Developmental psychology’s emergent identity as an applied developmental science (ADS) reflects our discipline’s rich and complex history and forecasts our discipline’s challenges and opportunities as we begin our second century of science and practice. As proponents of a key subdiscipline of psychology, we continue our commitment to advance psychology “as a science, as a profession, and as a means of promoting human welfare” (American Psychological Association, 2000, p. 1) and to “promote, protect, and advance the interests of scientifically oriented psychology in research, application, and the improvement of human welfare” (American Psychological Society, 2000, p. 1). Fulfilling this commitment involves heeding the recent call of a Nobel Foundation symposium for better integrated models of life-span development and for interdisciplinary and international frameworks (Cairns, 1998; Magnusson, 1996).

This chapter provides a brief history of the emergence, or re-emergence, of ADS as a compelling umbrella for advancing developmental psychology, with a particular focus on the first two decades of life, namely, child and adolescent psychology. Consistent with the interdisciplinary and multidisciplinary mandates, consideration of the kindred disciplines that partner to advance knowledge follows. Examples of substantive areas of inquiry and action in ADS are then considered, including articulation of the special methods of ADS, the special ethical imperatives of ADS, and some particular training challenges for ADS.

DEFINING APPLIED DEVELOPMENTAL SCIENCE
Over the last two decades increasing numbers of developmental psychologists have identified themselves professionally as applied developmental scientists. Joining them under this umbrella are colleagues from allied disciplines and specialties in the biological, social, and behavioral sciences and the helping professions, all sharing common goals and visions captured in some of the more formal definitions of the ADS fields. Certainly an early milestone in the staking out of the field’s territory occurred with the founding of the Journal of Applied Developmental Psychology in 1980, an international multidisciplinary life-span journal. The masthead proclaimed a “forum for communication between researchers and practitioners working in life-span human development fields, a forum for the presentation of the conceptual, methodological, policy, and related issues involved in the application of behavioral science research in developmental psychology to social action and social problem solving” (Sigel & Cocking, 1980, p. i). In welcoming the new journal in an inaugural editorial, Zigler (1980) narrowed the definition of the journal’s purview to what he called a “field within a field” (i.e., presumably, applied developmental psychology within developmental psychology) but set high and broad expectations that “these pages shall attest to the synergistic relationship between basic and applied research” (p. 1).

Almost 20 years later, Zigler (1998) issued a similar note of hope, celebration, and welcome in a significant essay called “A Place of Value for Applied and Policy Studies,” this
time in the pages of Child Development, the prestigious archival journal of the Society for Research in Child Development (SRCD). Child Development had been singularly devoted to “theory-driven, basic research. Now, after more than six decades of advancing science as a means to expand our understanding of human development, SRCD has formally welcomed into its major journal research that uses this knowledge on children’s behalf... the result of a very gradual transformation within SRCD from a scientist’s science toward a more public science” (Zigler, 1998, p. 532). The continuing vicissitudes of the gaps and synergies between applied and basic research will be a theme of the historical sketch offered in the next section (see also Garner, 1972).

In 1991 a National Task Force on Applied Developmental Science convened representatives from abroad, but not an exhaustive range of professional scientific organizations concerned with the application of the knowledge base of developmental psychology to societal problems. Organizations represented included the American Psychological Association, the Gerontological Society of America, the International Society for Infant Studies, the National Black Child Development Institute, the National Council on Family Relations, the Society for Research on Adolescence, and the Society for Research in Child Development. Goals included the articulation of the definition and scope of ADS along with guidelines for graduate training in this emergent, interdisciplinary field. A consensus process produced a complex four-point definition of ADS, quoted here at length to document the current parameters of content, process, methods, and values:

1. Applied developmental science involves the programmatic synthesis of research and applications to describe, explain, intervene, and provide preventive and enhancing uses of knowledge about human development. The conceptual base of ADS reflects the view that individual and family functioning is a combined and interactive product of biology and the physical and social environments that continuously evolve and change over time. ADS emphasizes the nature of reciprocal person-environment interactions among people, across settings, and within a multidisciplinary approach stressing individual and cultural diversity. This orientation is defined by three conjoint emphases: Applied: Direct implications for what individuals, families, practitioners, and policymakers do. Developmental: Systematic and successive changes within human systems that occur across the life span. Science: Grounded in a range of research methods designed to collect reliable and objective information systematically that can be used to test the validity of theory and application.

1.2 ADS recognizes that valid applications of our knowledge of human development depend upon scientifically based understanding of multilevel normative and atypical processes that continually change and emerge over the life cycle.

1.3 ADS reflects an integration of perspectives from relevant biological, social, and behavioral sciences disciplines in the service of promoting development in various populations.

1.4 The nature of work in ADS is reciprocal in that science drives application and application drives science. ADS emphasizes the bidirectional relationship between those who generate empirically based knowledge about developmental phenomena and those who pursue professional practices, services, and policies that affect the well-being of members of society. Accordingly, research and theory guide intervention strategies, and evaluations of outcomes of developmental interventions provide the basis for the reformulation of theory and for modification of future interventions. (Fisher et al., 1993, pp. 4–5)

By 1997 these parameters defining ADS were adopted as the editorial scope of a new journal, Applied Developmental Science, with further explication of a more inclusive range of methodologies and audiences. The journal publishes research employing any of a diverse array of methodologies—multivariate longitudinal studies, demographic analyses, evaluation research, intensive measurement studies, ethnographic analyses, laboratory experiments, analyses of policy and/or policy-engagement studies, or animal comparative studies—when they have important implications for the application of developmental science across the life span. Manuscripts pertinent to the diversity of development throughout the life-span—cross-national and cross-cultural studies; systematic studies of psychopathology; and studies pertinent to gender, ethnic and racial diversity—are particularly welcome... [The audience includes] developmental, clinical, school, counseling, aging, educational, and community psychologists; life course, family and demographic sociologists; health professionals; family and consumer scientists; human evolution and ecological biologists; and practitioners in child and youth governmental and nongovernmental organizations. (Lerner, Fisher, & Weinberg, 1997, p. 1)

This amplified definition of ADS postulates a number of hallmarks of ADS key to the discussion of its history, content, and special concerns. Among these hallmarks are

1. A historical context and perspective reflecting the perennial balancing of related constructs such as basic and applied research or science and practice or knowledge generation and utilization. This includes a sensitivity to historical and sociopolitical contexts captured in the notion of ADS as
Scholarship for our times. . . . As we enter the 21st century, there is growing recognition that traditional and artificial distinctions between science and service and between knowledge generation and knowledge application need to be reconceptualized if society is to successfully address the harrowing developmental sequelae of the social, economic, and geo-political legacies of the 20th century. Scholars, practitioners and policymakers are increasingly recognizing the role that developmental science can play in stemming the tide of life-chance destruction caused by poverty, premature births, school failure, child abuse, crime, adolescent pregnancy, substance abuse, unemployment, welfare dependency, discrimination, ethnic conflict, and inadequate health and social resources. (Lerner et al., 1997, p. 2)

2. A broadened and deepened awareness of the ethical challenges and imperatives involved in implementing the scope of ADS. This awareness evolves from challenges in the use of scientific methods in new ways such that protection of the autonomy and well-being of research participants is increasingly complex. Research participants become partners in the inquiry process and new, more complicated collaborations among diverse multidisciplinary professionals and communities become key elements of defining research questions and problems and seeking answers and solutions.

