those whose

major social involvement with peers is designed to prevent them from carrying out an action will certainly create an atmosphere of acrimony, ultimately affecting both the appropriateness and effectiveness of their interpersonal goals. Accordingly, assessments of the purposes of social initiations and related characteristics provide insight into what interests and motivates children to interact and the general tendency to initiate social interactions. Of interest as well is the extent to which children use diverse forms of expression to initiate interactions. If efforts to acquire objects are cast repeatedly in the form of imperatives, without any type of mitigation or embedding, potential difficulties in adapting initiations to context factors may well exist.

Krasnor and Rubin (1983) conducted a comprehensive analysis of the goals or purposes of children's initiations, in which over 6000 interactive attempts by 3- and 4-year-old children were coded into the following eight goal categories: 1) efforts to stop another child's action; 2) action on the part of the self, such as obtaining permission from another child to participate in an activity; 3) acquiring objects; 4) directing the attention of another child; 5) eliciting affection; 6) gaining specific information or clarification; 7) general initiations to engage in social contact; and 8) eliciting from another an active response not coded in any of the other categories. Similar goal categories have been used in other investigations (e.g., Guralnick & Paul-Brown, 1984; Levin & Rubin, 1983). Most goals tended to be associated with directing others in play (i.e., behavior requests) or obtaining the assistance of peers (i.e., information requests). Nonspecific initiations, apparently designed to establish social contact, also occurred frequently.

Of further importance is the fact that related studies have found that the degree to which children are successful in gaining an *immediate* response to their initiations (social/communicative interactions) is closely associated with general measures of peer-related social competence (Wright, 1980). Often, however, responses by peers to these initiations are obligatory or perfunctory. Nevertheless, a positive response in any appropriate form provides an index of the timing, clarity, and other aspects of the initiation as well as reflecting the willingness of a peer to interact positively. Consequently, an immediate indication of success (e.g., achieving a reasonable response to a question or an acknowledgement of or compliance to a directive) should be included as part of an assessment at the level of social/communicative skills. Also to be considered are peers' responses to diverse grammatical forms of directives or questions.

Responsiveness Interest in initiating interactions with others provides a reliable assessment of the extent to which children are socially oriented toward their peers. Yet, some children may have considerable difficulty initiating but may be highly responsive to the social bids of others. Responsiveness, a key characteristic of peer-related social competence (Asher, 1983), provides another theoretically independent measure of interest in peer relationships. As important as this measure may be, responsiveness at the level of social/communicative skills consists only of immediate, positive, and reasonable responses to one's peers. Accordingly, this measure may, as in the case of immediate success of initiations, reflect primarily obligatory or perfunctory reactions.

Forms of Expression Verbal forms of communication begin to supplement rather than supplant various aspects of nonverbal interactions with peers from the toddler to the preschool years (Finkelstein, Dent, Gallacher, & Ramey, 1978). Despite the fact that much can be accomplished in terms of social exchange among peers at the nonverbal level, reliance on primarily nonverbal modes of communication may limit more complex aspects of thematic play development involving planning and long-term strategies. Accordingly, even for children who are verbal, an evaluation of the child's use of verbal abilities with peers and his or her intelligibility would seem essential. Given the potential importance of verbal interactions to peer relationships during the preschool years, and the fact that the quality and quantity of verbal exchanges are highly sensitive to problems in virtually any developmental domain, an assessment of the status of a child's forms of expression seems essential.

Settings and Play Themes Even at the level of social/ communicative skills, children's willingness to respond as well as the purposes, frequency, and success of their initiations will vary substantially across different settings, play partners, and play themes (see e.g., Rogers-Warren & Wedel, 1980; Vandenberg, 1981). Play themes in which children become involved, along with associated toys and materials, are particularly important to identify because both reveal an interest in certain play activities, and the toys and materials facilitate social exchanges within the broad structure of the theme (Guralnick, 1986). Consequently, assessments of the circumstances that are associated with varying levels of social interactions with peers provide additional information that may be especially valuable in designing intervention strategies.

