

# The Development and Care of Institutionally Reared Children

The Leiden Conference on the Development and Care of Children without Permanent Parents

**ABSTRACT**—*This article briefly summarizes the literature on elements of research, practice, and policy pertaining to the development and care of children raised in institutions. It covers such children’s development while they reside in institutions and after their transition to adoptive or foster families. Of special interest are attachment and indiscriminate friendliness, physical growth, neurobiological deficits, and sensitive periods. Early exposure of a year or 2 to a substandard institution is related to higher*

*than expected rates of a variety of long-term neurological, physical, cognitive, and behavioral deficiencies and problems, even if the children are subsequently reared in advantaged families. Countries hoping to transition from a reliance on institutions to family care alternatives face a variety of unique challenges relating to their prevailing historical, cultural, political, and financial circumstances. Although there has been progress, developing a child welfare system of family alternatives may take time in some countries.*

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One of the central questions for developmental sciences is the contribution of early experiences to contemporary and long-term development. Scholars are paying increased attention to children reared in substandard institutions, because they represent a naturally occurring population that has atypical early experience.

## Numbers Worldwide

Institutionalized children are those without permanent parents, a group that includes “true orphans” who do not have living parents and “social orphans” who have at least one living parent who may be unable, unwilling, or unfit to rear the child.

Although accurate figures are impossible to obtain (Engle et al., 2011), an estimated 163 million children in 93 countries lack permanent parents (UNAIDS, UNICEF, & USAID, 2004). The vast majority live in villages, in kinship groups, in refugee camps, on the street, and in a variety of other formal and informal care arrangements (Engle et al., 2011), but an estimated 2–8 million (Human Rights Watch, 1999; USAID, 2009) live in institutions, mostly in Eastern Europe, Latin America, Asia, and Africa. Although institutionalized children—typically living in orphanages but sometimes in hospitals and other residential facilities—represent a small fraction of those without permanent

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parents, those reared in, adopted from, or fostered from such institutions have become the object of substantial study in recent years.

### Characteristics of Institutions

The physical, educational, and affective characteristics of the care that institutions provide children all vary from country to country, within countries, and over time. The few narrative and empirical published reports (Rosas & McCall, in press; van IJzendoorn et al., 2011) typically pertain to orphanages for infants and young children. The group sizes tend to be large (9–16 children per ward, but sometimes up to 70), the ratio of children to caregiver is high (six to eight children per caregiver, although it is often much higher), children are grouped homogeneously by age and disability status, and they are “graduated” to new groups or institutions periodically when they reach certain developmental milestones or ages.

There are also typically many different and changing caregivers per ward, and caregivers often work long shifts (up to 24 hr) and then are off for up to 3 days. For example, children in two Russian orphanages saw 60–100 different caregivers in the first 19 months of life, and they saw no caregiver today whom they saw yesterday or would see tomorrow (St. Petersburg-USA Orphanage Research Team, 2008).

Finally, although there are exceptions (e.g., Gavrin & Sacks, 1963; Vorria et al., 2003; Wolff & Fesseha, 1998), caregivers are frequently described anecdotally and empirically as being businesslike and perfunctory in performing their caregiving duties, with little talking and minimal warm, sensitive, contingently responsive interactions with children even when the number of children per caregiver is relatively low (Vorria et al., 2003). This environment is in stark contrast to that of an ordinary family.

## CHILDREN’S DEVELOPMENT

It is not surprising that children reared in institutions are substantially developmentally delayed, with potentially lifelong consequences.

### Children Residing in Institutions

Children living in institutions around the world average more than 1 *SD* below levels expected of noninstitutionalized children in their physical growth, cognition, and general behavioral development, and their attachment and social-emotional development are mostly disorganized and delayed (Johnson & Gunnar, 2011; van IJzendoorn, Bakermans-Kranenburg, & Juffer, 2007; van IJzendoorn et al., 2011). But the variation is substantial; although some develop within typical ranges, it is not uncommon to find children averaging 2 *SD* below the mean, with 40%–50% of institutionalized children below the 10th percentile of parent-reared children (McCall et al., 2010; St. Petersburg-USA Orphanage Research Team, 2005).

### Postinstitutionalized Children Placed in Families

Postinstitutionalized (PI) children adopted by typically advantaged parents (for a review, see Palacios & Brodzinsky, 2010) display immediate and substantial catch-up in physical growth (height, weight, and to a lesser extent head circumference), attachment, and cognitive and behavioral development as measured by standardized assessments (Juffer et al., 2011; van IJzendoorn & Juffer, 2006). This catch-up growth provides retrospective testimony to the developmentally depressing character of the institutions compared to family care.