More recently, some leaders have broadened the potential scope of ADS even further, suggesting elements of a blueprint for promoting civil society and social justice, a provocative and compelling elaboration of both the substance and the ethical orientation of the field (Lerner, Fisher, & Weinberg, 2000). Others have focused on more traditional academic or incremental stocktaking for defining ADS with attention to advancing the numerous knowledge bases and methodologies (e.g., Schwebel, Plumert, & Pick, 2000; Shonkoff, 2000; Sigel & Renninger, 1998). ADS is now considered an “established discipline” (Fisher, Murray, & Sigel, 1996), defined with the parameters just outlined. Our survey of this discipline moves now to a more detailed historical analysis, with attention to earlier roots as well as appreciation for the contemporary ferment evident in the definitional emergence of the last few years.

ELEMENTS OF THE HISTORY OF APPLIED DEVELOPMENTAL SCIENCE

From the earliest days of psychology in general and of developmental psychology in particular, tensions and balances basic to the emergence of contemporary ADS as just defined have provided the heat and light for historians of the field. Observers and analysts are prone to calling upon metaphors such as a swinging pendulum or old wine in new bottles. Indeed, as argued elsewhere, the newness of the ADS orientation “ought not be overemphasized—renewal is perhaps a more accurate frame” (Wertlieb & Feldman, 1996, p. 123). As the definition of ADS just noted emerged, Parke’s (1992) Presidential Address to the American Psychological Association Division of Developmental Psychology noted the return of developmental psychologists to “their forerunners’ concern for applying science to social problems . . . , and their renewed interest in interdisciplinary work also resembles early developmental psychology” (p. 987). Parke noted that “the applied/nonapplied distinction is an increasingly blurry and perhaps dubious one, as researchers continue to recognize the multifaceted value of social experiments such as Headstart” (p. 987).

Our forerunners were perhaps even bolder in asserting such views. When discussing the case of a chronic bad speller referred to his clinic, Witmer (1907), a founder of clinical psychology, noted that “if psychology was worth anything to me or to others it should be able to assist the efforts of a teacher in a retarded case of this kind. The final test of the value of what is called science is its applicability” (cited in Fagan, 1992, p. 237). Indeed, an elemental challenge in ADS today is overcoming the historical quagmires of scientism versus clinicalism (Perry, 1979) and applied versus scientific acceptability. As evident at psychology’s inception, Fagan (1992) reported that “both Hall and Witmer were popular with teacher and parent constituencies, but not always with psychologist colleagues, many of whom viewed their work as less than scientific” (p. 239).

Several extensive histories of the disciplines of developmental psychology and child development have been published, and most include reference to the ebb and flow of interest and priority for what might be termed the applied, practical, or societally oriented issues so central to ADS. Especially relevant are discussions offered by Bronfenbrenner, Kessel, Kessen, and White (1986); Cairns (1998); Davidson and Benjamin (1987); Hetherington (1998); McCall (1996); McCall and Groat (2000); Parke, Ornstein, Reiser, and Zahn-Waxler (1994); Sears (1975); and Siegel and White (1982). Hetherington (1998) framed her analysis by accenting her use of the term “developmental science . . . to emphasize both the scientific and multidisciplinary foundations of the study of development and the recognition that development is not confined to childhood but extends across the lifespan” (p. 93)—emphases lost or diluted in using the too-limiting term child psychology. She interpreted and extended Sears’s (1975) classic analysis, reaffirming that “unlike many areas in psychology [with their histories
documented by Boring (1950) and Koch & Leary (1985), developmental science originated from the need to solve practical problems and evolved from pressure to improve the education, health, welfare and legal status of children and their families” (p. 93).

The chronology of developmental psychology offered by Cairns (1998) serves as a useful framework in which to specify some of the distinctive or seminal elements of ADS. Cairns delimited the emergence of developmental psychology (1882–1912), the middle period of institutionalization and expansion (1913–1946), and the modern era (1947–1976). His compliance with a convention that 20 years must elapse before qualifying as “historical” leaves much of the significant milestone material mentioned in our earlier definition of ADS outside the realm of his presentation, but he did conclude his account with a clarion call for more integrated interdisciplinary science, quite consistent with what we might term the postmodern or contemporary era (1977–present). Indeed, it is from this most recent period that we draw our substantive examples of ADS, after the conclusion of this historical sketch.

Most accounts, including Cairns’s (1998) emergence analysis, portray the dialectic at the base of ADS as pioneered by G. Stanley Hall, the first professor of psychology in America (appointed in 1883 at Johns Hopkins University), the first president of the American Psychological Association (1891), and founder of the first child development research institute (at Clark University) and of the journal Pedagogical Seminary.

Hall was a remarkable teacher and catalyst for the field. Some of the most significant areas for developmental study—mental testing, child study, early education, adolescence, life-span psychology, evolutionary influences on development—were stimulated or anticipated by Hall. Because of shortcomings in the methods he employed and the theory he endorsed, few investigators stepped forward to claim Hall as a scientific mentor. His reach exceeded his grasp in the plan to apply the principles of the new science to society. Psychology’s principles were too modest, and society’s problems too large. Perhaps we should use a fresh accounting to judge Hall’s contributions, one that takes into account the multiple facets of his influence on individuals, the discipline, and society. The audit would reveal that all of us who aspire to better the lot of children and adolescents can claim him as a mentor. (Cairns, 1998, p. 43)

White (1992) asserted that

the simple fact is that G. Stanley Hall marched away from experimental psychology toward the study of children because at least six different constituencies existed in American society, basically still our constituencies today—scientists, college administrators, child savers and social workers, mental health workers, teachers, and parents. These constituencies wanted certain kinds of knowledge about children. Mirabile dictu, without even being developmental psychologists and before we came into existence, they were all collecting data that look like ours. So if you look at the social history that surrounds the birth of the Child Study Movement, you gradually come to the conclusion that perhaps we represent a professionalization of trends of knowledge gathering and knowledge analysis that existed in our society before our coming. That doesn’t completely detach us from the mainstream of the history of psychology, but it certainly throws a very different light on the emergence and evolution of the field and its basic issues. (Bronfenbrenner et al., 1986, p. 1221)

Among Hall’s most significant contributions, according to White (1992), were the concern with descriptions of children in their natural contexts and the need “to arrive at a scientific synthesis on the one side and practical recommendations on the other” (cited in Cairns, 1998, p. 43). Contemporary ADS continues in its value in the former and aspires to overcome the too-dichotomous implications of the latter; it emphasizes the reciprocal and mutual interactions of the scientific and practical typical in this earliest era.

