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Integrating competence and psychopathology: Pathways toward a comprehensive science of adaptation in development

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Abstract
This paper examines the conceptual and empirical connections between competence and psychopathology, two historically rich traditions for the study of adaptation in development, and what might be gained from their integration. Historical roots of these two traditions are reviewed, then overlaps in their definition are considered, with a focus on the ways in which judgments about competence enter into the nosology of mental disorders. DSM-IV is analyzed from the perspective of competence, and the debate about "harmful dysfunction" in defining mental disorder is discussed in relation to competence. Different models explaining the empirical associations of competence and psychopathology are delineated, and illustrative empirical evidence is provided. Potential explanations include confounded concepts and methods, symptoms undermining the effectiveness of adaptation in the environment, failures in age-salient developmental tasks leading to emotional and behavioral problems, transactional influences, shared vulnerability or risk factors producing both kinds of difficulties, and more complex models. The potential benefits of integrating competence and psychopathology as two major approaches to adaptation are discussed in regard to theory, classification of mental disorder, research, and intervention.

It is a fundamental premise of developmental psychopathology that the study of pathways to competence in development as well as pathways to deviance will inform theories about the etiology, prevention, and treatment of psychopathology (Cicchetti, 1984, 1990; Masten & Braswell, 1991; Sroufe & Rutter, 1984). Developmental psychopathology is concerned with adaptation in development, particularly the processes by which patterns of maladaptation arise and may be prevented or ameliorated.

Though complex, the constructs of competence and psychopathology each concern psychosocial adaptation and judgments about the individual differences in the successfulness of adaptive functioning (Masten & Coatsworth, 1995). The behavioral standards by which "doing OK" in life are judged clearly play a role in identifying psychopathology as well as competence in the lives of children. Children who do not meet the implicit expectations of teachers or parents with respect to these standards become the topic of concern and may be referred for evaluation and intervention. Similarly, many definitions of mental disorder include "impairment" in adaptive functioning in some form.

The close ties conceptually and historically

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between the constructs of competence and psychopathology also are evident in the emergence of "resilience" as a domain of inquiry over the last 30 years (Garmezy, 1985; Luthar, Cicchetti, & Becker, in press; Masten, 1994, 1999a). Resilience generally refers to the emergence of good adaptation in the context of high-risk exposure or significant threats to development. The systematic study of resilience arose in large part from studies of psychopathology, in which investigators observed that mentally ill patients with better premorbid competence had better prognoses and that children at risk for psychopathology had widely varying outcomes (e.g., Garmezy 1974; Watt, Anthony, Wynne, & Rolf, 1984; Zigler & Glick, 1986). To this day, investigators are interested in the processes by which competence develops among children from disadvantaging or threatening environments, with the goal of learning how to prevent or treat psychopathology and how to foster competence in development (Masten, 1999a, 1999b; Masten & Coatsworth, 1998).

Competence and psychopathology also have strong empirical connections (Masten & Coatsworth, 1995). Competence difficulties and psychopathology often co-occur: for example, children with specific disorders have predictable competence problems; children failing to meet the expectations for competence in school or society often have elevated rates of disorder. The same risk factors, such as socioeconomic status or low birth weight, frequently predict failures in social or academic competence as well as symptoms of psychopathology or higher rates of disorder. Adversity in the form of negative life events and chronic disadvantage is associated both with competence in multiple domains and multiple types of psychopathology.

It is perhaps surprising in light of the conceptual and empirical linkages between competence and psychopathology that there has been so little systematic effort to examine the significance of these connections or to integrate the distinct traditions associated with each class of constructs (see Masten & Coatsworth, 1995). The purpose of this paper is to consider what might be gained from a better integration of these two approaches to adaptation in developmental psychopathology.

Historical Roots of Two Traditions

Concepts of psychopathology, literally referring to diseases of the mind, have very old roots in the history of medicine (Alexander & Selesnick, 1966; Menninger, 1963). Hippocrates (460–377 B.C.) and his followers, for example, promulgated the idea that dysfunction in the organism, which they conceptualized in terms of imbalances in the four humors of the body (blood, phlegm, yellow bile, and black bile), affected the body and brain. The Hippocratics are also credited with the first classification system for mental illnesses, including epilepsy, mania, melancholia, and paranoia (which referred to mental deterioration; Alexander & Selesnick, 1966). The idea that brain dysfunction underlies mental illness continued to be central to definitions of psychopathology in the history of psychiatry, while the description and classification of mental diseases underwent extensive elaboration (Blashfield, 1984; Cantwell & Rutter, 1994; Costello, 1993; Menninger, 1963; Jensen & Hoagwood, 1997).

Modern concepts of psychopathology took hold in the late 18th and 19th centuries, with the blossoming of science and medicine that followed the Renaissance and Enlightenment, more than 2000 years after the classical Greek period. Behavior noticed centuries earlier was systematically described in terms of syndromes by astute observers like Pinel and Kraepelin (Alexander & Selesnick, 1966; Menninger, 1963). The *course* of a mental illness became a widely accepted basis for differentiation of illnesses in classification and diagnosis, a step that indicated growing acknowledgment of the significance of the observed quality of functioning over time. Age of onset, as well as course of illness, was recognized to be important in classifications of several 19th century psychiatrists, including Kahlbaum and Savage (Menninger, 1963).

During this time, childhood disorders were also described systematically by clinicians, including Esquirol, who noted the differences between mentally defective and psychotic

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children (though not in these words), and Emminghaus, who thought some child diseases resulted from physical causes, while others arose from excessive fear or poor conditions (Alexander & Selesnick, 1966). Emminghaus viewed childhood disorder as essentially different from adult disorders, but the prevailing view from the 19th century, well into modern times, was that many conditions of adults could be found in children (Alexander & Selesnick, 1966).

The "medical model" perspective that psychopathology resulted from organic diseases continued to dominate psychiatry in the 19th and early 20th centuries, though there were occasional dissenters. Griesinger (1817–1868) held that "mental diseases are brain diseases" (as quoted by Menninger, 1963, pp. 26, 454). Pierre Janet (1859–1947) would later take issue with the prevailing view of organic dysfunction as the root of all psychopathology. As described in Menninger's history of psychiatric classification (1963), Janet noted that sometimes an automobile stops because is it broken; sometimes it stops because it is out of gasoline (p. 445). And, as noted above, some child clinicians believed that poor rearing conditions contributed to psychiatric problems in children. By and large, however, the medical model of psychopathology, centered on mental illnesses as brain diseases, was firmly rooted by the end of the 19th century.