Developmental Domains Finally, as noted in Figure 2.1, information concerning a child's developmental status in each of the main

developmental domains is needed to provide a framework for intervention. A child's cognitive level is especially important because it provides the developmental basis for expectations of the level of the child's peer relations. Much of this information can be obtained from multidisciplinary assessments that are usually administered to children with disabilities. Often, this information must be supplemented by probes that focus on aspects of development that are most relevant to peer-related social competence. Issues concerning attention, specific abilities in information processing, or perhaps special problems in receptive language should be included as background information to be considered in designing intervention programs.

LEVEL OF SOCIAL STRATEGIES AND SOCIAL TASKS

Until recently, the vast majority of efforts to assess and improve children's peer-related social competence have taken place at the level of social/communicative skills. Designing more stimulating environments or emphasizing specific intervention techniques to increase the frequency of initiations, to encourage children to be more responsive, to select goals that are more positive, and to improve a child's intelligibility may well produce valuable changes in children's peer interactions.

Nevertheless, interventions guided by assessments at the level of social/communicative interactions are likely to be limited. Although the various assessments of this type do provide a useful descriptive profile of a child's peer interaction patterns and can perhaps suggest general directions for intervention, they reveal little about the specific nature of the problems or the processes that are producing a particular pattern of social interactions. As a consequence, in many instances only the surface features of peer interactions (e.g., frequency and purpose of social initiations) may be affected by intervention. In fact, even substantial changes at the level of social/communicative skills are no guarantee that improvements in socially competent functioning will result. For example, one intervention approach frequently used is to change systematically a child's available play partners to include those with characteristics likely to foster peer interactions (e.g., involving younger peers for less assertive children [Furman, Rahe, & Hartup, 1979] or including children who do not have disabilities in an effort to provide a more stimulating and responsive environment for children with developmental delays [Guralnick & Groom, 1988]). Of importance is the fact that these interventions do not necessarily result in improvements in general peer-related social competence, despite substantial and potentially important changes in

social/communicative skills, such as a greater frequency of positive social interactions (see Asher et al., 1981). Consequently, as significant as these changes in general social activity are at the level of social/communicative skills, they may not alter in any meaningful way the appropriateness or effectiveness of children's social behavior. It is argued here that in order to accomplish meaningful changes in peer-related social competence, social strategies in the context of social tasks must be considered.

The Importance of Social Strategies and Social Tasks

As the hierarchical model presented in Figure 2.1 suggests, through various processes to be discussed below, social/communicative skills are integrated, organized, and sequenced during the course of a specific social task in order for strategies to be created. In the context of a social task, social/communicative skills take on new meanings and are transformed into strategies that consist of constructs such as insistence, intrusiveness, negotiation, threat, compromise, justification, behavior synchronous with the group, or deescalation of play. In essence, strategies reveal how social/communicative skills are used in a manner that allows others to make judgments of both appropriateness and effectiveness. The importance of a shared context can be seen in this model as well, for, in order to select appropriate strategies, young children must be responsive to the generally understood conditions that may exist in different settings (e.g., rules regarding the ownership of toys). A sensitivity to the characteristics of their companions (e.g., chronological age) is also important, as children must make adjustments as needed. Chronological age is a particularly salient characteristic, and it has been demonstrated that young children are indeed capable of making reasonable and appropriate adjustments in accordance with a companion's age (Gelman & Shatz, 1977; Lederberg, 1982; Masur, 1978; Sachs & Devin, 1976; Shatz & Gelman, 1973).

Interestingly, linguists studying conversational or speech acts in the area of pragmatics also have recognized the importance of appropriateness, incorporating this construct into the conditions that underlie an utterance's ability to be transmitted successfully (Searle, 1969). Issues of relative status or ownership of toys, for example (see Newman, 1978), must be recognized at some level by both partners in an exchange for an appropriate utterance to result. Along the same lines, Garvey (1975) has identified what she has called "meaning factors" that help in understanding the appropriateness of children's requests for action. Such factors include a child's recognition that the peer is obligated or willing to carry out a request or has rights that

might conflict with what one is being asked to do. Often children anticipate the need to form appropriate utterances by providing required information related to these meaning factors in advance of a request or by justifying or otherwise explaining the basis for the request. Similarly, companions recognize the importance of these conditions by questioning when a child appears to make a request that violates the underlying but unstated understanding of what is and what is not appropriate.