The other heroes or giants of history contributing in this foundational period are, of course, Sigmund Freud, Alfred Binet, and John Dewey. Freud’s psychoanalytic theories and methods were key forerunners of one of contemporary ADS’s most vital arenas, developmental psychopathology. The separate path taken by psychoanalysis in subsequent years is only recently reconverging with developmental psychology. Millennium analyses of the field of developmental psychopathology are intriguing sources of elaboration of the history of ADS, and the reawakened appreciation of psychoanalytic approaches are of special interest (Cicchetti & Sroufe, 2000; Fonagy & Target, 2000).

The measurement and testing of intelligence pioneered by Binet continues to influence extant theories and methods in contemporary ADS, although certainly the scientific revolutions in the ensuing years (e.g., Piagetian psychology), as well as political sensitivities, establish a much more complex and sophisticated set of theories about intelligences, their manifestation and measurement, and their places in a broad array of processes, competencies, or outcomes relevant to developmental status or progress. The abiding links to schooling and education, so basic to the philosophical and scientific contributions of John Dewey, remain core foci in contemporary ADS. Notions of constructivism, of the salience of motivation and everyday experience, and of psychology as a foundational science for applications such as education championed by Dewey pervade contemporary ADS (Cahan, 1992).
The second and third periods of Cairn’s (1998) history of developmental psychology emphasize institutionalization, especially of scientific and laboratory-based inquiry, and expansion into a modern behavioral science. Many of the scientific and applied seeds planted in the foundational period grew in the middle of the twentieth century, with what we might term the rise and fall of the then-grand theories being an especially salient process. These grand theories included the elaboration of Freudian psychoanalytic approaches, behaviorism as espoused by Skinnerians and Pavlovians, as well as cognitive theories of Piagetians. Modernism and positivism yielded to postmodernism with the articulations and fragmentations captured by labels such as ego-analytic or neo-Freudian approaches; social-behavioral, social-learning, and cognitive-behavioral approaches; or neo-Piagetian approaches, for example. Bronfenbrenner et al. (1986, p. 1219) described and decried dimensions of this fragmentation process in the middle of the twentieth century, identifying a trend of what they term recurring faddism or, worse, recurrent scientific bias.

The contemporary era in which ADS is now emerging capitalizes on newly grand theoretical formulations. For instance, bioecological theory (Bronfenbrenner & Ceci, 1994), developmental contextualism (Lerner, 1998), and life-span developmental psychology (Baltes, Lindenberger, & Staudinger, 1998) each represent varying degrees of broadening and integrating (or even reintegrating) consistent with the scope and challenges of ADS. It is useful to consider a historical process somewhat akin to Werner’s orthogenetic principle: “Basic and applied aspects of developmental science began as a global unit and became increasingly differentiated. Further maturity now allows for a hierarchical integration of the specialized functions into a synergistic whole” (Zigler, 1998, pp. 533–534).

**Substantive** challenges or demands inherent in American social policy during the “Great Renaissance” of the 1960s and 1970s (the modern era according to Cairns, 1998) provided the raison d’être for ADS. The War on Poverty, Head Start early education intervention, and the community mental health movements all provided arenas for expectations and conversations between developmental scientists and the society in which they functioned. The newly grand theories were required to guide the generation of research questions, data, interpretation, and application. ADS is providing parameters for advancing with simultaneous and increasingly integrated attention to processes of knowledge generation and knowledge utilization.

As noted earlier, multidisciplinarity and interdisciplinarity are key hallmarks of ADS. Not surprisingly, parallel historical evolution in related subdisciplines and disciplines has been documented such that among the component fields or contemporary renditions of ADS are several emergent integrating or synergizing traditions. This trend has been discussed in kindred subdisciplines of psychology such as clinical psychology (Fox, 1982; Frank, 1984; Kendall, 1984; Levy, 1984; Wertlieb, 1985), community psychology (Marsella, 1998; Masterpasqu, 1981), school psychology (Fagan, 1992, 2000; Ysseldyke, 1982), educational psychology (Bardon, 1983), and pediatric psychology (Brennemann, 1933; Wertlieb, 1999). Other social sciences such as anthropology, policy analysis, social work, home economics/consumer sciences, and public health share some of these elements of differentiation and recent reintegration in interdisciplinary forms consistent with ADS (e.g., Elder, 1998; Featherman & Lerner, 1985; Kaplan, 2000; Nickols, 2001; Schneiderman, Speers, Silva, Tomes, & Gentry, 2001; Winett, 1995).

Within the field of psychology, as well as in the links with kindred disciplines that form ADS, the integrated identity as a “scientist-practitioner” evolves as a basic standard or goal. A similar rubric of reflective practice captures the optimal functioning of a scientist-practitioner (e.g., Schon, 1983). Cultivation of the scientist-practitioner remains an abiding challenge (Belar & Perry, 1992). This bridge between science and practice is requires constant attention, as documented by Kanfer’s (1990) articulation of the challenges “to foster and blend the skills, perceptivity and pragmatism of the professional along with training in methods, and exposure to the skeptic-empirical attitude of the researcher” (p. 269). Applied developmental scientists are “translators who a) devote systematic attention to research and dissemination of practical implications and methods derived from various domains of the social sciences and/or b) formulate professional problems in ‘basic science’ language and collaborate with (or act as) scientists whose expertise encompasses the domain in which these researchable questions are phrased” (p. 265). With definitions of ADS in hand, along with historically significant elements that continue to shape the field, we turn to a selective overview of contemporary domains of inquiry and action in ADS.