But catch-up is not always complete for general indices of social and behavioral development and especially attachment (Van den Dries, Juffer, van IJzendoorn, & Bakermans-Kranenburg, 2009) and specific cognitive and behavioral problems (Gunnar, 2001; Juffer & van IJzendoorn, 2005; MacLean, 2003; Pollak et al., 2010; Rutter et al., 2010). Although most PI children develop quite typically after entering a family, those exposed to institutions for longer periods display higher rates of relative deficiencies and problems in several areas, as well as more multiple problems (Hawk & McCall, 2011; Rutter et al., 2010), than would be expected of noninstitutionalized children residing in the PI children’s adoptive society or country of origin.

Specifically, even after spending years in an advantaged adoptive family, PI children may be slightly undersized physically and score slightly below expectations on general mental tests, and they can exhibit a variety of executive functioning deficiencies (i.e., short-term working memory, attention, inhibitory control, and set shifting); attachment, relationship, social engagement problems; and a variety of internalizing and externalizing behavior problems, especially in middle childhood and adolescence. At least one review (Julian, 2009) and a large longitudinal study (Van der Vegt, Van der Ende, Ferdinand, Verhulst, & Tiemeier, 2009) suggest that these problems do not simply represent an extremely troublesome adolescent period but persist in one form or another into adulthood.

### Institutional Exposure or Other Factors?

Most research in this area is nonexperimental, so technically it is impossible to unequivocally attribute the delayed development of children within institutions and the higher rates of long-term deficiencies to institutional rearing. Undoubtedly, genetics, prenatal conditions (such as maternal exposure to drugs, alcohol, and other agents linked to birth defects), birth complications (such as low birth weight, poor Apgar scores, lung immaturity), and preorphanage experience (such as birth hospital or an abusive or neglectful family) all have the potential to produce these developmental outcomes (Juffer et al., 2011; van IJzendoorn et al., 2011). Furthermore, these potentially confounding conditions are known to occur at higher than expected rates in at least some institutional populations (St. Petersburg-USA Orphanage Research Team, 2005; van IJzendoorn et al., 2011).

Nevertheless, the preponderance of circumstantial evidence indicates that institutional experience contributes substantially

to these concurrent and persistent developmental deficiencies (McCall, 2011; Rutter, et al., 2007). The most prominent evidence includes: (a) the uniformly delayed development of institutionalized children and their substantial catch-up growth in every domain after placement in family care despite variations in institutions and families, (b) a dose–response effect observed for time in the orphanage, and (c) intervention studies demonstrating profound improvement in children’s development when the institutional environment is improved (St. Petersburg-USA Orphanage Research Team, 2008) or when children are randomly assigned to foster care (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2008; Nelson, Furtado, Fox, & Zeanah, 2009).

### SPECIFIC DEVELOPMENTAL PROBLEMS AND ISSUES

Researchers have studied several specific issues with particular vigor because of their broader theoretical and practical implications.

#### Attachment and Indiscriminate Friendliness

Although much of the literature is descriptive, attachment theory has provided theoretical guidance regarding the long-term effects of early social-emotional and relationship deficiencies that most institutionalized children experience (Bakermans-Kranenburg et al., 2011). Indeed, six studies (Bakermans-Kranenburg et al., 2011) assessing the attachment of institutionalized children to their favorite caregiver using the Strange Situation Procedure or modifications of it indicate that on average 73% of institutionalized children display insecure disorganized attachment behavior: an incoherent (fear without solution) strategy to separation and reunion with an attachment figure (Main & Hesse, 1990). This is not surprising given the typically neglectful environments and the lack of sensitive, responsive interactions with changing and inconsistent caregivers that most of these children experience.

Children living in institutionalized settings also show more indiscriminate friendly behavior than noninstitutionalized children (Bakermans-Kranenburg et al., 2011). Apprehension about strangers is the norm for family-reared children, whereas a friendly approach to any adult willing to pay attention may enhance institutionalized children’s chances of being cared for and actually promote positive caregiving (Chisholm, 1998). However, PI children who are adopted then present a more complicated picture (Bakermans-Kranenburg et al., 2011). Although most PI children become attached to their adoptive parent, some are simultaneously indiscriminately friendly to strangers (Bruce, Tarullo, & Gunnar, 2009; Rutter, et al., 2007). It is unclear why indiscriminately friendliness persists in some PI children but not others.

#### Psychosocial Growth Failure

It is not widely appreciated that inadequate social-emotional and caregiver–child relationship environments can produce deficiencies in physical growth, a phenomenon called *psychosocial*

*growth failure* (Johnson & Gunnar, 2011). This phenomenon is supported by evidence that children in institutions that apparently provide adequate general nutrition and medical care are nevertheless undersized, and children show substantial catch-up growth when they leave the institution, especially before 1–2 years of age (van IJzendoorn et al., 2007). Further, it is possible to improve growth by improving the psychosocial environment of the orphanage without changing nutrition (St. Petersburg-USA Orphanage Research Team, 2008) or by providing foster care in a randomized trial (Johnson et al., 2010).

