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Integrating qualitative and quantitative methods in the study of developmental psychopathology in context

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Abstract

Qualitative methods are well suited to advance the understanding of the role of social context in the development of maladaptation and psychopathology. However, they have not been widely used by developmental psychopathologists, despite being utilized in related fields, particularly in the sociological study of crime and delinquency. This article assesses the potential for the increased use of qualitative methods in developmental psychopathology and addresses the challenges involved in integrating them with quantitative research strategies. The interplay of qualitative and quantitative methods in the study of juvenile delinquency is reviewed for relevant lessons about both the utility and the difficulties of integrating the two types of methods. The problem of assessing continuities and discontinuities over the life course in patterns of antisocial behavior is discussed as an example of the challenge of integrating methodological paradigms. Schools of thought about qualitative methods and their relationship to quantitative research paradigms are identified and compared. Examples are discussed of narrative life history interviewing and qualitative observational techniques and of recent research endeavors integrating these qualitative techniques with quantitative data analyses.

Qualitative methods, with their unique ability to capture the effects of social context on human development, have been little used to date in the emerging field of developmental psychopathology. Despite seminal definitional statements about the study of developmental psychopathology that employ the concept of "behavioral maladaptation" (Sroufe & Rutter, 1984) and invoke the need to assess a wide range of factors including "environmental and societal influences on behavior" (Cicchetti, 1993), the investigation of sociocultural aspects of the adaptive process has not been high on the research agenda to date. Adaptation and maladaption involve both person and environment. Understanding a lack of fit between the two from a developmental perspective entails assessing how both are organized at successive stages. Aversive environmental conditions, as well as internal pathologies, at one stage of developoment may have consequences for adaptation at both that and later stages.

Within the broader field of developmental studies, the importance and understudied nature of contextual factors in processes of development has become widely recognized, giving rise to a call for a program of developmental contextualism (Lerner, 1996). This new attention to social context has in turn directed attention to the use of qualitative methods for capturing both social context and the social construction of meaning (Jessor, Colby, & Shweder, 1996).

This article addresses the potential of qualitative methods for the specific study of developmental psychopathology. Much current research in developmental psychopathology, for example, is focused on a paradigm of risk

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and protective factors, pointing both to environmental stressors as sources of risk and to social supports as sources of protection and stressing the need to study the interaction of internal and external factors (Cicchetti & Richters, 1993; Stattin & Magnusson, 1996). The pursuit of holistic and person-oriented research strategies as means to these ends has thus far led to examination of new statistical techniques that better assess individual developmental trajectories (Bergman & Magnusson, 1997). These new statistical strategies, however, are designed primarily for better analysis of quantitative, longitudinal data sets and do not address the underlying problem with such data, namely, that they do not measure social context very well. Progress in assessing the social contexts of development is needed if the full promise of a holistic, interdisciplinary approach to developmental psychopathology is to be realized.

Qualitative methods, traditionally used in other disciplines in which social context is itself the object of study, offer one way to expand the incorporation of environmental factors into the study of developmental psychopathology. Integration of qualitative and quantitative methods, however, has proved a formidable challenge even within those disciplines. In view of the potential of qualitative methods for meeting the challenges already implicit in research paradigms within developmental psychopathology, this article examines some of the methodological controversies that have surrounded the use of qualitative methods in sociology and anthropology, particularly in the study of the developmental stage of adolescence and the phenomenon of juvenile delinquency.

The focus on juvenile delinquency is useful for present purposes because the sociological and legal construct of juvenile delinquency is closely related to core substantive constructs of developmental psychopathology, such as conduct disorder and antisocial behavior, and, further, because the study of juvenile delinquency has a long and rich history in which issues of the commensurability and possibilities for integration of qualitative and quantitative methods have been explored in some detail. While much of the focus here is on delinquency, that focus is meant to be illustrative and a platform for identification of key methodological issues applicable to the study of other forms of psychopathology from a developmental perspective.

Because delinquency is a term used in different ways in sociology, law, and developmental psychopathology, some attention to differences in the use of the term is required at the outset of this discussion. The term delinquency originated in law, to distinguish illegal acts by those under the age of legal majority from illegal acts committed by adults. Delinquent behavior includes both actions that are also illegal for adults, such as stealing and the use of violent coercion, as well as offenses, such as underage drinking and driving, that are only illegal for minors. The definition of delinquency and determination of delinquent status are actions undertaken in courts of law. Sociologists have adhered rather closely to legal constructs, but have also, by the use of both qualitative and survey methods, developed ways of ascertaining the existence of many technically illegal acts by minors that have not been detected by legal authorities. Both the courts and sociologists have reserved the category of delinquency for adolescents, declining to apply the categorization to the acts of children or adults, although the cutting points between childhood, adolescence, and adulthood vary (Empey, 1982).

Developmental pscyhopathologists, on the other hand, more commonly refer to either conduct disorder, for children, or antisocial behavior, throughout the life course. The term delinquency has sometimes been used in a rather specialized way in developmental psychopathology to refer to nonaggressive antisocial behavior in adolescence, such as lying and stealing (Achenbach, 1993). This usage contrasts sharply with sociological and legal usage that refers to all illegal behaviors by adolescents, a usage also found in developmental psychopathology. For present purposes, the more inclusive usage of the term delinquency to encompass all illegal behaviors will be employed.

