



Adoption research: Trends, topics, outcomes

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Abstract

The current article provides a review of adoption research since its inception as a field of study. Three historical trends in adoption research are identified: the first focusing on risk in adoption and identifying adoptee–nonadoptee differences in adjustment; the second examining the capacity of adopted children to recover from early adversity; and the third focusing on biological, psychosocial, and contextual factors and processes underlying variability in adopted children's adjustment. Suggestions for future areas of empirical investigation are offered, with an emphasis on the need to integrate research, policy, and practice.

Keywords

adoption, early adversity, family processes, resilience

Introduction

The adoption of minors by people who are not biologically related to them is by no means a recent phenomenon. It is found in all historical eras (its regulation is engraved on the basalt slab of the Code of Hammurabi, from around 1750 BC) and all cultures (Bowie, 2004; Volkman, 2005), and is indeed very common in animals (Avital, Jablonka, & Lachmann, 1998). The presence of adoption in mythology (Sargon in the culture of Mesopotamia, Moses in Hebrew culture, Oedipus in that of Greece, Romulus and Remus in that of Rome) and in literature (Perdita in Shakespeare, Oliver Twist in Dickens, Quasimodo in Victor Hugo) is testimony to its existence in all places and times, and to its ability to excite the imagination (Novy, 2004).

Researchers' interest in adoption-related matters is a much more recent phenomenon. Almost since its inception, adoption research has taken two parallel tracks governed by different interests and inspired by different disciplines, although the lines separating these research traditions are by no means rigid or impenetrable. From the *perspective of social work and child welfare*, researchers sought to understand the best policies and practices related to the placing of children and the type of support needed to ensure adoption stability and the well-being of all family members. Among other areas of interest, this line of research has been (and still is) concerned with practical issues such as matching children and prospective parents, adopters' need of services and satisfaction with its provision, and factors related to placement stability versus disruption. From the *perspective of developmental psychology and psychopathology*, researchers have been concerned mainly with mental health issues and developmental patterns in adopted children, the impact of pre-adoption experiences on later adjustment, and the implications of adoptive parenthood on adults. Whereas adoption as *protection* has been at the core of child welfare-inspired research, the connections between adoption and mental health *risks* has been more germane to research psychologically inspired.

These two research perspectives are by no means incompatible; they simply ask different questions. In fact, one of our suggestions at the end of this article is the need to bridge the gap between

them for their mutual enrichment and for the benefit of the adoption-related community of children, families, adoption practitioners and researchers.

In this article we concentrate on the psychological research inspired by the interest in developmental and clinical issues. More specifically, we analyze historical trends in this research, from its beginnings in the mid-20th century to the present time. Three different trends of research are identified, guided by different interests and questions. These trends imply that certain research topics are prevalent in a certain period of time during which most adoption research centers around similar questions. Each trend can be dated to a general starting point, sometimes in connection with key publications, but not always. Moreover, the older trend does not simply die out as the new research trend emerges; rather, the questions and issues defining the new trend simply dominate the research scene for a period of time, until newer questions begin to be addressed. The focus of this article is to highlight these trends by identifying some of the key studies in each period, as well as their goals and findings. It is not our purpose, however, to provide an exhaustive review of the adoption research literature, but only to identify and define the research trends and to illustrate them with some exemplary studies. We conclude our review with suggestions for future research, pointing out which areas of inquiry need additional work, and which new areas of research need to be pursued—in essence, defining what we believe should be the next trend of adoption research. For another recent effort to review adoption research, including its history, evolutionary basis, and ethical considerations, the reader is referred to Van IJzendoorn and Juffer (2006).

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In the field of adoption, it is customary to speak of the “adoption triad” (birth parents, child, adoptive parents) or the “adoption quadrangle” (Palacios, 2009), adding adoption professionals as a fourth focal point. This review article focuses mainly on children, in part reflecting the fact that most adoption research has adoptees as its main focus. We shall come back to this issue in the final section of the article.

Antecedents and predecessors of adoption research

Modern adoption practice emerged in the early part of the 20th century, to a great extent due to the growing problem of homeless dependent children in large urban areas, both in North America and Europe (Sokoloff, 1993). Previously, many of these children were placed with non-relative families, often in farm communities, with the goal of providing them with a more stable and wholesome life. Other children were cared for in “foundling homes” or other institutional facilities. However, both of these solutions to the societal problem presented by homeless youngsters were beginning to be questioned. Movements such as the “orphan train” in the United States—in which large numbers of homeless children were transported by train from eastern urban areas to adoptive families in mid-western and western areas—were criticized, in part, because of the failure to assess the quality of parenting and home life offered by the child’s new family. In addition, foundling homes and other institutional facilities were found to be associated with high rates of medical illness, developmental delays, and mortality.

As concern for the welfare of dependent children grew, legislative efforts were undertaken in most Western countries to formalize and regulate the practice of adoption. This movement also was fueled by the need to counter unregulated “baby brokers” and “black market adoptions.” These practices arose in response to the growing demand for babies resulting from the dramatic drop in the birth rate following the First World War and the worldwide influenza epidemic. It was in this social climate that the modern adoption agency system emerged (Cole & Donley, 1990). For two interesting examinations of the history of adoption in the USA and its implication for both practice and research, the reader is referred to Carp (2002) and Herman (2008).

As adoption developed as a child welfare practice, social scientists and clinicians began to be interested in different aspects of the adoption experience, as well as different members of the adoption kinship system. For example, early professional attention focused on the psychological and sociological correlates of unmarried motherhood—the primary reason for placing children for adoption during this period (Clothier, 1943; Lowe, 1927). Other investigators were beginning to examine the psychological dynamics and demographic characteristics of adoptive parents (Bernard, 1945; Kirkpatrick, 1939; Leahy, 1933), as well as the unique issues they faced in rearing their children (Knight, 1941). And still others were beginning to examine the mental health risks associated with adoption, foster care, and institutional rearing (Bowly, 1951; Spitz, 1945; Yarrow & Goodwin, 1955), as well as the benefits that adoption can bring to the life of the child (Skeels & Harms, 1948; Skodak & Skeels, 1949).

Despite growing interest in the experiences and outcomes associated with different aspects of adoption, these early efforts by social scientists, clinicians, and child welfare professionals failed to create a critical mass of studies and scholarly writings that would

form a true field of empirical inquiry, partly because they were so isolated and few in number and partly because they focused on such different research and practice issues. Nevertheless, it must be acknowledged that these early clinical case analyses, research studies, and social casework writings formed the foundation upon which later empirical and theoretical work on adoption would rest.

First trend in adoption research: Adopted children, normal or deviant?

The earliest systematic research and scholarly analysis of adoption, which began in the late 1950s and early 1960s, with a clear peak of publications in the 1990s, was guided by three primary questions: Are adopted children *overrepresented in clinical settings*? What unique *psychological problems and clinical symptoms* are commonly manifested by adopted children and are they different from those presented by nonadopted children? And finally, are adopted children at *increased risk for psychological and academic problems compared to their nonadopted community-based peers*? For nearly three decades, these questions, and their variants, dominated the study of adopted children. In fact, we continue to see some of these questions still being pursued to this day (e.g., Keyes, Sharma, Elkins, Iacomo, & McGue, 2008).