At the social strategy/social task level of analysis, a number of important social tasks have been identified, including obtaining compliance to a request, resolving conflicts during play, gaining entry into peer groups, and maintaining play with companions for sustained periods of time. As can be seen, some tasks have a longer-term goal and may even subsume other social tasks as events unfold. However widely or narrowly defined, as long as tasks can be identified adequately, assessments of effectiveness and appropriateness can be obtained. In the discussion that follows, the peer group entry task is used to illustrate the hierarchical model and how assessments could be carried out at the social strategy/social task level of analysis.

Peer Group Entry

One of the most difficult and critical tasks facing young children is to figure out how to become involved in play with peers who are already participating in an ongoing play activity. Failure to accomplish this social task clearly will prevent children from becoming integrated into playgroups. Moreover, peer group entry has been found to be highly diagnostic of general problems in peer-related social competence (Putallaz & Wasserman, 1990). Unfortunately, it appears that about 50% of all initial attempts to enter a group are rejected or ignored. Consequently, for those children who persist, and most do, they must select a series of strategies that will persuade their companions to allow them to participate in the group's activities. In many instances, this persistence creates conflicts, thereby requiring children to be skillful in managing the social task of dealing with conflict in the context of group entry as well.

One way to identify strategies that are appropriate and effective is to compare the group entry techniques used by children varying in terms of social status. As expected, children judged by their peers to be more socially competent (assessed through peer sociometric measures) enter groups more easily or successfully than those judged to be lower in sociometric status (Black & Hazen, 1990; Howes, 1988). Often comparisons of the strategies children use are carried out in analogue situations in which two children (hosts) are asked to play a

particular game together and a third child (entry child) is then introduced into the setting. As noted earlier, this analogue situation permits control over the characteristics of all children, especially the entry child, whose sociometric status can be determined through ratings obtained at the child's regular preschool or day-care program. Detailed videotaped records are often obtained of the child's attempts to gain entry.

A number of studies have now utilized this approach, and it is possible to make some generalizations about the appropriateness and effectiveness of specific strategies that occur during the peer entry situation (Black & Hazen, 1990; Corsaro, 1981; Dodge, Schlundt, Schocken, & Delugach, 1983; Hazen & Black, 1989; Putallaz, 1983; Putallaz & Gottman, 1981; Putallaz & Wasserman, 1989). First, it has been well established that children seeking entry into an existing group must initially understand the group's "frame of reference" by accurately perceiving the particular play themes or events. This is ascertained through observations of children focusing on (i.e., watching) the ongoing play activities. In turn, this frame of reference allows children to become "connected" to the host children by making comments relevant to the play activities. Relevance is a construct that appears repeatedly in the group entry literature and has general significance for children's peer-related social competence (Asher, 1983). Particularly damaging to children's likelihood of entry success are self-statements or comments that tend to redirect the host children's play activities. But beyond relevance is the fact that children's understanding of the frame of reference also permits them to demonstrate a synchrony or harmony with the group and their activities. For this to occur, the strategies that are selected will tend to be nonintrusive ones, particularly nonverbal behaviors, such as imitating aspects of play or engaging in play in proximity to the hosts that constitutes a variation of the hosts' activities. Once this occurs, and indications from the hosts suggest at least tentative acceptance, more directive, intrusive strategies can be employed effectively.

But what happens when children do not immediately succeed? As just noted, there are so many factors that can influence the success of initial overtures that failure is a frequent occurrence. Children might misjudge the type of play activities or the interest of their hosts in having them involved, or their initial attempts may be too disruptive. To overcome rejection in all of its subtle and obvious forms, children must first learn to persist in their tasks. The ability to solve problems in the context of social tasks requires a longer-term view, and, unless children are willing to pursue alternative strategies in the face of initial failure, successful group entry rarely will be realized.

Independent evidence that this is an important characteristic for children during interactions with peers was obtained by Guralnick and Groom (1990), who found that children rated by their mothers as being generally more persistent engaged in more extensive interactions with their peers.