The relationship of the category of delinquency to the categories of conduct disorder and antisocial behavior also requires com-

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ment. Conduct disorder generally refers to behavior syndromes among children who are too young to be legally classified as delinquent. The category of antisocial behavior is the most inclusive of all these terms, denoting behavior syndromes throughout the life course including but not limited to those that can also be designated as conduct disorder and delinquency. Aside from age considerations, the important distinction between delinquency and antisocial behavior is primarily a distinction between those applying the labels and not between the identification of underlying biological characteristics on the one hand and legal categories on the other.

As developmental psychopathologists have gone to some pains to point out, conduct disorder and antisocial behavior are established by behavioral measures (Dodge, 1990; Richters & Cicchetti, 1993a). Further, current standards of psychiatric practice allow for assigning a label such as conduct disorder in a manner that "resists all contextual information about a child's developmental history, capacities, strengths, and circumstances, and assumes that the antisocial behavior necessarily stems from an underlying disorder" (Richters and Cicchetti, 1993b). Questions of the relationship of behavior to underlying biological or psychological characteristics are empirical questions, and existing research suggests multiple pathways from such underlying characteristics to behavior (Cicchetti & Rogosch, 1996). Delinquency is usually labeled as such by courts of law or by sociologists applying those legal constructs to behavior measured within or outside of the courts. Conduct disorder and antisocial behavior are labeled as such primarily by the combined efforts of parents, teachers, clinicians, and research psychologists.

The next section of this article discusses the history of method in the study of juvenile delinquency. The following section turns to a more general discussion of methodological writings about qualitative methods and their commensurability with quantitative methods, followed by a discussion of problems confronting attempts to integrate methods in the study of developmental psychopathlogy and examples of recent strategies to do so.

History of Method in the Study of Juvenile Delinquency and Antisocial Behavior

The interplay of qualitative and quantitative methods in the study of juvenile delinquency has a long and complex history, beginning with the work of the Chicago school of sociologists in the 1920s and progressing through more recent research converging with the work of developmental psychopathologists. At various points along the way, the methods have been employed together or one type of method has been hegemonic and the other in abeyance.

The Chicago school

The works of the Chicago school (Park & Burgess, 1925) included pioneering studies of both types. Alongside the classic ethnographies of urban areas overseen by Park and Burgess came the works of Thrasher (1927) and Shaw and McKay (1931), who systematically mapped the geographical concentrations of youth gangs and officially recorded delinquencies in inner city areas, providing powerful empirical support for the theories of urban form advanced by Park and Burgess. In this sense, they were the progenitors of the technique of geocoding that has been at the center of many recent efforts to incorporate data on social context into studies of child development (Brooks–Gunn, Duncan, & Aber, 1997). As has been true of much subsequent sociological work on delinquency, a developmental perspective was implicit in their analyses even though their quantitative studies did not track individuals over time. Shaw and McKay attributed concentrations of official delinquency in poverty areas to processes of social learning, by which more recent immigrants to the city learned and reproduced a tradition of youth gangs.

In addition to his quantitative work with McKay, Shaw was also a pioneer in an area of particular interest for developmental studies, the collection of life history narratives recording processes of development of delinquent behavior over time. Although routinely cited as sociological classics, Shaw's *The*

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Jack-Roller: A Delinquent Boy's Own Story (1966[1930]) and its successors (Shaw, 1931; Shaw, McKay, & McDonald, 1938) have left an ambiguous legacy for contemporary social science.

The troubled career of life history studies has been described by Bennett (1981) in terms that eerily presage current dilemmas for integrating qualitative and quantitative methods. Shaw, following the methodological innovations of Thomas and Znaniecki's (1918/1919–1920/1927/1958) use of the life history technique for the study of immigration, began his project of life histories of delinquents with great enthusiasm. He advocated their use in terms similar to those used by current champions of qualitative research. In his view, qualitative data were essential for putting a human face on deviant subjects of social research.

Shaw was also a dedicated social reformer who collected life histories from youths drawn into the social programs he founded and that still exist today as the Chicago Area Project. For him, putting a human face on delinquents was of practical as well as theoretical importance, a source of humane social practice as well as an important corrective for biases that can so easily creep into ostensibly objective social research. Later generations of qualitative researchers have described the applied importance of life history and other forms of qualitative research in political terms, pointing to the dangers of complicity, intended or not, between objectifying research methods and oppressive practices of powerful social institutions (Becker, 1966, 1968; Hammersly & Atkinson, 1983).

In view of both the seminal influence as well as the enduring methodological dilemmas associated with Shaw's work in particular and life history techniques more generally, it is worth recalling the major points he advanced in his advocacy of this method:

> In our study and treatment of delinquent boys in Chicago, we have found that the "own story" reveals at least three important aspects of delinquent conduct: (1) the point of view of the delinquents; (2) the social and cultural situation to which the delinquent is responsive; and (3) the sequence of past experiences and situations in the life of the delinquent (Shaw, 1930/1966, p. 3).

These three aspects translate easily into the terms of current methodological discussion as concerns for finding the interrelationships among meaning or subjectivity; social context; and development. A more elegant summary of the potential benefits of qualitative methods for developmental research would be difficult to formulate.

Yet, despite Shaw's enthusiastic advocacy for collecting qualitative data about lives as they are lived in context and unfold over time, his announced project of ongoing life history research never materialized as envisioned. He claimed that the story of Stanley, the jack-roller, was one of over two hundred similar life histories that he and his colleagues had collected up to that point, but he published only two further life histories (Shaw, 1931; Shaw, McKay, & McDonald, 1938). He gradually lost interest in the project and increasingly devoted himself to activism. The richness of those hundreds of life histories never saw the light of day, either individually or in synthesis. *The Jack-Roller* became a classic, read by generations of social science and social work students. As the prototype for an enduring and continuing program of research, however, its legacy is far more ambiguous.

