

RUNNING HEAD: Development in Alternative Care Environments

The Development of Children Within Alternative Residential Care Environments¹

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Abstract

Worldwide, children without permanent parents often enter alternative care arrangements (e.g., adoption, foster care, institutional care, or reunification with the birth family following alternative care), and many advocate placing such children in family-type care arrangements over institutions. The published literature on existing care alternatives suggests that adoptive families provide the best care, foster/guardianship arrangements an intermediate level of care, and biological families of formerly institutionalized children only slightly better care than the institutions. Further, different aspects of children's development (physical growth, attachment and social relationships, the prevalence of problem behaviors, and cognitive outcomes) follow the same sequence, but the quality of care within a category is also associated with children's development. Scientific, practice, and policy implications are discussed with regard to both the preferences of international conventions and cultural values.

Key words: child welfare, adoption, foster care, reunification, institutions, orphanages

In 2003, there were an estimated 143 million orphans in 93 countries in sub-Saharan Africa, Asia, Latin America, and the Caribbean (UNAIDS, UNICEF, USAID, 2004). Children without permanent parents, whether true orphans (no parents) or social orphans (parents who are unable or unwilling to care for their children), often enter an alternative care arrangement (e.g., adoption, kinship/non-relative foster care, institutional care, or reunification with the birth family following alternative care). The placement type that is chosen is often dependent on the history, economics, and cultural values of a country.

While many low-resource nations have traditionally reared orphaned children in institutions, many high-resource countries have eliminated most institutions in favor of family-like alternatives, and advocates (e.g., UNICEF, USAID, others) are urging low-resource countries to do the same. Such decisions are sometimes made categorically (e.g., foster care would be better than institutions), without sufficient attention paid to the actual or potential quality of these alternatives.

The United Nations Convention on the Rights of the Child (1989) and the Hague Convention on Protection of Children and Co-Operation in Respect of Intercountry Adoption (1993) both assert that the criterion for placement is “the best interest of the child.” Specifically, children should remain in the care of their family of origin if at all possible (e.g., reunification, kinship care), and when this is not possible, a family environment with non-relatives should be considered (e.g., adoption, non-relative foster care); institutional care should be utilized only if necessary and appropriate. While many factors are taken into account when determining a placement setting for an individual child, knowledge of how children’s development compares in these different settings can inform the work that needs to be done to improve these settings.

Thus, this review examines children’s development in these alternative care environments

as they have been typically practiced in many countries over the last few decades and are represented in the published literature. The major question is whether this literature converges on conclusions about children's development in these different care arrangements despite the very substantial differences between countries and over time in the nature of these arrangements. More specifically, for example, do children develop better in accord with the international conventions? Do such children do best with their biological parents? Are all family environments better on average than institutions? In addition, to the extent possible, the results of the review will be discussed with respect to the potential quality of these alternatives and the practical decisions countries face in this regard.

This review focuses on studies that compare two or more placement settings (e.g., adoption, non-relative foster care, kinship care, institutional care, or reunification). The literature, however, does not always fall cleanly into these categories. Children often move from one placement setting to another, and there is substantial variation of quality within types of settings (e.g., stability of the placement, caregiver's commitment to the child, and the degree to which the care is warm, nurturing, responsive, and child-directed). This literature was generated in large part from a practical, rather than a scientific, perspective—that is, in which *alternative as typically practiced* do children develop better? Because children were (with one exception—the Bucharest Early Intervention Project) not randomly assigned to placement types, their placements can be assumed to reflect what agencies or case workers have determined to be best for each child given the available options and each child's individual circumstances.

Many studies use a comparison group that is composed of children who have never been in an alternative care placement and are being reared by their biological parents; these children will be referred to as *parent-reared*. However, studies comparing an alternative environment

only to parent-reared children will not be included, because this review aims to provide information to improve different placement alternatives for children. Further, literature on alternative settings specifically in low-resource countries is limited, so research based on samples from the USA and Western Europe will also be presented. The results of international adoption will not be considered in detail, but references to that literature will be made as appropriate. This review only considers published articles and chapters, not gray literature.

Because many studies fail to provide enough information to calculate appropriate effect sizes and studies vary in their choice of comparison groups (rendering effect sizes incomparable between studies), meta-analysis was not appropriate for the current review. Instead, this review will use a simple ranking strategy to compare the placement alternatives in each study.

Nature of Alternative Care Environments

On average, care environments for orphaned children differ in many ways that are known or believed to affect children's development, including the nature of the family, risk factors, and resources.

Reunification

Reunification with a child's biological family is often preferred because of the human right and responsibility of people to rear their own children, cultural preferences for "blood lines" and aversions to fostering and adoption, and the belief that biological parents in general have greater commitment to and love for their own children.