Like most research in the early phase of an emerging discipline, the first trend of empirical studies was primarily descriptive in nature, unguided by formal theory, with the exception, in some cases, of psychoanalytic theory. Furthermore, many of the studies used small, unrepresentative samples and were rife with other methodological problems, including the use of only a single respondent, typically one parent’s response on a scale such as the Child Behavior Checklist (CBCL); in contrast, few studies in adoption have looked at the degree of consistency in children’s outcome data when multiple informants are used (see Brodzinsky, Schechter, Braff, & Singer, 1984, and Rosnati, Montirosso, & Barni, 2008, as exceptions to this pattern). In addition, given that most adoptions during this period still involved the placement of domestically-born infants into same-race families, with confidential arrangements between the parties, there was relatively little research on older child adoption, intercountry adoption, adoption across racial lines, and open adoption. Despite these limitations, this early research stimulated a great deal of interest in the study of adopted children and their families and defined a new field of inquiry in developmental and family research.

One of the first researchers to write about psychological risk in adoption was Schechter (1960; Schechter, Carlson, Simmons, & Work, 1964). A psychiatrist and psychoanalyst by training, Schechter reported on what he believed to be a significantly high rate of referrals of adopted children to his clinical practice (over 13%) and suggested that these children might be at greater risk for emotional disturbance because of their history and unique psychodynamics, especially related to being informed of their adoptive status.

The question of whether adopted children were overrepresented in clinical settings soon was examined by other researchers, but in a more systematic way. Studies from the United States, Canada and Great Britain reported rates of adopted children in outpatient mental health settings varying from 3% to 13%, with a conservative mid-range estimate of 4–5% (see Brodzinsky, Smith, & Brodzinsky, 1998 for a review of this research). This is approximately twice the level of what one would expect given their representation in the general population, which has been estimated, at least in the United

States, to be 2.5% (Census 2000). In addition, the prevalence rate of adopted children in inpatient psychiatric centers and residential treatment centers was found to be even higher, ranging from 9 to 21% (Brodzinsky et al., 1998). Taken together, these studies were interpreted by the first wave of researchers as indicating that adopted children, even those placed as infants or at a very young age, are at significant risk for a variety of psychological problems compared to their non-adopted peers. More recent studies, however, have added another perspective to this conclusion. Both Warren (1992) and Miller, Fan, Grotevant, Christensen, Coyle, et al. (2000) found that adopted children's overrepresentation in outpatient clinical settings was not only due to a higher rate of psychological problems, but also to the propensity of adoptive parents to more readily use mental health services, especially when emotional and behavioral problems are still at a relatively low level.

In reviewing the research during this period, Brodzinsky et al. (1998) noted that investigators found that the most common clinical symptoms manifested by adopted children were externalizing in nature—namely, attention deficit hyperactivity disorder; oppositional, defiant, and conduct problems; and substance abuse. In addition, higher rates of learning problems were noted in this group of children. However, few differences were found between clinic-referred adopted and nonadopted children in internalizing disorders such as depression and anxiety, or thought disorders such as psychosis. Adopted youth also were found to be younger at the time of first admission to a psychiatric center, more likely to have had a previous hospitalization, and to have longer stays in the hospital than nonadopted children and teenagers (Dickson, Heffron, & Parker, 1990; Weiss, 1985).

Although these findings reinforced concern among mental health professionals about the psychological risks associated with adoption, critics soon pointed out that the data were based primarily on clinic-referred children and, consequently, may not be representative of the adjustment pattern of adopted youth in the general population. To answer this question, researchers in the 1980s and 1990s began to examine the relative adjustment of adopted and nonadopted children in community settings. The results of these studies produced a more inconsistent picture of the adjustment of adopted children than did previous clinic-based studies. For example, a number of community-based studies failed to find differences in the adjustment of adopted and nonadopted children, both in the early years of life (Carey, Lipton, & Myers, 1974; Plomin & DeFries, 1985; Singer, Brodzinsky, Ramsay, Steir, & Waters, 1985), as well as during childhood and adolescence (Benson, Sharma, & Roehlkpartain, 1994; Borders, Black, & Pasley, 1998; Stein & Hoopes, 1985). Other studies, however, did support the conclusion that adopted children were at greater risk for adjustment difficulties. For example, in a series of cross-sectional studies, focusing on children placed early in life, Brodzinsky and his colleagues (Brodzinsky et al., 1984; Brodzinsky, Hitt, & Smith, 1993; Brodzinsky, Radice, Huffman, & Merkler, 1987; Brodzinsky, Schechter, & Brodzinsky, 1986) found that elementary school-age adopted children were more likely to manifest both psychological and academic problems compared to their nonadopted age-mates. Similar findings were reported by other groups of researchers both in North America and Europe (Deater-Deckard & Plomin, 1999; Rosnati et al., 2008; Stams, Juffer, Rispen, & Hoksbergen, 2000; Verhulst, Althaus, & Versluis-den Bieman, 1990). As noted in previous research with clinical samples, the greatest differences reported between adopted and non-adopted youth in community-based samples—typically using the parent-report and/or teacher-report CBCL—were in areas

measuring externalizing behaviors (e.g., impulsivity, hyperactivity, conduct problems, and substance use) and learning problems, as opposed to internalizing behaviors (e.g., depression and anxiety).

Researchers also began using longitudinal designs during this period to investigate the relative adjustment patterns of adopted and nonadopted individuals. Two of the earliest longitudinal studies were conducted in Europe, one by Bohman (1970; Bohman & Sigvardsson, 1990) in Sweden and a second begun by Seglow, Pringle, & Wedge (1972) in the United Kingdom and later carried on by other researchers (Lambert & Streather, 1980; Maughan & Pickles, 1990). Both groups of investigators focused on children placed for adoption early in life and followed their research participants into young adulthood. Moreover, the pattern of results from both studies was essentially the same; namely, increased adjustment problems for adoptees compared to nonadoptees during childhood and early adolescence but little or no differences between these groups by late adolescence and young adulthood. Similar results were reported by Hoopes (1982; Stein & Hoopes, 1985) for a group of adoptees followed from childhood to adolescence in the United States.

The issues addressed by the first trend of adoption researchers were not fully resolved during this early period. In fact, continued interest in adoptee–nonadoptee differences in psychological and academic adjustment can be seen in the 1990s and even during this past decade. The primary difference between the earlier and more contemporary research is methodological.

To counter the inherent problem of using relatively small, convenience samples, researchers began using large scale survey data and national registrar data as sources of information on the adjustment of adopted individuals. For example, Miller, Fan, Christensen, Grotevant, and van Dulmen (2000) used data from the ADD Health survey, a representative sampling of 90,000 U.S. adolescents from 12 to 17 years of age, to examine differences in psychological and academic adjustment among adopted and nonadopted youth. Both adolescent self-report and parent-report data were collected in the survey. Results indicated group differences consistently favoring nonadopted over adopted adolescents in areas related to school performance, psychological well-being, and substance use. The use of large scale survey data, however, is not without its own problems. In a subsequent re-analysis of their data, the researchers pointed out that the definition of “adoption” status is often unclear in this type of data source, and may, at times, be falsified on purpose by the adolescent participants, resulting in a misleading picture of the relative adjustment of adopted versus nonadopted youth (Miller, Fan, & Grotevant, 2005).

Mention also must be made of the contemporary, large scale adoption studies conducted in Sweden. Because Sweden has a national registrar, in which the socio-demographic and health data of all citizens can be identified through their personal identification numbers, researchers have the unique opportunity of comparing adjustment outcomes for adopted versus nonadopted individuals with little concern for the inherent biases associated with convenience samples. A number of investigators have taken advantage of this unique opportunity, with the results generally confirming increased risks for adopted individuals for psychiatric hospitalization, suicide behavior, severe social problems, lower cognitive functioning, and poorer school performance (von Borczyskowi, Hjern, Lindblad, & Vinnerljung, 2006; Dalen, Hjern, Lindblad, Odenstad, Ramussen, et al., 2008; Hjern, Vinnerljung, & Lindblad, 2004; Lindblad, Hjern, & Vinnerljung, 2003). However, in a number of studies, findings also showed that children's country of origin

moderated these results, with Korean-born adoptees showing much better cognitive and school adjustment compared with other intercountry adoptees; in fact, Korean adoptees often were on par with non-adopted individuals in cognitive and academic adjustment. The researchers suggested that perhaps better pre-adoption care and the selection of healthy infants for intercountry placement account for the different pattern of adjustment for Korean-born adoptees (Dalen et al., 2008).