Bennett (1981) has reviewed the troubled legacy of oral history studies by Shaw and others from the nineteenth century forward, concluding that demand for such studies waxes and wanes as the public first confronts new social pathologies and then becomes hardened toward their existence. Making life history studies cumulative has long been a methodological as well as rhetorical problem, in part because methods of analysis that move beyond the immediate revelatory experience of the in-depth portrait to produce finer-grained explanations of the evolution of social pathology have been elusive.

Becker's introduction to a new edition of *The Jack-Roller* (1966) still stands as a landmark consideration of the strengths and weaknesses of life history method. Becker addresses and acknowledges many of the problems of reconciling life history with other types of social science data. Without offering an explicit program for systematic integration of life histories with other data, he concludes

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that life histories are valuable in and of themselves for much the same reasons advanced by Shaw. Despite admitted problems of integration, he advocates continued use of life histories as part of the "mosaic" of social science.

Community and small-group studies

From the 1940s into the 60s, qualitative methods dominated the study of delinquency, but the most influential works were community studies such as Whyte's classic *Street Corner Society* (1943) and Suttles' *The Social Order of the Slum* (1968) and studies focused on small group interactions within youth gangs (Short & Strodtbeck, 1965; Yablonsky, 1962). These studies provide rich descriptions of social interaction within relatively bounded geographical areas and over relatively short periods of time. As descriptions of social context, they remain exemplary. They tend to deemphasize differences in individual developmental trajectories over time. At the level of theory, however, they continue to invoke notions of development by portraying delinquency as learned behavior acquired in particular social contexts. This theoretical emphasis is clearly marked in influential constructs such as subculture (Cohen, 1955) and blocked opportunities (Cloward & Ohlin, 1960). The link between social contexts of poverty and the learning of delinquent behaviors by young people growing in these contexts runs throughout these studies, at the expense of attention to individual variations within poor areas and the widespread existence of delinquency in middle-class areas.

Self-report surveys

The hegemony of qualitative studies of delinquency and their emphasis on environments of poverty as generating milieux of delinquent behavior (Miller, 1958) came to an end with the advent of new methodological approaches relying on statistical analyses of quantitative data collected by means of self-report surveys. Introduced in 1958 (Short & Nye, 1958), this methodological approach became predominant with the publication of Hirschi's *Causes of Delinquency* a decade later (1969). Hirschi's work stood prevailing wisdom on its head by showing a wide distribution of delinquency (or minor delinquency, an important qualification) throughout the class structure, along with strong correlations between feelings of attachment to parents and school and low levels of delinquent behavior. These patterns were then corroborated extensively. Theoretical emphasis shifted sharply away from environmental causation towards internal pathology.

The new methods, rigorously quantitative, became coupled by some writers with a wholesale denunciation of the importance of social causation in the development of delinquency. This trend has culminated in recent years with two influential, synoptic works locating the causes of crime and delinquency at the level of individual psychology and polemically debunking the role of social context in the unfolding of careers of delinquency and crime (Wilson & Herrenstein, 1986; Gottfredson & Hirschi, 1990). The extreme ontogenetic emphasis of these criminological theorists stands in sharp contrast to theoretical trends in other fields of developmental study, including developmental psychopathology, in which the Vygotskyan axiom that development is a function of both person and environment continues to be honored in principal even alongside acknowledgments that environmental factors have often been neglected in research practice (Vygotsky, 1978).

Though other influential quantitative studies have avoided such polemics and continued to stress social learning (Akers, 1973) and strains associated with socioeconomic status (Elliott, Huizinga, & Ageton, 1985), the role of social context in sociological research on delinquency remained much diminished because of the methodological limitations of self-report survey methodology. Surveys do a much better job than community studies in tracing individual variations in delinquency, either cross-sectionally or, more recently, longitudinally. Most surveys, however, have collected scant information on social context in comparison to the rich detail provided by ethnographic studies.

Beginning in the late 1980s, the method-

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ological pendulum reversed direction somewhat and a new wave of ethnographic studies of began to appear (Bourgois, 1995; Hagedorn, 1988; Moore, 1978, 1991; Padilla, 1992; Sullivan, 1989; Taylor, 1989; Vigil, 1988; Williams, 1989; Williams & Kornblum, 1985). Despite the proliferation of these studies, however, they have remained somewhat marginal in mainstream criminology, a source for anecdotal illustration of theories that still tend to appeal to analyses of large quantitative data sets as the ultimate ground of credibility. The more recent qualitative studies renew the theoretical link between contexts of poverty and delinquency as learned behavior and some studies pay more attention to individual variations within stressful environments, but the integration of these studies and survey-based studies remains a challenge.

Convergence of sociology and psychology

In the 1990s, disputes about the role of contextual factors in the development of delinquent behavior have also been predominant within quantitative research traditions. In the past few years, a powerful convergence of findings between studies of antisocial behavior in childhood by psychologists and studies of delinquency during adolescence by sociologists has established much more clearly than ever before remarkable continuities of psychopathology over the life course (Sampson, 1992), along with equally remarkable patterns of discontinuity (Robins & Rutter, 1990; Sampson & Laub, 1992, 1993). The same kinds of longitudinal, quantitative studies that point to the strong continuities in antisocial behavior over the life course for some individuals also suggest that most individuals who exhibit antisocial behavior during adolescence do so only primarily during adolescence and not before or after (Moffitt, 1993).