**DOMAINS OF INQUIRY AND ACTION IN APPLIED DEVELOPMENTAL SCIENCE**

At the start of the twenty-first century, scores of applied developmental scientists are actively and productively pursuing hundreds of significant research questions with important implications and applications to the well-being of children, youth, and families. Table 2.1 lists many of these topics of


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<thead>
<tr>
<th>Topic</th>
<th>Sample Study or Review</th>
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<tr>
<td>Early child care &amp; education</td>
<td>Lamb (1998); Ramey &amp; Ramey (1998); Scarr (1998); Zigler &amp; Finn-Stevenson (1999).</td>
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<tr>
<td>Parenting &amp; parent education</td>
<td>Collins et al. (2000); Cowan et al. (1998).</td>
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<tr>
<td>Developmental assets</td>
<td>Benson (1997); Scales &amp; Leffert (1999); Weissberg &amp; Greenberg (1998).</td>
</tr>
<tr>
<td>Marital disruption &amp; divorce</td>
<td>Hetherington, Bridges, &amp; Insabella (1998); Wertlieb (1997).</td>
</tr>
<tr>
<td>Developmental psychopathology</td>
<td>Cicchetti &amp; Sroufe (2000); Cicchetti &amp; Toth (1998b); Richters (1997); Rutter &amp; Sroufe (2000).</td>
</tr>
<tr>
<td>Depression</td>
<td>Cicchetti &amp; Toth (1998a).</td>
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<td>Children's eyewitness reports</td>
<td>Bruck, Ceci, &amp; Hembrooke (1998).</td>
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<tr>
<td>Prevention science</td>
<td>Côte et al. (1993); Kaplan (2000).</td>
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inquiry and action to provide a sense of the broad scope of ADS. Recent textbooks (e.g., Fisher & Lerner, 1994), review chapters (e.g., Zigler & Finn-Stevenson, 1999), handbooks (e.g., Lerner, Jacobs & Wertlieb, 2002; Sigel & Renninger, 1998), special issues of journals (e.g., Hetherington, 1998), and regular sections of journals such as the “Applied Developmental Theory” section of Infants and Young Children provide ongoing articulation of ADS inquiry. Journals such as the Journal of Applied Developmental Psychology, Applied Developmental Science, and Children’s Services: Social Policy, Research and Practice are among the central outlets for new work in ADS. Each of the chapters that follow in the present volume on developmental psychology reflects, to varying degrees, some influence of ADS in establishing the current state of knowledge, and the final section of this volume includes several chapters specifically focused on ADS-related scholarship across the life span. For the purposes of this chapter’s overview of ADS, just two of the many areas of inquiry and action have been selected to illustrate some of the substantive concerns of ADS: (a) parenting and early child care and education, followed by (b) developmental psychopathology and developmental assets. As will be evident, each of these complex areas involves foci of theoretical and methodological concerns, and most link to several of the others listed in Table 2.1, consistent with the highly contextual and interdisciplinary orientation of ADS.

Parenting and Early Child Care and Education

The state of ADS in parenting and early child care education is well summarized in several reviews (e.g., Bornstein, 1995; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Cowan, Powell, & Cowan, 1998; Harris, 1998, 2000; Scarr, 1998; Vandell, 2000; Zigler & Finn-Stevenson, 1999) and covers core questions such as

1. How do parenting behaviors influence a child’s behavior and development?
2. How do children influence parenting behavior?
3. What are the influences of different forms of child care and early education on children’s development?
4. How effective are different interventions for parent education and early education of young children?
5. How do social policies influence the qualities of interventions and programs for children and parents?

Political, philosophical, and scientific controversies permeate many discussions of parenting and early child care and education. In recent years, as challenges to what had become conventional wisdom about the salience of parents’ attitudes, beliefs, and behaviors as shapers of their children’s development (e.g., Harris, 1998) gained notoriety, applied developmental scientists have acknowledged the shortcomings of extant socialization research (see chapter by Kerr, Statin, & Ferrer-Wreder in this volume). “Early researchers often overstated conclusions from correlational findings; relied excessively on singular, deterministic views of parental influence; and failed to attend to the potentially confounding effects of biological variation” (Collins et al., 2000, p. 218). Now, with augmented behavior-genetic designs, longitudinal analyses, animal comparative studies, more sophisticated data collection, and analyses and grounding in more comprehensive and contextual biopsychosocial ecological theories, researchers offer more valid and sophisticated accounts of the important
influences of parenting on behavior. These accounts are highly nuanced with emphasis on interaction and moderator effects, reciprocal influences, nonfamilial influences, and attention to impacts of macrocontexts such as neighborhoods, policies, and cultures.

As an example, consider the studies of children’s temperaments and parenting reviewed by Collins et al. (2000). Children can be characterized in terms of constitutionally based individual differences or styles of reacting to the environment and self-regulating. Developmental research had established modest statistical correlations between “difficult” temperamental profiles in young children and later behavioral problems.

Bates, Pettit, and Dodge (1995), in a longitudinal study, found that infants’ characteristics (e.g., hyperactivity, impulsivity, and difficult temperament) significantly predicted externalizing problems 10 years later. Although this finding at first seems to support the lasting effects of physiologically based characteristics, Bates et al. (1995) also showed that predictive power increased when they added information about parenting to the equation. Infants’ early characteristics elicited harsh parenting at age 4, which in turn predicted externalizing problems when the children were young adolescents, over and above the prediction from infant temperament. Similarly, this and other findings imply that even though parenting behavior is influenced by child behavior, parents’ actions contribute distinctively to the child’s later behavior. (Collins et al., 2000, p. 222)

Coupled with the increasingly sophisticated literature on the development and effectiveness of intervention programs that help parents alter their parenting behavior with infants, young children, or adolescents (e.g., Cowan et al., 1998; Webster-Stratton, 1994), this area of scholarship is a prototypical domain of inquiry and action for ADS, and one that provides theoretical, methodological, and practical contributions.

When care by other than the child’s parents is examined, similar advances are evident (Lamb, 1998, 2000; National Institute of Child Health and Human Development Early Child Care Research Network, 2000; Scarr, 1998; Zigler & Finn-Stevenson, 1999). Again, these advances are in the context of political, philosophical, and scientific controversies. The last quarter century has seen a shift away from research aimed at documenting how much damage is done to children who are left in daycare as their mothers enter the work force, to research discovering and describing varieties and qualities of day care and early education experiences for children, and more recently to sophisticated longitudinal studies comparing and contrasting varieties of maternal and nonmaternal care, including in-home, family-based, and center-based care. These latter studies increasingly include “not only proximal influences on the child but distal influences as well” (Scarr, 1998, p. 101) and adopt conceptual frameworks requiring attention to individual differences in children, in family processes, and contextual issues such as staff training and support, access to care, and related social policies. Attention to the special needs of at-risk populations such as children living in poverty or other disadvantaged conditions shows similarly increasing sophistication as ADS frameworks are employed (e.g., Ramey & Ramey, 1998).

