

IX. RESEARCH, PRACTICE, AND POLICY PERSPECTIVES ON ISSUES OF CHILDREN WITHOUT PERMANENT PARENTAL CARE

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This chapter presents conclusions, trends, conceptual analyses, hypotheses, and speculations regarding some fundamental issues of research, practice, and policy that are largely unsettled or controversial. As such, the chapter is not a summary of Chapters I–VIII, but rather contains interpretations and opinions of the author intended to elevate the priority of certain issues, suggest hypotheses to be studied, and propose practice and policy steps to be considered.

This chapter is primarily aimed at presenting conclusions, trends, conceptual analyses, hypotheses, and speculations regarding some fundamental research, practice, and policy issues that are unsettled or controversial. The goal is to examine some of the conceptual forests at a time when the field may be preoccupied with individual trees, raise the priorities of these general issues on future agenda, and heuristically contribute ideas that may be researched or discussed with greater vigor in the future. Thus, this chapter is not a summary of Chapters I–VIII; some points made in those chapters are highlighted here, but additional material is added, some of which was prepared for this project and is still unpublished, and a variety of new issues are raised. The interpretations and opinions expressed are those of the author, not a consensus of project participants.

SOCIAL SCIENCE ISSUES—A TOUGH SCIENTIFIC NUT TO CRACK

Early adversities, whether poverty, malnutrition, abuse and neglect, institutionalization, or other atypical circumstances, represent unfortunate

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conditions but ones that allow developmental scholars to study the role of certain circumstances in the development of children that would not be possible or ethical with conventional methodologies. Such studies of delayed and catch-up growth constitute nearly the only scholarly approach to studying in humans some of the most fundamental developmental questions, namely, what adverse experiences and other factors are associated with delayed, deficient, or atypical human development and what subsequent experiences are related to partial or full recovery?

Inevitably, answering these questions represents an exceedingly tough scholarly nut to crack for many reasons discussed below, and this is especially true in the study of children subjected to early adversity, primarily institutionalization.

Minimum Theory

It has long been apparent that the development of children reared in institutions was extremely delayed or atypical (e.g., “anaclitic depression”; Spitz, 1945), presumably for lack of “mothering.” Bowlby, in a report to the World Health Organization (1952), observed that most institutionalized children were denied the opportunity to develop stable and continuous attachment relationships with caregivers, even when their physical needs were met, and this relationship deprivation likely contributed to their delayed and atypical development now documented in Chapters I–VI. The subsequent development of attachment theory (Ainsworth, 1967, 1979; Ainsworth, Bell, & Stayton, 1974; Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1958, 1969, 1980; Chapter III) has been nearly the only theoretical guidance invoked in the contemporary study of children without permanent parental care, especially institutionalized children.

But attachment theory, despite its roots in the study of institutionalized children, provides this field with minimum guidance other than the prediction that a lack of sensitive, responsive caregiver–infant/toddler interactions in institutions is a, if not *the*, crucial factor in the delays and deficiencies of institutionalized and postinstitutionalized (PI) children’s development (Chapter III). Beyond this, however, the literature in this domain is essentially an atheoretical basket of empirical threads that are not yet woven into a conceptual fabric. This chapter represents a modest attempt to create a few speculative swatches of patterned cloth.

Unspecified Independent Variable

A major methodological and conceptual problem is that the primary independent variable—typically institutionalization or other early adversities—is usually not descriptively specified beyond “present” versus “not present.”

Institutions for infants and young children, however, can be divided predominately on the basis of narrative reports into categories of severity of deprivation (e.g., Chapter I; Gunnar, 2001). A simple categorization might start with *globally depriving*, which principally includes the 1990s Romanian orphanages that were severely deficient in every physical and psychosocial respect. The second is *psychosocially depriving*, in which medical care, sanitation, nutrition, safety, and toys and equipment are at least minimally acceptable but the psychosocial environment is deficient, principally consisting of a lack of warm, sensitive, contingently responsive interactions with a few stable and consistent caregivers; structural and operational characteristics that might support these; and often minimum stimulation of any sort (e.g., Rutter, 1998; Tizard & Tizard, 1971; The St. Petersburg-USA Orphanage Research Team, 2005, 2008). A third group either falls in between or the conditions are *unknown*. Indeed, until recently (e.g., Dobrova-Krol, Van IJzendoorn, Bakermans-Kranenburg, & Juffer, 2010; Groark, McCall, Fish, & The Whole Child International Team, 2011; McCall et al., 2010; Muhamedrahimov, 1999; Nelson, Furtado, Fox, & Zeanah, 2009; The St. Petersburg-USA Orphanage Research Team, 2005, 2008; Vorria et al., 2003; Zeanah et al., 2003), there were no comprehensive empirical descriptions of orphanages, caregivers, caregiver-child interactions, or children; mostly only pretests on one or two behaviors, typically physical growth measurements or general behavioral developmental tests, preceding a focused intervention (Chapter I). Thus, the vast bulk of this literature does not specify empirically the major independent variable of interest.

Institutions vary one to another and over time in the environments they provide children (Chapters I and II), and the institutions in the published literature cannot be assumed to be representative. Nevertheless, certain characteristics are commonly reported in the literature (Rosas & McCall, in press; for descriptions of institutions for older children, see Whetten et al., 2009). Nearly all institutions are deficient to a certain extent in the psychosocial environment as described above and in Chapter I. Globally depriving institutions may be even more severely psychosocially depriving (e.g., 10–30 children per caregiver; Chisholm, 1998; Rutter, Beckett et al., 2007) than those characterized as solely or predominantly psychosocially depriving institutions (three to six per caregiver; The St. Petersburg-USA Orphanage Research Team, 2005; Tizard & Tizard, 1971) plus they are deficient in medical care, nutrition, sanitation, safety, and physical resources. With a few exceptions (e.g., Dobrova-Krol et al., 2010; Gavrin & Sacks, 1963; Vorria et al., 2003; Wolff & Fesseha, 1998), this is the approximate description of the independent variable of institutionalization; but this is often by inference, generalization, or narrative description, and results must not be glibly generalized to all orphanages everywhere or even within the same country. Nevertheless, psychosocial deprivation is likely the most common characteristic of

institutions represented in the literature, although the severity of this condition varies.

Parameters

Many of the parameters of the development of PI children, the largest portion of the literature, have only recently been examined systematically, so most previous studies in the literature do not investigate such parameters and sometimes do not even report them as characteristics of the sample. This situation contributes substantially to a great lack of comparability and apparently contradictory findings between studies.

Child Characteristics

In most cases, little or nothing is known to researchers about the children's birth parents, genetic background, mother's pregnancy, and maternal use of drugs and alcohol prior to the assessment of children in the institution or their adoption. Perinatal circumstances, birth weight, and birth date may be available, but usually researchers must rely on adoptive parental report for this information, which may be of uncertain accuracy (i.e., was such information accurately communicated to them and do they remember it accurately?). Children's temperament, which can influence caregiver-child interactions, is rarely known (Chapter III).

Only a few recent studies (e.g., Dobrova-Krol et al., 2010; Smyke, Koga, Johnson, Zeanah, & The BEIP Core Group, 2007; The St. Petersburg-USA Orphanage Team, 2005) report extensive data on children's perinatal condition and physical and behavioral measurements upon *intake* to the institution and for children in *residence* at any one time, which can be different because of selective departures. Generally, children in these institutions have had higher rates of adverse perinatal circumstances (e.g., including low birth weight, length, head and chest circumference) than is typical for children in that country and their physical and general behavioral development is often delayed at arrival to the institution (Chapter I), but the entire range of such conditions is represented. Although perinatal factors could potentially contribute to PI children's outcome, given the measurements and the data available, they have not been found to be consistently or substantially related to PI children's school and behavior problems (Bruce, Tarullo, & Gunnar, 2009; Kreppner et al., 2007; Merz, 2009; Merz & McCall, 2010a; Miller, Chan, Tirella, & Perrin, 2009).

Preinstitutional Experience

It is often assumed that most children are transferred from maternity wards to the institutions in the first few months of life. This may be true

in some cases (e.g., Dobrova-Krol et al., 2010; Vorria et al., 2003) but only partly true in others. For example, in one study with institutional records on preinstitutional circumstances (The St. Petersburg-USA Orphanage Team, 2005), approximately 63% of children in St. Petersburg (Russian Federation) did come directly from the birth hospital or another hospital; but 30% came from their birth families, relatives, or foster care; and another 6.7% came from other orphanages or had no information available. Thus, in this study, while 63–70% of the children had been in some kind of institution nearly all their lives, 30% were not in institutional care for at least some time during the first few months of life, and they tend to be adopted at somewhat older ages (Hawk et al., in press).

Furthermore, even in this study, information is lacking on individual children's specific preinstitutional experience or why they were institutionalized (but see Dobrova-Krol et al., 2010; Vorria et al., 2003). Reasons range from the parent was a teenager or a single mother or was financially unable to raise the child to more threatening circumstances of neglect, abuse, or parental drug, alcohol, and mental health issues perhaps leading to involuntary removal of the child. In a few studies (Chapter II), some of these circumstances are categorically known, especially if the child never went to an institution but was adopted from foster care or from the birth family. But it is not always clear whether these preinstitutional environments are more or less developmentally advantageous than orphanages (Hawk et al., in press). For example, many hospitals (which may be considered "institutions") provide even less supportive behavioral environments than orphanages (e.g., children may be confined almost totally to their cribs). Is it better to have been in a family if abuse, neglect, alcohol, or drugs were common there? Perhaps it is (Dobrova-Krol et al., 2010), but this would seem to depend on the quality of both environments.

Age at Adoption

Age at adoption, often a surrogate for the length of exposure to the institution or other environments, is a likely parameter of PI children's developmental outcomes (Chapter VI; below). However, it is often assumed that children come to the institution soon after birth, so age at adoption correlates highly (e.g., $r = .77$ in one study; Merz & McCall, 2010a) with length of exposure to the orphanage (Hawk et al., in press). But this is very approximate in most cases. For example, the above correlation comes from the same population in which institutional records showed a mean age at intake of 6.4 months (The St. Petersburg-USA Orphanage Team, 2005). Furthermore, age at adoption may be confounded with age at intake, adverse perinatal factors, physical status at intake and discharge, preinstitutional experience

including involuntary removal from an abusive family, etc.; but in one sample (Hawk et al., in press), only time in the institution and preinstitutional experience were related to age at adoption.

Age at Assessment

Age at assessment also may be a parameter. Parents report that older PI children display more behavior and executive function problems than younger PI children (Chapter II; Colvert et al., 2008; Gunnar, Van Dulmen, & IAP Team, 2007; Merz & McCall, 2010a, 2010b; Verhulst & Versluis-den Bieman, 1995), although this is not totally consistent (Juffer & Van IJzendoorn, 2005; Groza, Ryan, & Nelson, 2008).