The role of social context continues to haunt these debates. Ontogenetic and sociogenic explanations continue to be debated for patterns of both continuity and change. While relying on internal factors to explain life course continuities has a high plausibility, continuities might also be explained by environmentally based concepts such as cumulative continuity, ecological continuity, state dependence, and cascading disadvantage, were better data on continuities in environment available (Nagin & Paternoster, 1991; Sampson & Laub, 1992, 1997).

Research on the urban underclass

Another strand of recent research, focusing on Wilson's (1987) concept of an urban underclass, illustrates the difficulty of assessing environmental influences on development using existing quantitative, longitudinal research designs. The primary methodological approach to this problem has been to attach geo-codes to existing longitudinal data sets in order to assess the effects of different areas of residence on developmental outcomes.

Despite extensive efforts of this type, research findings have been somewhat equivocal. While contextual effects on development have been identified, the size of these effects has often been small and the directions and patterns difficult to interpret (Brooks–Gunn, Duncan, & Aber, 1997). Further, the contrast with findings from qualitative studies, which continue to claim substantial contextual effects, has been substantial. In the absence of unified research designs providing the richness of contextual data supplied by in-depth qualitative studies along with the normal population sampling and individual-level measurement over time supplied by quantitative, longitudinal studies, these differences are difficult to reconcile. Despite the emphasis of Wilson's theory on local-level social organization as shaping developmental outcomes, relatively little systematic work has examined local-level social organization in the comparative manner that would be needed to test the theory (Sullivan, 1996).

Problems of continuity and change in life-course patterns of antisocial behavior and of the respective roles of factors internal and external to the individual in these patterns are currently matters of focal concern at the intersection of a number of fields, including developmental psychopathology. The discussion here is intended not to resolve these questions but to raise methodological issues concerning the integration of qualitative and quantitative

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methods in the study of developmental psychopathology in context. A brief survey of the history of methods in the study of juvenile delinquency reveals a rich history in which a wide variety of methodological approaches have been employed, leading to a great deal of cumulative knowledge but also revealing significant gaps and unresolved contradictions. Many signs point to the need for a better understanding of contextual factors in development. Our ability to make further progress in assessing contextual factors depends in part on systematic work to advance and integrate methods.

Researchers relying primarily on quantitative methods have been making important advances in their ability to assess social context, through methods such as geocoding, as well as new statistical techniques to deal with the hierarchical, nested character of social context (Bryk & Raudenbush, 1992). These, however, represent advances within an existing paradigm.

Qualitative research methods, including such traditional techniques as participant observation, life history interviewing, and other forms of open-ended interviewing, along with newer techniques such as windshield surveys and focus groups, also have a great deal to offer in the assessment of contextual effects on development. Qualitative data, however, are primarily narrative data. Integrating narrative and quantitative data raise very different and difficult questions of epistemology and research practice. One must address basic questions of how to think about narrative and numbers at the same time. Are they fundamentally different and, if so, how? To the extent that they are the same or different, how can they be integrated within feasible research designs? These issues are addressed next.

Commensurability of Qualitative and Quantitative Methods

Some irony attends the current sense that developmental studies are confronting a new challenge in the attempt to incorporate qualitative methods. The roots of developmental studies, after all, are in clinical and observational work by such seminal writers as Freud (1962), Piaget (1995), and Erikson (1950). Lewin's field theory (1951) remains a pillar of qualitative epistemology. Case studies (Yin, 1994) have clearly been central to the emergence of developmental theory. At present, however, quantitative research paradigms are so hegemonic in developmental studies and many other social science disciplines that case studies and other qualitative techniques appear to many researchers to require scientific justification.

A great deal of polemical ink has been spilled over this issue, particularly with the advent of a burst of methodological writing about qualitative methods since the 1980s. The defensive tone of many of these writings is perhaps understandable given the condescending dismissals of qualitative studies as "merely anecdotal" or "impressionistic" that can still be heard in many academic settings; the common use of the term "empirical" to refer solely to quantitative studies rather than, properly, to the distinction between theory and facticity; and concomitant disparities in professional prestige, funding, and the like.

In response, some advocates of qualitative methods have attacked the very use of quantitative methods, particularly survey methods, as atomizing of social reality and politically oppressive. The term "positivist" is an unambiguous slur in some intellectual circles. These attitudes, for example, pervade many of the articles in the recent *Handbook of Qualitative Research* (Denzin & Lincoln, 1994). Fortunately, more recent writings have begun to turn down the heat, from both sides (Hammersly & Atkinson, 1983; Jessor, 1996) in search of light.

In view of these sometimes sharp debates over method, it is useful to delineate some of the major points of contention in order to proceed with the business at hand of pointing to practical approaches that can and are being taken towards integrating methods. The stance adopted here is embodied in Becker's use of the phrase "practical epistemology" (Becker, 1996; Latour, 1987). Rather than seeking a complete and irreproachable philosophical statement of scientific method, it is more productive to inquire how working scientists do what they do and communicate the

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results of their work to one another. In this spirit let us look very briefly at some schools of thought about qualitative methods and their relationship to quantitative research paradigms.

In rough chronological order of emergence, we may distinguish five rather arbitrarily delineated schools of thought concerning qualitative methods: the early fieldwork manuals of anthropologists, the "second Chicago school," naturalistic inquiry, postmodernism, and narrative positivism.