Several contemporary researchers also have utilized longitudinal designs in an effort to overcome the inherent problems associated with cross-sectional studies. An illustrative example is the work of Verhulst and his colleagues (Tieman, van der Ende, & Verhulst, 2005; van der Vegt, van der Ende, Ferdinand, Verhulst, & Tiemeier, 2009; Verhulst et al., 1990; Verhulst & Versluis-den Bieman, 1992; Versluis-den Bieman & Verhulst, 1995). These investigators followed 2,148 adopted individuals from childhood into adulthood—all children born in other countries between January 1972 and December 1975, but adopted by non-relatives in the Netherlands. The adoptees were between 10 and 15 years old at the time of initial assessment. In late childhood and adolescence, the adoptees, especially boys, showed more problem behavior than nonadoptees. It was found that pre-adoption risk factors such as neglect and abuse increased the chances of maladjustment in the adopted individuals. In addition, in adulthood, adoptees, especially males, were found to have more psychiatric disorders than nonadopted individuals. Furthermore, the experience of multiple early adversities significantly increased the chances of poorer adjustment outcomes.

A third effort by contemporary researchers to improve on the methodology of earlier adoption research is the use of meta-analytic techniques to examine adoptee–nonadoptee comparisons across large numbers of studies. Wierzbicki (1993) was the first to employ this technique for examining the relative adjustment of adopted children. His analysis confirmed that adopted children are overrepresented in both outpatient and inpatient mental health settings, and are more likely than their nonadopted peers to manifest both externalizing problems and academic difficulties, but not internalizing problems. More recently, Juffer and van IJzendoorn (2005, 2007) conducted meta-analyses examining behavior problems and mental health referrals, as well as self-esteem, of international and domestic adoptees compared to nonadopted children and youth. The results indicated that both groups of adopted individuals—those placed domestically and those placed internationally—were more likely to be referred for mental health services, and showed more total behavior problems, as well as externalizing and internalizing problems compared to nonadopted controls. Interestingly, internationally-placed children manifested fewer adjustment difficulties than domestically-placed children, a finding that has been replicated, at least for externalizing symptoms, by Keyes et al. (2008). However, no differences in self-esteem were found between adopted and nonadopted individuals; nor were differences in self-esteem found between domestically-placed and internationally-placed children, or between transracial and same-race adoptees. In short, through the use of meta-analysis, contemporary researchers have been able to confirm the picture that slowly emerged in the first trend of adoption research—namely, that adopted children are at greater risk for adjustment difficulties compared to their nonadopted community-based peers. Moreover, contemporary research has shown that this pattern holds both for those youngsters placed domestically and those placed from other countries. Finally, although a number of studies have indicated that older

age at placement increases the risk for adjustment problems for adopted children (e.g., Gunnar, van Dulmen, & the International Adoption Project Team, 2007; Verhulst et al., 1990), Juffer and van IJzendoorn's (2005) meta-analysis of the literature found that this factor is not a consistent predictor of adjustment difficulties, independent of pre-adoption risk experiences, at least for internationally-placed children.

Although adoptee–nonadoptee differences in adjustment appear to be a reasonably consistent and valid finding, Juffer and IJzendoorn (2005) also reported that, in fact, the group differences actually are relatively small in magnitude, with effect sizes generally in the small to moderate range; the exception being for mental health referrals, where the effect size is large. The small magnitude of difference in the adjustment of adopted versus nonadopted children was first emphasized by Haaguard (1998), who suggested that these groups show different patterns of adjustment primarily at the tails of the outcome distribution. In other words, there are more similarities than differences for adopted and nonadopted individuals; only at the more extreme ends of functioning is it likely that these two groups will differ. In fact, a study by Sharma, McGue, and Benson (1996) supports Haaguard's conclusion. These investigators found that in the midrange of the distribution of scores for total psychological problems and illicit drug use there was a 1:1 ratio for adopted and nonadopted adolescents, but this ratio changed to more than 3:1 at the upper range of the distribution, indicating significantly more adopted youth at the extreme level of problems. These results emphasize the point that although adopted children may have greater psychological and academic problems than their nonadopted counterparts, the vast majority of these youngsters are well within the normal range of adjustment.

In summary, by examining issues related to psychological risk associated with adoption, the first trend of adoption investigators defined a new field of developmental and family research. Moreover, they were able to confirm that this group of children was more likely than nonadopted youth to be referred for mental health services and to manifest a range of psychological and academic problems; in fact, in many cases, the risk for adjustment difficulties was shown to continue into adulthood. Most of this research, however, was unguided by formal theory. Consequently, there was little focus on the bases for adopted children's adjustment difficulties, as well as on those factors which allow children, at times, to overcome early adverse experiences. These questions would form the foundation of future trends of adoption research.

Second trend in adoption research: Recovery following early adversity

According to Selman's (2009) estimate, nearly one million children were adopted internationally in Western countries between the end of the Second World War and the present. The figures for international adoptions are not constant, but show ups and downs, both globally (there was an increase in the 1970s, a decline starting at the end of the 1980s, an increase between 1995 and 2005, and a decrease thereafter) and within any single country. Historical changes in intercountry adoption have been influenced by a host of factors, both in the sending countries (e.g., war and social upheaval, poverty, lack of child welfare services, overpopulation, cultural attitudes about out-of-wedlock pregnancy, single parenthood, and adoption) and the receiving ones (e.g., infertility, lack of available

adoptable babies, immigration policy, and changes in adoption policy, practice, and law).

Although international adoptees had been arriving in Western countries for a long time, researchers' interest in them is more recent. Part of this interest was fueled by the many adoptions of children from Romania in the years following Ceausescu's fall in 1989. Although by no means the only internationally-placed children presenting problems and difficulties on arrival, the appalling circumstances of Romanian institutionalization (e.g., undernourishment, lack of basic hygiene and healthcare, extremely poor social and nonsocial stimulation, inadequate caretaker to child ratios, being housed with mentally ill adults, etc.) deeply marked the first months or years of these young children's lives. Many of these children were severely delayed at the time of placement with their adoptive families in Europe and North America. In several countries, there were different groups of researchers who soon realized that these children presented a unique opportunity to study critical developmental issues, such as the impact of the early experiences on later development and the existence of critical or sensitive periods regarding the ability to recover from early adversities. In fact, intercountry adoption has brought with it the opportunity to expand the array of topics covered by the study of domestic adoption.

Interest in the impact of institutional life on children's development was by no means new. Beginning in the 1940s, to a great extent influenced by psychoanalytic theory, there were several publications on the adverse consequences of children's institutionalization. For example, Lowry (1940) published a study on personality distortions in institutionalized children. Shortly afterwards, Goldfarb (1943, 1945) demonstrated the advantages of foster care over institutional rearing for both young children and adolescents. Later, Spitz (1945) published the conclusions of his observations of children in a foundling home, from which he coined the terms "hospitalism" and "anaclitic depression." At the beginning of the next decade, the World Health Organization published a study conducted by Bowlby (1951) on the mental health of homeless children in post-war Europe, in which he postulated the need for a warm, intimate, and continuous relationship with the mother (or a permanent, committed substitute) for a child's healthy psychological development. This study became the forerunner for interest in early mother-child attachment in human development.