The work of Darwin and Freud, two towering figures of the 19th century, profoundly influenced concepts of psychopathology as well as competence. In markedly different ways, both Darwin and Freud spurred the study of behavior from the perspective of adaptation and development (Alexander & Selesnick, 1966; Cairns, 1998). Their influence can be seen in the classification system of Adolf Meyer, who departed radically from the 19th century concepts of psychopathology in his biosocial theory of psychopathology. He conceptualized mental diseases in terms of reactions of the whole organism to the environment, particularly in the form of adaptation to stress and life experiences (Kendell, 1975; Menninger, 1963). Similarly, Jellife and White fused Darwinian and Freudian theory with the biological psychiatry of the 19th century to create a classification system that included neuroses like "shellshock" as well as dementia praecox and manic–depressive psychoses (Menninger, 1963).

In 1945, William Menninger put forward a classification system that synthesized the ideas of his time, with five major groups of mental illness, including neurotic reactions, and emphasizing that some clinical phenomena reflected reactions rather than diseases (Menninger, 1963). This system was adapted by the Veterans Administration and strongly influenced the *Diagnostic and Statistical Manual of Mental Disorders* published by the American Psychiatric Association in 1952. Psychoneurotic disorders were included, such as anxiety reaction and conversion reaction. The early 20th-century classification systems, both in the United States and Europe, reflected the medical model of disease that emerged in the 19th century as well as ideas from Darwinian and Freudian schools of thought. These systems focused on the organism interacting with environment and the processes of adaptation, as well as the psychoanalytic concepts of personality disorder.

Subsequently, decades of debate have ensued about the definition of mental illness, the medical model of psychiatry, categorical versus dimensional approaches, whether and how to include suffering and impairment in the definitions of disorder, and other issues (Akiskal, 1989; Blashfield, 1984; Cantwell & Rutter, 1994; Costello, 1993; Engel, 1977; Jensen & Hoagwood, 1997; Kiesler, 1999; Spitzer & Wilson, 1975; Zubin, 1972). Several of the recurrent controversies in defining and classifying psychopathology relate to the concept of competence, as will be examined below.

The second tradition for describing the quality of adaptation shares some common historical roots with psychopathology. "Competence" in psychological theory and research encompasses a family of constructs related to the effectiveness of individual adaptation in the environment (Masten & Coatsworth, 1995). Like psychopathology, competence as a construct has early historical roots in classical Greek thought, if not earlier. Plato, in *The Republic,* made recommendations about who

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should rule according to individual characteristics. Clearly individual differences in effectiveness were noted long before they were measured and analyzed scientifically. The systematic study of variation in individual adaptation, however, dates to the 19th century, which gave rise to the theory of evolution by natural selection, as well as to mental testing and psychoanalysis, all of which focused on individual differences in adaptation (Borstelmann, 1983; Cairns, 1983; Mayr, 1982). The idea of adaptation shifted from a static notion (e.g., a reflection of the perfect harmony of nature) to a dynamic one in the 19th century (Mayr, 1982), which is evident both in Darwin's theory of evolution and in Freud's theory of personality development and psychoanalysis. Natural selection of individuals who varied in heritable ways provided the mechanism of evolution. In Freudian theory, the job of the mental structure termed the "ego" was to orchestrate internal and external adaptation, balancing the needs of the unconscious parts of the mind with the requirements of the social world. Thus the ego in Freud's theory served adaptive functions that were elaborated later by Anna Freud and Heinz Hartmann (Masten & Coatsworth, 1995).

Robert White's (1959) theory of competence integrated the ego psychology of the neo-Freudians and evolutionary theory with observations from animal research on motivation. White argued that the capacity for effective adaptation in the environment stemmed from a powerful human motivational system to master and to derive pleasure from effective interactions with the environment. Though the individual was motivated by the pleasure in mastery, the evolutionary effect was better adaptation. The motivation to become competent was highly adaptive and evolved presumably by natural selection.

Subsequent historical contributions to modern views of competence include the concepts of ego-resiliency by Jack and Jeanne Block, perceived competence by Harter, self-efficacy by Bandura, and developmental tasks, articulated by Erikson and Havighurst (Masten & Coatsworth, 1995). The idea of developmental tasks was particularly important because it drew attention to the standards by which success in adaptation was judged (Masten & Coatsworth, 1998). Erikson's psychosocial tasks included achieving a coherent identity in adolescence and intimacy in early adulthood. Havighurst's tasks included such milestones as learning to walk and talk in early childhood and learning to read, write, and do calculations in middle childhood. Failures or deviations from the norm on these developmental tasks could lead to concern on the part of parents, teachers, or children, and problems like distress or unhappiness, peer rejection, poor academic or deportment grades, school dropout, or delinquency.

The study of competence has held more interest for developmental science and education than for medicine and psychiatry. Waters and Sroufe (1983), for example, linked the construct of competence and the idea of developmental tasks with the organizational theory of development. Classification and diagnostic systems for effective behavior in the environment did not arise in the same way that they did for problems and symptoms. Certainly, failures in the developmental tasks of childhood often led to referral to medical professionals as well as developmental and educational specialists. At this point, however, the search for an explanation or a treatment plan typically turned to models of disease or dysfunction in the organism, such as mental disorders or learning disabilities. Yet the need for assessment of progress in the competence domains deemed important by society gave tremendous impetus to the testing movement in psychology (Masten & Coatsworth, 1995). Tests of learning ability and achievement, sociometrics and peer reputation, social skills, social behavior in the classroom, and adaptive functioning, such as the Vineland Social Maturity Scale (Doll, 1935), among others, attest to the salience of evaluating social and academic competence. It was also recognized in some corners of psychiatry that adaptive functioning in the developmental tasks expected for one's age and place in society was an important index of the severity of mental illness and helpful in predicting its course, prognosis, or treatment. "Premorbid competence" was assessed, for example, in scales developed by Zigler and

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Phillips, because it predicted outcomes of individuals with psychiatric disorders (Zigler & Glick, 1986; Zigler & Phillips, 1961). Recent editions of the classification system of the American Psychiatric Association for mental disorders have included indices of adaptive functioning for similar reasons.

Contemporary Definitions of Competence and Psychopathology in Relation to Each Other

Definition of competence

In the last 2 decades of the twentieth century, the concept of competence has seen a resurgence in developmental psychopathology (Cicchetti, 1987; Cicchetti & Toth, 1995; Ford, 1985; Masten & Coatsworth, 1995; Waters & Sroufe, 1983). In keeping with this perspective, competence refers to adaptational success in the developmental tasks expected of individuals of a given age in a particular cultural and historical context (Masten & Coatsworth, 1995; Masten et al. 1995). Competence by this definition is inherently multidimensional, because there are multiple developmental tasks salient in a given age period in a given place and time in society. Maladaptation in these developmental models of competence would describe failures to meet the expectations for behavior in society, either in all areas or in one major area. Thus, a generally maladaptive child of elementary age might have conduct problems, peer problems, and academic problems. A child who is well behaved (follows the rules of parents and schools) but struggles in school work or is rejected by all of his or her peers could also be viewed as having significant competence problems.