Early fieldwork manuals

Qualitative researchers took much longer than their quantitative counterparts to become methodologically self-conscious. Qualitative research incubated within the discipline of anthropology where the challenges of the sheer physical adventure of fieldwork in distant places may have outweighed the challenges of providing epistemological justification for research endeavors. Evidence that the researcher had gone places that members of a research audiences had not was sufficient to establish the credibility of reported findings (Clifford & Marcus, 1986). Perhaps for this reason, formal training in methods in departments of anthropology was often nonexistent or perfunctory, as it remains in many places to the present. Fieldwork manuals (Seligman, 1951) consisted of lists of topics on which to gather information and travel advice. Practical training in field research was a matter of oral tradition and apprenticeship.

The second Chicago school

Reflective writing about qualitative methods emerged in the 1960s from a group of sociologists sometimes referred to as the "second Chicago school" (Fine, 1995), including Becker (1970), Schatzman and Strauss (1973), and Glaser and Strauss (1967) and their mentors (Blumer, 1969; Hughes, 1971). Since sociology had grown increasingly quantitative since the late 1940s, field researchers were forced to develop self-conscious justifications for their research practice. The writings of this school provided language and procedures through which qualitative researchers could communicate to research audiences reasonable accounts of how they defined problems, bounded their fields of inquiry, and collected and analyzed data. They addressed directly the main requirement of positivist epistemology, that scientific propositions be falsifiable (Popper, 1959). In place of techniques of statistical inference, however, they showed ways of accomplishing this with narrative data through procedures such as the search for negative cases (Becker, 1970) and the constant comparative method (Glaser & Strauss, 1967).

Symbolic interactionist theory (Blumer, 1969; Prus, 1996) provided the theoretical umbrella for the careful delineation of the epistemological assumptions underlying qualitative research. (The term "qualitative research" is used here to encompass the terms "ethnography" and "field research," which, for reasons of academic institutional politics rather than underlying scientific rationale, were used during this period by anthropologists and sociologists, respectively). The central tenet of symbolic interactionist theory is that people act as they do on the basis of socially constructed meanings. All analyses of human behavior must therefore include attention to processes of constructing and sharing meaning.

Naturalistic inquiry

The next generation of writings emerged in the 1980s, under a variety of labels. Two prominent examples were "naturalistic inquiry" (Lincoln & Guba, 1985) and "reflexivity" (Hammersly & Atkinson, 1983). These writings extended the lines of thought established by the second Chicago school in a number of directions. First, they emphasized further the embeddedness of human behavior in social context. The notion of naturalistic inquiry was opposed to positivism on the grounds that positivistic studies abstracted too far from social phenomena, seeking universal laws based on a small number of variables in order to explain behavior embedded in far more complex sets of contextual interrelationships. Naturalistic inquiry, in contrast, sought

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to produce theoretical accounts that were more nearly isomorphic with the phenomena under study. Second, Lincoln and Guba (1985) made important advances in providing qualitative analogues to such fundamental concepts of positivist epistemology as objectivity, reliability, and internal and external validity. They showed that qualitative researchers cared about the same things as quantitative researchers but had their own ways of accomplishing them.

A third line of work by this school, however, represented a more radical challenge to positivism. In criticizing the experience-distant abstractions of quantitative researchers, these writers also began to emphasize that positivist paradigms, with their close relationship to the physical sciences, systematically left interpretive processes out of the picture. Although the earlier symbolic interactionists had made the same point, they emphasized the interpretive activities of people being studied. Now the emphasis shifted to the often unstated interpretive assumptions of social scientists. Concern moved from the neglect of research subjects' own social constructions of meaning to the constructions of meaning being foisted surreptitiously by researchers onto their readers. This critique included a distinctly political component suggesting that such surreptitious foisting of meanings tended to serve the interests of institutions and agencies of social control. Such arguments can be traced back to Shaw's concern with connecting delinquents' own stories with courses of treatment (1930/1966) and to Becker's labeling theory (1973).

Postmodernism

In the mid-1980s, this concern with interpretation led to a truly radical break with positivism, in the form of postmodernism (Denzin, 1996). Drawing on fashionable literary theory (Marcus & Fisher, 1986), postmodern social theorists began to go beyond the idea that scientific perception of social reality must contend with multiple points of view and interpretation toward the notion there is no social reality, no there there. In this view, positivist accounts are not just in danger of foisting meanings but convicted before they begin. Campbell (1996) has termed this intellectual position "ontological nihilism," in which all intellectual statements are but expressions of interest group politics and science and objectivity become outmoded concepts.

Philosophically, this position is a modern version of the unassailability of pure skepticism demonstrated by philsophers of the Enlightenment (Berkeley, 1969; Hume, 1996). The pure skeptic has the advantage of being able to show that no proposition is certainly true, along with the disadvantage of being unable to show anything else without being hoist on his own petard. The postmodern position is the one paradigm of qualitative methodology that is intrinsically incommensurable with quantitative research paradigms. Social scientists with any interest in conceiving of themselves as such will disavow this position and perhaps wonder why it is necessary even to discuss it. It is in the face of such tendentious reasoning that Becker (1996) calls for devoting energy to practical rather than philosophical epistemology.

The postmodern position, however, grows directly out of longstanding concerns about the need to include delinquents' own stories in analyses of delinquency and to be suspicious of officially defined categories of behavior, including the defining activities of social scientists themselves. In a society with deep and widening chasms of inequality and elaborate systems for classifying and controlling the poor and powerless, a great deal of skepticism about how these systems work and how their categories correspond to the lived experience of those they classify is surely justified. The recovery and representation of the social contexts and constructions of meaning by and about those who are classified as psychopathological are activities of considerable importance, in the name of objective social science. Hume, after all, was the modern progenitor of empiricism, by means of his skepticism, not in spite of it.