Country of Origin

Although the characteristics of institutions in the published literature do not obviously vary substantially between countries or over the past six decades (Rosas & McCall, in press), institutions do vary one from another and over time and children adopted from different countries have somewhat different outcomes (Dalen, 2002; Dalen et al., 2008; Miller, 2005). For example, behavioral problems appear more frequent among children adopted from the Russian Federation and Eastern Europe (Gunnar et al., 2007), whereas adopted Chinese and especially Korean children are known to have fewer problems and better mental performance (e.g., Odenstad et al., 2008; Stams, Juffer, Rispen, & Hoksbergen, 2000; Tam & Marfo, 2006; Vinnerljung, Lindblad, Hjern, Rasmussen, & Dalen, 2010). These differences may exist because of higher prenatal use of alcohol in Eastern Europe, a different temperament among Asian children, or they may represent differences more directly related to the nature of institutional conditions and preadoptive care arrangements. But this is complicated, because countries can change practices and conditions over time. Unfortunately, many studies mix children adopted from many different countries and often do not have sufficient *N*s to compare them. A related issue is that country of origin may be confounded with the child being adopted into a family and a society that is of a different race, culture, or ethnicity. Such children may face special adjustment issues, especially during adolescence (Chapter II).

Comparison Group Issues

Children who have experienced early adversity are typically compared with another group of children who have not experienced such adversity,

but the nature of the particular comparison group can make a difference in the results. For example, noninstitutionalized and presumably nonadopted children in the adoptive country (either a new sample or the standardization sample for the assessment instrument) have the advantage of being the group of children to which the adopted children most likely will be compared by parents, teachers, society, and the children themselves. However, this group may differ in ways other than institutionalization, such as a different gene pool, different perinatal circumstances, different ethnicity and occasionally different race, no experience of adoption or with learning a new language, and often much greater variation in family circumstances than the adoptive families that are typically advantaged (MacLean, 2003).

Sometimes the birth children of the adoptive parents are used as a comparison, because presumably they share the same general (if not specific) rearing environment. However, such a group has the same limitations as above plus adoptive parents are invariably high socioeconomic status (SES), so their birth children tend to score higher on developmental measures than is typical for the average child in their adoptive country. Also, many parents adopted because they had no birth children, which means that parents who do have birth children may be a biased sample in unknown ways.

A third comparison group is children adopted from foster care. Although the nature of foster care may not be known, such a comparison controls for birth country, birth parents who are likely poor and perhaps have other risk factors, and international adoption, but the comparison child was raised in a family rather than an institution.

A fourth comparison group is children adopted before a specific age, either from the same country as the PI children or children domestically adopted in the PI children's adoptive country. Presumably both of these groups control for the fact of adoption, and there seems to be no consequences of institutionalization if the child was adopted in the first 6–24 months of life (the specific age depends on the severity of the institution among other factors; see below and Chapter VI). Early adoptees from the same sending country as the target PI children presumably also control to a largely unknown extent for gene pool, perinatal circumstances, ethnicity, and very early environments, although some selective adoption may occur. Early adoptees may be an especially advantageous comparison for PI children who are of minority racial groups in their adoptive countries and for whom nonadoptive children of the same race may be difficult to obtain. But early adoptees also may be difficult to obtain because of policies and administrative procedures imposed on the international adoption process that delays the age at adoption. Thus, this group may control for many potential confounds, but as noted above, age at adoption may have its own set of confounds.

Therefore, the results of studies using different comparison groups may differ, not because the target children are different but because the comparison children are different.

Adoptive Families

Relatively few studies have examined the SES status, parenting style, and environment of adoptive families, and this sparse literature shows that such factors *can*, but do not consistently, relate to PI children's developmental outcomes (Chapter II). For example, in studies of 1990s Romanian PI children, higher adoptive family SES and income were associated with fewer children's problems in Canada (Ames, 1997) but not in the United Kingdom (Beckett, Maughan et al., 2006; Croft et al., 2007; Kreppner et al., 2007). More specifically, a high degree of closeness and open communication among adoptive family members was associated with better adaptive functioning and later competence and fewer behavior problems (McGuinness & Pollansch, 2000, 2007). In contrast, family risk (e.g., marital dissatisfaction, changes in mother's partner, parental mental health) was not associated with a composite of social, behavioral, and cognitive outcomes for 1990s Romanian PI children (Kreppner et al., 2007), disinhibited attachment (Rutter, Colvert et al., 2007), or emotional difficulties (Colvert et al., 2008), but a collection of family stressors was related to more multiple behavior problems among psychosocially deprived PI children (Merz, 2009). Parental warmth, sensitivity, stimulation, support, and responsiveness have been associated with better outcomes in several studies (Audet & LeMare, 2010; Groza & Ryan, 2002; Jaffari-Bimmel, Juffer, Van IJzendoorn, Bakermans-Kranenburg, & Mooijaart, 2006; Morison & Ellwood, 2000; Stams, Juffer, & Van IJzendoorn, 2002) but not others (Croft et al., 2007).

Thus, while adoptive parents tend to be somewhat homogeneous and advantaged with respect to SES, which might limit variability on such measures, more specific parenting variables tend to show relations to outcome and need more study (see below).

Intervention Issues

Describing the short- and long-term developmental outcomes of PI children provides a glimpse of possible consequences of deleterious early experiences; in contrast, experimental interventions provide clues regarding what early experiences might contribute to more positive developmental outcomes. But intervention research in this context faces its own set of methodological challenges (e.g., Nelson et al., 2009; The St. Petersburg-USA Orphanage Research Team, 2008). In some institutions, children come and go at varying ages, and as many as half the children in an orphanage may turn over in

the course of a year. Thus, children may not be in residence long enough to experience a sufficient amount of the intervention; although many children may be involved, the longitudinal sample size may be relatively small and atypical of the total population; children begin and end the intervention at different ages; and selective attrition (i.e., adoption, outplacement, change in government policies) can bias results. Also, children may be moved from one focal group of the intervention to another in mid-study (e.g., be adopted, go to foster care, return to biological parents; Fox, Almas, Degnan, Nelson, & Zeanah, 2011). Intent-to-treat analysis is designed to retain random assignment despite dropouts, but effect sizes may be diluted and treatment groups contaminated. Furthermore, now that a variety of interventions have been shown to be effective, it may be ethically more difficult to deny treatment to some children (Nelson et al., 2008; Rudan, 2008), and lagged intervention designs in which the initial comparison orphanage is also given the treatment later may limit the opportunity for long-term follow-up of comparison children.

Conclusion

It should not be surprising that the literature on the developmental consequences of early adversity, much of which pertains to early institutionalization, is somewhat chaotic and contradictory at best. Much of this inconsistency is understandable, given that children are being adopted from numerous countries and circumstances all around the world into many countries and that many of the relevant parameters of their developmental outcomes have not been established until recently. Thus, a certain tolerance for ambiguity and contradiction is required when trying to find common trends and themes in this literature. Despite these considerable limitations, this is one of the few opportunities to pursue some of the most fundamental questions of human development.

Future Research

Ideally, future research should obtain as much information as possible on children's birth circumstances (e.g., pre- and perinatal circumstances, birth weight, Apgar scores, etc.), preinstitutional experience (e.g., environments, placement changes, adverse circumstances, reasons for relinquishment to the institution), birth country, race/ethnicity, birth date, and date of intake and departure from the institution. Institutional records should be used if possible for these data, because parent reports can be inaccurate. An indication of prenatal alcohol exposure can be assessed in PI children using photographs (Astley, 2003; Astley & Clarran, 1995). It is also helpful to have

as much information as possible on structural and operational characteristics of the institutions (e.g., ward size, number of caregivers assigned per week per ward, children:caregiver ratios during waking hours, caregiver turnover, periodic transitions of children to new groups, homogeneous grouping by age/disability), recreational and educational programs, special professional services, and measured characteristics of caregiver–child interactions and relationships. Finally, strive for sufficient *N*s to analyze for relevant potential parameters, especially preinstitutional experience, severity of deprivation in the institution, length and ages of exposure (or age at adoption), and age at assessment if these parameters vary within the sample. Unfortunately, much of this desired information is often not available or told to parents who must remember it with unknown accuracy.

Specific parenting and other characteristics of the adoptive home deserve more study and are relatively accessible. For example, most PI children have insecure attachments upon adoption; non-PI insecurely attached children have later antisocial conduct problems predominately if their rearing parent displayed a more power-assertive parenting style (Kochanska, Barry, Stellern, & O’Bleness, 2009). Furthermore, the attempts by parents to adjust to, compensate for, and remediate PI children’s deficiencies and problems might be studied, and the role of siblings (adopted vs. nonadopted; younger vs. older) and sibling relationships might be considered.

Relatively few longitudinal studies of children residing in orphanages have been conducted, but they might reveal the progressive emergence of specific deficiencies in basic cognitive and emotional functioning that are detected in many PI children (below and Chapters I–II). Also, there are relatively few studies of older children, either residing in institutions or after adoption (Julian, 2009); children who enter institutions for the first time at older ages (2+ years); and children who spend nearly all their lives in institutions and then transition to society.

THE ROLE OF INSTITUTIONAL DEPRIVATION IN DEVELOPMENTAL OUTCOMES

Given the limited data on the nature of institutions and the variety of confounds that may exist, what is the role of the institutional experience per se in actually causing the developmental consequences that have been observed?

Does the Institutional Deprivation Produce Developmental Deficiencies?

Some (J. N. McCall, 1999) have questioned whether the institutional experience per se produces the developmental consequences frequently reported or whether these outcomes reflect a selected gene pool, adverse perinatal

circumstances, preinstitutional experiences, selective placements, and postadoption variables. While these potential confounds may operate and many studies attempt to examine their possible contribution, the preponderance of indirect evidence supports the causal role of exposure to institutions in producing a variety of adverse outcomes in some PI children (Rutter, Beckett et al., 2007, 2010).

Several themes converge on this conclusion. First, delayed and atypical development has been observed despite variability in the nature of institutions, countries represented, decade of studies, and variation in potential confounds between and within studies (Chapters I and II). For example, the profile of specific behavior problems on the Child Behavior Checklist (CBCL) associated with institutionalization was relatively similar for children from the 1990s Romanian orphanages, children from the psychosocially depriving St. Petersburg (Russian Federation) orphanages, and children from orphanages throughout the world (Hawk & McCall, 2010; Merz & McCall, 2010a).