Most developmental theorists assume that many processes contribute to competence (Masten & Coatsworth, 1995; Waters & Sroufe, 1983). Indeed, one of the characteristics of this family of constructs is their high-level, integrative nature, referring to behavior that requires the coordination of cognitive, emotional, physical, and social activities to achieve good adaptational outcomes, and that flows from many transactions between organism and environment. Concomitantly, maladaptive behavior or failures in competence could result from different kinds of problems at different levels in the interaction of organism and environment. These could range from a genetic defect that leads to mental retardation, an injury leading to cognitive problems, health problems, poor parenting that results in deviant behavior, constraints on opportunities resulting from prejudice, or a dangerous or unsupportive environment. Cognitive, emotional, or behavioral difficulties associated with mental disorders could therefore compromise competence. However, there is no assumption that competence problems necessarily indicate a functional problem in the organism.

The complex role of competence-related constructs in the psychiatric definitions of psychopathology is evident in the current classification system represented in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; American Psychiatric Association, 1994). Evaluations of competence enter into the definition of mental disorder, the criteria for nearly all disorders on Axis I and II, Adjustment Disorders, the Axis IV descriptions of psychosocial and environmental problems, and the Axis V Global Assessment of Functioning, in addition to the descriptions of associated features and course of numerous disorders.

Definition of mental disorder

The DSM-IV, while acknowledging the imprecision of current definitions of "mental disorders," defines a mental disorder as follows:

> A clinically significant behavioral or psychological syndrome or pattern that occurs in an individual and that is associated with present distress (e.g., a painful symptom) or disability (i.e., impairment in one or more important areas of functioning) or with a significantly increased risk of suffering death, pain, disability, or an important loss of freedom. . . . Whatever its original cause, it must currently be considered a manifestation of a behavioral, psychological, or biological dysfunction in the individual. (p. xxi)

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In relation to competence, the most striking elements of this definition are the requirement that a mental disorder involve either significant distress or impairment and a dysfunction in the organism. In the specific criteria for numerous disorders, either "marked distress" or "significant impairment in social, academic, or occupational functioning" is often described. For many disorders, distress or impairment is required. Some disorders specify a particular kind or severity of impairment. For example, diagnostic criteria for the learning disorders (e.g., reading disorder) require significant interference with academic achievement or activities that require reading, math, or writing skills. Reactive attachment disorder of infancy or early childhood requires "markedly disturbed" social relationships, particularly within the primary caregiver relationship. The pervasive developmental disorders require impairment in major developmental domains such as social competence. Autistic disorder criteria, for example, require "qualitative impairment in social interaction." These disorders, among the group of disorders "usually first diagnosed in infancy, childhood, or adolescence," are judged in large part on marked failures or difficulties in achieving age-salient developmental milestones in psychosocial development, including attachment, language, play, and peer relations.

Additional disorders explicitly require impairment rather than distress. These include schizophrenia, which requires not only two or more from a list of characteristic symptoms such as delusions but also social dysfunction, reflected either in a marked decline from a previous level of functioning or "failure to achieve expected level of interpersonal, academic, or occupational achievement."

Associated features for the group of attention-deficit and disruptive behavior disorders often note competence problems. Academic problems are noted for attention-deficit hyperactivity disorder (ADHD) and conduct disorder, for example. The diagnostic criteria for ADHD require impairment from the symptoms in two or more settings.

The criteria for conduct disorder are interesting in that the "symptoms" of this disorder could all be viewed as failures to abide by the rules for conduct in society, considered one of the core developmental tasks of school-age children. In this case, however, more than competence problems is denoted by this diagnosis; the assumption is that the problems (whatever their origin) currently reflect dysfunction or mental disorder in the individual. Richters and Cicchetti (1993), among others, have questioned whether children with the patterns of antisocial behavior denoted by the conduct disorder label are best described as having a "mental disorder," with the presumption of pathological dysfunction in the organism.

The issue of dysfunction as a fundamental requirement for mental disorder, long an issue in the history of psychiatry, as indicated above, has been hotly debated in recent years (Bergner, 1997; Blashfield, 1984, 1997; Jensen & Hoagwood, 1997; Lilienfeld & Marion, 1995; Nathan & Langenbucher, 1999; Wakefield, 1997). In a paper both widely acclaimed and criticized, Wakefield (1992) argued that a mental disorder involves a "harmful dysfunction" in the organism, which refers to a malfunction or failure of a natural (naturally selected, resulting from evolution) mental operation in the organism that is "harmful" in the sense that it has significant consequences for the individual or society (it is undesirable according to social values). A child who has normal rearing and learning conditions but who does not learn to read could be said to have a harmful dysfunction or learning disorder in literate societies, because (a) human children normally develop the capacity to learn to read in such societies *and* (b) in modern societies reading is extremely important (Wakefield, 1997).

Spitzer, who played a key role in the definition of mental disorder quoted above (adopted in DSM-III and included since that edition), characterized the Wakefield concept of harmful dysfunction as "brilliant" and "a major breakthrough" (Spitzer, 1997, pp. 260–261). However, critics of Wakefield's notion of harmful dysfunction have challenged his proposition that mental disorders involve dysfunction in "natural" mental operations resulting from evolution (Lilienfeld & Marion,

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1995). On the other hand, the importance of the "harmfulness" judgment in Wakefield's principle of "no harm, no disorder" is rarely questioned. Lilienfeld and Marion comment as follows: "As Wakefield [1992] noted, harmfulness or impairment has been a major criterion in most definitions of mental disorder and it seems likely that harmfulness would remain a crucial criterion in deciding which conditions necessitate intervention" (p. 418). Indeed, Jensen and Hoagwood (1997) suggest that classification systems need to give much greater attention to context and transactions of organism with environment and to the "adaptive and maladaptive processes of the person within his or her environment."

The significance of impairment in the conceptualization of mental health problems is also evident in the concept and assessment of "serious emotional disturbances" in education and mental health practice. Public Law 94-142, the Individuals with Disabilities Education Act, originally passed in 1975 and subsequently reauthorized, required states in the United States to provide a "free and appropriate" education to children with disabilities, which included serious mental health problems. Functional impairment in developmentally appropriate school family or community life was central to the definition of serious emotional disturbances (SEDs). Given the importance of qualifying for special services on the basis of SED designation, it is not surprising that a struggle has ensued about how to define and assess SED (McConaughy, Mattison, & Peterson, 1994; Narrow et al., 1998; Wodrich, Stobo, & Trca, 1998). Other federal and state laws affecting the financing and delivery of education and mental health services to children have adopted similar definitions of what constitutes serious mental health problems (Narrow et al., 1998). All of these standards provide evidence that impairment in the developmental tasks of life are viewed as a critical criterion defining mental health problems in need of services. At the same time, the controversies over assessment and definition attest to remaining challenges and ambiguities inherent in defining mental disorder with regard to competence.