Two additional studies, carried out some years later, need to be mentioned as antecedents of more contemporary investigations of post-institutionalized children. One was carried out by Dennis (1973) and involved Lebanese children who were institutionally reared in their first years, some of whom were later adopted at different ages. According to the conclusions of this study, those children adopted before two years of age could overcome their initial retardation, reaching and maintaining a normal IQ, but those adopted after two could never overcome their preadoptive retardation.

The conclusion about age threshold was different in the series of studies carried out in the UK by Tizard and her collaborators (Hodges & Tizard, 1989; Tizard, 1977; Tizard & Joseph, 1970), in which a group of children initially raised institutionally were subsequently followed in their restored, foster-care or adoptive families. The conclusions of this study highlighted the ill effects of institutional life, the risks of restoration to a problematic birth family, and the advantages of adoption, especially if the placement happened before the age of four and a half years. One of the characteristics of this study was that the privations involved were mainly in the emotional domain, as the other needs of the children were adequately met, which differs from the institutional circumstances of the

Lebanese children studied by Dennis (1973), a difference that could be related to the reported findings.

Unlike the institutions in Tizard's study, the orphanages in which many more recent international adoptees have spent their initial life can be characterized as globally depriving in terms of health, stimulation, and social and emotional relationships. Through their adoption by psychologically healthy and socially above-average families, these children experienced a most dramatic and positive change of life circumstances, which, in turn, was viewed by researchers as a "natural experiment" for studying their response to various developmental risk and resilience factors. Also, their adoption as infants was an invitation for longitudinal studies of their developmental pathways. In particular, both pediatricians (e.g., Johnson, 2000) and developmental researchers found in the very special circumstances of these children a fruitful territory for exploring the issue of *recovery following early adversity*, the main focus of the second trend of adoption research. Although there had been research on this precise topic in relation to prenatal exposure to drugs and alcohol in domestic adoption (Barth, 1991; Barth & Brooks, 2000; Crea, Barth, Guo, & Brooks, 2008), intercountry adoption opened the window for the study of a wider array of adversities (including, in some cases, prenatal exposure) and stimulated a considerable amount of research.

There have been two large-scale longitudinal studies tackling the development of post-institutionalized Romanian children, one in Canada (with Ames as the initial principal investigator) and the other in the UK (with Rutter as the principal investigator). The first journal publication of the Canadian study was authored by Morison, Ames, and Chisholm (1995), and that of the UK study by Rutter and the English and Romanian Adoptees (ERA) Study Team (1998). Thus, the beginning of contemporary psychological research on recovery following initial adversity can be dated to the second half of the 1990s. Given that the ERA study is documented in a vast number of publications (for a summary, see Rutter, Beckett, Castle, Colvert, Kreppner, et al., 2009), a brief account of some of the main conclusions will suffice to illustrate the concerns and findings of this second trend of research.

The ERA study provides information on the arrival of and the subsequent changes in 150 Romanian children who had suffered initial institutional deprivation for up to 42 months and were later adopted in England; these youngsters were compared with a control group of children who were adopted domestically. The data published so far focus on the initial adjustment parameters and later recovery (at 4, 6, and 11 years) in physical growth, intelligence, language, social behavior, and conduct problems. Both the growth and psychological development of the Romanian adoptees were severely delayed on arrival. To mention just one example, the mean Denver developmental quotient on entry into the UK was around 50. The improvement following adoption can also be illustrated by the fact that the mean IQ score at 11 years was over 90. In general, the catch-up was virtually complete for weight and height at 6 years, but much less complete for head circumference (a proxy for brain growth) and psychological development. In these two areas, some catch-up was observed in the period between 6 and 11 years, several years after adoption, although progress was observed mainly in the group of children with poorer scores at age 6.

The major post-adoption recovery notwithstanding, the sequelae of profound early deprivation were still present in some children at ages 4, 6, and 11. The persistent problems were quasi-autism (problems in social reciprocity and communication, unusual circumscribed interests), disinhibited attachment (a lack of clear

differentiation between familiar and unfamiliar adults), inattention/overactivity (both at home and at school, with many children receiving services for ADHD), and cognitive impairment (with negative consequences for academic achievement). In other areas (for instance, emotional and conduct problems), the problems were present at certain ages but not others (e.g., conduct disturbances at 11 not present at age 6).

The ERA data suggest that both continuity and heterogeneity in development are characteristic of the Romanian adoptees. The majority of the children who had no impairment at a given age after adoption (e.g., at age 6) continued to have no impairment later (e.g., at age 11) and those with serious difficulties in earlier periods continued to exhibit problems later on. But the heterogeneity in children's functioning was as marked as their continuity: e.g., some children exhibited no impairment at all (even some of those with longer institutional experience), while others exhibited problems in several areas (but not all necessarily in the same ones). Also, although the ERA data had previously suggested that there was a dose-response association between the duration of the institutionalization and the degree of impairment, the results at 11 years produced a different picture: whereas there was a clear, systematic difference between children adopted before 6 months of age and those adopted above this age, no differences were found depending on the length of institutional experience after 6 months.

Some of the findings of the ERA project concerning recovery following initial adversity have been replicated in other studies, but not all. The 6 month threshold, for instance, might be a consequence of the severity of the early deprivation in the adoptions from Romania at that time. In all probability, it does not represent an inevitable critical period after which full recovery becomes more difficult. So, for instance, in a study involving children adopted from six different countries, some with and some without institutional experience, no specific age at adoption was predictive of later recovery, although, in general, earlier adoptees fared better than those adopted later (Palacios, Román & Camacho, submitted for publication). In this particular study, as in the ERA project, catch-up in weight and height was more complete and happened earlier than head circumference and psychological development, and most of the changes took place in the first three post-adoption years, with less progress afterwards. Since, in these two studies, the focus was primarily on cognitive functioning, this conclusion cannot be extended to other areas, such as emotional and social development, in which there could be a more protracted period of recovery.

Also, when considering intercountry adoption it is important to remember that not all children are adopted from similar adverse circumstances. While children from some sending countries were exposed to institutional life before their adoption, others were adopted from family foster care. Research results are consistent in showing that those from the latter group arrive less affected by adversity than those from the former, as illustrated in Miller, Chan, Comfort, & Tirella (2005).

Recent meta-analytic studies by the group of researchers at the University of Leiden have added further insight into the issue of children's recovery from adversity (see Juffer & van IJzendoorn, 2009, for a review of this research). By using this approach, the researchers have been able to capture an overall picture of the empirical findings in this area, independent of the inherent strengths/weaknesses of any one study. The results of the meta-analyses indicate that adopted children show an impressive catch-up in all areas when compared with their peers left behind in institutions, as shown, for instance, in the area of attachment: the

proportion of disorganized attachment in children who remain institutionalized is twice as great as that of postinstitutional children who live in adoptive families. Comparison with their current peers, however, yielded more mixed results, with several areas in which no or negligible differences were found (weight, height, IQ, and self-esteem, and also attachment security in those adopted before 12 months), other areas in which the group differences were significant but of small to moderate magnitude (academic achievement, behavioral problems) and still other areas in which the differences were more marked (head circumference, use of mental health services, disorganized attachment regardless of age at adoption, and attachment security for those adopted older than 12 months of age).

In summary, the second trend of psychological research on adoption has taken ample advantage of the dramatic turn in the living circumstances of children initially exposed to a wide array of adversities. By studying their developmental status on arrival, as well as the changes after a significant time in a stimulating, loving, and protective family environment, the studies of this trend have shown the extraordinary resilience of psychological development in the initial years, as well as the fact that the fingerprints of the past do not simply disappear after adoption, with a significant continuity being as remarkable as the noteworthy recovery most of these children experience.