However, when children do persist in the face of initial failure, they immediately find themselves in a conflict situation (see Shantz, 1987). Social bids may be ignored or rejected or other attempts at entry resisted. As a consequence, how appropriately and effectively children resolve conflicts likely will determine the ultimate outcome of their efforts to enter peer groups. In fact, children who employ strategies during entry that are associated with more successful resolution of conflicts, such as negotiation, compromise, and making alternative suggestions (e.g., Eisenberg & Garvey, 1981; Phinney, 1986), are far more effective and are judged to be highly socially competent (e.g., Hazen & Black, 1989). Of special note was the finding that less socially competent children seeking to enter groups respond negatively to hosts' alternative or temporizing suggestions to their entry bids without providing any further explanations for their behavior (Hazen & Black, 1989). Clearly these flat rejections following a disagreement are not likely to lead to a productive continuation of social exchange.

Implications for Assessment

These studies provide a clear sense of the strategies employed by socially competent children during peer entry situations and also suggest behavioral patterns that lead peers to judge others as less competent. Any assessment of children's strategies during the entry social task must consider these findings, and may require arranging an analogue setting if attempts are not frequent enough in the typical play setting.

Strategies First, an assessment should be made of how children approach the initial attempt to gain entry and, most important, whether they try to understand the frame of reference. As noted, unless a shared understanding of the activities of the participants is achieved, connected and relevant social exchanges will not result. This frame of reference must not only include a recognition of the social task at hand and existing play activities, but also consider as well the specific context and characteristics of the hosts. That is, appropriate strategies will require comments that are relevant, as well as those that recognize issues related to ownership, general classroom rules, and other social obligations of the participants. These assessments of whether entry children try to establish a shared frame of reference can be determined by the degree to which they wait and

observe the hosts' activities. Evaluations of the content of their comments provide an additional measure. Furthermore, it is important that children seeking entry continue monitoring the activities of the hosts if the initial entry attempt is not successful. Unless evidence of monitoring is found in the assessment, it is unlikely that the child's subsequent entry attempts will succeed.

The degree of intrusiveness constitutes the second major dimension of peer entry skills. Typically, less intrusive strategies, such as encirclement or producing a variant of the ongoing behavior (see Corsaro, 1979), are the strategies chosen initially by socially competent children. These may be repeated over the course of an entry sequence if no response or a rejection is received, but eventually they will be followed by more direct requests for participation. Assessments of the specific strategies and degree of intrusiveness can be obtained readily during subsequent turns in the peer entry sequence.

A third area to be assessed in the peer entry situation relates to the strategies children employ to resolve conflicts. How children select and organize strategies to insist, mitigate a request, threaten, offer counter proposals or compromises, or provide reasons for their actions, provides insight into the ways in which conflict is managed. Given the ubiquitous nature of conflict for social tasks in general, children's ability to manage conflict in different situations is central to the understanding of peer-related social competence. The Assessment of Peer Relations (Guralnick, 1990a) instrument attempts to capture these events.

Processes Within the hierarchical model, it has been suggested that social interactions with peers are based upon more fundamental, social/communicative skills that are transformed into strategies within the framework of social tasks. The model also suggests that the specific strategies that are selected depend upon many other factors, most important, the context and the characteristics of one's companions. What remains unclear, however, is how children actually go about processing information as part of the social task in order to arrive at the selection of a particular strategy (represented by the dotted lines in Figure 2.1). Insight into how children think about problems that involve relationships with peers can be extremely valuable for designing intervention programs. In particular, for children who are less competent, it must be determined what it is they do that results in the selection of strategies that are responsible for judgments of low social competence. If these processes can be understood, perhaps they can be altered.

This is precisely the reasoning that led Dodge and his colleagues (Dodge et al., 1986) to propose and test a model of social-cognitive processing applicable to social tasks. These investigators suggested

that children process social information in five sequential steps: 1) encoding social cues in the present situation, 2) mentally representing and interpreting those cues, 3) generating possible behavioral responses (strategies), 4) evaluating the consequences of possible responses and selecting a specific strategy, and 5) enacting a behavioral response. Problems could occur at one or more of these steps, and a novel procedure was developed to establish the connection between each of these processing steps and children's peer-related social competence (see Dodge et al., 1986).