Having a relationship with one's birth parents and residing in a family environment are likely to confer benefits to a child, but in some other respects these families tend not to be as favorable for children's development as other alternatives. First, the reasons families once relinquished their children (i.e., parental poverty, mother's young age, drug and alcohol

problems, mental health issues, abuse and neglect, lack of financial and social support) may remain to varying extents at the time a child is reunited (Fraser, Walton, Lewis, Pecora, & Walton, 1996).

Second, while conditions may have improved enough to merit the child's safe return, these families generally tend to be less financially and educationally advantaged than alternative families (Bellamy, 2008). In fact, reunification is associated with an increase in adverse life events, which is associated with increased levels of problems (especially internalizing) in reunified USA children (Bellamy, 2008; Lau, Litrownik, Newton, & Landsverk, 2003).

Third, the behavioral environment may be less favorable. Relative to adoptive and foster parents, parents of reunified children report using more psychological and physical violence when disciplining their children, and their children were more likely to have witnessed violence in the home (Litrownik, Newton, Mitchell, & Richardson, 2003). English children were often reunified following their mother's marriage (usually not to the child's father); about half of reunified mothers were in poor financial situations, some had 4-6 other children to rear, and they provided fewer literary opportunities to their children than even those in institutions (Tizard & Rees, 1974).

Adoption

Adoptive homes typically represent the most favorable rearing environments. Adoptive parents in many countries are routinely screened and selected to have the temperament and finances to parent, have a strong desire for children, and have a lower divorce rate than parents in general (Hoksbergen, 1999). Adopted children in Scotland tend to have a higher sense of security and belonging in their family and continue to feel close to their family as they become adults (Triseliotis, 1984, 2002; Triseliotis & Hill, 1990). Children adopted in England experienced

more treats, excursions, and literary opportunities than children in other placement settings (Tizard & Rees, 1974).

French children who were adopted into higher SES homes experienced a greater increase in IQ scores following adoption than those adopted into lower SES homes, suggesting that SES, which tends to differ between placement types, may contribute to differences in cognitive outcomes both within and between different placement settings (Duyme, Dumaret, & Tomkiewicz, 1999).

Foster Care

Kinship care vs. non-relative foster care. Foster care differs greatly between families and countries and consists of two general types—care with relatives (kinship care) or non-relatives. Kinship care is often preferred, and some countries have traditions of kinship care (e.g., many African countries). USA children are more likely to be placed in kinship versus non-relative care if the child is African-American, has a known disability or special need, or is under one year of age at the time of removal from the biological family (Beeman, Kim, & Bullerdick, 2000).

It is unclear whether kinship or non-relative foster environments are more advantageous. On the one hand, Israeli adolescents in kinship care express a greater sense of belonging to the family, and the biological family tends to visit the child more frequently in kinship compared to non-relative foster care (Mosek & Adler, 2001).

On the other hand, compared to non-relative foster parents, USA kinship parents are more often single parents; the female caregiver is more often employed while the male caregiver (when present) is less often employed; and the parents tend to be somewhat older, less educated, lower income, less likely to own a home, and in poorer health (Berrick, Barth, &

Needell, 1994). USA kinship caregivers use more physical discipline, show a lower level of empathy toward their children's needs, are less likely to be offered services by child welfare agencies, and tend to be paid less by the agencies compared to non-relative foster families (Berrick et al., 1994; Litrownik et al., 2003). Further, USA kinship caregivers often drift into the role as a result of pressing circumstances and the arrangement may be informal. Subsequent reunification with birth parents and adoption are less likely and proceed more slowly when a child is placed with kin (Berrick et al., 1994).

Stability of foster care. Because a foster home is not usually regarded as a permanent placement (although, see below), children in foster care may change placements. Swedish foster children experience more changes in placement than adopted or reunified children (Larsson, Bohlin, & Stenbacka, 1986). A meta-analysis found that kinship care in a sample of mostly European and North American countries is no more stable than non-relative foster care, but children with a history of institutional care had more placement breakdowns (Oosterman, Schuengel, Slot, Bullens, & Doreleijers, 2007). Having more placement changes in Sweden and the USA is associated with having more psychological problems, poorer inhibitory control, and more oppositional behavior (Larsson et al., 1986; Lewis, Dozier, Ackerman, & Sepulveda-Kozakowski, 2007), although the direction of effects is not always clear.

Regardless of a USA child's age and risk factors, a foster placement is more stable when a caregiver is more committed to the role of foster parent and to the specific child (Dozier & Lindhiem, 2006; Lindhiem & Dozier, 2007). Commitment to the foster child is higher when the child is younger at placement and has been with the caregiver for a longer period of time, and the caregiver is younger and has had fewer previous foster children (Dozier & Lindhiem, 2006; Lindhiem & Dozier, 2007).