But psychosocial growth failure does not mean that nutrition is irrelevant to institutional children’s development. Even in orphanages that provide adequate macronutrients, children may be undernourished in specific elements through dietary insufficiency or infection with parasites that diminish absorption or promote loss (Johnson & Gunnar, 2011). For example, iron deficiency can persist even after an adoptive family switches the child to a nutritious diet because of high iron demands for expanding red blood cell mass to accommodate catch-up growth. Thus, children with psychosocial growth failure may also experience relatively prolonged iron deficiency, which opens the possibility of associated cognitive and behavioral deficiencies. Other micronutrients critical for brain development, such as zinc, copper, selenium, and iodine, could be implicated in similar scenarios but are as yet understudied.

Another apparent consequence of psychosocial deprivation in PI girls and to a lesser extent in boys is much higher rates of early puberty (Johnson & Gunnar, 2011), even when compared to non-PI children of the same ethnicity (Teilmann et al., 2009). No studies have compared PI girls who experience early versus typical menarche and their longer term behavioral problems. However, 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—all characteristics that occur at higher rates among PI children.

#### Neurobiological Costs of Institutionalization

Recent studies have looked at PI children from a neurobiological perspective (Nelson, Bos, Gunnar, & Sonuga-Barke, 2011), and the neurobiological evidence at least parallels the behavioral outcomes observed at higher rates in PI children.

Specifically, there is less metabolic, physiological, and neurochemical activity in the brains of PI children in middle childhood than in family-reared children, and there is abnormal development of the prefrontal cortex and amygdala. These regions are typically associated in non-PI children with higher cognitive functions, memory, and emotion, and some studies show that PI children with these brain deficiencies tend to have mild impairments of impulse control, attention, and social relations. These deficiencies may also be related to PI children’s problems in inhibitory control, emotional regulation, and executive functioning, especially connecting separate aspects of the

environment in thought (Nelson et al., 2011). For example, the amygdala is sensitive to early negative or stressful experiences, such as abuse and neglect, and an atypical amygdala might be related to diminished or more extreme emotional responses to stress and threat, which in turn might underlie a variety of internalizing and externalizing behavior problems that tend to be intercorrelated (Hawk & McCall, 2011).

### Sensitive Periods

A central question is whether there is a sensitive age period during which exposure to a deficient institution produces the maximum developmental damage (Zeanah, Gunnar, McCall, Kreppner, & Fox, 2011). Of course, it is impossible to conduct the crucial experimental studies, and most children enter the institution at a very early age and leave at varying ages, which confounds time in the institution with specific ages and total duration of exposure. Consequently, there is no way to answer the question definitively, but exposure for several months during the first 2 years of life is potentially sufficient to produce the higher rates of long-term problems common to PI children.

At least two lines of evidence converge on this proposition (Zeanah et al., 2011). First, substantial research shows that long-term problems are more frequent in PI children who are adopted at older ages, and conversely, developmental catch-up and developmental improvements are greater when children transition to families earlier. Second, in several studies that have investigated children adopted at several different ages during the first 3 years of life, a variety of long-term adverse outcomes—multiple problems and problems with behavior, executive functioning, and social skills—have been shown to be a step function of age at adoption. That is, children adopted at ages before the step have the same rates of problems as family reared never-institutionalized children; then rates of problems increase precipitously, and the rates do not increase further with longer exposure to the institution.

However, the age at which the step occurs depends on several factors, including the severity of the orphanage experience and the specific outcome variable and its measurement. Children adopted from the severely and globally depriving Romanian orphanages in the 1990s show a step-like increase in risk for multiple long-term problems when they are approximately 6 months old (Kreppner et al., 2007; Stevens et al., 2008). Children from psychosocially depriving Russian orphanages have a step function around the age of 18 months for several parent-reported problem behaviors, executive functioning, and social skills that are usually reported for adolescents (Hawk & McCall, 2011; Julian, 2010; Merz & McCall, 2010a, 2010b). For children adopted from various countries including a large number from China (thought to be from better circumstances), the step function may occur around the second birthday (Gunnar et al., 2007; Merz & McCall, 2010a). Furthermore, studies suggest that children first entering the orphanage after 2 years of age may have fewer such problems (Lee, Seol, Miller, Sung, & Minnesota International Adoption

Project Team, 2010; McKenzie, 1997, 2003; Vorria, Rutter, Pickles, Wolkind, & Hobsbaum, 1998).

Studies revealing step functions of age at adoption are individually consistent with a sensitive period hypothesis, but the pattern between studies of a step at earlier ages the more severely deficient the institution suggests a cumulative exposure hypothesis and possible epigenetic interpretations. In any case, these results imply that some duration of exposure to the institution is necessary to increase risk, but the effects may well be observed after as little as 6 months in very severely depriving orphanages and within the first 2 years for many other institutions. This result implies that children should be transitioned out of institutions as soon as possible, because any specific institution will not know what length of exposure is too long.