Preliminary support for this model, particularly for the peer entry task, was obtained, and each step in the complex social-cognitive process appears to be consistent with what are known to be important aspects of social competence with peers. The first step, encoding social cues in the present situation, is most critical because it requires children to engage attentional and perceptual processes. Emotional expressions of peers, their tones of voice, and the types of play themes that exist are the kinds of cues to be encoded at this stage, although there is as yet no higher order cognitive interpretation as to their meaning. It is apparent that children who fail to attend to cues appropriately at this step cannot possibly generate strategies that are relevant or connected. As Walden and Field (1990) observed, the ability of preschool children to encode affective expressions is strongly associated with peer-related social competence.

Even social cues that are accurately encoded are somewhat ambiguous by their very nature. Consequently, in the second step, the interpretation of the cues, bias due to past experiences may result in children interpreting cues inaccurately, thereby failing to appreciate the intent of a companion's social interactions. For example, an unusual sensitivity to rejection may lead to the interpretation of a cue that was intended to communicate postponement of involvement in a peer group as a final rejection, ultimately resulting in a highly negative emotional reaction. In this example, the influence of children's abilities to regulate their emotions can be seen as a critical factor during the course of a social task. Although Dodge et al. (1986) emphasize the more cognitive components associated with social information processing, it is apparent that children's abilities to regulate emotions, especially during conflict episodes, must be considered also (Gottman, 1983; Gottman & Katz, 1989). A complete model will require an understanding of both the social-cognitive and emotional aspects of peer-related social competence.

It should be noted that the third and fourth steps of the Dodge et al. (1986) model require a recognition of the importance of the availability of a range of possible strategies as well as an understanding of

the context and companion characteristics needed to select a strategy that is appropriate. Awareness, at some level, of the relationships between strategy selection and the broader context of events is highly demanding from a cognitive perspective and requires extensive experience. Moreover, for those children who tend to make rapid or impulsive decisions, the fourth step may easily be overlooked, resulting in a lower likelihood of selecting an appropriate strategy.

As might be expected, these processes are extremely difficult to assess in preschool or disabled children. The methods used by Dodge et al. (1986), as creative as they may be, may not be applicable to these children since they depend on sometimes complex verbal reports. Nevertheless, to the extent that these processes reflect how children approach social tasks, the model may be useful in establishing hypotheses about the source or sources of children's peer interaction problems. In essence, any model guides the development of hypotheses. For complex and multidimensional domains such as peer relations, intervention consists of a trial-and-error process based upon a series of hypotheses or clinical judgments. Appropriate assessments of social-cognitive processes consistent with models such as that proposed by Dodge et al. (1986), as well as indicators of children's ability to regulate their emotions during social tasks, can provide better information about how children approach social tasks.

Cognitive Abilities As can be seen from the descriptions of the skills needed to be socially competent, children's success in adapting to the rapidly shifting nature of social exchanges clearly contains a strong general cognitive component. The ability to grasp play themes, to remember and execute sequences of social behavior, and to retrieve past information are only a few of the cognitive abilities that are part of this complex process. In the hierarchical model, cognitive abilities exert influence at two levels. At the level of social/communicative skills, cognitive abilities contribute, for example, to recognizing the various intentions of companions and integrating events involving objects and peers. At the level of strategies and social tasks, cognitive abilities play a similar role, although higher order cognitive processes related to planning or the evaluation of consequences are of more significance.

As might be expected, general cognitive development is associated both with children's ability to achieve their interpersonal goals and with social status (see Wright, 1980). Putallaz (1983) observed that even in the peer entry situation, a substantial positive correlation existed between cognitive ability and sociometric ratings received by children. Other investigators have found similar relationships (Krasnor & Rubin, 1983; Quay & Jarrett, 1984).

Despite this correlation, general cognitive development accounts for only a relatively small proportion of the variability found in children's peer-related social competence. Of course, many noncognitive factors such as a child's ability to produce intelligible speech or having sufficient motor skills to engage in rough and tumble play can have an important impact on children's peer-related social competence. But, as seen earlier, other processes, including those associated with social-cognitive information processing and the ability to regulate one's emotions during social tasks, extend beyond general cognitive abilities and appear to be most closely associated with peer-related social competence.