Adaptive functioning in DSM-IV

In addition to defining mental disorders, both globally and by specific criteria, competence-related concepts are embedded in this document in other ways. Axis IV of this system provides a way to indicate "psychosocial and environmental problems" that are relevant to diagnosis, prognosis, or treatment. A checklist or simple listing of such problems can be used for this part of the diagnosis. Examples from DSM-IV of problems that might be included and are relevant for children range from "birth of a sibling" to "academic problems" or "parental overprotection." Axis V allows a clinician to make an overall judgment of the individual's functioning, again with the expectation that a global rating of functioning has utility for assessment, prognosis, or treatment. The Global Assessment of Functioning (GAF) scale was originally based on the Health-Sickness Rating Scale (Luborsky, 1962), revised by Endicott, Spitzer, Fleiss, and Cohen (1976). Reliability of the Axis V score and related instruments on which it was based have been mixed (Goldman, Skodol, & Lave, 1992). Global functioning is rated on a 100-point scale. As is clear in the scale point descriptions, this global rating blends symptoms with indicators of social effectiveness or impairment. Criticisms about the confounding of symptoms in the GAF scale for Axis V in DSM-III-R led the authors of DSM-IV to include an exploratory scale that removed the severity of symptoms from the rating of disability, called the Social and Occupational Functioning Assessment Scale (SOFAS; see Goldman, Skodol, & Lave, 1992), which is included as an appendix. Similarly, a specific scale on Global Assessment of Relational Functioning (GARF) was provided in the DSM-IV appendix for exploratory use. The SOFAS reads like a global competence or adaptive functioning rating. The high-end scores represent a judgment of good functioning in all areas of occupational or social functioning; the low end describes difficulties in self-care as well as social and occupational functioning, similar to criteria required for diagnosing adaptive behavior in mental retardation.

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These scales, particularly those omitting symptom severity, appear to be closer conceptually to the definition of competence, in several ways. First, they imply standards for social behavior against which impairment is judged; second, they do not require symptoms of psychopathology; and, third, they allow for impairment resulting from mental or physical health problems. It is interesting to note, however, that impairment that could be attributed to lack of opportunity or other environmental constraints does not count in making this rating. Thus, there is still a causal presumption of dysfunction in the organism.

The most striking omission from these adaptive functioning scales is the absence of a developmental perspective. Clearly the standards for what constitutes adequate, poor, or superior functioning change over development. Moreover, the importance of a given domain of functioning, such as occupational versus school functioning, change. Undoubtedly, the well-trained child or adolescent psychopathologist renders a clinical judgment based on a developmental understanding of behavior.

Thus, in many different ways, DSM-IV indicates a complex and pervasive concern with competence-related concepts, most particularly social, academic, and occupational performance, and a focus on "impairment" in these domains that is presumably related to dysfunction or disabilities in the organism. What is the significance of the pervasive role of impairment or dysfunction in the definitions of psychopathology embodied by DSM-IV?

Models and Data Linking Competence and Psychopathology

Competence and psychopathology may be connected for a variety of reasons, some of which reflect overlaps in definition or measurement, and some of which reflect important processes in the development of psychopathology. In this section, the possible links will be examined and illustrated by selected empirical findings that provide the kind of evidence that support or refute the model. But first it is important to consider several broad conceptual and methodological issues pertinent to a consideration of these models and data.

Conceptual and methodological issues

Understanding the relation of competence and psychopathology must begin with the recognition that both the conceptual and operational definitions of these two classes of phenomena present problems. For example, rule-abiding versus rule-breaking behavior is widely viewed to be a salient developmental task in children, an important domain of social competence (Masten & Coatsworth, 1998). At the same time, externalizing symptoms or antisocial behavior are widely assessed as an important aspect of psychopathology. The instruments used to assess these domains of behavior have much in common, including overlapping items. Similarly, while tools used to assess the psychopathology domain of anxiety or internalizing symptoms would be likely to have little item overlap with assessment tools used to assess school achievement or rule-abiding behavior, there could be common items related to social functioning. Moreover, if specific disorders are studied, such as overanxious disorder, and one of the criteria requires significant distress or impairment, a different kind of confound arises. The sample of children meeting diagnostic criteria will possibly be based on current social competence indicators. In fact, for the anxiety disorders impairment is often viewed as crucial for distinguishing between normative fears and disorder: "A useful rule of thumb is to judge the child's ability to participate in expected, age-appropriate social and academic activities" (Klein, 1994, p. 354).

The pervasive criterion of impairment for most mental disorders presents a challenge for interpreting research on the linkage of competence to psychopathology, particularly when it is not clear (a) if a particular child met criteria for disorder due to distress or social impairment or (b) what the nature of the impairment was that led to referral or diagnosis. It is not illuminating to learn in a research report that a group of children selected in part on the basis of impairment in age-salient develop-

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mental tasks has lower scores on competence indicators than a comparison group.

Descriptive data linking competence and psychopathology

It has long been noted that competence and symptoms or disorders are statistically associated, both concurrently and longitudinally. Early on, these connections were simply noted or described, based on cross-sectional, follow-back, or follow-up designs. In a classic pair of reviews, Kohlberg and colleagues (Kohlberg, LaCrosse, & Ricks, 1972; Kohlberg, Ricks, & Snarey, 1984) concluded that overt antisocial behavior in childhood has greater predictive significance than symptoms of emotional disturbance and that both academic achievement and peer relations are good long-term predictors of later outcomes. Kohlberg and coauthors also argued that "the best predictors of freedom from adult mental illness and maladjustment are the *presence* of various forms of competence and ego maturity rather than the *absence* of problems and symptoms as such. The more prognostic negative traits of children are traits of ego weakness and of intellectual and social failure rather than symptoms as such" (1984, p. 161).