Lamb’s (1998) summary of the current state of knowledge on child care reflects the orientation of ADS:

In general, the quality of care received both at home and in alternative care facilities appears to be important, whereas the specific type of care (exclusive home care, family day care, center day care) appears to be much less significant than was once thought. Poor quality care may be experienced by many children . . . and poor quality care can have harmful effects on child development. Type of care may also have varying effects depending upon the ages at which children enter out-of-home care settings, with the planned curricula of day care centers becoming increasingly advantageous as children get older. Interactions between the type of care and the age of the child must obviously be considered, although claims about the formative importance of the amount of nonparental care and the age of onset have yet to be substantiated empirically. It also appears likely that different children will be affected differently by various day care experiences, although we remain ignorant about most of the factors that modulate these different effects. Child temperament, parental attitudes and values, preenrollment differences in sociability, curiosity and cognitive functioning, sex and birth order may all be influential, but reliable evidence is scanty . . . We know that extended exposure to nonparental child care indeed has a variety of effects on children, but when asked about specific patterns of effects or even whether such care is good or bad for children we still have to say It depends. (pp. 116–117)

Such an analysis of the state of our science becomes a starting point for the ADS professional in pursuing the collaborations with researchers from allied disciplines and community partners to advance knowledge and build and evaluate programs.

**Developmental Psychopathology and Developmental Assets**

In fostering synergy among disciplines concerned with the understanding and well-being of children, ADS provides a forum for significant scientific cross-fertilization between two powerful new traditions of inquiry and action: developmental psychopathology and developmental assets. An early
definition of the science of developmental psychopathology called it “the study of the origins and course of individual patterns of behavioral maladaptation, whatever the age of onset, whatever the causes, whatever the transformations in behavioral manifestation, and however complex the course of the developmental pattern may be” (Sroufe & Rutter, 1984, p. 18). Cicchetti and Toth (1998b) confirmed that developmental psychopathologists should investigate functioning through the assessment of ontogenetic, genetic, biochemical, biological, physiological, societal, cultural, environmental, family, cognitive, social-cognitive, linguistic, representational, and socioemotional influences on behavior. . . . The field of developmental psychopathology transcends traditional disciplinary boundaries. . . . Rather than competing with existing theories and facts, the developmental psychopathology perspective provides a broad integrative perspective within which the contributions of separate disciplines can be fully realized. . . . The developmental psychopathology framework may challenge assumptions about what constitutes health or pathology and may redefine the manner in which the mental health community operationalizes, assesses, classifies, communicates about, and treats the adjustment problems and functioning impairments of infants, children, adolescents, and adults. . . . Thus, its own potential contribution lies in the heuristic power it holds for translating facts into knowledge, understanding and practical application. (p. 482)

As society grasps the challenges and the costs of mental disorder and behavior dysfunction, only a multidisciplinary vision so broad and so bold, with attendant reliance on the newly grand theories noted earlier, especially developmental contextualism and biocultural theory, can suffice. And even with this breadth and boldness evident in developmental psychopathology, vulnerability to the critique of its being illness oriented or deficit oriented limits its scope. Richters’s (1997) critique of developmental psychopathology identifies dilemmas and a “distorted lens” (p. 193) that hamper research advances. ADS provides a support for the bridges needed by developmental psychopathology by linking to the complementary concepts and methods of the developmental assets approach. When contemporary clinical psychologists or clinical-developmental psychologists (Noam, 1998), for instance, who are increasingly comfortable in claiming their role as developmental psychopathologists, can collaborate with community psychologists, for instance, who are increasingly comfortable in cultivating developmental assets, ADS approaches its promise as a framework for understanding and addressing the needs of children in our society.

The developmental assets framework (Benson, Leffert, Scales, & Blyth, 1998; Scales & Leffert, 1999) has some of its roots and branches in developmental psychopathology but contributes its own heuristic power to ADS, especially in grafting its roots and branches in community psychology and prevention science (e.g., Weissberg & Greenberg, 1998). Although developmental psychopathology may focus more often on outcomes reflecting health and behavior problems or mental disorders or illness, the developmental assets framework emphasizes outcomes (or even processes) such as competence or thriving, as captured in the “emerging line of inquiry and practice commonly called positive youth development” (Benson et al., 1998, p. 141; see also Pittman & Irby, 1996). ADS emphasizes the importance of simultaneous consideration of both orientations. In addition, whereas developmental psychopathology is explicitly life-span oriented as noted in the definitions stated earlier, the developmental assets framework, at least to date, is more focused (in derivation though not implication) on the processes boldest in the second decade of life. The empirical and theoretical foundations for the framework emphasize “three types of health outcomes: a) the prevention of high risk behaviors (e.g., substance use, violence, sexual intercourse, school dropout); b) the enhancement of thriving outcomes (e.g., school success, affirmation of diversity, the proactive approach to nutrition and exercise); and c) resiliency, or the capacity to rebound in the face of adversity” (p. 143).

Developmental assets theory generates research models that call upon a system or catalog of 40 developmental assets, half of them internal (e.g., commitment to learning, positive values, social competencies, and positive identity) and half of them external (e.g., support, empowerment, boundaries and expectations, and constructive use of time). Assessments of these characteristics and processes in individuals and in communities then provide for problem definition, intervention design, and program evaluation. While the developmental psychopathologist might focus on similar constructs and word them only in a negative or deficit manner (e.g., a positive identity is merely the opposite of poor self-esteem), simultaneous consideration of both the assets and psychopathology orientations reveals that beyond the overlapping or synonymous concept or measure are complementing and augmenting meanings with important implications for both research and practice.

Some features of the synergy obtained with the perspectives fostered by developmental psychopathology and developmental assets orientations are evident in theory and research conducted in frameworks termed the stress and coping paradigm (e.g., Wertlieb, Jacobson, & Hauser, 1990), or vulnerability/risk and resiliency/protective factors model (e.g., Ackerman, Schoff, Levinson, Youngstrom, & Izard, 1999; Hauser, Vieyra, Jacobson, & Wertlieb, 1985; Jessor, Turbin & Costa, 1998; Luthar, Cicchetti, & Becker, 2000; Luthar & Zigler, 1991; Masten & Coatsworth, 1998).
To illustrate some dimensions of this synergy that are basic to advancing ADS, we offer an overview of the stress and coping paradigm.

The Stress and Coping Paradigm

An important step toward the integration of emergent approaches to developmental psychopathology and extant stress theories salient to both health and mental health researchers was taken about 20 years ago at a gathering of scholars at the Center for Advanced Study in the Behavioral Sciences. Attendants generated what at the time was a comprehensive state-of-the-art review and compelling research agenda published as *Stress, Coping, and Development in Children* (Garmezy & Rutter, 1983). At a reunion a decade later, many of the same scientists and their younger colleagues now pursuing the agenda took stock of the research to produce *Stress, Risk, and Resilience in Children and Adolescents* (Haggerty, Sherrod, Garmezy, & Rutter, 1994). This latter volume was especially impressive in its articulation of important interventions and prevention applications, reflecting the historical trend noted earlier to be fueling ADS. A comparison of the two titles reveals that the coping construct disappeared—an unfortunate decision in light of present concerns with the promises of coping interventions and developmental assets as elements of overcoming stress, risk, and poor health outcomes. However, the second title did introduce core biomedical and epidemiological constructs of risk and resiliency, basic conceptual and methodological tools consistent with ADS as defined earlier. In any event, these volumes provide a comprehensive treatment of the stress and coping field as an ADS. Figure 2.1 is a simple schematic that illustrates some basic features.