Second, some studies (e.g., Beckett et al., 2006; Bruce et al., 2009; Kreppner et al., 2007; Merz & McCall, 2010a, 2010b; Miller et al., 2009) have examined variations in birth weight, prematurity, and physical status at adoption (a possible measure of the general extent of early adversity and deprivation) and not found relations with most postinstitutional children's outcomes (except head circumference at adoption). While prenatal exposure to alcohol can influence certain kinds of outcomes that are commonly reported for PI children, the one study to examine this variable in PI children found a small relation ($r = .30$) with head circumference at arrival but not with subsequent specific educational or behavioral problems (Miller et al., 2009).

Third, the dose-response effect of (1) not finding deleterious outcomes in children adopted at a very young age (below and Chapter VI), (2) observing such delays in adopted children who were exposed longer to the orphanage, and (3) finding no further increase in problem rates with longer exposure (Kreppner et al., 2007; Hawk & McCall, 2011; Merz & McCall, 2010a, 2010b), suggest that gene pool, perinatal circumstances, and preinstitutional experiences at least are less important to long-term development than exposure to the institution. Of course, healthier infants and those with obvious sociability may be adopted before less healthy ones in some countries (e.g., The St. Petersburg-USA Orphanage Research Team, 2005), but other kinds of developmental delays and deficits observed in childhood (e.g., executive functioning) are less visible in the first year or so of life to provide a basis for selective adoption. Also, the step functions observed for age at adoption (below and Chapter VI) do not match the more progressive increase in the rate of delay that might be expected on the basis of selective adoption.

Fourth, studies of the 1990s Romanian adoptees are less likely influenced by selective adoption, because children from these orphanages were adopted nearly en masse once their condition and availability became internationally

known, so selective adoption was minimal at least initially (Rutter, Beckett et al., 2007).

Fifth, PI children have more adverse outcomes than non-PI children who have been internationally adopted (who presumably share similar backgrounds and circumstances with PI children) but who come from birth or foster families (e.g., Gunnar et al., 2007).

Sixth, the severity of the institutions seems to affect outcomes. For example, children from globally depriving institutions have higher rates of extreme behaviors after fewer months of institutional exposure than children from psychosocially depriving institutions (Hawk & McCall, 2010; Kreppner et al., 2007; Merz & McCall, 2010a).

Seventh, a quasi-experimental intervention designed to change many of the common psychosocial elements of institutions was effective in producing substantial physical, cognitive, and social-emotional improvements in both typically developing children and those with disabilities while they were in residence (The St. Petersburg-USA Orphanage Research Team, 2008). Similarly, providing foster care to a randomly assigned group of institutionalized children also produced comprehensive developmental improvements (Nelson et al., 2009). These studies suggest that the psychosocial deprivation characteristic of many institutions could be a major contributor to children's delayed development while in residence.

Finally, nearly all children placed in adoptive or foster families following institutionalization display an immediate and substantial catch-up growth spurt in nearly every developmental domain, presumably reflecting the benefits of supportive family over institutional environments (Chapter II).

Thus, the preponderance of indirect evidence suggests that exposure to most institutions produces greater developmental delay and higher rates of deficiencies and problems in resident (Chapter I) and PI children (Chapter II). This is not to say that potential confounding factors may not contribute to outcomes, especially as moderators (Chapter IV), but rather that the institutional experience per se produces a deleterious effect over and above these factors.

Development of Children Within Institutions

If institutions produce delayed development, then resident children should be delayed and probably display progressive developmental deterioration over their residency period. Chapter I documents that children living in institutions are delayed in essentially every sphere of development. On average, children in institutions are approximately more than a standard deviation below levels expected of noninstitutionalized children in physical growth and general behavioral development, and attachment and social-emotional

development are disorganized and delayed (Chapters I, II, and IV; Van IJzendoorn, Bakermans-Kranenburg, & Juffer, 2007). But there is a wide range of average developmental levels across the literature, and severe delays (below the 10th percentile) may characterize nearly half of resident children (Groark et al., 2011; The St. Petersburg-USA Orphanage Research Team, 2005).

The presumed conclusion is that the deficient environments of institutions produce these developmental delays, but few studies know the status of children at intake and most relate children's status to age or time in the institution using cross-sectional data that are potentially subject to the effects of selective attrition. Although there is longitudinal evidence that children decline in physical and behavioral development the longer they reside within the institution, consistent with the proposition that institutionalization produces delays in development (Chapter I), other studies show that selective adoption and attrition can occur and sometimes children actually improve developmentally over time in the institution (Dobrova-Krol et al., 2010; Johnson et al., 2010; The St. Petersburg-USA Orphanage Research Team, 2005, 2008).

One interpretation of whether children decline or improve focuses on the children's developmental status at intake, which may be influenced by preinstitutional experience. For example, some children enter the institution at very depressed levels, whereas others may arrive at much higher levels. The institutional environment appears on average to support developmental levels between these two extremes, so those children arriving exceedingly delayed may improve somewhat, whereas those arriving at higher developmental levels may decrease with continued exposure to the institution.

The above argument suggests researchers should study longitudinally the development of children residing in institutions. It does not threaten the conclusion that institutions generally contribute to developmental delays; indeed, it is quite consistent with, even supportive of, this conclusion. Both cross-sectional and longitudinal data demonstrate the extreme delays of children residing in orphanages, so whether children increase or decrease to those average levels is less important than the conclusion that orphanages tend to support a poor level of development in nearly every sphere measured.

Postinstitutional Development

Almost all PI children display immediate and substantial catch-up growth in nearly every developmental sphere after leaving institutions for adoptive and foster families (Chapter II), and it is commonly said that the majority of PI children eventually develop typically. But this prognosis needs to be qualified.

First, on average PI children as a group have more delayed development and problem behavior than non-PI children (Chapter II). Nevertheless, ignoring parameters, most are likely to develop within typical and nonclinical ranges, given the variables that have been measured. Second, however, PI

children who were adopted very young are likely to develop typically; but if they are adopted at older ages, the likelihood of clinically significant disorders in intelligence (IQ) and behavior problems (e.g., CBCL, school problems), especially when assessed in late childhood and adolescence, can be quite high—as much as 60–80% in some studies of children from both globally and psychosocially depriving institutions (e.g., Hawk & McCall, 2011; Kreppner et al., 2007; Miller, Chan, Reece, Tirella, & Pertman, 2007). A substantial percentage of these (40–60%) display two or more problems. Third, delays and extreme behaviors measured by professionals (e.g., on the CBCL and other measures) may or may not be considered “problems” by parents or the children. For example, two studies asked parents if their children’s behavior interfered with school or family life (Miller et al., 2007) or if they had used mental health services (Merz & McCall, 2010a), and these rates were roughly half the rates of the measured problems, but still approximately one fourth the sample.

SPECIAL ISSUES

Chapters I–VI take up more specific conceptual issues, predominately pertaining to PI children, and these are now considered.

Resilience

A universal finding is that some PI children display delays, deficits, and problems whereas others do not, and for the most part factors associated with higher or lower risk of adverse outcomes have not been extensively studied (Chapters I–II).

The most well-documented risk factor is time exposed to the orphanage, typically approximately indexed by age at adoption. On average, children adopted before 6–24 months of age do not display delays or higher-than-expected rates of problems but some do (Chapter VI). Conversely, later adopted children on average do present higher rates of delays and problems, but some do not. There may be additional parameters. For example, the age-at-adoption cutoff is likely younger (e.g., 6 months) for children coming from globally and severely depriving orphanages, 18–24 months for children from behaviorally deficient orphanages, and even later for children from better circumstances. Also, the cutoff age may vary with the particular outcome, one versus another measure of the same conceptual outcome, and age at assessment (e.g., Chapter VI; Merz & McCall, 2010a). As noted above, when these several risk factors are all present, rates of adverse outcomes can be quite high (Hawk & McCall, 2011; Kreppner et al., 2007; Miller et al., 2009).

Other possible risk factors have received only a little study, such as genetic disposition, a particularly intriguing possibility (Chapter I), as well as

preinstitutional experience of an adverse nature, and an endearing temperament that attracts caregiver favoritism. Several other variables are likely moderators (Chapter I-II) such as sensitive (Jaffari-Bimmel et al., 2006; Stams et al., 2002) and authoritarian parenting (Audit & LeMare, 2010). In addition, more attention should be paid to studying remedial interventions, professional services, or experiences that might promote resilience or moderate outcomes, such as postadoptive parenting programs (e.g., Juffer, Bakermans-Kranenburg, & Van IJzendoorn, 2005, 2008a, 2008b, 2009; Juffer, Hoksbergen, Riksen-Walraven, & Kohnstamm, 1997) and preschool programs to promote executive functioning (e.g., Tools of the Mind; Diamond, Barnett, Thomas, & Munro, 2007).

The Role of Attachment

Although attachment has historically been the central theoretical concept relevant to institutionalized children, Chapter III discusses the appropriateness of the traditional concept and its measurement for institutional children.

Traditional measures of attachment in non-PI children include two components that tend to go together—behavior that testifies to the child's relationship to the parent/caregiver and the child's inhibited behavior toward strangers. But institutionalized children are often indiscriminately friendly with strangers while in the institution (e.g., hugging or holding on to them) and relatively uninhibited with strangers long after being adopted, even while they also show strong attachment to their adoptive parents (Chapter III). Indiscriminate friendliness can be relatively independent of PI children's attachment to their adoptive parent or their cognitive and emotional abilities, but it may be more related to deficits in inhibitory control and inattention (e.g., Bruce et al., 2009; Chisholm, 1998; Chisholm, Carter, Ames, & Morison, 1995; Roy, Rutter, & Pickles, 2004; but see Rutter, Colvert et al., 2007; Chapter III). Part of this unusual pattern may emerge because indiscriminately friendly behavior is often rewarded with adult attention, not only within the orphanage where such behavior may be adaptive, but also after the child is adopted when parents and strangers may regard the behavior as "cute and endearing" (Chisholm, 1998). It may be a problem in adopted PI children (e.g., child readily goes off with strangers) or not, and it may be molded over the years into a positive trait (e.g., gregariousness) (Rutter et al., 2010). In any case, indiscriminate friendliness may mean something different in institutionalized and PI children than in non-PI children (Dobrova-Krol et al., 2010).

Furthermore, the Strange Situation Procedure (SSP) is likely to be perceived much differently by institutional than noninstitutional children (Chapter III). For example, institutional children are almost never in a one-to-one situation with a caregiver and almost never left alone, whereas these

circumstances are more common for parent-reared children. Furthermore, caregivers and strangers come and go constantly in many institutions, but this is less common for most parent-reared children (except those in certain child care arrangements). Finally, institutionalized children usually have no opportunity to develop a relationship with a specific caregiver, because there are either too many and changing caregivers or few caregivers who do not behave in the warm, sensitive, and responsive ways thought to promote attachment.