Numerous studies have found that broad indicators of psychopathology, such as scores on "Externalizing" and "Internalizing" broadband behavior problem scales, the higher order factor dimensions of instruments such as the Child Behavior Checklist (Achenbach, 1991), are related within and across time to assessments of competence in salient developmental tasks, such as academic achievement or peer success (Cohen, Gotlieb, Kershner, & Wehrspann, 1985; Cohen, Kershner, & Wehrspann, 1988; Hymel, Rubin, Rowden, & LeMare, 1990; Masten & Coatsworth, 1995; Parker, Rubin, Price & DeRossier, 1995; Rubin, Bukowski, & Parker, 1998). Generally, children with "internalizing profiles" (high on internalizing but not externalizing symptoms) have better competence scores on multiple domains, as well as better scores on measures of intellectual functioning and attention. The most consistent competence difficulties reported among children high on internalizing symptoms are peer social problems. Children with "externalizing profiles" have negative competence profiles on both academic and social indicators. Children with both kinds of problems (with higher "Total Behavior Problems" scores) have the worst competence picture. Girls as a group typically have higher internalizing and lower externalizing raw scores than boys (Achenbach, 1991), which is one of the reasons scores are typically standardized within gender.

On the whole, these studies also find greater long-term predictive significance for externalizing symptoms, congruent with the earlier Kohlberg reviews. However, this conclusion is based on studies that generally were not looking for differential predictive validity or where little effort was made to assess outcome dimensions one would expect to be related to internalizing but not externalizing symptoms. Greater attention in recent years to emotional problems and disorders has suggested a reconsideration of the conclusion that emotional problems have less stability and prognostic significance. As knowledge of anxiety disorders and depression among children and young adolescents has grown, for example, evidence has increased that these disorders signify an elevated risk for similar problems in the future (Cicchetti & Toth, 1998; Harrington, Rutter, & Fombonne, 1996; Kovacs & Devlin, 1998; Lewinsohn, Rohde, Klein, & Seeley, 1999; Mattanah, Becker, Levy, Edell, & McGlashan, 1995; Pine, Cohen, Gurley, Brook, & Ma, 1998). Children with comorbid anxiety disorders and depression have been found to have worse prognoses for future psychosocial adjustment than those with anxiety disorders alone (Last, Hansen, & Franco, 1997).

An extensive literature on peer relations has also indicated consistent associations within and across time between peer acceptance or rejection and symptoms (Cicchetti & Bukowski, 1995; Cicchetti & Toth, 1991; Masten & Coatsworth, 1995; Parker & Asher, 1987; Parker, Rubin, Price, & DeRosier, 1995; Rubin, Bukowski, & Parker, 1998). Antisocial behavior problems are often associated with rejection by normative peers in structured settings like school classrooms,

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though children with these problems may well end up in deviant peer groups where they are accepted (Cairns, Cairns, Neckerman, Gest, & Gariepy, 1988; Cairns, Cairns, & Neckerman, 1989). Children who have only internalizing types of problems, particularly girls, appear to be more socially acceptable than antisocial children, but their social problems may increase with age; shy, inhibited, withdrawn, or anxious behavior may be more noticed by older children and may have greater consequences for boys in U.S. society (Caspi, Elder, & Bem, 1988; Morison & Masten, 1991; Rubin, Hymel, Mills, Rose–Krasnor, 1991; Rubin et al., 1998).

There are significant problems with much of the evidence linking various domains of competence and symptoms in the developmental literature. Not only do some of the measures overlap in items or content; there also are very few longitudinal studies that control for both competence and symptoms at the outset, making it difficult to interpret covariance, even in a longitudinal design.

Numerous studies have also documented competence or adjustment problems among children with diagnosed disorders by psychiatric criteria (Masten & Coatsworth, 1995; McGee & Stanton, 1990; Newman et al., 1996; Sanford, Offord, Boyle, Peace, & Racine, 1992). Children with ADHD and conduct disorder (or both), for example, have widely reported problems with peer relations and academic achievement (Anderson, Williams, McGee, & Silva, 1989; Hinshaw, 1992; Hinshaw & Melnick, 1995; Webster–Stratton & Lindsay, 1999). Children meeting criteria for both disorders usually have significantly worse functioning in other domains. Children with anxiety disorders often have school and social problems too (Beidel, Turner, & Morris, 1999; Ginsburg, La Greca, & Silverman, 1998; Kovacs & Devlin, 1998; La Greca & Lopez, 1998; McGhee & Stanton, 1990), but these appear to have a different quality than the peer acceptance problems of children with disruptive types of behavioral disorders, reflecting social withdrawal from peers or peer neglect, rather than active rejection. Children with some anxiety disorders, such as separation anxiety disorder or social phobia, also may refuse to go to or stay in school (Bernstein & Borchardt, 1991; Beidel et al., 1999; Kovacs & Devlin, 1998).

Psychopathology undermines competence

One of the fundamental concepts in the medical model of psychopathology is the idea that an organic disease process interferes with adaptive behavior (Blashfield, 1984; Sroufe, 1997). The World Health Organization publishes an *International Classification of Impairments, Disabilities, and Handicaps* to accompany the *International Classification of Diseases*. The subtitle of the former is revealing: *A Manual of Classification Relating to the Consequences of Disease* (World Health Organization, 1980). This manual describes the consequences of physical or mental illness in terms of *impairment* (dysfunction in the organism), *disability* (in the performance of normal human activities resulting from such impairments), and *handicap* (the social disadvantage resulting from such disabilities). This system represents a highly elaborated depiction of the medical model linking psychopathology to competence.

In the DSM-IV the criteria for diagnosing schizophrenia include deterioration in functioning, and most would assume that this deterioration of function results from disease processes that lead to significant difficulties of adaptation in the environment. Recent theories describe schizophrenia as a neurodevelopmental disorder (Andreasen, 1999; Cicchetti & Cannon, 1999); few would argue that competence failures cause this disorder. Similarly, modern views of autism assume that there are major problems in the developing brains of children with this disorder and that the resulting dysfunctions of cognition and affect impair many aspects of development, including social competence (Pennington & Welsh, 1995; Sigman & Ruskin, 1999).

Schizophrenia, autism, and mental retardation were among the earliest disorders identified in which the defining symptoms of the disorder were assumed to cause competence problems. These are disorders characterized by clear, though varying, difficulties in cognitive functioning. Disorders such as obsessive–

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compulsive disorder (Carter, Pauls, & Leckman, 1995) and Tourette's disorder (Peterson, Leckman, & Cohen, 1995) also have hallmark symptoms that readily can be seen to interfere with performance of age-salient developmental tasks, such as going to school and getting along with teachers or peers.

With mood disorders, models about the causal directionality of the link with competence have been more complex. Some causal theories propose that failures in competence contribute to psychopathology (discussed below), whereas others propose that a disease process leading to severe symptoms begins to interfere with adaptive functioning. For example, depression is associated with peer difficulties, but this could be due in part to symptoms turning off peers, peer rejection (for a variety of reasons) leading to loneliness and despondency, or a transactional process of both kinds of influence (Rudolph, Hammen, & Burge, 1994). The differentiation of these models is important because the implications for intervention and prevention are quite different.