Third trend in adoption research: Underlying processes and factors in adoption adjustment

The first two trends of adoption research both involved a comparative strategy—the first one focusing on adoptee–nonadoptee differences and the second one on children's developmental status on arrival and after some time with the adoptive family. In contrast, the third, and most recent, trend in adoption research focuses on the *underlying processes and factors operating in adopted persons and/or in adoptive families*. The main goal of this approach, which emerged primarily after 2000, is delineating the neurobiological, developmental, and relational factors involved in the experience of adoption. Although comparative outcomes with nonadopted individuals are, at times, an interest of contemporary researchers, the primary goal now is to clarify the bases for individual differences in the adjustment of adopted individuals. While studies of the first two trends are still needed and continue to be published, the majority of adoption researchers today are shifting their attention to empirical questions that are more in line with this third wave of adoption research.

As in the previous trends, the “new” direction for adoption research is anything but new. Actually, it can be dated back as early as the establishment of adoption research, with Kirk's publication of *Shared Fate* in 1964. In his pioneering effort to understand the specificity of adoptive family life, Kirk described a “role handicap” in parents who were adopting after infertility and who lacked models of behavior as adoptive parents. In an attempt to cope with their doubts and feelings, some adopters were described as denying any differences with biological parenthood (termed the rejection-of-difference strategy), whereas others were said to readily admit them (referred to as the acknowledgement-of-difference strategy). According to Kirk (1964), adoptive parents who acknowledge their difference from biological families will be more empathic and communicative with their adopted children concerning adoption-related matters, which in turn will facilitate healthier parent–child relationships and a more stable family life. Although ground breaking in his

analyses of adoptive family dynamics, Kirk's work largely was ignored until the emergence of the third wave of adoption research.

Another illustration of previous efforts to understand adoption-related processes can be found in the work by Brodzinsky and his colleagues beginning in the 1980's, which focused on developmental changes in children's understanding and appraisal of adoption and adoption-related losses (Brodzinsky, Singer, & Braff, 1984; Brodzinsky et al., 1986). Influenced by Piagetian theory, these studies described the developmental transitions from a naïve and positive attitude about adoption in preschoolers, to feelings of ambivalence, sadness, and even anger in middle childhood which are linked to the child's emerging realization that being adopted not only involves gaining a family, but losing one as well. Brodzinsky and colleagues (1984) emphasized that experiencing adoption-related loss could explain, in part, some of the adjustment difficulties experienced by adopted youngsters during these years. Furthermore, with the acquisition of more complex and abstract cognitive abilities, adolescent and young adult adoptees also were described as having greater potential for exploring the possibilities of search and contact with their birth family (Brodzinsky, Schechter, & Henig, 1992).

Regarding the contemporary research inspired by the interests of this third trend of adoption studies, one of the topics being studied is the *impact of different family structures* on family functioning and children's adoption adjustment. One obvious comparison here is between adoptive and non-adoptive families. Comparing a variety of family structures, including families formed through adoption, one of the first studies addressing this issue showed that family processes were of more importance for psychological well-being and relational quality than family structure (Landsford, Ceballo, Abbey, & Stewart, 2001). In addition, recent research also has shown that adoptive parents allocate more personal, economic, cultural, and social resources to their children than genetic parents do (Gibson, 2009; Hamilton, Cheng, & Powell, 2007). But what is more characteristic of the current trend is its focus on family and relational processes. This can be illustrated, for instance, with reference to the analysis of interaction processes in families with and without adopted adolescents carried out by Rueter, Keyes, Iacono, & McGue (2009). This study found more similarities than differences in the way family members interacted with one another. For example, levels of warm, supportive communication and parental control were similar in adoptive and nonadoptive families, as well as within families with both an adopted and a nonadopted child. However, the level of parent-child conflict was higher in families with adopted adolescents, and adopted adolescents' behavior was found to be less warm and, at times, more conflictual than the behavior of non-adopted adolescents. As the authors of this study point out, additional research is needed to more fully understand the origin and the meaning of these differences.

Although other structural differences (e.g., families that become bi-racial through adoption, gay/lesbian adoptive families, single parent adoptive families) could illustrate the growing interest in family processes, only studies on *open adoption* will be highlighted. In open adoption, there is some degree of contact between the birth relatives and the adoptive family (the so-called "adoptive kinship network"). The type, frequency, and intensity of the contact can be as diverse as the specific persons involved (e.g., birth siblings, birth parents, extended birth family), with all these characteristics changing as time passes.

Although much of the initial research on open adoption focused on outcome comparisons between open and confidential adoptions or between children with different levels of contact (Grotevant, Wrobel, van Dulmen, & McRoy, 2001)—similar to the

comparative strategy adopted by the first trend of adoption research—researchers now seem to be paying increasing attention to the different processes involved in contact issues, which fits more closely with the emphasis of the current trend of adoption research. This interest is nicely illustrated by Grotevant's (2009) study of the regulation of contact and emotional distance between the two families as involvement with one another develops over time. As Grotevant notes, the desire for contact and its occurrence change over time, depending on the personal and family circumstances, as well as on the adoptee's age. Although often the needs and desires of birth parents and adoptive family members are similar, sometimes they are not. So, for instance, shortly after the child's placement, the birth mother may wonder about the child's well-being, need reassurance and information, and therefore desire more contact; for the adoptive parents, however, who perhaps had been waiting a long time for the child to arrive, establishing their new family becomes their first priority, and they may be less open to contact with the birth mother at this point. Later, when the adoptive parents feel more secure and see their family as well established, and/or the child begins to ask questions about their origin, they often are ready to begin or increase the contact. Yet, in some cases, the birth mother may want to pull back, as she starts a new relationship or perhaps begins parenting another child. As for the regulation of the emotional distance between the two families involved, Grotevant (2009) reports that positive and rewarding interactions tend to increase contact, while the opposite is true for problematic interactions.

Partly due to the influence of research on open adoption, there also has been an increased interest in *adoption communication* issues. Much of this research is based on ideas first raised by Kirk (1964), but that went unexplored for many years. According to Brodzinsky and Pinderhughes (2002), communication about adoption is one of the central tasks of adoptive parents, who must decide when and what information about adoption to share with their child. Generally, this is an evolving process, starting in the early preschool years with a relatively simple story that gains in complexity (i.e., the revelation of information initially withheld) as the child's intelligence, curiosity, and emotional maturity progress. The developmental nature of adoption-related communication is nicely illustrated in the model of adoption communication developed by Wrobel, Kohler, Grotevant, and McRoy (2003).

In recent years, there has been increasing interest in openness in adoption communication, at times contrasting "open adoption" with "openness in adoption." As Brodzinsky (2005) has argued, a family could be in an open adoption arrangement and have attitudes and emotions that are not favorable to the expression of adoption-related feelings or to the sharing of relevant pieces of information. Conversely, a family could be in a confidential adoption arrangement (where there is no contact between the two families involved) but be open to disclosing to the child the information they have, as well as exploring with the adoptee areas in which information is lacking—carrying out these activities in an emotionally open, empathic, and respectful style. In fact, Brodzinsky (2006) found that the communicative attitudes and behaviors of the adopters (that is to say, their openness) were more predictive of the adoptee's adjustment than the type of arrangement that existed between the adoptive and birth families (open versus confidential adoption).