The stress and coping paradigm depicted in Figure 2.1 juxtaposes four variable domains capturing the complex and dynamic stress process (Pearlin, 1989) as a slice in time and context. The dimensions of time, or developmental progression, and context are those noted earlier as the bioecological framework (Bronfenbrenner & Ceci, 1994) and life-course models (e.g., Clausen, 1995; Elder, 1995); they are the background and foreground absent from, but implicit in, the schematic in Figure 2.1. A common critique of stress research focuses on the circularity of some of its constructs and reasoning. For instance, consider a stressful life event such as the hospitalization of a child and the necessity to consider it both as a stressor in the life of the child and his family and as an outcome of a stress process. As ADS evolves with its more sophisticated longitudinal and nonlinear analytic methodologies, these critiques will be less compelling. For the moment and for the sake of this brief description of the paradigm, a circular form with multiple dual-direction arrows is adopted. The reciprocity of influences and the transactional qualities
of relationships among and across domains are signaled by both the intersections of the quadrants and the dual-directed arrows around the circumference. Consideration of each quadrant should convey the substance and form of this developmental stress and coping paradigm and the way it calls upon key variables in developmental psychopathology and developmental assets orientations.

Beginning with the stress quadrant, reference is made to the types of stress that are familiar in the literature and have documented developmental and health consequences. For instance, each child encounters biological, psychological, and social milestones and transitions. Examples include the toddler’s first steps, kindergartners entering school, teenagers entering puberty, and young people marrying. These are the developmental stressors, or transitional life events, of development.

Traditional psychosomatic medicine as well as contemporary health psychology and behavioral medicine have focused most heavily on health consequences of major life events. Among these are normative experiences such as entering high school or starting a new job, nonnormative events such as the death of a parent during childhood or getting arrested, and events that do not fit classification by normative life course transitions. Thus, being diagnosed with a serious chronic illness or undergoing a divorce are examples of nonnormative event changes. The horserace between major life events such as these and, in turn, what are termed hassles, or the microstressors of everyday life—efforts to quantify one type or the other as more strongly related to particular health outcomes—has been a feature of recent research in developmental psychopathology. This work teaches us the importance of avoiding overly simple variable-centered strategies and striving to capture the richness of conceptualizations that link, for instance, chronic role strain and acute life events, be they major or quotidian (Eckenrode & Gore, 1994; Pearlin, 1989). Notions of chronic stressors allow for consideration of a relatively vast child development literature on the adverse impacts of, for example, poverty (e.g., McLoyd, 1998). The distinction between chronic and acute stressors also serves applied developmental scientists when they can differentiate variables and processes in an acute experience. Thus, for instance, receiving a diagnosis of a chronic illness, such as diabetes, may be considered an acutely stressful event, whereas living with diabetes may be viewed as a chronic stressor (Wertlieb et al., 1990).

Health consequences associated with these stressors appear in the outcomes quadrant of Figure 2.1. Highlighted here are a commitment to multidimensional and multivariate assessments of health outcomes; an appreciation of both physical and mental health indexes, acknowledging both interdependence and unity; an emphasis on a balance among assets, health, and competence indexes; and a context of health as a part of a broader biopsychosocial adaptation. In traditional terms, ADS is concerned with the health and mental health of individuals. In contemporary terms, the health of developmental systems and communities must also be indexed.

For decades, it was these two domains—stressors and outcomes—that alone constituted the field of stress research. Consistent, reliable, and useful relationships were documented confirming the stress and illness correlation. Across scores of studies, statistically consistent relationships on the order of .30 were obtained and replicated. Thus, we could consistently account for close to 10% of the variance shared by stress and health—scientifically compelling, but hardly enough given the magnitude of the decisions that health care providers and policy makers must make. Using the ADS framework, stress and coping researchers pursue a quest for the other 90% of the variance. The expansions and differentiations of stressor types exemplified in the stress quadrant of Figure 2.1 contribute to the cause. In addition, it is the incorporation of the other two quadrants—coping processes and coping resources/moderators—that are the keys to achieving the goal. As these variables are incorporated into our models, explanatory and predictive power increases, and the quest for the other 90% advances.

The present model employs a specific conceptualization and assessment methodology for coping processes as advanced by Lazarus and Folkman (1984) and adapted for children by Wertlieb, Weigel, and Feldstein (1987). This model emphasizes three types or dimensions of coping behavior exhibited by children as well as adults. A focus on the appraisal process, the problem-solving process, or the emotion-management process can be distinguished and measured in the transactions between an individual and the environment as stress is encountered and as developmental or health consequences unfold. Other researchers have employed similar or competing coping theories, and many, perhaps most, are consistent with the broader stress and coping paradigm presented here (e.g., Aldwin, 1994; Basic Behavioral Science Task Force of the National Advisory Mental Health Council, 1996; Bonner & Finney, 1996; Compas, 1987; Fiese & Sameroff, 1989; Luthar & Zigler, 1991; Pellegrini, 1990; Sorensen, 1993; Stokols, 1992; Wallander & Varni, 1992; Wills & Filer, 1996).

Similarly, there is a wide range of coping resources/moderators investigated in the literature, and Figure 2.1 selects a few examples to illustrate the range and demonstrate the relevance to the developmental psychopathology and developmental assets domains of ADS. Many of the
40 elements of the developmental assets framework reflect various dimensions of social support (e.g., family support, a caring school climate, a religious community, or school engagement). A large and complicated literature documents the manners in which social support in its diverse forms influences the relationships between health and illness. Key discriminations of pathways for such influences in terms of main effects, interactions, buffering effects, and mediation or moderation are elaborated in these studies (Cohen & Syme, 1985; Sarason, Sarason, & Pierce, 1990). Similarly complex, and even controversial, are formulations that call upon constructs and measures of intelligence or cognitive capacities or styles, as resources, moderators, or mediators of the stress-health relationship (Garmezy, 1994; Goleman, 1995). Diverse ranges of personality variables have also been employed in this work, including biologically oriented notions of temperament and psychological control orientations (Wertlieb, Weigel, & Feldstein, 1989).