Thus, one might suppose (Muhamedrahimov, personal communication, October 19, 2009) that institutionalized children in the SSP do not attempt to maintain, regain, or enhance the “security of a relationship” with a caregiver because they have no such relationship; instead, their goal in this situation may be to “reduce uncertainty and stress” by increasing social interaction with whomever is present. Thus, some institutional children may be so accustomed to caregivers and strangers coming and going that they do not react at all to these events and continue to play with the toys. Others may be highly stressed, but since this is unique in their experience, they have no coping strategies and simply sit, stare, or cry. Still others may have learned strategies to get caregiver or stranger attention, including indiscriminate friendliness and the display of positive emotions (e.g., smiling) even when highly stressed. Such behaviors do not easily fit into the traditional scoring scheme, and indeed research suggests that coders are often uncertain about the categories to which they assign institutionalized children (Chapter III). The result is typically very high percentages of disorganized classifications or unclassifiable decisions (e.g., approximately 73%, except in children in better quality institutions; Chapters I and III; Herreros, 2009), but perhaps some of these children are using organized, appropriate, and rewarded strategies unique to the institutional environment that do not easily fit the traditional assessment situation or scoring scheme designed for family-reared children (Muhamedrahimov, Konkova, & Vershinina, 2008).

Do institutionalized children have traditional organized attachment relationships with their caregivers? Not the majority, at least by conventional definitions; under typical institutional environments how could they? Does a lack of an organized attachment (i.e., a D classification) mean the same thing in an institutionalized child who has had no opportunity to develop an organized attachment as it does in a parent-reared child who had the opportunity but is classified as D? Maybe not. Should PI children’s attachment to their adoptive parent and their indiscriminate friendliness to strangers be interpreted independently? Probably, because they display a different pattern of relations than in non-PI children. And should the assessment and scoring procedures for institutionalized children be redesigned or at least reinterpreted? Perhaps (see Chapter III), and Carlson and the Bucharest group (Zeanah, Smyke, Koga, Carlson, & The Bucharest Early Intervention Project

Core Group, 2005) and Muhamedrahimov et al. (2008) have already begun such endeavors.

Psychosocial Growth Failure and Nutrition

Chapter IV provides an exhaustive review of research on the physical growth of children residing in institutions and after adoption. Several issues deserve highlighting.

Psychosocial Growth Failure

Psychosocial growth failure (Blizzard, 1990; Johnson, 2000a, 2000b; Chapter IV) results from children being exposed to social-emotional neglect despite generally typical nutrition (Skuse, Albanese, Stanhope, Gilmour, & Voss, 1996). Growth deficiency results from hyperactivity of the corticotrophin-releasing hormone hypothalamus-pituitary-adrenal axis, which reduces growth centrally by inhibiting growth hormone production and peripherally because cortisol inhibits growth supporting factors from the liver (Albanese et al., 1994; Gunnar, 2001; Vazquez, Watson, & Lopez, 2000).

Although not a new concept, the fact that psychosocial deficiencies of the kind that characterize many institutions can produce physical growth failure is not widely recognized, especially in the medical communities of many countries that rely on institutions (Chapter IV). As a consequence of minimum appropriate social-emotional interactions with caregivers, some institutional children may become hyperphagic and eat enormous amounts of food, but their systems do not metabolize it effectively and they are still undersized. Other children may develop an aversion to eating, especially children with disabilities, because too many different caregivers feed them in a hurried and somewhat aggressive manner (e.g., Muhamedrahimov, 1999).

The facts that (1) even children adopted from institutions that apparently provide adequate general nutrition are undersized, (2) children show substantial catch-up growth when they leave the institution (especially if adopted before 1–2 years), and (3) growth can be improved if the psychosocial environment of the orphanage is improved (The St. Petersburg-USA Orphanage Research Team, 2008) or if foster care is provided (Nelson et al., 2009) collectively constitute rather strong confirmation of psychosocial growth failure. Of course, poor nutrition, both general caloric and micronutrient intake, is also a cause of growth failure especially in infants and young children, but there is less evidence that subnutrition is as influential in the growth failure of somewhat older institutional children because their weight-per-height is nearly normal (Chapter IV). Collectively, such evidence might persuade medical professionals and policy makers that many institutions are behaviorally inadequate and children need to be transitioned to families as early as possible or the institutional environment needs to be psychosocially improved.

Iron Deficiency

Another unrecognized problem is that many PI children have low levels of iron while in residence and within the first 6 months after adoption, even if they receive adequate caloric diets and higher levels of iron than the U.S. Recommended Dietary Allowances (Chapter IV). Iron may be shunted into erythropoiesis to build red blood cell functions during catch-up growth, and some children may have parasites that diminish iron absorption, so these children may need more iron than is typical. Thus, they may experience relatively prolonged iron deficiency even after adoption because their own bodies, not their diets, contribute to the deficiency, which has the potential to produce iron insufficiency in the brain and subsequent cognitive and behavioral deficiencies. Furthermore, other micronutrients critical for brain development (e.g., zinc, copper, selenium, iodine) could pose scenarios similar to iron deficiency. Ideally, these micronutrients should be checked in individual children, although this is more likely to be done in adoptive families than low-resource institutions.

Early Puberty

Early psychosocial deprivation, especially in girls, is associated with earlier puberty. Postinstitutional girls adopted into advantaged homes are many times more likely to have early puberty than non-PI girls (Chapters I and IV), even non-PI girls of the same racial/ethnic background. Among non-PI girls in Western cultures, early puberty is related to higher rates of mental health problems, especially depression, earlier sexual activity, and more externalizing symptoms. This suggests that studies of PI adolescents in Western countries might inquire about early puberty and these possible behavioral symptoms.

Long-Term Health Outcomes

On the surface, institutionalized infants are similar to small-for-gestational-age (SGA) infants who are not institutionalized (Chapter IV). Both groups are growth impaired, capable of recovery, have similar biochemical dynamics, and girls have early puberty. As children, SGA infants have higher rates of “metabolic syndrome,” which includes obesity, type II diabetes mellitus, hypertension, heart disease, and polycystic ovary syndrome. Will PI children, especially those who were in the orphanage for more than 1–2 years, whose physical growth recovery did not reach typical levels, and who had early puberty, also eventually have higher rates of these disorders?

The Neurobiological Costs of Institutionalization

Chapter V reviews the relatively recent work on the neurobiological deficiencies observed in some PI children. This evidence suggests that there is less metabolic, physiological, and neurochemical activity in the brains of PI children. More specifically, there is abnormal development of the orbitofrontal cortex and temporal lobe (amygdala), which are regions typically associated with higher cognitive functions, memory, and emotion; indeed, these children do tend to have mild impairments of impulsivity, attention, and social relations (Chugani, Behen, Muzik, Juhasz, Nagy, & Chugani, 2001; Mehta et al., 2009). There is diminished white matter in these regions, which may be related to PI children's deficits or delays in inhibitory control, emotional regulation, and executive functions connecting separate aspects of the environment or thought (Eluvanthingal et al., 2006). Furthermore, it is known that the amygdala is sensitive to early negative or stressful experiences, such as abuse and neglect, and that the amygdala grows very rapidly in the first 3 years of life (Sanchez, Hearn, Do, Rilling, & Herndon, 1998; Teicher et al., 2003). A dysfunctional amygdala might be related to blunted or more extreme emotional responses to stress and threat. The prefrontal cortex also has been implicated in PI children's poor performance on inhibitory control, visual attention, visual memory and learning, and other aspects of executive functioning (Pollak et al., 2010).

Thus, there is a correspondence between neurobiological deficits in some PI children that tend to focus on areas of the brain that are usually involved in memory, cognitive and emotional control, attention, impulsivity, and other aspects of executive functioning that are often deficient in PI children. It is possible that the diminished behavioral environments of institutions lead to excessive neural pruning—the neurological equivalent of “use it or lose it”—which leaves these areas underdeveloped (Chapter V). Undoubtedly, this domain is far more complex than this simple summary conveys, but the possible correspondence between the brain areas affected and certain behavioral deficiencies commonly observed in PI children contributes some cross-disciplinary cohesion to this emerging literature.

Sensitive Period(s)

Chapter VI reviews the evidence directly pertaining to whether there is a sensitive period in development in which exposure to the deficiencies of institutional environments is most corrosive to future development. Scientifically, a major problem is that it is very difficult to separate two potentially competing factors—the total length of exposure to the institution

more or less regardless of specific ages versus the specific ages at exposure. Most children come to the orphanage early in the first year of life and most children who are internationally adopted (the bulk of the research literature) are adopted between approximately 9 and 24 months, which means that length of exposure and particular ages at exposure tend to be highly confounded.

Chapter VI reviews different types of evidence, perhaps the most intriguing of which is the step function observed between age at adoption and various later deficiencies in PI children. An increase in PI children's delayed development or higher rates of subsequent problems tend to occur only after a certain age at adoption, and continued exposure to the institution after that age-at-adoption cutoff does not increase the risk of later adversity. This result seems to favor a sensitive period or minimum necessary exposure hypothesis within a sensitive age period. But while exposure to the institution before the cut off age at adoption *alone* does not seem to contribute to the risk of later delays and problems; exposure before the cut off age may add a necessary length of exposure to the institution or provide additional time during which a variety of risks might accumulate. Furthermore, although exposure after the necessary amount is not associated with additional risk, no one knows the consequences of exposure for children who first enter the institution at or substantially after the cut off age, but the limited available evidence suggests it may be less damaging than exposure earlier in life (e.g., Lee, Seol, Miller, Sung, & Minnesota International Adoption Project Team, 2010; McKenzie, 1997, 2003; Vorria, Rutter, Pickles, Wolkind, & Hobsbaum, 1998; Whetten et al., 2009). Nevertheless, it is likely that both factors—the length of exposure within a window of sensitive ages—are involved.

But it is also likely that there is not a single sensitive period as signaled by one age-at-adoption cutoff but many depending on a variety of parameters outlined below.

Severity of Institutional Environment

Results suggest that exposure to globally and severely depriving institutions for the first 6 months of life (e.g., Ames, 1997; Groza & Ryan, 2002; Kreppner et al., 2007; Stevens et al., 2008) and to less severely psychosocially deficient orphanages for approximately the first 18–24 months of life (Gunnar et al., 2007; Hawk & McCall, 2011; Merz & McCall, 2010a, 2010b) may not be sufficient to produce higher rates of later cognitive and behavioral problems; but exposure beyond these ages does, and continued exposure beyond these ages does not increase the risk. This implies that there is both a

sensitive period specific to approximately the ages of 6–24 months as well as a length of exposure effect in which children exposed to less severely behaviorally deficient environments require a longer length of exposure to produce increased risk, at least within the first 2 years of life. Again, no one yet knows the specific contribution of exposure before the cutoff or exposure that is limited to ages substantially after the cutoff.