Competence problems lead to psychopathology: Failure models

There are several ways in which competence problems could contribute to psychopathology, and a number of etiological theories in developmental psychopathology have proposed such models. Conceptual models of antisocial behavior problems and violence have proposed, for example, that failures to succeed or get along at school and with normative peers can result in children affiliating with more deviant peers, leading to escalations in externalizing symptoms (Catalano & Hawkins, 1996; Dishion, Andrews, & Crosby, 1995). Some of these models describe progressive cascades or transactional processes in which early problems in parenting and self-regulation lead to later peer rejection and academic problems that in turn lead to hostile attributional styles, association with deviant peers, and other problems (Crick & Dodge, 1994; Dodge, 1996; Patterson, Reid, & Dishion, 1992).

Patterson and Capaldi have proposed a "dual failure model" of depression in children, where failures in social and academic arenas were hypothesized to lead to dysphoric mood (Capaldi, 1992; Patterson & Capaldi, 1990; Patterson & Stoolmiller, 1991). In a longitudinal study of conduct problems and depressive affect in adolescence, found that conduct problems were associated with academic problems and predicted increases in depression over time, whereas depression did not add significantly to the prediction of changes in conduct problems (Capaldi, 1992). This developmental model posits that conduct problems contribute to failures in competence that in turn contribute to more conduct problems and also depressed mood.

David Cole and colleagues have proposed a "competency-based model" of childhood depression that fits in this class of causal models. The basic hypothesis stemming from this model is that perceptions of failures in competence will contribute to depressive affect. Cole and colleagues have tested this model in comparison to the alternative possibility that depressive affect influences competence, in studies of third to sixth graders (Cole, Martin, & Powers, 1997; Cole, Martin, Powers, & Truglio, 1996). Utilizing path analysis and structural equation modeling, social competence was found to predict changes in depression over time, while depression did not predict changes in competence, findings congruent with a "failure model." Additional analyses were congruent with the investigators' supposition that this effect is mediated by perceptions of competence; moreover, the perceptions by *others* about one's competence were found to predict changes in perceived competence for girls but not boys (Cole et al., 1997).

A powerful test of this kind of model is to intervene in one or more competence domain(s) as a means to change the affective or behavioral domain of psychopathology. Kellam and colleagues, for example, have postulated that failures to master core developmental tasks such as reading in the early primary grades can contribute to depression among vulnerable individuals (Kellam & Rebok, 1992). They have demonstrated that an intervention focused on improving reading

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achievement in first graders decreased symptoms of depression (Kellam, Rebok, Mayer, Ialongo, & Kalodner, 1994). Similar efforts to reduce disruptive behavior problems through tutoring interventions are also showing success (Gest, 1998). Long-term effects of early intervention programs like Head Start on antisocial behavior in adolescence have also been interpreted as evidence that the promotion of social competence decreases antisocial behavior (Zigler, Taussig, & Black, 1992).

Shared vulnerability or diathesis

Another type of model linking psychopathology to competence hypothesizes an underlying vulnerability or diathesis in the organism, possibly genetically based, that contributes to multiple consequences in development, resulting in difficulties in achievement of competence in salient developmental tasks as well as symptoms of psychopathology. For example, a common genetic liability for depressive symptoms and antisocial behavior was implicated in a twin–family study of their occurrence (O'Connor, McGuire, Reiss, Hetherington, & Plomin, 1998). Individual differences in temperament (e.g., inhibition), attentional functioning, emotional regulation, and intelligence could operate in this way, simultaneously raising the risk for academic or peer problems and for anxiety or behavioral disorders, quite possibly through a variety of processes. Based on the evidence that very early onset internalizing disorder persists and has prognostic significance, Kovacs and Devlin (1998) posited that there must be individual traits with some stability playing a significant role in the continuity, such as "negative emotionality." Inhibition to the unfamiliar, a robust temperamental difference evident in early and middle childhood, predicts anxiety disorders, internalizing symptoms, lower social competence, and delays in taking on new social roles (Caspi, 1998; Gest, 1997; Kagan, 1998; Rothbart & Bates, 1998). These effects may be due to direct or indirect processes of influence; Rothbart and Bates (1998) delineated examples of processes that could underlie the links between temperament and adjustment, including direct–linear effects (e.g., extreme shyness is pathological), indirect–linear effects (e.g., irritable child influences behavior of parents or teacher which in turn affects child), or interactions (e.g., stress-reactive child has worse responses to negative life events).

Lower IQ scores and poor attention regulation predict both academic problems and externalizing symptoms (Coie & Dodge, 1998; Hinshaw, 1992; Rothbart & Bates, 1998). Again, these effects could be direct (e.g., severe problems with attention regulation or intellectual functioning comprise core criteria for disorders such as ADHD and mental retardation, and interfere with learning in school or social cognition in peer interactions) or indirect (e.g., the behavior of the child with cognitive or attentional problems annoys peers and teachers, leading to rejection and anger or loneliness, perhaps special classroom placement with less favorable learning opportunities, and more deviant peers). Or, under conditions of adversity, vulnerable children unable to regulate emotion experience greater stress, which increases the chances of depression and may also produce cognitive or behavior changes that negatively affect interactions with parents, teachers, and peers.

Personality traits have been linked to a wide variety of health risks as well as competence. In a report on psychosocial and behavioral predictors of longevity among Terman's cohort of gifted children, the "Termites," Friedman et al. (1995) found that personality traits in childhood, such as low conscientiousness and impulsivity, were related to risk for mortality decades later. Much shorter term longitudinal studies have also indicated that personality traits measured in childhood predict both competence and psychopathology in adolescence and early adulthood (Caspi, 1998; Shiner, 2000).

Such studies have uncovered leads to common vulnerability factors that could explain at least part of the co-occurrence of competence and psychopathology problems. However, these studies often reveal common experiential or contextual risk factors as well.

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Shared stressors and risk factors

Another possible explanation for the apparent covariance of psychopathology and competence is shared experiences that contribute to both kinds of difficulties. Major risk factors for human development, such as socioeconomic status (SES), poor parenting, and child maltreatment, predict a multitude of subsequent problems, including traditional indicators of social competence and symptoms. Shared risk factors is one of the explanations of the high prevalence of comorbidity or co-occurrence of multiple mental disorders among children and adolescents (Caron & Rutter, 1991), but there is good reason to believe that risk effects are much broader than mental disorders. "SES gradients" research indicates strong associations between measures of SES and a wide variety of morbidities in human health, including mental health, physical health, and social competence outcomes among children and adults (Keating & Hertzman, 1999; Lipman, Offord, & Boyle, 1994). Similarly, the quality of parenting in childhood has been linked to many outcomes, including multiple domains of competence and psychopathology (Masten et al., 1999; Rolf, Masten, Cicchetti, Nuechterlein, & Weintraub, 1990). Chronic and acute stressors, including child maltreatment and a wide variety of negative life events and conditions, long have been associated with both competence and psychopathology (Cohen, 1988; Compas, 1987; Garmezy & Masten, 1994; Masten & Coatsworth, 1998; Masten & Wright, 1998).