Narrative positivism

Another line of work that has developed since the early 1980s is the school of narrative posi-

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tivism (Abbott, 1992). As its name insists, narrative positivism offers a fundamental critique of existing quantitative research paradigms while still affirming the positivist ideals of objectivity and the falsifiability of scientific propositions. The central point of this critique is that currently hegemonic quantitative paradigms attribute causality to variables rather than to agents. In place of variables, this school insists on cases as the proper building blocks of social research. Turning the conventional objection of most quantitative researchers to the scientific usefulness of case studies on its head, narrative positivism notes the widespread tendency of survey researchers to generalize from group averages down to individual cases (Mischler, 1996), a point that has also emerged from within developmental psychopathology (Bergman & Magnusson, 1997). It often occurs that survey researchers convert numbers into narratives, constructing from group averages stories of how individual processes of development work.

This powerful line of argument demonstrates that the integration of qualitative and quantitative methods must be, as Becker (1996) insists, a two-way street, not simply a matter of deciding under what conditions case studies and other products of qualitative inquiry can be deemed acceptable as bases for scientific generalization. Narrative positivists have also developed specific analytic techniques, such as optimal matching (Mischler, 1996), that allow individual cases of developmental sequences to be aggregated, without sacrificing their integrity as individual cases. As Mischler notes, the underlying theory is equally applicable to qualitative and quantitative data.

In place of the hazardous practice of attributing causality to variables rather than to people, narrative postivists stress the great value of narrative data for preserving the meanings that people attribute to events and actions. In this sense, narrative data is fundamentally about sequences of causation as they are perceived by human actors. For developmental studies, this means that making records of sequences of behavior must include recording the meanings associated with these behaviors and how these meanings are socially constructed.

This brief survey of schools of thought about qualitative methods and their relationship to quantitative research paradigms has identified only one school that considers qualitative and quantitative research methods to be fundamentally incommensurable. Even the solipsisms of postmodernism provide a useful limiting case of total and paralyzing skepticism against which one can address questions of practical epistemology.

In Becker's most recent formulation (1996), the notion of any absolute difference between quantitative and qualitative methods is illusory. Qualitative researchers conduct studies from vantage points more near the events and experiences of interest, quantitative researchers from more distant perspectives encompassing larger numbers of cases but with far less detail about each case. The substantive questions at issue—such as why and how some adolescents become delinquents or age out of antisocial behavior—are often the same. The rules of evidence for deciding on the soundness of answers are also much the same, although the specific techniques for implementing these rules of evidence necessarily vary with the type of data employed.

From the perspective of developmental studies, existing ways of doing qualitative and quantitative work both have their limits. In the most general sense, these limits are the limits of generalization, in opposite directions. How does one generalize from individual case studies to larger populations? This familiar question remains troublesome. The opposite question, however, is equally challenging. How does one generalize from patterns in large populations down to processes of individual development within more proximal social contexts? The answers to these dilemmas are not to be sought in speculative philosophy but rather in new forms of research practice that acknowledge and address these problems.

Theoretical and Practical Challenges for Integration of Methods

The foregoing discussions of the use of different methods in the study of delinquency and

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of schools of thought about qualitative methods point to a number of theoretical and practical challenges that must be faced in attempts to integrate qualitative and quantitative methods in the study of developmental psychopathology in context. The theoretical problems include reconciling processes of inductive and deductive reasoning and reconciling the deterministic emphases of quantitative paradigms with the emphases on agency and contingency in qualitative paradigms. The more practical problems are largely concerned with the ways in which we conceive and measure social context.

Induction and deduction in social science

Qualitative and quantitative research paradigms are sometimes distinguished as favoring inductive versus deductive reasoning processes, respectively, or, alternatively, as appropriate to the context of discovery versus the context of validation. While there is some truth in these distinctions, they can never be absolute. Just as Glaser and Strauss (1967) have showed that qualitative analysis involves a systematic alternation between the generation of theoretical categories and checking these categories against further data, every working quantitative analyst knows that dealing with large numerical data sets requires an iterative process of refining questions according to earlier identification of patterns in the data.

There is an irreducible inductive element to field research, however, that involves a progressive specification of the boundaries of the unit of analysis—the field—as well as the categories of analysis. A program for the integration of qualitative and quantitative methods that looks to the collection of field data simply to prove the existence of patterns of social process deductively predicted from patterns in large, quantitative data sets may conceivably achieve that goal. Along the way, however, a good portion of the considerable labor-intensive resources devoted to collection of the necessary field data will probably have been wasted. Going into the field to answer completely predefined questions is rarely worth the effort. Social context is infinitely complex, and the ability of field methods to identify previously unsuspected connections between contextual factors, from the perspective of a suitably defined problem focus, is among the main attractions of the use of these methods.

This does not imply that every field research endeavor is a fishing expedition. On the contrary, defining a suitable problem focus, on the basis of all the quantitative, historical, policy-oriented, and other appropriate data available, is what sets a good field research project apart from either a fishing expedition or the wasteful use of a resource-intensive activity like field research to accomplish something that could be done more easily in other ways. To the extent that qualitative and quantitative methods are integrated within the same research design, due allowance should be given to the potential of both kinds of methods for contexts of both discovery and validation.

Determinism, agency, and contingency

If there is a radical fault line between the philosophical underpinnings of qualitative and quantitative research traditions, it is located not in postmodernist solipsism but in conceptions of determinism, agency, and contingency. Quantitative research is strongly tied to the search for findings of causality. This nomothetic emphasis contrasts sharply with the idiographic emphasis of qualitative studies on human agency and historical or situational contingency (Roseberry, 1989). In this sense, qualitative studies are aligned more closely with historical studies than with the physical sciences which provide the model for most quantitative studies.