The observation within single studies of poor outcomes being a step function of age at adoption suggests a sensitive period interpretation, but the finding between studies that the step occurs at a younger age for children from severely deficient institutions but at an older age for children from less severely depriving institutions suggests a cumulative deficit interpretation. An intriguing speculative resolution focuses on epigenetics, the possibility that experiences can influence genetic expression in genes that all children possess. Presumably, very severe deprivation may trigger such genetic modifications after only a few months, whereas a longer exposure is required to produce the same genetic changes in children in less severely deficient institutions. Furthermore, these genetic changes do not occur in all children, depending perhaps on other aspects of their genetic and experiential backgrounds. Unfortunately, considerable effort is required to test this; genetic assays would need to be done on all children at intake into the institution as well as much later to show no genetic changes before the step function age but some after the step; furthermore, those children with genetic changes should have a much higher rate of various behavior problems later in childhood and adolescence.

Age at Assessment

Age-at-adoption effects may be observed only when children are assessed at certain ages, especially adolescence (Hawk & McCall, 2010; Merz & McCall, 2010a, 2010b) and for one versus another type of measurement. For example, it is possible that parent report measures, such as the CBCL and the BRIEF assessment of executive functioning, may not show age-at-adoption effects until adolescence (Merz & McCall, 2010a, 2010b), whereas laboratory tasks conducted on the child may reveal executive functioning deficits at younger ages (6–10 years; e.g., Pollak et al., 2010) and possibly with less exposure to the institution. Parent reports require rather obvious displays of inadequate behaviors under typical everyday circumstances, which may not be as noticeable to parents until the child reaches adolescence (in addition to the special demands this age period places on the youngster), whereas laboratory assessments on the children may be more sensitive to detecting deficiencies that are more subtle and thus reveal them at younger ages.

Different Outcomes

Chapter VI suggests that the critical age at adoption or sensitive period may be different for different outcome variables, presumably corresponding to different sequential periods of development in which these skills must be appropriately nurtured.

For example, sensitive periods for cognitive development are likely to cover a much broader age range than social-emotional-behavioral periods. The sensitive period for language, for example, is thought to be quite long, extending up to about 9+ years (e.g., Lenneberg, 1967), whereas attachment theorists state that attachments are typically developed between approximately 6 and 12 months, and others have suggested that social relationships need to be established in the first 1–4 years for typical social-emotional development (Rutter, 2000). Even within a single general domain, such as mental development, sensitive periods may be different for different components. For example, parent-reported executive functioning is only minimally correlated with general IQ (e.g., Gioia, Isquith, Guy, & Kenworthy, 2000), and the sensitive period for executive functioning may be substantially earlier than for general mental performance and for language. Furthermore, it is reasonable to suppose that the experiences necessary to establish basic mental functions might be quite different from the experiences needed to develop much higher level cognitive skills. This may mean that the timing and nature of the intervention needed to prevent severe deficiencies might be very different from that needed to produce mental superiority (Chapter VI).

Conclusion

Despite these complexities, the data converge on the proposition that a certain length of exposure (depending on several parameters) to the institutional environment—typically during the first 1 or 2 years of life but longer under better conditions—is sufficient to produce an elevated risk that PI children adopted into advantaged families will display a variety of cognitive deficiencies and behavioral problems at least through adolescence and likely into adulthood (Julian, 2009), and that additional exposure to the institution does not raise that risk.

WHAT ARE THE CRUCIAL CAUSE-EFFECT ELEMENTS?

Although the evidence is sparse at best, at least two fundamental cause-effect questions beg addressing: What specific aspects of the institutional experience potentially produce long-term deficiencies, and is there one or

more broader, more fundamental deficits that underlie the diverse set of adverse outcomes observed in PI children? What follows is a speculative set of hypotheses addressing these issues.

Possible Deleterious Characteristics of Institutions

Many institutions have the caregiver–child behavioral and structural deficiencies described above; globally deficient orphanages are often more deficient in these psychosocial characteristics in addition to providing poorer medical care, nutrition, sanitation, safety, and possibly abuse. Although there are differences in PI children as a function of the severity of the orphanage environment, such differences seem to pertain to the rate of subsequent problems and the amount and timing of exposure necessary to produce them—not the nature of the problems, which are somewhat similar (Chapters I–VI; Hawk & McCall, 2010; Merz & McCall, 2010a). Moreover, intervention research with PI and non-PI infants and toddlers shows that improving the structural and psychosocial environment improves the development of children (Landry, Smith, & Swank, 2006; Nelson et al., 2009; Sparling, Dragomir, Ramey, & Florescu, 2005; The St. Petersburg-USA Orphanage Research Team, 2008), although no research exists on the long-term consequences of such improvements. Thus, at least some of the crucial deficiencies of the institutional environment are likely structural and psychosocial, even though other factors (e.g., medical care, nutrition, micronutrients) may also contribute.

These characteristics of institutions are almost directly opposite to several attributes of family life that most cultures of the world deem desirable for rearing children (Groark & McCall, in press). Specifically, there are many and changing caregivers in the institution versus a few stable and consistent caregivers in most families. Institutions have large groups of children with high children:caregiver ratios versus a relatively smaller group of children with low children:caregiver ratios in families. Children in the ward are typically homogeneous in age and disability status, whereas children in families tend to be various ages and may include those with disabilities. And often children are periodically transitioned to new caregivers and peers, which tends not to occur in most families. These structural characteristics of institutions mean there are few one-on-one interactions between caregivers and children, and children do not have dependable interactions with a few consistently and continuously present caregivers or peers. Moreover, caregivers tend to be highly caregiver directed in their interactions with children; there is minimum sensitive, contingent responses to children's overtures; there are few warm and caring interactions or displays of affection by caregivers; and there is little talking and even less reciprocal conversation, explanation, question answering, planning, or problem solving (Rosas & McCall, in press; The

St. Petersburg-USA Orphanage Research Team, 2005, 2008)—again, all characteristics opposite to the presumed ideal in families.

It is not difficult to imagine why children growing up in this kind of institutional context subsequently have deficiencies and problems in general language and mental development; executive functioning including activity, working memory, attention, mental sequencing, cognitive inhibitory control, and associations between symbolic entities; a general lack of effectance and agency (i.e., “I can influence objects and people in my environment”); and ineffective and immature social interactions that may lead to a variety of behavioral problems. But the sensitive period data (Chapter VI, above) indicate that the damage produced by institutional environments likely occurs within the first 2 years of life, even the first year of life in severe environments, and that additional exposure to the institutional environment after 12–24 months does not increase the risk of later deficiencies and problems in PI adopted children. This means major damage can be done even before children have developed symbolic relations—the ability to connect and mentally manipulate two symbolic entities in their minds—which in non-PI children typically emerges at approximately 21 months (McCall, Eichorn, & Hogarty, 1977; Piaget, 1952). Thus, the search for causal elements within depriving orphanages should look at basic skills that are typically developed in the first year or two of life.

Basic Contingency Learning and Effectance/Agency

One basic skill is simple stimulus–response and stimulus–stimulus learning. Even newborn infants can learn to match either the biting or negative pressure aspects of sucking to fit whichever is rewarded with milk (Sameroff & Cavanaugh, 1979), infants in the first few weeks of life can imitate certain facial gestures modeled by an adult (Meltzoff & Moore, 1977), and they are sensitive to learning stimulus sequences at least by 4 months of age (Lewkowicz & Berent, 2009). In these cases, the stimulus and its consequence must be highly relevant to the infant’s perceptual and behavioral repertoire, and the contingencies must be immediate and distinctive. Furthermore, visual acuity is quite limited (e.g., 20/300–700) until approximately 2–6 months of life, so stimuli and environmental responses need to have high contrast and be relatively large, often within 12–24 inches of the infant’s eyes (Banks & Salapatek, 1983).

But if infants are relegated to their cribs most of the day and fed with propped bottles or facing away from a caregiver, there is little pattern stimulation within the infant’s functional visual field and minimum experience with response contingencies or stimuli well matched to the infant’s perceptual and motor abilities. The human adult is extraordinarily well matched to these

infant needs—adults can hold the infant at a distance in which their face is perceived relatively clearly, imitate and otherwise match their sounds and actions to those of the infant, and stimulate and respond sensitively and contingently to the infant’s behaviors. Caregiver talking guides appropriate neural pruning so infants discriminate and eventually produce the phonemes of the prevalent language, and talking and conversation matched to an infant’s and toddler’s actions promote effectance, receptive language, and appropriate social behavior. Such interactions typically produce mutual reinforcement of both infant and caregivers (Valloton, 2009) that progressively motivates and encourages such interactions and presumably promote learning and a sense of effectance or agency in the infant (Gergely & Watson, 1999; Gianino & Tronick, 1988; Maccoby & Montin, 1983; Watson & Ramey, 1972).

Unfortunately, institutionalized infants do not tend to have these experiences even in the context of routine caretaking activities. Moreover, caregiving is often “done to” infants and toddlers—it can be literally “ready or not here it comes” with respect to food, changing, and bathing. Even crying is not attended to promptly (Muhamedrahimov, 1999; The St. Petersburg-USA Orphanage Research Team, 2005). It is difficult to imagine how much learning, contingency experience, or motivation to do anything can occur in a context like this, especially over the first 8–12 months of life. Could this environment overly “prune” the frontal cortex because of relative lack of use, almost analogous to Riesen’s (1951) monkeys who were deprived of light and whose optic nerves atrophied?

Self-Movement

Another major necessary element in early development is the need for self-movement and physical engagement with the environment, including with other people (Gunnar, 2001). For example, kittens must engage in self-directed motor movement even in a highly simple visual environment (rather than passive movement in the same visual environment) to develop typical visual-motor behaviors (Held & Hein, 1963). Analogously, human infants apparently need experience crawling around their environments to develop the ability to avoid the visual cliff and other spatial abilities (Bremner & Bryant, 1985). Furthermore, there is a current emphasis on the role of social experiences in promoting typical development, learning, and especially language acquisition (Meltzoff, Kuhl, Movellan, & Sejnowski, 2009). For example, studies show young children do not learn a language simply by hearing the language spoken (e.g., on television) but need to physically engage in language interaction in a reciprocal manner with another person (e.g., Roseberry, Hirsh-Pasek, Parish-Morris, & Golinkoff, 2009; Sachs & Johnson, 1976; Snow et al., 1976; Zimmerman et al., 2009).