For the adoptees, on the other hand, reflecting upon their adoption circumstances—the "inner search" according to Irhammar and Cederblad (2000)—seems to be a normative experience that begins in middle childhood in the context of the developmental changes in

their understanding of adoption (Brodzinsky et al., 1992). The desire to gain more information or to achieve contact, as well as the activities aimed at those goals—the “outer search”, according to Irhammar and Cederblad (2000)—are more typical of the adolescent, youth, and early adulthood periods (see also Wrobel and Dillon, 2009). Contemporary research has begun exploring the extent to which adoptees *search for their origins*, the characteristics of those who do, their motives for searching, and the outcomes of this process. Most research on this issue has focused on domestic adoptions (see Müller and Perry, 2001a, 2001b, for a comprehensive review of the literature), but as children of intercountry adoption have begun entering their adult years, interest of researchers is also extending to them (Juffer & Tieman, 2009; Tieman, van der Ende, & Verhulst, 2008). To date, the research in this area has produced very inconsistent and at times contradictory findings related to a number of issues: for example, estimates of searching at some point in one’s life range from one-third of adoptees in some reports to two thirds in others; gender differences favoring greater searching by females in some studies, to no differences in others; and greater adjustment difficulties among searchers in some studies but no differences in adjustment outcomes compared to nonsearchers in other reports. Future research will need to be conducted to determine the basis for these discrepant findings.

Attachment is another area in which researchers are looking into links to adoption processes. The study of children adopted who previously experienced maltreatment and neglect (in the family, in an institution, or in both) has made it possible for several investigators in the second adoption research trend to document the negative impact on children’s attachment of early childcare adversity, as well as the significant gains made by these children following their adoption. What is characteristic of the research inspired in this more recent trend is an interest in the dynamic processes involved. So, for instance, researchers associated with the Anna Freud Centre in London have documented the process of change in children’s internal working models of attachment, showing how new positive emotional relationships experienced in adoptive families modify the attachment-related representations of previously maltreated youth (e.g., there is a post-adoption increase in security). The research also indicated that the benefits to children provided by adoption did not completely erase the impact of the previous adverse experiences (e.g., representations involving insecurity still seem stable in the third post-adoption year) (Hodges, Steele, Hillman, Henderson, & Kaniuk, 2005). According to these investigators, the new positive representations of attachment develop in competition with the negative pre-existent ones, rather than simply replacing them.

Other adoption researchers working in the area of attachment are seeking to understand the relationship between the emotional context of the family environment and changes in the adoptees’ attachment patterns. Maternal sensitivity in mother–child interactions (Stams, Juffer, & van IJzendoorn, 2002), the caregiver’s representation of attachment indexed by the Adult Attachment Interview (Steele, Hodges, Kaniuk, Steele, Asquith, et al., 2009), and attachment security scripts and parental reflective functioning regarding the child and their relationship (Palacios, Román, Moreno, & León, 2009) are some of the constructs that have been shown to bear a connection with the adopted children’s attachment.

A study concerning attachment serves to introduce another direction of research within this third trend: the *influence of specific genetic markers* on the adopted persons’ characteristics. Research by Caspers, Paradiso, Yucuis, Troutman, Arndt, et al. (2009) sought to analyze the connections between a specific genetic trait (the short variant of the 5-HTTLPR allele) and unresolved adult attachment in

a sample of adoptees whose birth parents’ psychiatric characteristics were known. The 5-HTTLPR polymorphism has been shown to have an influence on the functioning of the amygdala, a brain structure related to emotional reactivity and regulation. The main finding of this study was the significant association between this particular genetic trait and unresolved adult attachment, so that the presence of the short variant of the specified allele in the adopted individuals increased their risk of this type of attachment representation. The authors suggest that the 5-HTTLPR genotype plays a role in the interconnectivity of the brain networks that are responsible for the appreciation of emotional experiences, increasing the susceptibility to the disorganizing effects of elevated affective intensity while recalling experiences of loss. As with other genes involved in the emotional and motivational aspects of behavior, the basic research question lies in the genotype \times environment interaction: the rearing environment can overcome or otherwise enhance the susceptibility induced by a genetic characteristic.

The possibilities opened up by molecular genetics extend a tradition of genetic studies that use the so-called “adoption paradigm” (in contrast, for instance, with the “twins paradigm”). For non-adopted children, genes and rearing environment come from the same parents, making it impossible to disentangle the independent influences of each factor. In the “adoption paradigm,” these two elements are separated, which explains its popularity among researchers (see, for instance, Reiss, Neiderhiser, Hetherington, & Plomin, 2000). If the characteristics of the birth parents with some genetic component are known, it then becomes possible to analyze their presence in adopted children and the moderating effect of the rearing (i.e., adoptive) environment.

In this way, for instance, Cadoret, Yates, Troughton, Woodworth, and Stewart (1995) had shown that a biologic background of antisocial personality disorder predicted increased aggressivity, conduct disorder, and antisocial behavior in a group of adopted adolescents only when there was adversity in the adoptive family environment (marital problems, parental psychopathology, substance dependence, legal problems). A very similar finding was reported by a Finnish study involving a group of adopted children whose birth parents suffered from schizophrenia, as well as a comparison group of adopted children with no such familial antecedents (Tienari, Wynne, Sorri, Lahti, Laksy, et al., 2004): in the adoptees at high genetic risk, there was a higher incidence of diagnosis of schizophrenia-spectrum disorder when the adoptive family environment was problematic, which was not true for adoptees with problematic families but without the genetic risk; moreover, the research findings ruled out the possibility that the problems in the adoptive family were due to the troubled adolescents. Of particular importance for counseling adoptive parents, these studies also show the protective role of positive rearing circumstances in the adoptive family: children with genetic risks growing up in well-functioning families are far less likely to develop the problems to which they are predisposed.

Still in the domain of biologically-related studies, the new theoretical and technical developments in *brain* research have already started to translate into a growing number of publications in which, typically, institutional children who were later adopted are compared with a group of children without early institutional experience. The goal here is not the analysis of recovery after previous adversity (as in the second trend), but to explore whether some of the psychological and behavioral characteristics of the adoptees can be better understood by defining the underlying neurobiological structures and processes involved. In summary, these studies have shown the negative consequences of early institutionalization for

the volume of white and grey brain matter, for the metabolism and connectivity between different brain regions, and for the size of some limbic structures, notably the amygdala (Chugani, Behen, Muzik, Juhasz, Nagy, et al., 2001; Eluvathingal, Chugani, Behen, Juhasz, Muzik, et al., 2006; Mehta, Golemb, Nosarti, Colvert, Mota, et al., 2009). All of these findings have implications for understanding some of the negative outcomes observed in adopted children who experienced early adverse childcare circumstances.

In a very similar line of inquiry, other researchers have looked into *neurochemical processes* in children adopted after early institutional deprivation. Hormones such as oxytocin and vasopressin (associated with affiliative and positive social behavior), and cortisol (associated with the stress-responsive system) have been the main target of this line of research. The results show that early institutional adversity and deprivation may translate, even years later, into dysfunctional levels of certain hormones, particularly in situations of stress and close interpersonal relationships, with a negative impact also on children's cognitive functioning (Gunnar, Morison, Chisholm, & Schuder, 2001; Kertes, Gunnar, Madsen, & Long, 2008; Marshall & Kenney, 2009; van der Vegt, van der Ende, Kirschbaum, Verhulst, & Tiemeier, 2009; Wismer Fries, Shirtcliff, & Pollak, 2008).