### WHAT SHOULD BE DONE?

The research provides practitioners and policy makers with a few simple and profound conclusions: (a) most institutions for infants and young children are not supportive of children's development and may produce long-term, perhaps permanent impacts on children's brains and their physical, cognitive, and social-emotional development; (b) these consequences can be disruptive and expensive for societies; (3) every effort should be made to avoid placing infants and toddlers in institutions in the first place and to transition children out of institutions as early as possible because damage can occur early and after relatively short exposure; and (d) adoptive, foster, and other family type arrangements are better for young children's development than most institutions.

There is no question that on average family care environments are better and cheaper long-term than institutions, but efforts to implement modern child welfare systems of family care alternatives in countries that still rely on institutions face a variety of challenges (Engle et al., 2011; Groza, Bunkers, & Gamer, 2011).

For example, there may be longstanding historical, cultural, social, political, or religious hesitation or resistance of parents to rear someone else's child. This, coupled with insufficient financial means, can make it difficult to recruit enough domestic adoptive or foster parents. Financial systems must start providing incentives and adequate support to birth, kin, foster, and adoptive parents. Many children may not be eligible for family care in some countries because they lack birth certificates or are not legally relinquished, and adoptive or foster parents often do not want children with special needs or disabilities and older children, especially those with behavior problems. Nevertheless, children are now adopted domestically at higher rates than in the past in countries such as Brazil, India, and China, and traditionally hard-to-place children are also being taken into domestic family care more frequently, such as girls in China and India (Selman, 2009).

A burning issue of the 21st century is how to provide adequate care to the numerous children affected by the HIV/AIDS pan-

dem. Alternative solutions to institutional care, such as kinship care, may rise to meet the challenge or fall apart when financial resources are very limited or traditional extended family networks unravel because of this pandemic (Engle et al., 2011).

Further, many children in institutions have at least one parent, but there is often a reason why that parent placed the child in the institution, and there is often a shortage of professional services and community-based support for such parents to keep their children or to have children restored to them. It will likely take many years to build the professional infrastructure to select, train, support, and provide services to such parents.

Finally, although intercountry adoption provides excellent homes for institutionalized children, it should be regulated strictly and carefully according to the 1993 Hague Adoption Convention. Under this convention, financial gains in intercountry adoption and illegal child trafficking should be banned. Importantly, to safeguard increasing possibilities for domestic family care alternatives, the subsidiarity principle should be followed. This principle implies that a country's first priority is to try to place the child in the birth family or in kinship care, and if that is not possible, in domestic adoption, foster care, or kaffala (Islamic guardianship). Only when a family cannot be found within the country does intercountry adoption become an acceptable alternative.

In practice, if a country has substantial political will, leadership, and financial resources; a well-conceived, long-term plan; and few of these challenges, it should be able to develop and implement a professional child welfare system of family care alternatives in a few years. Even so, sometimes progress can be slow. Ukraine, for example, had the political will, administrative commitment, and resources, but after 5 years of intensive effort, only 5,000 children had been placed in foster care while 45,000 children remained in orphanages (Groark, McCall, & Li, 2009).

Thus, in many countries, large numbers of children are likely to remain in institutions for the foreseeable future, even when there is progress toward creating family care alternatives. Further, older children and children with disabilities or HIV/AIDS, who are often less preferred by parents, are likely to constitute an increasing proportion of the remaining institutional population.

Of course, research shows that it is possible to improve institutions and increase the development of both typical children and those with disabilities (St. Petersburg-USA Orphanage Research Team, 2008). Advocates, however, think that improving institutions sometimes represents a simpler solution for a country than developing a comprehensive child welfare system and would divert attention and funds from developing family alternatives that are more in the children's best interest. But, importantly, because family care alternatives are generally cheaper, the savings could be used to improve the institutions in which the remaining children live. In the end, each country will need to develop a system consistent with its own values, resources, culture, and practices, and some countries and nongovernmental

organizations have developed rather unique approaches to solving this issue (Engle et al., 2011; Groza et al., 2011).

The research convincingly suggests that infants and young children either should not be placed in institutions or should be removed from them as early as possible. Nations would do best for these children and their societies to develop community-based services to support birth parents and their extended families to keep their children while modernizing child welfare systems to create alternative family care environments such as foster care, kaffala, and adoption. However, it is likely that developing a system of family care will take time and that many children will remain in institutions for some years. Thus, countries should improve the institutions for infants and young children while simultaneously aiming to improve family care and other rearing for children of all ages and genders, with and without disabilities, and all racial-ethnic origins.

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