APPLICATION OF THE HIERARCHICAL MODEL FOR CHILDREN WITH DEVELOPMENTAL DELAYS

Since the 1980s interest in the peer-related social competence of children who do not have disabilities has promoted a similar interest in various groups of young children with disabilities. Moreover, research in this area has intensified as a consequence of the movement to mainstream preschool-age disabled children (Guralnick, 1990b). It has been well recognized that the ability of children with disabilities to establish and maintain social relationships with peers is central to their social integration and social acceptance in mainstreamed settings.

Unfortunately, existing research has revealed that, overall, children with disabilities have a peer interaction deficit; that is, their degree of involvement in peer interactions falls substantially below expectations based on their developmental levels (Darbyshire, 1977; Guralnick & Groom, 1985, 1987; Guralnick & Weinhouse, 1984; Higgenbotham & Baker, 1981; Markovits & Strayer, 1982; Siegel, Cunningham, & van der Spuy, 1985; Vandell & George, 1981). This finding appears to be quite robust, occurring in numerous contexts with a range of assessment techniques and for children with differing disabilities. The primary characteristic of this deficit is less involvement in group play in conjunction with a correspondingly greater involvement in solitary play.

By examining the patterns of social interactions of peers at both the level of social/communicative skills and of social strategies and tasks, the hierarchical model and corresponding assessment domains presented in this chapter may be useful in understanding the nature of this deficit as well as suggesting areas for future research. Similarly, the model can perhaps serve as a framework for approaching the difficult problems related to intervention to improve children's peer-

related social competence, especially when social-cognitive and emotional regulation processes are considered.

It is beyond the scope of this chapter to present a detailed analysis of the hierarchical model (see Guralnick, in preparation); however, in this section, a brief summary of how this model can be applied to existing data for children who have mild to moderate (cognitive) developmental delays is presented (see Guralnick & Bricker, 1987 for a description of these children). The deficit for this group of children has been well documented as delayed children engage in extensive amounts of solitary play and limited amounts of group play, and have low social status as assessed by peer sociometric measures (Guralnick, 1990c).

Social/Communicative Skills

It would be reasonable to expect that delays in cognitive development as well as associated difficulties for children with disabilities would have a major impact at the level of social/communicative skills. However, this does not appear to be the case. Social interactions with peers appear to occur with reasonable frequency and are organized in a reciprocal fashion (Dunlop, Stoneman, & Cantrell, 1980; Guralnick & Weinhouse, 1984). The willingness of children with developmental delays to interact and their responsiveness to the social bids of others have not been investigated extensively, although available evidence does suggest that children with mild delays are sufficiently responsive to the social bids of peers (Guralnick & Paul-Brown, 1986). Children with developmental delays are also able to communicate their intent (especially directives and questions) as well as developmentally matched groups of children who do not have disabilities and are as effective in obtaining an initial and immediate response to their social bids (Guralnick & Groom, 1985, 1987; Guralnick & Paul-Brown, 1986). The distribution of social/communicative skills that occurs during the course of social exchanges with peers, even including mitigated and unmitigated directives, is also similar to that of an appropriately matched group of children who do not have disabilities (Guralnick & Groom, 1987; Guralnick & Paul-Brown, 1989). It is not known whether the purposes of the initiations of children with delays differ, although preliminary analyses have not revealed any differences (Guralnick, Paul-Brown, Booth, & Groom, in preparation).

Despite overall similarities of the peer interactions of children with delays to developmentally matched children who do not have disabilities at the level of social/communicative skills, some differences have been observed. Specifically, there is a strong tendency

for social/communicative interactions to occur less frequently in children with delays (Guralnick & Paul-Brown, 1989), although overall frequency is highly sensitive to settings and to the characteristics of a child's companions (see Guralnick & Groom, 1988). This is especially apparent for those skills associated with directing others in play (Guralnick & Groom, 1985, 1987). As just noted, for children with delays the success rate in social bids is similar to that of nondisabled children, but there is a strong tendency for success to decrease with increasing experience with peers (Guralnick & Groom, 1987). Although the complexity of the speech of children with delays that is directed to peers is less than that of nondisabled children (Guralnick & Paul-Brown, 1989), expressive language is not a strong correlate of peer-related social competence (Guralnick & Groom, 1985). Of greatest concern, however, has been the unusually high level of disagreements (i.e., statements of disapproval, criticisms, refusals to comply, minor struggles) observed during peer interaction of children with delays (Guralnick & Paul-Brown, 1989).