The search for underlying processes explaining some of the difficulties in adopted persons has led other researchers to look at variability in *executive functioning*, part of the cognitive system governed by the pre-frontal cortex and related to planning, mental flexibility, abstract thinking, activation and inhibition of actions, and selection of relevant sensory information. Adverse experiences, such as prolonged early institutionalization (Colvert, Rutter, Kreppner, Beckett, Castle, et al., 2008) and placement instability (Lewis, Dozier, Ackerman, & Sepulveda-Kozakowski, 2007) have been shown to have a negative impact, for instance, on the regulation of inhibitory control abilities (e.g., the ability, following the researchers' instructions, to read "green" when shown a card on which the word "green" is printed in red; or to say "night" every time a white card with a sun is shown, and to say "day" every time a black card with a moon and stars is shown). Difficulties in the executive functioning system are assumed to underlie some of the attentional and behavioral problems of adoptees uncovered by the studies in the first trend of adoption research.

Along similar lines, other researchers, studying adopted children's *theory of mind*, have found that adverse institutional experiences, so common among intercountry adoptees, often compromise these youngsters' ability to understand and interpret other people's states of mind and emotions (Colvert et al., 2008; Tarullo, Bruce, & Gunnar, 2007; Vorria, Papaligoura, Sarafidou, Kopakaki, Dunn, et al., 2006). This difficulty may help explain some of problems these children experience in relating to others.

In summary, there is a rich diversity of directions in which contemporary adoption researchers are moving to gain a better understanding of some of the intrapersonal, interpersonal, and biological processes underlying the characteristics and psychological functioning of those touched by adoption (be they birth parents, adoptive parents, or adopted persons). Whereas some of these directions are new, others have a longer research tradition. What they have in common, however, is a focus on those factors and processes underlying individual differences in adjustment to adoption.

Looking to the future

Only a few years ago, we wrote about recent changes and future directions for adoption research (Palacios and Brodzinsky, 2005).

Since that time, much has changed in the adoption field, leading to more varied and sophisticated, as well as theory-driven, studies on adoption by a growing group of professionals with different backgrounds, perspectives, and research questions. The field has benefited from the establishment of journals specifically targeting research on adoption and related areas—i.e., *Adoption and Fostering* published in the UK and *Adoption Quarterly* published in the US. It also has benefited from periodic conferences on adoption research which have allowed investigators from different countries to meet and explore questions of mutual interest and to develop collaborative research efforts. The first International Conference on Adoption Research was held in Minneapolis, USA, in 1999. A second conference was held in Norwich, UK, in 2006, with the keynote lectures being later published in a book edited by Wrobel and Neil (2009). A third meeting will be held in 2010 in Leiden, the Netherlands. These conferences reflect not only a growing interest in adoption research among developmental, family, clinical, and child welfare researchers, but they also have become the catalyst for many new directions for this research. The question of interest is in what direction this research will head in the future.

In this last section of the article, we seek to explore some of the directions in which we believe adoption research will progress in the coming years. Some of the directions we previously envisioned (Palacios & Brodzinsky, 2005) are now clearly underway (e.g., greater reliance on resilience theory; increased interest in the biological factors underlying the adjustment of adoptees; more longitudinal studies of adopted individuals), and have been included in our current review. Others we envisioned have not progressed very far (e.g., contextual meaning and implications of adoption; impact of pre- and post-adoption services) and will be discussed further later, along with some new thoughts about the direction of future adoption research.

Since the third trend is still very much in its initial stage, future research will need to *continue the advances represented by this wave of studies*. We believe there is still much to be learned from the various lines of inquiry that have emerged over the past 10 years, especially in areas related to the impact on the adoptees' adjustment of the quality of family relationships (e.g., between parents; parents and children; siblings; nuclear and extended family members), as well as regarding attachment processes, adoption communication, openness in adoption, search and reunion, and the underlying genetic and neurobiological substrates of adoptees' behavior and adjustment. Also, adoption research would benefit from paying more attention to relationships with the adoption kinship system, especially the way in which these relationships change over time and those factors related to the change.

While studies on adoption outcomes and on recovery after early adversity (the first two trends) are still important, we believe that understanding children's adjustment to adoption will benefit more from an in-depth study of these issues—that is, an examination of the processes underlying adoptee–nonadoptee differences, the processes underlying the capacity to recover from early adversity, the interaction processes within the adoptive family and the varying developmental pathways found among different groups of adoptees, as well as the variability within any one specific group of adoptees. In short, all the research directions summarized above for the third trend are full of promise for enriching our understanding of the psychology of adoption. Hopefully, the focus on underlying processes will also extend to other content areas in future research.

That the study of underlying processes still has a long way to go can be illustrated with reference to the role of genetic,

neurobiological, and neurochemical factors in adopted children's adjustment. Cutting edge studies on these issues are only beginning to unveil their potential. If adopted children's antecedents have traditionally been concealed in a "black box," newer approaches to research such as the focus on molecular genetics, as well as other neurobiological and neurochemical processes, are forcing adoption professionals (and ultimately adoptive parents and adoptees too), to recognize the important role of biology, including genetics, in the long-term adjustment of adopted individuals. The role of gene \times environment interactions in the developmental pathways of adoptees also is highlighted by this research.

In fact, in our view, progress in understanding important aspects of adoption adjustment would be greatly facilitated by integrating two lines of research that so far have proceeded in parallel: on the one hand, the impact of early institutionalization and on the other, the consequences of early trauma due to any form of child maltreatment. The study of the neurobiology of emotion recognition and understanding can be taken as an illustration. In the context of the Bucharest Early Intervention Project (BEIP) (Nelson, Zeanah, Fox, Marshall, Smyke, et al., 2007), a "widespread cortical hypoarousal" was found in institutional children that could explain their difficulties (smaller neural wave amplitudes, longer latencies) in processing facial emotions (Moulson, Fox, Zeanah, & Nelson, 2009). In a similar vein, studying early maltreated children, Cicchetti and Curtis (2005) reported a differential sensitivity to happy and angry stimuli that could reflect "neuropsychological connections" in the brain caused by exposure to trauma and aberrant emotional environments. Taken together, these two studies may help to explain, at a biological level, some of the relational difficulties commonly observed by previously traumatized adopted children. Since so many adopted children experienced early trauma and/or institutionalization, continued research along these lines has the potential for providing a more in-depth understanding of their development and adjustment. Furthermore, in our view, extending this line of research to areas focusing on the therapeutic efficacy of a positive family environment (as in the BEIP's foster care placement) and on intervention programs aimed at facilitating changes in the children's representational models of parent-child interaction (Toth, Maughan, Manly, Spagnola, & Cicchetti, 2002) also holds great promise. The possibilities of genetic studies for both basic research and for developing prevention programs with adoptive parents are discussed in Reiss, Leve, and Whitesel (2009).

Progress in adoption research will require not only going further in some of the already existing lines of study, but will require research efforts in new directions as well. For instance, most of what we know about adopted persons refers to adopted children and youth. In contrast, much less is known about the *adjustment of adult adoptees*, and, specifically, about how they function in different roles. Given the evidence of attachment difficulties in many adopted children, especially those who have experienced various forms of trauma, it is relevant to ask what type of caregiving environment they are likely to create when they become parents. The longitudinal study of non-adopted individuals has documented both the long term mental health consequences of early adversity (particularly of disorganized attachment) and the importance of the developmental contexts beyond infancy (Sroufe, Egeland, Carlson, & Collins, 2005). The study of adopted persons as parents could be one of the ultimate tests of adoption as a successful social intervention: in their transgenerational transmission of attachment, will the pre- or the post-adoption attachment experiences prevail in adopted persons' parenting?

Beyond attachment-related issues, it would also be very interesting to see how adult adoptees reflect on the *meaning of adoption* as they traverse through various adult roles and have different life experiences. Although qualitative efforts have been made to document the meaning of adoption through the developing adult years (Brodzinsky et al., 1992), no systematic research has been conducted on this important topic. We hope that in the years to come research will progress in these very interesting directions.