Socioeconomic status (SES) is depicted in this resource quadrant, reminding us of the problem of redundancy and circularity. In the earlier description of types of stress I noted the manner in which poverty—a level or type of SES—could be modeled. Here, whether the SES is conceived as a factor that psychological researchers too often relegate to the status of background variable in a multivariate model or as a factor that sociologists might emphasize in a social structural analysis, its elements are crucial pieces of the contemporary context for the stress-health linkage. Again, the general stress and coping model in Figure 2.1 can accommodate considerable diversity in this coping resources/moderators domain; success in the quest will reflect the achievement of simplicity and parsimony.

A specific composite case example from our research program in pediatric psychology, or child health psychology, will serve to show the stress and coping paradigm in action. Again, the ADS framework orients us to significant demands for both knowledge generation and knowledge utilization in this example of a child’s development, where understanding as well as application in terms of health care intervention and social policy are intertwined (Wertlieb, 1999). The example of Jason Royton involves each of the four domains shown in Figure 2.1.

Twelve-year-old Jason Royton was rushed to the pediatric hospital emergency room by his distraught father the morning after a vociferous battle in their home about whether Jason will get to see the R-rated movies that he contends all his friends are allowed to see. Within hours, the pediatrician emerges with the diagnosis: insulin-dependent diabetes mellitus (IDDM). In this scenario, the applied developmental scientist can quickly document multiple interacting dimensions of stress that potentially impinge on the child: the acute trauma of the health emergency and diagnosis, the parallel stress of the separation and autonomy struggle in the Royton’s lives, the onset of a chronic stressor of living with a life-threatening illness, and the initiation of multiple series of hassles or quotidian stressors associated with the precise regimen of diet, insulin injection, exercise, and medical care. Also immediate are the coping processes and a mélange of challenges and responses—shock, grief, denial, anxiety, appraisal (sizing up the nature of the challenges), problem solving (assessing and marshaling resources to comprehend and meet these challenges)—and for each individual, as well as for the family system, managing the feelings, threats, and disequilibria now introduced into their lives.

Influences of coping resources/moderators can be recognized as well. Mobilization of social support is part of the problem-solving process as we see Jason’s grandmother arriving on the scene once they return home. Caring for the other two Royton children will be only a minor worry for Mr. and Mrs. Royton as they get through these initial days of their new status as a family with IDDM. Less minor and more surprising is the extent to which some of the protection offered by their comfortable middle-class lifestyle does not turn out to be what they thought it was. Clarifying their benefits and expenses in their new managed health care plan confirms that health insurance is not what it once was, IDDM, too, is not what it once was. Several decades ago, prior to the 1922 introduction of insulin therapy, the diagnosis was a death sentence. Now, people living with IDDM are part of a large group enjoying productive lives and pioneering novel challenges. The hope for ever-greater advances in biomedical science and technology is part of that life; a cure for IDDM, or a prevention, is an active research area.

Jason, meanwhile, is having his various “intelligences” challenged as his health care team launches him on an education for life with IDDM. Processing complex biomedical and psychosocial information, shifting notions of future threats and complications in and out of awareness, and anticipating how to live with this difference, especially when being different, has little cachet in a young adolescent’s social circles. These stressors are moderated and will unfold as elements of the multidimensional health outcomes profile that must be considered in assessing the current or future health of a youngster with IDDM. Most immediate health outcomes focus on maintaining healthy blood glucose levels and some optimal adherence with the medical regimen. Psychological dimensions of accommodation of psychosocial strivings for autonomy and consolidation of a positive sense of competence and self-worth are related developmental processes. Undoubtedly, this set of experiences for Jason and his family.
engages the applied developmental scientist in an array of conceptual and methodological endeavors guided by frameworks of developmental psychopathology and developmental assets. (A more detailed consideration of IDDM in a stress and coping paradigm can be found in Wertlieb et al., 1990; a comprehensive survey of pediatric psychology is offered by Bearison, 1998.)

In elaborating the stress and coping paradigm as an example of an ADS heuristic, a key point to be made is that although any science can be described by mapping its domains of inquiry, to describe ADS, one must map domains of inquiry and action. The synergy and cross-fertilization between inquiry and action are core processes in advancing the ADS field. For instance, in the stress and coping paradigm example, note that each quadrant includes variables that are amenable to some range of intervention, influence, or change. Families, health or social service professionals, communities, or public policies may be among the instigators or agents of such changes. Stressors of various types can be reduced, modified, or ameliorated by individual actions or shifts in public policies. Coping processes can be taught or modified. Resources and moderators can be introduced, altered, strengthened, or weakened. Outcomes can be changed. The design and evaluation of such change processes constitutes key elements of ADS. These foci involve a number of special methods as well as ethical imperatives.

SPECIAL METHODS AND ETHICAL IMPERATIVES OF APPLIED DEVELOPMENTAL SCIENCE

Having sketched key historical and definitional parameters of ADS and having sampled a few of the many substantive domains of inquiry and action in ADS, this section shifts to consideration of some of the special research methods of and ethical issues in ADS. As evident in the sampling of inquiry domains, the ADS parameters are addressed only to a certain extent by traditional research methods and designs. Acknowledgment of the conceptual complexity imposed by the relevant developmental contextual and bioecological theories engages increasingly sophisticated methodological approaches. Orchestration of a researcher’s perspectives on a set of problems with a society’s perspectives on the problems—be they concerns about how to provide a type of care for children or how to sustain the health and development of an ill child, as considered in this sampling—requires extension and innovation by the applied developmental scientist. Some of the extension and innovation is relatively incremental. For example, study of children’s adaptation to illness becomes the province of interdisciplinary teams of endocrinologists, pediatric psychologists, nurses, and child psychiatrists. Bolder innovation advances ADS when families and communities are recognized and embraced as legitimate partners in the research enterprise, when the audience or “consumer” of research is broadened to include service providers and policy makers, and when traditional institutional structures and functions associated with the ivory tower of the university are challenged or modified. A leading perspective in capturing these extensions and innovations is termed outreach scholarship (Chibucos & Lerner, 1999; Lerner & Miller, 1998).