In contrast, institutionalized infants have little opportunity for self-produced movements, because they spend a disproportionate amount of time in their cribs or in relatively barren large playpens where movement is restricted by their delayed ability to crawl. Caregivers provide very limited sensitive responses contingent on an infant's motor actions, and because caregivers keep changing, what little caregiver-child interaction occurs is likely not consistent from one occasion to the next. There may be a substantial amount of "learned helplessness"; crying is not attended, so eventually children learn not to cry. With this minimum level of experience with learning and self-guided movement and a stimulus-barren functional perceptual environment, one may suppose that memory is not exercised, the building blocks for focusing and sustaining attention and limiting movement are lacking because there is little to attract and sustain attention in the environment, mentally sequencing actions and cognitive and emotional control are not exercised, and language is underdeveloped (Windsor, Glaze, Koga, & The BEIP Group, 2007)—all of which may contribute to poor cognitive (Kopp & Vaughn, 1982) and executive functioning (Gunnar, 2001).

Chronic Stress and Atypical Development

Ordinarily, much of this basic stimulation is provided socially by a few devoted caregivers (Schaffer, 1971), but species-typical caregiver-child interactions are lacking in many institutions. Presumably, the lack of consistent caregivers, sensitive and responsive interactions, dependable social contingencies, and relationships (Chapter III); the ready-or-not feeding, bathing, and dressing practices; the failure of caregivers to promptly attend to crying or other needs; the largely caregiver-directed rather than child-directed activities; and constantly changing peers produce atypically high and continuing levels of stress in institutionalized infants and toddlers (e.g., Chapter I; Dobrova-Krol et al., 2010; Gunnar, Morison, Chisholm, & Schuder, 2001). The literature on the neurobiology of stress and its effects on development (Gunnar & Quevedo, 2007) suggests that (1) the first year of life is ordinarily a period of rapid growth in this system and thus of heightened vulnerability to adverse consequences of chronic stress, (2) chronic stress in the absence of good caregiving can be especially deleterious to brain development as well as later self-regulation and inhibitory control (Kochanska, Murray, & Harlan, 2000; Lewis, Dozier, Ackerman, & Sepulveda-Kozakoski, 2007; Olson, Bates, Sandy, & Shilling, 2002; Winsler, Diaz, McCarthy, Atencio, & Chabay, 1999), (3) chronic stress produces atypical or underdevelopment of the prefrontal cortex and amygdala (Chapter V), (4) these areas of the brain are those that are found to be disturbed in PI children (Chapter V), (5) PI children with deficiencies in these brain areas have higher rates of deficiencies in executive

functioning and emotional control (Chapter V) especially in negative social situations (Tottenham et al., 2009), and (6) deficiencies in these basic behavioral domains are related to a variety of mental, achievement, and behavioral problems that characterize higher than expected numbers of PI children. Although there is evidence for each of the above assertions, there is less evidence that links these points in a longitudinal developmental sequence specifically for institutionally reared children. Nevertheless, this stress model contributes a plausible hypothesized explanation and mechanism for which institutional characteristics, even very early in life, could produce chronic stress that leads to atypical brain development that in turn produces basic deficiencies that underlie the variety of problems that occur in higher rates in PI children, especially those exposed to the institutions for relatively longer periods of time.

Relationships

The lack of warm, sensitive, contingently responsive interactions with a few consistent caregivers that fails to provide the needed stimulation described above similarly deprives the infant of developing a relationship with a caregiver. Humans are likely biologically disposed to have attachment relationships, especially caregiver–infant relationships. For example, at 2–4 months, two black circles placed horizontally on a white background but not other marks can elicit smiling even in the absence of other social stimuli (Webbink, 1986). Attachment theory (Ainsworth, 1967; Ainsworth et al., 1978; Bowlby, 1951, 1958) has been the most prominent theoretical orientation explaining institutionalized and PI development (Chapter III).

Ordinarily, the emphasis is on the lack of the institutional child's relationship to a caregiver, but the fact that long-term damage apparently can be produced with as little as 6 months exposure to severely depriving conditions (Kreppner et al., 2007; Stevens et al., 2008) provokes the speculation that something more basic and biological is involved, such as the stress hypothesis described above. If so, more emphasis needs to be placed on a few "attached caregivers" who can be expected to provide the kinds of stimulation described above uniquely matched to the infant's limited, specific, and changing abilities (Schaffer, 1971) and whose consistent and sensitive care limit stress-producing situations and teach the infant how to self-regulate and control stress.

Additional Questions

Even if these speculations were all valid, many questions would remain. Why are not all institutionalized children affected (see above)? Do

genetic polymorphisms or epigenetic processes play a role? The literature on stress and development (Gunnar & Quevedo, 2007) suggests that a variety of factors may influence the outcomes of chronic stress, including genetics.

Is *all* the damage associated with institutionalization created in the first year or two of life? What role does residency in depriving institutions afterward play? For the most part, we do not know, because most of the literature reviewed in this volume pertains to children who experience institutions and are adopted out of them in the first few years of life. At a minimum, such institutions likely maintain the delayed development produced earlier and limit the development of more advanced mental (e.g., language, reasoning, analogies) and social functioning. However, there are few studies of children who only arrive at the orphanage after 2 years of age (e.g., Lee et al., 2010; McKenzie, 1997, 2003; Vorria et al., 1998), and their outcomes also may depend on their preinstitutional experience; and there are few reports of the development of children who remain in the orphanage system for several years or the adjustment made by those released into society after approximately 18 years in the institutional system.

Fewer Fundamental Deficiencies?

Chapter II documents the greater delays and higher rates that PI and other children experiencing early adversity display with respect to physical growth, attachment relationships (disorganized attachment), school achievement, and many kinds of behavioral problems. A few studies, including the English and Romanian Adoption Study (Rutter, Colvert et al., 2007, 2010) and more recent research (Chapter V; Merz & McCall, 2010b), have described deficits in attention, activity, cognitive development, and facets of executive functioning, which can include cognitive and emotional inhibitory control, short-term working memory, impulsiveness, planning, the ability to sequence components of a task, set or rule shifting, and similar skills. Furthermore, these behaviors are in the same category as those cognitive functions likely governed in part by the prefrontal cortex and amygdala, brain areas found to be atypical in many PI children (Chapter V). Nearly all of these problems have been observed in some PI children from a variety of different orphanage environments varying in severity, country of origin, and other parameters.

This is a rather diverse set of outcomes that provokes the question of whether there are fewer, more fundamental, broad-based, underlying deficiencies (e.g., “intraorganismic deficiency of brain functioning”; Kreppner et al., 2007; Chapter V) that lead progressively to, or underlie, this set of varied specific limitations and problems observed even years after adoption into advantaged families.

A major assumption in this quest is that some or many of these diverse behaviors should be related to one another, either contemporaneously or predictively. Among non-PI children, deficiencies in short-term working memory are related to a variety of parent-reported executive functioning delays and hyperactivity problems (Alloway, Gathercole, Kirkwood, & Elliott, 2009), and inhibitory control problems at 6 years are related to externalizing and internalizing problems at 10 years (Eisenberg et al., 2009). Among PI children, inattention and overactivity have been found to be strongly associated with conduct problems, disinhibited attachment (Bruce et al., 2009), and executive functioning but not general IQ (Stevens et al., 2008), and parent-reported executive function deficits are strongly related to a diverse set of parent-reported behavior problems (Bruce et al., 2009; Merz & McCall, 2010b).

Furthermore, in the British study of early 1990s Romanian children, inattention/overactivity, conduct problems, and executive functioning disturbances occurred at least by age 6, and both inattention/overactivity and conduct problems at age 6 made independent contributions to conduct problems at age 11, and executive functioning was related to inattention/overactivity at both ages (Kreppner et al., 2007). Studies of children from less severe but psychosocially deficient orphanages indicate that the age-at-adoption step function occurs at the same age (18 months) for parent-reported CBCL behavior, BRIEF executive functioning problems, and social skills; factor analyses of items pertaining to CBCL behavior problems described a single predominant factor containing a set of diverse specific problems; and substantial co-morbidity of extreme problems was found (Hawk & McCall, 2011; Julian, 2009; Merz & McCall, 2010a, 2010b) as well as among and between behavioral and school problems (Miller et al., 2009). Although these relations are complicated and other studies have found some but not overwhelming co-morbidity among other kinds of PI outcomes (Kreppner et al., 2007), these results are at least consistent with the hypothesis that a cluster of fewer broad-based deficiencies may underlie many of these diverse problems (e.g., attention/activity, executive functioning, cognitive/emotional/self-regulation). This possibility is still largely speculative, and even if fewer dimensions were confirmed, that fact alone would not threaten the analysis of a postinstitutional syndrome given in Chapter I.

The above analysis also provokes speculation of a developmental sequence or progressive and cumulative deficiencies produced by institutional rearing that at some point is sufficient to produce long-term risk. For example, it seems plausible to assume that institutionalization in the first 1–2 years of life limits basic learning of contingencies and sequences, short-term working memory, effectance/agency, attention, activity, cognitive control, and rule shifting. Children who have deficiencies in these basic cognitive skills and then have no opportunity to improve them, for example, in the context of warm, sensitive, responsive relationships with a few consistent

caregivers, would seem to be prone to later difficulties in performing contingently appropriate sequences of social interactions and an inability to sustain relationships. This, in turn, may produce social frustration, which coupled with a lack of emotional control may lead to a variety of attention seeking, antisocial, aggressive, rule breaking, or inhibited/internalizing behavior problems. The actual sequence is undoubtedly more complicated than this simple formulation (e.g., Eisenberg et al., 2009), but it provokes the idea of longitudinal studies within orphanages using assessments of basic cognitive processes in the first 2 years of life as well as longitudinal studies of PI children beginning shortly after adoption (e.g., 2 years of age) to describe relative deficiencies and their developmental sequence.

WHAT TO DO?

The research reviewed in Chapters I–VI has practice and policy implications for institutional and alternative family care. However, implementing such suggestions, especially creating entire child welfare systems rooted in family care alternatives and improving orphanages, faces several challenges (Chapters VII and VIII).

What Does the Research Tell Practice and Policy Makers?