Another area of research that needs better development is the *contextual nature of adoption* (Palacios, 2009). Given that the meaning of adoption is socially constructed (Leon, 2002; Miall, 1996; Wegar, 2000), it is reasonable to expect that the experience of being adopted may well be different in different countries. Yet there has been virtually no research examining the cross-cultural impact of adoption on children, teenagers, or adults. Consider the experience of the transracially-placed child growing up in the US or UK, where there is considerable racial and cultural diversity, versus in the Scandinavian countries, where there is much more homogeneity in terms of race and culture. The first group of children is likely to have many more opportunities to learn about their racial and cultural heritage, to meet others who share a similar racial and cultural origin, and to develop appropriate strategies for coping with racial prejudice than is the second group of children. If this is true, how might this impact on the adopted person's development and adjustment? Although research generally has shown that inter-country adoptees, including those placed transracially, do as well or even better than domestically-placed individuals (Juffer & van IJzendoorn, 2005, 2007), there has been little effort to examine the adjustment of these children as a function of where they are growing up (Barni, León, Rosnati, & Palacios, 2008).

One area, in particular, that should be pursued, is the contextual basis for *adoptive identity development* (Grotevant, 1997), and especially racial/ethnic identity in those individuals placed in different-race families. Even though there is an extensive body of research dating back to the 1970s demonstrating that most transracially-placed individuals display similar patterns of adjustment compared to those youngsters living with same-race families (see Frasier & Brooks, 2003 and Lee, 2003 for reviews of this literature, and Juffer, & van IJzendoorn, 2007 for a meta-analysis of studies comparing self-esteem in these two groups), a question that hasn't been adequately addressed is whether their ability to develop a well consolidated and secure racial identity is affected by the cultural attitudes, circumstances, and experiences they are exposed to during their developing years. Adoption agencies placing across racial and ethnic lines often provide adoptive parents with an array of strategies for fostering healthy and secure racial identity in their children (Smith, McRoy, Freundlich, & Kroll, 2008). Yet there has been little research effort to determine the effectiveness of these strategies. The study of ethnic and cultural identity is now being undertaken in the frame of the cultural attitudes and socialization strategies approach (Lee, Grotevant, Hellerstedt, Gunnar, & the MIAP Team, 2006).

Another area in need of study is the contextual basis of adopted *children's social integration into their peer group, school, and community*. Given the social stigma associated with adoption (Miall, 1996; Wegar, 2000), its non-normative family status, and the obvious differences that are readily apparent in transracial adoptive families, relevant questions can be asked about how children and youth negotiate the perceived differences they experience in the context of interactions with friends, classmates, neighbors, and strangers who they encounter on a daily basis. Much has been

written about the experience of feeling different among adoptees, and having those differences reflected in the comments and actions of others (e.g., Brodzinsky et al., 1992); but little, if any, systematic research has been conducted on this potentially important topic. In our view, it is an area worthy of study.

A final research area in need of further development is the *interface between child welfare concerns about adoption and those of the mental health field*. As noted in the introduction of this article, these two fields have followed largely parallel paths in the study of adoption. For child welfare researchers, the primary questions of interest have focused on issues related to adoption practice—e.g., the risk and correlates of adoption disruption, qualities of children, parents, and families associated with adoption satisfaction, etc. The ultimate goal of this research has been to enhance placement stability and the long-term well-being of adopted children and their parents. Mental health researchers, in contrast, have focused more on identifying and understanding adjustment difficulties and varying developmental pathways manifested by adopted children and youth. These researchers have shown little interest, however, in the implications of their findings for adoption practice. As adoption has become more complex as a social service practice, with growing numbers of children entering their new families with multiple pre-placement risks, and perhaps even observable clinical problems already evident, it has become increasingly important to ensure that adoptive parents are adequately prepared, educated, and supported for the challenging task of raising their children (Brodzinsky, 2008). There are few guidelines, however, regarding how best to achieve this goal. New research is needed to explore the pre- and post-adoption needs of adoptive parents, with appropriate preparation and education programs developed and empirically tested to ensure that they are effective in achieving their intended goal. This can be best achieved through an interdisciplinary focus on adoption, and in particular with greater cooperation between child welfare and mental health professionals.

One interesting program that has sought to test the effectiveness of an adoptive parent support program has been reported by Rushton and his colleagues (Rushton & Monck, 2009; Rushton, Monck, Upright, & Davidson, 2006). Using a randomized controlled design, adoptive parents who were parenting children with serious behavioral problems were allocated to one of two specially designed parenting interventions—one guided by cognitive behavioral principles and the other by psychoeducational principles. The remaining adoptive parents received “service as usual,” but no specialized training—except at the end of the study when they were offered the opportunity to receive the additional training provided to the other parents. Interventions consisted of 10 weekly sessions of manualized, home-based training and advice following the guidelines set out by the specific training. Objective outcome measures of child and adoptive parent behavior and beliefs were obtained. The results indicated significant positive changes in parent beliefs and behavior for the two intervention groups compared to the control group; small but nonsignificant post-intervention improvement was also noted for children’s emotional and behavioral problems. Unfortunately, the researchers were only able to recruit a small sample for their intervention study, not only reducing statistical power of the study, but also limiting its generalizability. Despite its methodological limitations and the failure to find significant post-intervention changes in children’s behavior, the study represents an important step toward developing empirically-based preparation and support programs for adoptive parents which hopefully will be the focus of additional research in the future.

A second important contribution to adoption-related interventions has been reported in an edited volume by Juffer, Bakermans-Kranenburg, and van IJzendoorn (2008). These researchers and their colleagues report on a short-term, manualized video-feedback program for enhancing attachment security in adopted children through training parents in positive parenting and sensitive discipline strategies. Empirical tests of the intervention effectiveness found short-term changes reflecting greater maternal sensitivity and a reduction in disorganized patterns of attachment in adoptive families (Juffer, van IJzendoorn, & Bakermans-Kranenburg, 2008). In addition, when the video-feedback procedure focused on fostering more sensitive discipline, the intervention was effective in enhancing maternal attitudes toward sensitive discipline, as well as the use of more positive discipline strategies, but it did not reduce the use of negative discipline strategies (Mesman, Stok, van Zeijl, Alink, Juffer, et al., 2008). Given the increased risk for attachment difficulties and other negative behavior patterns in adoptive children, especially those experiencing orphanage life and other early life adversities, this type of intervention program would appear to hold great promise for fostering healthier parent–child relationships, and a more secure and emotionally stable life, for adopted individuals. This program of research also serves as a model for future studies in its emphasis on attempting to empirically validate newly developed intervention models for working with adoptive families (see also the work of Lieberman & van Horn, 2008, on empirically validated child–parent psychotherapy aimed at repairing the effects of stress and trauma on early attachment).

In conclusion, although a relatively new area of scientific inquiry, psychological research on adoption has already accomplished a great deal. In our view, the relevance of the research findings goes well beyond the realm of adoption; in fact, the data inform us about human behavior and developmental trajectories in non-normative circumstances. Also, what adoption research uncovers goes beyond the realm of basic research, as it opens vast opportunities to inform adoption policy and practice, as well as intervention efforts aimed at improving the lives of children and their families. It is our hope that in the years to come adoption research will continue to be as vibrant and fruitful as during the time covered by this review. We also hope and expect that there will be greater collaboration in the future among researchers, practitioners, and policymakers, each learning from and contributing to the others. Such collaboration can only improve the lives of the vulnerable children served by adoption, as well as their new families.

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