In general, then, assessments of peer interactions of children with delays at the level of social/communicative skills have revealed many similarities to appropriately matched groups of children who do not have disabilities, in conjunction with some concerns regarding the frequency, quality, and perhaps success of social exchange with peers. Taken together, however, it is the similarities rather than the differences that emerge as the primary pattern of interactions at the level of social/communicative skills. Even with the differences that have been identified, it is difficult to see their contribution to understanding the substantial peer interaction deficit that is characteristic of children with delays. The natural next step would be to examine children's interactions at the level of social strategies and social tasks. Although overall measures that are summed across all social situations and social tasks at the level of social/communicative skills do not appear to be correlated strongly with the special problems of children with delays, it is reasonable to anticipate that difficulties may become apparent when children with delays are challenged to solve complex social problems within social tasks. They may have difficulty with the requirements of integrating, organizing, and sequencing social/communicative skills, while remaining sensitive to the context and the characteristics of their companions.

Social Strategies and Social Tasks

Unfortunately, analyses at the level of social strategies and social tasks for children with developmental delays have not been carried out in any systematic fashion, and constitute a major barrier not only

to the understanding of the peer-related social competence of this group of children but for children with disabilities in general. That problems are likely to be evident at the level of social strategies is suggested by the finding that unusually high levels of disagreements occur during peer interactions of children with delays (Guralnick & Paul-Brown, 1989). It may well be that the strategies employed by these children during disputes that arise during the peer entry situation or surrounding the ownership of toys are not appropriate or effective. Given the central role that conflict management plays in peer relations (Gottman, 1983), it would not be surprising that problems in this area would have a pervasive influence on peer interactions, thereby substantially contributing to the peer interaction deficit. These and related hypotheses are being evaluated in current analyses of the conflict resolution strategies of children with delays during directive episodes (Guralnick et al., in preparation) and in the direct assessment of peer entry behavior as part of the University of Washington's component of the Research Institute on Preschool Mainstreaming.

Further speculating within the hierarchical model suggests that the ability of children with delays to regulate their emotions during typical exchanges with peers should be evaluated carefully. Moreover, given that attentional problems commonly are revealed in studies of children with delays (Krakow & Kopp, 1983), it is likely that their ability to encode appropriate social cues is impaired, which would cause distortion of the remaining steps of the social-cognitive processes suggested by Dodge et al. (1986) that are necessary for producing appropriate strategies. The importance of establishing a shared understanding or frame of reference and its association to issues concerned with the relevance and connectedness of social exchanges has been emphasized in this chapter, and difficulties in this domain due to encoding problems may well turn out to be one of the most critical factors in understanding the peer-interaction deficit of young children with developmental delays.

CONCLUSION

In this chapter, a hierarchical model has been presented in order to provide a framework for understanding young children's peer-related social competence. Critical features of the model are its reliance upon a developmental perspective and a recognition that the contributions of many disciplines are necessary for a complete understanding of the peer interactions of both nondisabled and disabled children. In fact, the study of peer relationships, because of its fundamental inte-

grative, sequential, and dynamic nature has served as a catalyst for bridging the often disparate areas of linguistics, clinical child psychology, developmental psychology, and early childhood special education.

The hierarchical model contains two major levels of analysis: social/communicative skills, and social tasks and social strategies. It appears that the latter is most relevant to understanding the construct of peer-related social competence. This level of analysis provides an opportunity to examine systematically the unfolding of social events over time and helps focus on the processes that are associated with solving complex social interaction problems with peers. Assessments of peer interactions during defined social tasks is an emerging area of research for children who do not have disabilities but remains largely unexplored for children with disabilities. Once assessments of social strategies and processes within social tasks are carried out, a more thoughtful approach to intervention may well emerge.

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