The research has several practice and policy implications:

1. Most institutions as currently operated typically are not supportive of infants' and young children's development and may produce long-term, perhaps permanent, damage to children's developmental potential akin to severe neglect. The first practical need is recognition that a problem exists. Orphanage administrators and caregivers are well-intended people operating in traditional ways; they know a family would be better, but they are likely unaware of the long-term consequences of traditional orphanage rearing. However, the total mass of data seems incontrovertible that a disproportionate number of children reared longer than the first 6–24 months in institutions as typically operated will have long-term developmental limitations or problems (Chapters II–VI). The stunted physical growth status and delayed general behavioral development of most institutionalized infants and children (Chapters I and IV) is readily observed—even glaring—testimony to inadequate institutional environments, which is further confirmed by children's remarkable catch-up growth in nearly every domain of development immediately upon being transferred to family

environments. Moreover, depending on the severity of institutional conditions and the length of time children are exposed to it, PI children adopted into very advantaged families on average display higher rates of persistent developmental delays, deficiencies, and problems in certain cognitive abilities (e.g., the executive functioning skills of attention, activity, short-term working memory, cognitive inhibition and control, role shifting, sequencing), disturbances of attachment relationships, and a variety of social and behavioral problems especially aggressiveness, antisocial behaviors, lack of emotional control, and internalizing problems (Chapters II, III, and VI).

2. Early and prolonged residency in most institutions produces neurological and biochemical deficiencies in the brains of many such children, their physical growth can be compromised, puberty may occur earlier, and it is possible they will have higher rates of a variety of medical and behavioral conditions later in adolescence and adulthood. Thus, the orphanage experience can produce neurological, hormonal, biochemical, and physical changes that even subsequent advantaged family life may not be able to completely erase (Chapters II, IV, and V). More specifically, many children exposed to most institutions for at least their first year or two of life have atypical neurological development in the prefrontal cortex and amygdala of their brains, areas generally known to be instrumental in the same mental functions and emotional behaviors that often represent problems for PI children (Chapter V). Furthermore, such children may be stunted in their physical growth, girls are more likely to have early puberties that potentially can be associated with increased likelihood of certain mental health disorders, and there is the possibility (yet to be confirmed) that PI children eventually may display higher rates of metabolic syndrome (i.e., obesity, type II diabetes mellitus, hypertension, heart disease, and polycystic ovary syndrome; Chapter IV).
3. Pictures demonstrating the deleterious effects of prolonged institutionalization on some children's neurological development and activity in certain brain regions may provide vivid and persuasive evidence to medical professionals, practitioners, and policy makers that a better child welfare system for children without permanent parents needs to be developed in their countries. Such visual evidence of "brain damage" has been a powerful influence in changing policy with respect to child abuse and early care and education in the United States and could play a similar role in

this domain. However, caution is advised not to publicly paint orphanages as terrible places for children, because this further stigmatizes all children who have spent some time in orphanages and demeans those who work in orphanages who may be doing as well as they can under existing conditions and who ultimately may need to be important contributors to a new child welfare system (Groark, McCall, & Li, 2010).

4. The cost to society is likely substantial for children who spend most of their childhood in institutions and are eventually transitioned to society in their home countries. Although little research exists on children in low-resource countries who remain in the orphanages until approximately 18 years of age and then are transitioned to independent life in the society, it is a reasonable expectation that such children will have worse outcomes than those who are adopted earlier in life. For example, children who remain in the United States foster care system until age 18 have very high rates of costly behavior problems, although many are of high risk and have problems when they enter the system (Berger, Bruch, Johnson, James, & Rubin, 2009; Carpenter, Clyman, Davidson, & Steiner, 2001; Kortenkamp & Ehrle, 2002). Furthermore, adults from mostly high-resource countries who have spent various amounts of time in institutions on average have higher rates of certain health problems, lower educational and occupational attainment, more marital problems, and a variety of social and emotional behavioral problems that are costly to society, such as early pregnancy, drug and alcohol problems, and criminality (Julian, 2009). Thus, it is reasonable to expect that continued reliance on institutions as currently operated is exceedingly costly in the long term to those societies.
5. Every effort should be made to transition infants and young children out of institutions and into family alternatives as early in their lives as possible. Unfortunately, an age by which children should be transitioned to family alternatives cannot be easily specified; it can be as early as 6 months for children from very severely depriving institutions or up to 18 of 24 months in less severely depriving institutions, and individual children vary in their resilience. But this cannot be predicted in advance, so the sooner children are transitioned out of institutions the better, and this may be especially important for those infants at medical risk who are more vulnerable to the deficiencies of institutions (Chapter IV). A balance is needed between the birth parents' right to retain legal custody of children being reared in an institution and the

children's right to be adopted or fostered as soon as possible (see below).

6. It is less costly for governments to operate family-based child welfare systems (i.e., supporting birth parents to help them keep their children and avoid institutionalization, foster care, adoption) than institutions for children without permanent parents. Numerous studies in various countries show that operating family-based systems is substantially cheaper than institutions, although an additional initial investment is required to establish such a system and a quality professional infrastructure to support it (Chapter VIII).

Therefore, child welfare systems need to be developed, revised, or improved in many countries; efforts to support families to keep their children should be emphasized (Chapter VIII); family alternatives need to be developed; children should be transferred to family environments as soon as possible; and institutions may need to be improved for those children who remain in them (see below).

Rights of the Child

The Convention on the Rights of the Child (United Nations, 1989) often guides the efforts of practitioners, advocates, and government and international organizations to improve child welfare systems (Chapters II, VII, and VIII). Ostensibly using the criterion of "the best interests of the child," the Convention implies a first preference that birth parents be encouraged to keep their children or have them restored to them after residing in an institution; then if parents cannot keep children, kinship, nonrelative foster care, and domestic adoption are favored followed by international adoption if necessary; institutions are least preferred. If children's physical and behavioral development is a large component of "children's best interests," then research on children's development is only partly consistent with these preferences, perhaps reflecting social/cultural values more than evidence (Chapter VII). Specifically:

1. *Institutions are the least preferred alternative.* Consistent with the Convention, the physical and behavioral outcomes of children, especially those who spend longer than approximately the first 1 or 2 years of life in institutions as currently operated, are the poorest of any of the rearing environments (Chapters II and VII; Julian & McCall, 2009). This may not be true of institutions for older children (Whetten et al., 2009).

2. *Although having birth parents retain a child rather than relinquishing it to an institution or having the child restored to them after a period of residency in the institution is the preferred alternative, children develop less well under these conditions as currently practiced than in foster care or adoption* (Chapters II and VII; Julian & McCall, 2009). Indeed, except for children who remain in institutions for 2 or more years, across studies children retained or restored to their at-risk birth parents do not develop much better than those who remain in the institution and less well than those who are fostered or adopted (Julian & McCall, 2009). Of course, results for individual studies can fall on either side of this generalization depending on the relative quality of care (e.g., Dobrova-Krol et al., 2010). This general result is perhaps because such birth parents often have many risk factors that dispose them to relinquishing their child in the first place, and most low-resource countries that rely on institutions do not have well-developed family preservation and reunification systems (Chapter VII). Thus, this research observation does not imply that children should not be kept or returned to their birth parents, but rather that developing a professional system of social, economic, psychological, and parenting services for at-risk families needs to be a major priority for countries attempting to improve their child welfare systems (Chapters VII and VIII).
3. *Foster family care is preferred over institutions.* Generally, children in kinship and nonrelative foster care as currently practiced do better developmentally than those remaining in the institution (Chapter VII; Julian & McCall, 2009; Nelson et al., 2009), even though the social service systems to support foster family care are often not well developed in low-resource countries.
4. *Adoption is often emphasized somewhat less than kinship or foster care, but children develop best in this context.* Although there are few studies of domestic adoption in low-resource countries, there is every reason to believe on the basis of the existing comparative literature (Julian & McCall, 2009) and the empirical international adoption literature (e.g., Chapter VII; Van IJzendoorn & Juffer, 2006) that adopted children develop best. However, the traditional value for “bloodlines” is prevalent in many parts of the world, and there can be resistance to adoption for cultural or religious reasons (Chapter VII).
5. *International adoption is the last option, not because children develop poorly, but because of occasional reports of corruption and because it can deflect efforts away from domestic solutions.*

International Adoption

International adoption is a controversial issue (Chapters VII and VIII). When foreign parents are willing to pay substantial amounts to adopt, there is money to be made by unscrupulous institution directors, adoption agency directors, and “brokers” who encourage women to give up children for adoption (e.g., Post, 2007). Also, occasional press reports of foreign parents who have abused or killed their adopted children (Miller et al., 2007; Pickert, 2010) incense legislators, who may complain that the receiving country does not monitor adoptive families or report on their welfare to the child’s birth country. Indeed, the Russian Federation and the United States have recently agreed to a system of monitoring of adoptive families and children (e.g., Boudreaux, 2011). Unfortunately, press reports rarely communicate the prevalence of such incidents, and only a few wonder if the abuse *rate* is higher among adoptive families (it is not, perhaps lower the evidence suggests; Van IJzendoorn, Eures, Prinzie, Juffer, & Bakermans-Kranenburg, 2009). Nevertheless, a country may pass legislation to stop all international adoptions. It seems easier, faster, and cheaper for a country to simply terminate international adoptions than to create a system that follows the Hague Convention on Protection of Children and Cooperation in Respect of International Adoption to minimize corruption or to develop family alternatives.

Another complaint is that international adoption sometimes exists instead of domestic alternatives (Chapters VII and VIII; Chou & Browne, 2008; Dickens, 2002; but see Gay y Blasco, Macrae, Selman, & Wandle, 2008). A potential partial solution (Van IJzendoorn & Juffer, 2006) is to charge adoptive parents a fee that would go to supporting family alternatives in the birth country. International adoption is also sometimes accused of siphoning off the best children for international rather than for domestic adoption. This could occur in corrupt situations, but most countries that allow international adoptions typically have policies that favor domestic over international adoption but currently do not have many domestic adoptive parents. Furthermore, older children and those with special needs are being adopted internationally from certain countries more frequently in recent years (Selman, 2009).

Unfortunately, the result of these concerns typically is that children remain in the institution, essentially the worst alternative for them. In contrast, adoptive families tend to have two parents with college degrees and high incomes and are relatively stable (Gunnar et al., 2007; Pomerleau et al., 2005), most children develop well (better than in other environments) except for problems likely produced by institutionalization (Julian & McCall, 2009; Van IJzendoorn & Juffer, 2006), there are few adoption disruptions (Brumble, 2007), and 98% of U.S. international adoptive parents, for example, would recommend it to their friends (Hellerstedt et al., 2008).

Ideally, countries should develop a comprehensive quality child welfare system composed of services for all parents and domestic family alternatives. But this is likely to take time (Chapters VII and VIII). In the meantime, establishing an international adoption system that minimizes corruption and simultaneously favors and supports domestic adoptions would be in the best interests of such children, as long as efforts continue to develop or improve the domestic child welfare system. In short, children need families as soon as possible; institutions cannot be eliminated unless there is a family care system; and a monitored international adoption process could exist until there are sufficient domestic family alternatives.