In practice, again, these differences are rarely absolute, but they do mean that different kinds of questions are often being asked. Most social science findings take the form "under these conditions, that occurs." The quantitative analyst is usually interested in paring down the number of conditions to the parsimonious minimum required for the probable occurrence of a predicted phenomenon. The qualitative analyst tends to be more interested in identifying the broadest possible

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range of conditions related to the actual occurrence of a phenomemon. As with the relative emphases on induction and deduction, there is no right answer to which approach is superior, only the use of an appropriate package of methods given the problem at hand.

Defining and measuring social context

Abstract issues of induction and deduction and of determinism, agency, and contingency begin to assume practical form when we confront the task of including contextual factors in models of human development generally and of developmental psychopathology in particular. Precisely because social context is so complex, it raises the issue of contingency with great urgency. To the extent that we emphasize the embeddedness of behavior in multifaceted context, we imperil our ability to produce parsimonious models. This dilemma has engaged both qualitative and quantitative researchers for some time. Two important issues emerging from this work have been the question of the salience of geographical place of residence as a context of development and the question of how to deal with the hierarchical, nested nature of social context.

The predominant operationalization of social context in much recent developmental research has been in terms of geography, through geocoding of place of residence into developmental data sets and then looking at area characterisitics at the level of the census tract or zip code (Brooks–Gunn, Duncan, & Aber, 1997). As those doing this work have noted, however, adminstratively constructed geographical units do not necessarily coincide with naturally existing communities of interaction. Going farther, it is not difficult to establish that many different subcommunities can exist within even a rather small geographically bounded unit. Recent community theorists have pointed to historical changes in the salience of local areas as sources of social affiliation with the advent of modern technologies of communication and transportation (Fischer, 1977, 1982; Wellman, 1979).

Two alternative conceptions of social context that have been widely discussed and used, particularly in qualitative studies, are those of social network (Bott, 1957; Mitchell, 1969; Stack, 1979) and practice (Bourdieu, 1977; Ortner, 1984). It appears entirely plausible that the group average characteristics of all those within geographical proximity of a growing child may have less importance for that child's development than the immediate social network of those with whom the child interacts or the patterned activities which the child participates in and witnesses. Burton and her colleagues, for example, have recently presented data on differences for the inner city adolescents they have studied ethnographically between areas of residence and areas of sociability (Burton, Price–Spratlen, & Spencer, 1997). Clearly, alternative ways of conceiving and assessing the effects of social context need to be developed and tested.

Bronfenbrenner's ecological theory (1992), proposing a series of contextual levels from more proximal to more distal, has provided a useful and widely cited conceptual scheme for dealing with the hierachical, nested nature of social context. From this perspective, if we are to understand the context of a child's development, we need to attend to conditions of home and parenting but also to local institutions providing or regulating child care, child protection, and education, as well as to national level processes affecting levels and types of investment in families and children.

While researchers in both quantitative and quantitative traditions have dealt with the problem of how to conceive and assess social context at multiple, nested levels, they have not yet systematically applied these techniques to problems of development or developmental psychopathology. Among quantitative researchers, recent advances in statistical modeling, such as hierarchical linear modeling (Bryk & Raudenbush, 1992), have been hailed as mathematical breakthroughs for the problem of assessing contextual and individual variation simultaneously. Finding adequate data to feed through these advanced statistical techniques, however, has been difficult. The problems discussed above concerning objective and perceived environments and differences between geography, network, and practice illustrate some of the difficulties involved. At present, it appears that the analytic

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techniques are more advanced that either the theory or the data that would be necessary to make most effective use of those techniques, though significant efforts are in progress.

Qualitative researchers have also recognized the problem of hierarchical, nested levels of context, even if they have not expressed the problem in those terms. Anthropologists, for example, have worried for more than a generation over the inadequacy of the local community as a unit of social or cultural analysis (Arensberg & Kimball, 1966; Steward, 1950). The course of recent history has forced this change, as self-sufficient communities have disappeared from the globe. Nader's (1969) famous injunction to "study up" (Nader, 1969) has been heeded to such an extent that the study of local level social organization has arguably fallen into neglect in favor of studies of global and transnational processes (Sullivan, 1996).

Building on this anthropological tradition, Burawoy (1995) has recently proposed the method of extended case analysis (Van Velsen, 1967) as a way of bridging micro and macro levels of analysis. Working with even a single case, which could be a person, event, or situation, the analyst works inductively outward and upward to identify the contexts relevant to understanding that case. Contradictions at much higher levels of the social order may be deeply and specifically implicated in explaining that one case. While this approach may not explain patterns of variation among cases, it can help achieve the equally important task of showing how individual development is embedded in multiple levels of social context. Problems of meaning and agency can emerge with clarity from such an approach, along with simultaneous presentation of multiple and conflicting points of view and critical assessments of social institutions that support, regulate, and label developmental processes.

Strategies for Integrating Methods

Given a suitable problem focus concerning issues of developmental psychopathology, a number of strategies for integrating qualitative and quantitative methods can be used in order to improve knowledge of the role of social context. Some examples are presented here, drawn primarily from studies of crime and delinquency and of contexts of inner city poverty in which life-course transitions considered abnormal and pathological in mainstream society are more common.