Cumulative risk. It has also been noted that many of these risk factors covary; hence, they tend to aggregate in the lives of children and the prevalence or risk for a wide variety of child problems in social, physical, and mental health rises as a function of increasing overall risk (Masten & Coatsworth, 1998; Masten & Wright, 1998; Sameroff, 1999; Sameroff, Seifer, & Bartko, 1997; Yoshikawa, 1994). The breadth of the correlates of high risk on such indices suggests that high scores signify either that fundamental adaptive systems central to human functioning, both internally and in the environment, are not operating normally, that the "load" on the organism's adaptive capacity is overwhelming, or some combination of both. These adaptational systems could include homeostatic regulatory operations with the human body as well as the protections offered by normal parents when a child is threatened (Masten & Coatsworth, 1998).

Competence and psychopathology emerge from multiple influences

Given the complexity of human behavior, simple unidirectional models are unlikely to explain all the processes leading to linkages of competence and psychopathology. Thus, it is not surprising to find numerous models that reflect multiple processes and multiple directions of influence. Transactional models allow for the likelihood that child and environment are shaping each other through many interactions over time (Cicchetti & Rizley, 1981; Cicchetti & Toth, 1998; Sameroff & Chandler, 1975; Sameroff, 1989). Patterson and colleagues at the Oregon Social Learning Center have described and tested transactional models of "coercive" and other negative sequences of interaction between children and parents that leads to worsening of antisocial behavior and competence problems in the child (Patterson et al., 1992).

Diathesis–stressor models encompass the vulnerability and risk models of causality in more complex explanatory models (Gottesman, Shields, & Hanson, 1982; Meehl, 1962, 1989). In this framework, high levels of adaptational challenge in the lives of individuals could result in multiple problems or disorders emerging, depending on the pattern of vulnerabilities of a given individual. Theoretically, more adverse rearing conditions would be expected to result in more general dysfunction across more domains of adaptation, as well as raising the likelihood that a genetic vulnerability to a specific disorder would be manifested in the phenotype. Thus, one would expect considerable comorbidity (of mental and physical illnesses and problems) along with high co-occurrence of educational, social,

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mental, and physical health problems among highly disadvantaged children. Such patterns are typically found among children growing up in poverty (Luthar, 1999, Masten, 1992; McLoyd, 1998) or in dangerous homes with poor parenting (Masten & Wright, 1998; Rogosch, Cicchetti, Shields, & Toth, 1995).

Developmental systems theory has also become prominent in recent years as a class of complex and comprehensive explanatory models that accommodates processes within the organism and between organism and the many embedded contexts in which individual children live and develop (Ford & Lerner, 1992; Thelen & Smith, 1998). In these models, the behavior of an individual is always the result of many interactions of organism and environment. Associations of competence and psychopathology could arise in many different ways, including all of the models described above. Indeed the possibilities are so complicated that this theoretical approach often leads investigators to search for striking constraints and patterns in their data, anomalies, or unexpected outcomes and to refocus attention on *persons* and life course trajectories as a way to discern meaning in potentially overwhelming complexity (Bergman & Magnusson, 1997).

Resilience studies, which gained in popularity over the past quarter century (Masten, 1999b; Luthar et al., in press), can be viewed as a class of inquires into "off-gradient" or "false positive" prediction, in that investigators seek to understand how "better than expected" or good outcomes emerge from high-risk conditions. What makes a difference when adversity or risk is high? The resilience framework focuses attention on processes that counteract or moderate the influence of threat or hazard on developmental outcomes. In this research domain, those outcomes may concern competence in salient developmental tasks or the absence of mental health problems or both. The resilience literature has implicated many of the same individual and environmental qualities mentioned above as correlates of competence and symptoms, pointing once again to the idea that there are important adaptational systems that offer protection for human development across broad indicators of status (Masten, in press; Masten & Coatsworth, 1998).

Intervention models

All of these complex models suggest that there may be several major strategies for preventing or treating psychopathology and promoting the development of competence at the same time (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 1999; Cowen, in press; Kellam & Rebok, 1992; Masten & Coatsworth, 1998; Weissberg, Caplan, & Harwood, 1991; Yoshikawa, 1994). Moreover, well-designed prevention and intervention studies offer important field testing of causal models such as those described above. Strategies include effects to reduce the occurrence of risk factors, reduce the exposure to stressful life experiences, increase resources suspected to play a counteracting or protective role for children faced with adversity, and process-oriented efforts to improve the effectiveness of important adaptational systems for human development and coping, such as the quality of relationships or self-regulation of emotion.

There are a number of contemporary prevention programs that focus on processes hypothesized to promote competence as a means to preventing problems. Programs that target academic achievement as a strategy for reducing emotional and behavioral problems were described above. Other highly promising programs with careful research designs include the Seattle Social Development Project (Hawkins et al., 1992) and the Abecedarian Project (Ramey & Ramey, 1998). Popular community-based efforts include the "asset-building" programs of the Search Institute (Benson, Galbraith, & Espeland, 1995).

Conclusions and Implications

Competence and psychopathology have many conceptual and empirical ties, yet it is clear that these domains of theory, assessment, and empirical investigation have not been systematically integrated. Each domain of scholarship is concerned with individual differences in patterns of behavior related to how the human organism is doing, yet competence and

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psychopathology do not represent opposite ends of any simple dimension of adaptive functioning. Children failing in one or all major domains of important development tasks for their age and society are likely to have a higher base rate of disorders than a competent group of children succeeding in all or most areas. Many may have identifiable symptom clusters and "harmful dysfunctions" that can be seen to impair their developmental competence and that may also qualify them for one or more diagnoses. Other individuals appear to be "operating" within a normal range of mental functioning and still are failing in major developmental tasks, perhaps due to lack of opportunities, discrimination, a debilitating chronic health condition, high mobility, or a language barrier, none of which in itself would be likely to qualify the child for a psychiatric disorder. On the other hand, it is possible to be quite successful in age-salient developmental tasks and miserable enough to qualify for a diagnosis of mental disorder, although there is ongoing debate about whether an unimpaired person (not impaired in social and school/work domains) should be labeled as having a mental disorder of any kind (Wakefield, 1997).