Creating a System of Alternative Family Care

A substantial portion of research on children who experience early adversity consists of children who have been institutionalized (Chapters I–VI). But children exposed to institutions represent a small fraction of the world’s children without permanent parental care (Chapters VII and VIII). Although accurate counts are impossible (Chapter VIII), some estimates suggest there are 143 million children in 93 countries without permanent parents (UNAIDS, UNICEF, USAID, 2004), but only approximately 8 million (Pinheiro, 2006) or roughly 5%, reside in institutions. Thus, the worldwide problem is much larger and more complicated than simply finding alternatives to institutions, even though that may be the most immediate alternative, and Chapters VII and VIII provide a glimpse of this larger situation and its complexities.

A major component of a child welfare system is family alternatives to institutionalization, but this can be quite challenging even in countries with political will and financial resources (Chapters VII and VIII; Groark et al., 2010). For example:

1. *Recognizing the need for reform can be politically embarrassing.* Reforming child welfare represents an admission that the current system is not as good as it could be, perhaps even deplorable. Some political leaders do not want to admit that such a situation exists on their watch, even if it was created under previous administrations, so the issue may be suppressed from public view.
2. *A major challenge is getting enough foster and adoptive parents.* There may be historical, cultural, and religious aversion to “raising someone else’s child” (Chapter VII); public information campaigns can inadvertently demean orphanage staff who could be a source of foster parents; and creating financial incentives that attract parents and promote permanency can be complex.

3. *Financial systems may need to be changed.* A financial system for the institutions must be created that does not punish them for relinquishing children to alternative family care. Often institutions are paid per capita fees by the government, so outplacements of children mean a smaller budget. A financial system should involve institutions as partners in alternative family care, using their facilities and their staff to be foster parents or to provide support and assistance to them. And the system should have money follow the child not services.
4. *By some estimates, most children in institutions have at least one parent and potentially do not need to be there for a variety of reasons* (Chapters VII and VIII). Policies and especially services need to be developed to encourage and help potentially able parents to keep their children.
5. *Many children may not be eligible for family care.* Older children and those with disabilities are more difficult to place in families and may need small group homes and specialized foster care, which may not be available, rather than large institutions. Also, although policies vary between countries, some permit birth parents a long time to retain legal custody of children residing in the institution even without visiting them. Policies may need revision to better balance parental rights to their children and children's rights to a better life. Furthermore, in some countries abandoned and minority children may not have birth certificates and legally cannot be placed in families. As a result, only a small proportion of children in the total child welfare system may be potential candidates for family care (Groark et al., 2010). Policies should be considered that minimize these constraints.
6. *An infrastructure of social services needs to be developed.* A system must be created to select foster or adoptive parents, train them, and provide social services to deal with the problems that some may face. This requires a social service profession and training and mentoring of social workers in contemporary best practices, maintaining a stable workforce, creating supervisors, and providing salaries sufficient to attract and maintain qualified personnel, all of which will take time to develop (Chapters VII and VIII).
7. *Policies to support adoption are often underemphasized relative to other types of care; these should be linked to serve the same goal.* Some countries have a value for and sometimes legislation that preserves the "secrecy of adoption," which can have the effect of discouraging potential adoptive parents from participating in a selection

process, training, or receiving professional assistance after the adoption. Furthermore, governments are sometimes reluctant to provide financial incentives to adoptive parents, even though they may provide such incentives to birth and foster parents.

The above principles may be more applicable to some (i.e., Eastern Europe) than other (i.e., mid-East) countries. The cultural, financial, social, and political circumstances affecting child welfare systems can be very different in various parts of the world (Chapters VII and VIII). In Africa, for example, the HIV/AIDS epidemic has created hundreds of thousands of children without permanent parents (Chapter VIII). Some of these countries can barely provide for adults, so children are reared by kin, in the village, or en masse in refugee camps. The few institutions that exist may actually provide better nutrition, medical care, sanitation, and safety than the prevalent alternatives (Whetten et al., 2009).

In contrast, the one-child policy in China produced many females to be raised in institutions. Now, however, the economy is booming, and many families, especially those with boys, want more than one child and are adopting girls. Furthermore, the Chinese are not culturally averse to fostering, and a fostering system has been tried and is being expanded across the country (Glover, 2006). A few orphanages have created “resident foster families.” However, the result is that larger percentages of children currently in institutions are older or have disabilities, so the challenge for China is to develop a system of early intervention and special education services for both parents and institutions. Indeed, this same task is, or likely will be, a priority for many other countries.

Thus, even in countries that have a priority for creating family alternatives (e.g., Ukraine; Groark et al., 2010), progress can be quite uneven, there may be many bumps in the road, change can be painfully slow even with a committed government and administration, and the number of foster and adoptive families can be very few relative to the total number of children in institutions. It took high-resource countries many decades to shift from institutions to family care alternatives, and it is debatable whether all of these systems are as good as they should be; we should have realistic expectations for low-resource countries attempting to develop such a system, especially against a backdrop of longstanding challenges.

IMPROVE INSTITUTIONS?

Advocates, with some justification, often argue that institutions should be eliminated, and all policy, practice, and financial resources should be devoted to creating alternative family systems. It is a worthy ideal, which tacitly, if

not overtly, subscribes to the proposition that “any family is better than any institution” (e.g., Moore & Moore, 1977). But a family may not be the actual alternative to an institution, and in some places, an institution may provide adequate nutrition, reasonable sanitation, relative safety from violence, and some education that is better than is otherwise available for such children. The *quality* of each alternative is likely more important than its sheer category.

In the course of child welfare reform, some attention should be paid to the quality of institutions in addition to family alternatives. Why? Because, as noted above, it is unlikely that a new system of family alternatives will be able to handle most children without permanent parents in the near future, and in the meantime, the vast majority of such children will still reside in institutions (Groark & McCall, in press). For example, Ukraine has been vigorous and highly committed to creating an alternative system, but after approximately 5 years only approximately 5,000 children were in alternative care and approximately 44,700 were in orphanages that have been completely ignored in the reform effort (Groark et al., 2010). But advocates sometimes argue that when resources are scarce, all funds should be devoted to family alternatives. However, it can be argued that family alternatives are usually substantially cheaper than institutions (Chapters VII and VIII), and money saved as family alternatives become more common could be reinvested into the system, perhaps to improve institutions for the children who remain there.

But typically there is neither motivation to change nor knowledge about how an institution could be improved. Institutions have operated more or less the same way for decades in many countries worldwide, and professionals and policy makers see no reason to change them. Institutions may be operated under the auspices of a medically oriented ministry that is unaware of modern behavioral pediatrics, early intervention, and other psychosocial practices demonstrated elsewhere to promote the development of all children. Also, there may be the tacit belief that “nothing can be done to improve these children,” especially children with medical diagnoses and disabilities, or faith in experiences (e.g., stimulus integration rooms) or therapies (physical therapy) that are known to be ineffective or less effective for such children (e.g., Palmer et al., 1988).

Most institution directors and staff typically are sincerely concerned about the development of children in their charge, and when confronted systematically with the characteristics of the human family thought to be crucial to the development of children versus the characteristics of the institution, the extreme contrast can be shocking, illuminating, and sometimes motivating to them (Groark & McCall, in press). Furthermore, interventions in Russia designed to make an institution more family-like and encourage caregivers to behave more parent-like have demonstrated that children’s development can be increased very substantially (The St. Petersburg-USA Orphanage Team, 2008). So, it is possible to improve institutions (Chapter VIII) and the

development of children in residence; the issue is the political will and reallocation of resources to do this for the children who are likely to remain in them for the next several decades.

WHAT SHOULD BE DONE?

Several steps could be taken now (Chapter VII and VIII).

1. *Create international political commitment to develop better child welfare systems for children without permanent parents.* This is already a priority for UNICEF, USAID, and numerous nongovernment organizations (Chapters VII and VIII). However, it is often pursued in bits and pieces, rather than systematically and comprehensively by an entire country.
2. *Attempt to create family-based care as an alternative to institutions.* This may need a public information campaign to recruit potential families, but the campaign should emphasize the positive aspects of fostering and adopting rather than the negative aspects of institutional care. Policy makers will need to be convinced that this is worthwhile, and for them the visual displays of deficiencies in brain development and activity and the stunted physical and behavioral development of institutionalized children followed by catch-up growth when they are transferred to families may be persuasive. Ultimately, governments need to pass policies, establish administrative systems, and provide incentives to move in this direction. But there is no one-size-fits-all model of child welfare reform (Dickens & Groza, 2004); a consulting team that will work collaboratively to help countries develop their own systems may help to blend local circumstances with the world's knowledge and lessons learned.
3. *Develop social service systems that include modern professional training, adequate salaries to attract people to social work, and training specifically in the problems of children without permanent parents that are appropriate to each individual country.* The training and curricula need to be practical, not just theoretical, and emphasize services and practices that have some documented effectiveness.
4. *Develop and package materials relevant to a modern child welfare system.* Such materials might include how to select foster and adoptive parents; training modules to prepare foster and adoptive parents; and services and intervention programs to support social

workers and parents in dealing with problems likely to occur among such children, including attachment, self-regulation, and executive functioning (e.g., Diamond et al., 2007).

5. *Develop and package training materials for caregivers.* Training materials could be packaged for caregivers (e.g., www.globalorphanage.net, www.fairstart.net), parents (Juffer et al., 2005, 2008a, 2008b, 2009), professionals, and paraprofessionals. These might provide guidance on how to promote warm, sensitive, contingently responsive interactions; child-directed interactions, holding reciprocal conversations, empathizing with children's display of appropriate emotions, emotional regulation, early intervention, and motor and occupational therapy techniques for children with disabilities.
6. *Package suggestions for changing the structure and operation of institutions to support the goals of caregiver training.* As long as children reside in institutions, attention and services should be appropriately devoted to making them as good for children as possible. Training institutional caregivers alone is rarely very effective unless it is accompanied by a system of monitoring and supervision plus a structural and organizational environment that provides an environment in which caregivers can readily implement the trained behaviors (Groark & McCall, in press; The St. Petersburg-USA Orphanage Research Team, 2008).

Many of these materials exist but are not packaged appropriately, and a coterie of professionals may need to be prepared to be available through international organizations to collaborate with diverse countries and train-the-trainers to implement new systems and procedures.

CONCLUSION

The research, practices, and policies reviewed in this monograph document that many institutions for children without permanent parents throughout the world do not provide adequate care and that many infants and young children can be permanently disabled after only a short time in residence early in their lives. But this is potentially a solvable problem. Although there is much research yet to be done and there are many challenges both common and unique to each situation, this is more a problem of awareness and social-political will than knowledge and resources. We hope this monograph and its derivative publications contribute to progress in both knowledge and international child welfare reform.

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