Jensen, Hoagwood, and Trickett (1999) contrast university-based research traditionally supported by the National Institute of Health in an efficacy model with an outreach model that reflects emergent approaches to research consistent with the parameters of ADS and basic to advancement in the numerous domains of inquiry and action listed in Table 2.1. Outreach research or outreach scholarship characterizes the “engaged university” (Kellogg Commission on the Future of State and Land-Grant Colleges, 1999) more so than the traditional ivory tower university (e.g., McCall, Groark, Strauss, & Johnson, 1995). In outreach scholarship, knowledge advances as a function of collaborations and partnerships between universities and communities such that the scientists and the children, families, and communities that they seek to understand and to help are defining problems, methods, and solutions together. Communities include policy makers as well as the families and service providers who both implement and consume interventions and programs. Lerner et al. (2000) properly noted that this involves a “sea change in the way scholars conduct their research” (p. 14) and then noted the principles of outreach scholarship that characterize these special collaborations and methods in ADS. These principles include the following:

1. an enhanced focus on external validity, on the pertinence of the research to the actual ecology of human development . . . as opposed to contrived, albeit well-designed, laboratory type studies; (2) incorporating the values and needs of community collaborators within research activities; (3) full conceptualization and assessment of outcomes, that is, a commitment to understanding thoroughly both the direct and indirect effects of a research-based intervention program on youth and their context and to measuring these outcomes; (4) flexibility to fit local needs and circumstances, that is, an orientation to adjust the design or procedures . . . to the vicissitudes of the community within which the work is enacted; (5) accordingly, a willingness to make modifications to research methods in order to fit the circumstances of the local community; and (6) the embracing of long term perspectives, that is, the commitment of the university to remain in the community for a time period sufficient to see the realization
As articulated in the definitional parameters of ADS that opened this chapter and as reflected in the specific examples of inquiry and action, the extensions and innovations involved in outreach scholarship provide a means to address the conceptual and methodological challenges inherent in attending to the synergy and advancement of science and practice. Along with these tools and potentials comes a series of ethical imperatives reflecting responsibilities of both researchers and practitioners. These complex challenges have been a central concern to ADS from its earliest contemporary renditions, and the frameworks offered by Fisher and Tryon (1990) continue to serve well as an agenda.

Fisher and Tryon (1990) noted that along with the synergy and integration of research and application basic to the advance of the field, the applied developmental scientist is bound by the ethics of research, by the ethics of professional service, and by a complicated admixture that emerges with the acknowledgement of their interdependence. In addition, as the notion of outreach scholarship shifts the applied developmental scientist away from narrow and traditional notions of research subjects, patients, and clients to more appropriate notions of partners, consumers, and collaborators, there emerge areas as yet uncharted by the ethical standards of extant disciplines and professions. Indeed, even the imperative—that ethical behavior in ADS reflects some consensus or amalgam of the applied ethics embraced over time by diverse disciplines or traditions now teeming up in any of the areas of inquiry and action noted earlier—invokes challenge. Distinctive, perhaps even unique, ethical issues arise when the articulation of basic bioecological and contextual theories are parlayed into methods, measures, research designs, interventions, programs, and policies. Further, whether in the traditional disciplines or in emergent ADS, ethical considerations are encumbered and enriched by the mores and pressures of the historical context. Thus, the particular exigencies of our evolving multicultural and global societies that are manifested in concerns about diversity and cultural sensitivity and competence become deep and abiding concerns for the applied developmental scientist as she develops and tests her theories, designs and evaluates her interventions, provides health or social services, or engages policy makers around social programs and policies.

As one example of the special ethical challenges that ADS must master, return to our consideration of the research on early child care and education. As noted then, the sociohistorical shift involving the entry of more women into the workforce fueled the interest and concern of both society and developmental scientists. Hoffman (1990) described the manner in which bias in the scientific process characterized much of the early research on maternal employment. Knowledge was produced and applied with an emphasis on documenting defects or deficits in children left in nonparental day care. As the more sophisticated concepts and methods of ADS were engaged to address the social concern of nonparental care, there were more nuanced and accurate notions of direct and indirect effects of individual differences and quality variables in home-based and center-based care settings. In addition, as dire as were some of the ethical challenges in the conduct of the science aimed at generating understanding about the impacts of different care arrangements, the risks involved in the communication of findings to the public and to policy makers can also be harrowing and daunting. Hoffman (1990) concluded her account with the position that whereas “there is a social responsibility to make findings available for social policy and individual decision, there is also a responsibility to communicate the results accurately, and to educate the public about what the data can and cannot say. The tentative nature of our findings, their susceptibility to different interpretations, and the complications of translating them into individual or policy actions must be communicated to achieve an ethical science” (p. 268).

A second example to capture some of the particular ethical challenges facing ADS pertains especially to this particular historical moment where ADS is gaining recognition as an established discipline (Fisher et al., 1996). Yet, training programs to produce the next generation of applied developmental scientists are only just emerging. Whereas some of the root or allied disciplines may have sophisticated quality-control and credentialing procedures in place to increase the likelihood that ethical standards are met, ADS cannot borrow completely from these traditions. ADS must generate new and appropriate standards reflecting the exigencies of its special methods (e.g., outreach scholarship, university community partnerships) and the special expectations and demands faced by new applied developmental scientists as they pursue work in many, or any, of the domains of inquiry and action listed in Table 2.1.

For instance, traditional developmental psychologists can be trained, and their allegiance to the ethical standards of the American Psychological Association (1992) can be inculcated during their graduate training. Clinical psychologists,
as another example, can be educated and held accountable both through their graduate training and later professional career in APA standards and in a variety of state and national licensing and credentialing conventions. Although applied developmental scientists now emerging from traditionally regulated fields such as clinical, school, or counseling psychology will have a starting point in these traditional ethical guidelines, neither they nor their colleagues from diverse disciplinary and multidisciplinary training bases are yet equipped with explicit ethical principles or credentials for the practice of ADS. Indeed, Koocher (1990) alerted the field to this challenge a decade ago, and although the sociopolitical scene has evolved in complex ways since then, the challenge remains for ADS to attend very seriously to issues of graduate training and ethics commensurate with its appropriately broadened scope and deepened mission.

CONCLUSIONS

The tributary of history that was developmental psychology has joined a river that is ADS. This contemporary face of developmental psychology is not really a new focus, but rather a contemporary manifestation of some of the field’s earliest roots and priorities. As was originally the case, the understanding of children, their development, and their needs is pursued for the intellectual bounty only in part. It is the use of this knowledge to enhance the quality of life for children that launched the discipline of developmental psychology in the late nineteenth century and that propels ADS in the early twenty-first century.

Recently emerged and sophisticated theoretical frameworks have evolved and are required to address the parameters of ADS. In particular, biocultural theory and developmental contextual theory are useful in capturing the complexities of children's lives over time. As society, including families, caregivers, service providers, and policy makers, as well as youth themselves, convey their awareness of the needs and potentials of today’s children, applied developmental scientists can collaborate to generate systematic understandings of how best to meet those needs and achieve those potentials. A large array of substantive areas of inquiry and action is likely to be advanced through such collaboration, and only a few examples were discussed in this chapter. The challenges in many of these areas are considerable—conceptually, methodologically, and ethically. ADS is aware of the challenge and is poised to pursue its potential for enhancing the well-being of children, adolescents, and families across the life span.

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