A comprehensive account of adaptation and development would encompass both kinds of evaluation, as well as additional aspects of child functioning and context. Indeed, there are signs of movement toward more comprehensive models of development in neuroscience, psychology, psychiatry, and sociology, often from the perspective of embedded living systems models that cut across biological, behavioral, and social system levels of analysis (Cicchetti & Cohen, 1995; Ford & Lerner, 1992; Koch & Laurent, 1999). In such a comprehensive framework, the developmental and psychopathology sciences would be fused. In many ways, developmental psychopathology as an integrative framework has emerged from the conceptual shifts in multiple fields toward more complex and dynamic systems models (Bergman & Magnusson, 1997; Cicchetti, 1990; Cicchetti & Schneider–Rosen, 1986; Masten & Coatsworth, 1995; Sroufe, 1997). But integration has not been fully achieved. Meanwhile, we believe that it is useful to take a more careful look at the relation of competence and psychopathology, in theory, classification of mental disorders, research, and intervention.

Implications for defining competence and psychopathology

The definitions of competence and psychopathology overlap in a variety of ways in the conceptual and empirical literature, a situation that clouds the study of both aspects of adaptation. Operational definitions and assessment tools often overlap in content. This problem is most evident in the conduct domain that includes rule-governed behavior and meeting the expectations of society for behavior in classrooms, social interactions, and in public. Poor performance in this arena is viewed both as a failure in developmental task definitions of competence and as externalizing problems or key symptoms of disruptive or conduct disorders.

Defining mental disorders with criteria that allow for either marked distress or impairment also presents a problem for research attempting to understand how disorders emerge and how competence is affected by or contributes to disorder and treatment. It would be more informative for developmental science and clinical practice if the DSM classification system made it easier to assess and track the level of psychological distress or well-being as well as the level of impairment, for every child (and adult), regardless of diagnosis. Both subjective distress and observable impairment play an important role in referral and provision of services. The degree of impairment appears to have prognostic significance as well as referral and intervention salience (Costello, Angold, & Keeler, 1999; Gould, Bird, & Jaramillo, 1993). If the either–or definition of distress or impairment is maintained, then it needs to be made clear on other axes in this multiaxial classification system what the level of distress and impairment were. Symptom severity can still be specified within disorder, when that is appropriate. To be most useful, the distress and adaptive functioning axes need to provide independent information. Adaptive functioning scales that confound

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symptoms and adjustment are not going to inform us about the processes that may link competence and psychopathology. Thus, we endorse the recommendation of Goldman et al. (1992) and others (e.g., Gould et al., 1993) that the level of competence or impairment be evaluated on a separate axis and independently of symptoms.

We also recommend that DSM explicitly define impairment in terms of age-salient developmental tasks. Thus, the "impairment" axis would actually take the form of global ratings on competence, with a developmental perspective. Scale-point anchors need to include examples of age-salient developmental tasks for different epochs of development. These scales should be kept simple for practical reasons, but there will need to be several ratings because competence or impairment is clearly multidimensional. Steps in this direction are evident in impairment ratings developed by the Ontario Child Health Study (Sanford et al., 1992), as well as the SOFAS. However, we recommend further that competence or impairment be rated without regard to assumptions about the etiology of their status on these domains of behavior.

Finally, in regard to the definition of psychopathology and its classification, we believe that further constructive debate is needed on the conceptualization of psychopathology in relation to development and individual differences in psychosocial behavior, the definition of mental disorder, and the role of competence or impairment and adaptation in that definition. Jensen and Hoagwood (1997) called for a new paradigm that distinguishes three major kinds of disorder: one with defective "adaptational equipment," one where adaptive systems are operating normally within the organism but there is a "disconnect" between organism and a disordered environment, and a third where some combination of vulnerability and experience may have "mistuned" the organism to the requirements for adaptive success in the environment. Sroufe (1997) has conceptualized psychopathology *as* development, arguing persuasively for a shift to broadly integrative developmental approaches to the emergence and patterning of behavior through time. Angold et al. (1999) have argued that children who do not meet criteria for a specific mental disorder but who have symptoms associated with significant impairment should be considered to have a psychiatric disorder. What these papers have in common is the recognition that current conceptualizations of psychopathology are not well integrated with developmental theory and do not fit the data at hand on problems, adaptive or maladaptive pathways in development, or disorders. In other words, these authors, in different ways, intimate that new paradigms may need to be considered.

Implications for research and intervention

It was striking in the search for studies linking competence and psychopathology how few of the many studies bearing on the topic were designed in ways that could illuminate the processes that may explain how and why competence and psychopathology are associated in development. For example, despite extensive research on peer relations spanning decades, there are few studies that examine whether peer rejection has predictive significance for *changes* either in other domains of competence or symptoms of psychopathology. Similarly, studies of social competence in children with disorders rarely control for the nature of the impairment used to make the diagnosis, much less the level of many correlated risk factors (e.g., SES or IQ).

The predictive significance of internalizing problems and disorders relative to externalizing problems and disorders also needs to be reexamined with a careful eye on the issues of comorbidity, correlated risks and protective factors, breadth of outcome domains assessed, and disaggregation of symptom clusters or disorders. Internalizing problems and disorders, in whole or in part, not only may have more continuity than once believed; they may have greater significance in terms of current and future adaptation than once thought.

Better longitudinal data on the developmental interconnections of symptoms, competence, risk, and protection also hold the promise of spurring innovative or more specific strategies for prevention and treatment of

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problems (Cicchetti & Toth, 1992; Coie et al., 1993; Masten, 1999a, 1999b). There are many indications that integrating competence and psychopathology frameworks has value for intervention. Successful intervention programs frequently have the dual objective of promoting competence and preventing risks or problems. However, there is clearly much to be learned about the processes linking competence and psychopathology. Studies that attempt to treat or prevent psychopathology by improving competence or to simultaneously reduce the risk of psychopathology and promote competence have considerable potential for testing hypothesized processes of adaptation and maladaptation.

Moving toward integration

As the century turns, signs abound that the promise of developmental psychopathology to provide a segue to a more integrative developmental science of behavior is being realized. Disciplines like psychiatry, which once focused attention predominantly on deviant patterns in development, are turning attention to the significance of competence in varied forms (e.g., studies of desistance, impairment, and resilience), while developmental scientists once focused on normative patterns consider the significance of deviance and the full range of individual differences for their models of development. In both cases, human behavior and the organism's context are being examined in more comprehensive ways. Meaningful integration of concepts and research on competence and psychopathology would herald the arrival of a synthesis in the study of adaptation in development. New classification approaches and new strategies for intervention are likely to emerge from such a synthesis, along with a better understanding of the processes in development that produce the diverse array of life paths we judge to be good or bad, adaptive or maladaptive, resilient or unsuccessful—pathways, in other words, toward competence and health versus problems and disorder.

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