The qualitative data gathering techniques discussed here include both life history interviewing and narrative, contextual descriptions of the type more common in community studies and studies of small-group interaction. The usefulness of life history data such as those used by Shaw for present concerns seems obvious. Since life histories contain sequentially ordered data on behavior, context, and meaning, they address many of the theoretical and methodological concerns identified above. Although contextual descriptions often lack the longitudinal dimension of particular interest for developmental questions, the possibility of linking rich contextual descriptions to longitudinal data offers the possibility of going beyond the narrow practice of geocoding in order to address more directly questions of patterns of interaction in particular geographical contexts and how these interactional patterns affect development.

New techniques for eliciting and analyzing qualitative data offer the possibility of going beyond the impasse encountered by Shaw after the publication of only three of the hundreds of life histories he reported collecting. In my own work on developmental patterns of delinquency, for example, I have been able to construct carefully limited generalizations about developmental patterns of delinquent behavior across different neighborhood environments by eliciting information about patterns of schooling, employment, and crime from samples of criminally involved young males in three different areas (Sullivan, 1989). Although I collected data on relatively small numbers of individuals, about a dozen in each of three areas, contextual differences between these areas in both opportunities for and sanctions against criminal activities emerged quite consistently from these interviews and observations, along with individual differences within each area between patterns of offending that appeared motivated more by

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inner pathology (as assessed by both individuals and their peers) and those that appeared motivated more by external opportunities and constraints. Sampson and Laub (1993) have been engaged in interviewing the surviving members of a cohort of delinquents and nondelinquents first recruited during the 1930s by the Gluecks (1950, 1968). They have been using a life calendar technique to chart development in different domains of activity across decades. These examples illustrate that it is possible to compare and contrast patterns of developmental psychopathology across multiple narrative life histories.

New data analytic techniques and tools greatly facilitate handling the large amounts of narrative data involved in efforts of this sort. Microcomputer-based qualitative database management programs now make it possible to code and recode large blocks of text in ways not available to earlier generations of qualitative researchers. The techniques and programs for optimal sequence matching described by Abbott (1992) and Mischler (1996) also offer promise in formal modeling of developmental data, although these techniques have not yet been applied extensively to problems of developmental psychopathology. At some point, qualitative data become amenable to quantitative data analysis, if one collects enough cases. Edin's recent work on the economic survival strategies of welfare mothers, in which she collected literally hundreds of qualitative interviews, is a case in point (Edin & Lein, 1997).

Different strategies are possible for linking qualitative and quantitative data in addressing problems defined from a developmental perspective. It is possible to begin with either qualitative or quantitative data and then collect the other type of data in order to corroborate, complement, contextualize, or illustrate emergent patterns. In my own studies, I have moved from earlier research activities of collecting and analyzing life history and observational narrative data to later activities in which I have examined sources of quantitative data on the same local areas in which I recruited the ethnographic examples. In my work on patterns of youth crime and employment (Sullivan, 1989), I used census data, board of education data, and police data to corroborate patterns of schooling, employment, and crime that emerged from my analyses of comparative ethnographic data. In a subsequent effort, I identified patterns of abortion and marriage among pregnant and parenting teenagers in the same three local areas and then corroborated these patterns with small-area health statistics (Sullivan, 1993). In that effort, I was also able to use cross-tabular analyses of the quantitative data in order to further analyze patterns of association of ethnicity and income level with patterns of abortion and marriage both within and between the local areas.

Korbin and Coulton, working in a remarkable long-term qualitative–quantitative partnership, have shown that it is possible to move in the other direction, from patterns identified in quantitative data to targeted qualitative interviews assessing relevant variations in social context. They first identified patterns of neighborhood variation from epidemiological data on child maltreatment and then conducted qualitative interviews in selected neighborhoods on patterns of relationships between adults and children (Korbin and Coulton, 1997; Korbin, Coulton, Chard, Platt–Houston, & Su, 1998).

As Yin (1994) has argued, the integration of qualitative and quantitative data can take place even within a single case study. If a single case is properly contextualized within the relevant spectrum of variation, a capable research consumer is in a position to appreciate the rich detail on social process and context provided by the extended case with due caution about the limits of generalizability upwards.

Of course, fully integrated prospective research designs incorporating substantial efforts to gather both qualitative and quantitative data are entirely possible. Even within such designs, however, it is likely that some practical strategy of combining wide and deep samples will be most feasible.

Conclusion

The problems of integrating qualitative and quantitative methods in the study of developmental psychopathology in context are substantial but not intractable. As with all re-

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search design considerations, a clear problem focus is essential and hard decisions have to be made about how research resources are to be invested and to what ends. Given the great utility of qualitative methods for study of social context, the prominence of concern about social context at the theoretical level, and the understudied nature of social context in developmental pschopathology to date, further advances in the integration of methods promise to be of great value to the field.

While the substantive examples in this article have primarily concerned antisocial behavior, the theoretical and methodological issues identified here would appear to be relevant to many other areas of developmental psychopathology, given that one of the definitional parameters of the field is on uncovering the processes leading to maladaptation. As that which is adapted to by the individual, social context constitutes a broad challenge to investigators. For example, Durkheim's (1951) classic work linking suicide to social position points to important connections between social context and depressive disorders that might fruitfully be investigated from a developmental perspective.

Another example concerning a very different kind of pathology is McDermott and Varenne's (1997) intriguing work on deafness in Martha's Vineyard, an area in which rates of this pathology are so high that non-hearing-impaired individuals commonly learn sign language. This example of a context that has adapted to a pathology prompts us to rethink radically what we mean by adaptation. The study of social context in developmental psychopathology is important not least because it impels us to reflect on the social institutions that manage psychopathology. We need to include them, and, by implication, ourselves, in our analyses.

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