In some countries (e.g., Romania, Ukraine, among others), non-relative foster care is considered “permanent” (although it may not be in practice); foster parents may be selected and/or trained and paid. Compared to adopted Scottish children, long-term foster children had a diminished sense of security and belonging, and more stigmatization and negative self-image relating to their fostered status. In adulthood, foster children had lower levels of social functioning and perceived less closeness to family than adopted children, and adoptive parents were more satisfied with the placement than foster caregivers. However, there are advantages to long-term foster care, such as the availability of child welfare services and the stronger relationship some long-term foster children have with biological relatives (Andrews, 1971).

Institutional Care

Institutional care (e.g., orphanages) can vary substantially in quality from the infamous Romanian institutions of the early 1990s that were globally deficient in all respects (e.g., Johnson, 2000) to those that were relatively high quality in which caregiver-child relationships were emphasized (Gavrin & Sacks, 1963). Other institutions, such as those in St. Petersburg, Russian Federation, provide an adequate physical environment (e.g., health, nutrition, safety, toys, equipment, and learning materials), but are lacking in caregiver-child relationships (The St. Petersburg-USA Research Team, 2005).

Conclusion

Adoptive homes typically represent the most favorable whereas reunified homes and institutions tend to be the least favorable rearing environments for children’s development, with kinship and non-relative foster care in between. At the risk of over-extrapolating from limited information and recognizing the substantial variability between studies and within care arrangement types, Table 1 presents an approximate summary of the relative quality of care in

Table 1: Characteristics of alternative care environments

	Adopted	Foster Care	Reunified	Institution
Commitment	Good	Variable/Poor	Poor	Poor
Child's sense of belonging	Good	Poor	Variable	Poor
Permanency	Good	Poor (unless long-term foster care)	Variable/Good	Variable/Poor
Violence experience	Good	Good	Poor	Variable
Support from agency	Poor	Good (for non-relative foster care only)	Poor	Variable
SES	Good	Variable	Poor	Poor

each care arrangement on dimensions represented in the literature.

*****Table 1 here*****

Children's Development

Given the differences between care arrangements described above, children's development might be expected to vary in corresponding ways. One can hypothesize that children reared in institutions probably have not had the caregiver-child social-emotional experience to develop attachments and likely will not if they remain there. A secure attachment relationship is more likely when the same caregiver(s) consistently responds to an infant's signals in a warm, sensitive, and contingently responsive way and less likely when caregivers are not stable or consistent, and their time, energy, and commitment are limited (Egeland & Sroufe, 1981; Spieker & Booth, 1988).

Problems with attachment in parent-reared children are risk factors for later psychological, social, and achievement problems as well as physical growth and disease (Blizzard, 1990; Johnson, 2000; Landry, Smith, & Swank, 2006); in contrast, children with secure attachments are more likely to have better social and mental skills later (Aviezer, Sagi, Resnick, & Gini, 2002; Landry, Smith, Miller-Loncar, & Swank, 1997).

Thus, based on attachment theory (Ainsworth, 1979; Bowlby, 1969/1982) and outcomes in parent-reared children, one would expect adopted children to have better developmental outcomes than reunified, fostered, or institutionalized children.

Attachment and Social Relationships

Attachment in institutions. The high caregiver/child ratios and changing caregivers that characterize most institutions make it unlikely that institutionalized children will develop a secure attachment relationship (MacLean, 2003), and this is, in fact, the case in practice (The St.

Petersburg-USA Orphanage Research Team, 2008; Tizard & Rees, 1975; Zeanah, Smyke, Koga, Carlson, & The Bucharest Early Intervention Project Core Group, 2005). Once children are adopted into families, however, most develop secure attachments with their adoptive parents, but at lower rates than parent-reared children (MacLean, 2003).

Attachment in family care. A recent meta-analysis representing many different countries found that the effect sizes for both foster and adopted children's attachment security and attachment disorganization were similar to those of parent-reared children (van den Dries, Juffer, van IJzendoorn, & Bakermans-Kranenburg, 2009). Further, Tizard and colleagues (Hodges and Tizard, 1989a, 1989b; Tizard & Hodges, 1978; Tizard & Rees, 1974, 1975) found that most parent-reared and adopted, fewer reunified, and almost no institutionalized British children were reported to be deeply attached and affectionate to their caregivers at age 8 and 16 (Tizard & Rees, 1975; Tizard & Hodges, 1978; Hodges & Tizard, 1989b). The institution in this study provided relatively high quality care, but had many changing caregivers that limited close adult-child relationships; adopted and reunified children spent their first 2-4 years of life residing in the institution. This set of studies is limited, however, in its small *N*'s and reliance on parent-reported behaviors.

In another study, when Romanian children were randomly assigned to either remain in institutional care or transfer to high-quality foster care, parent-reared children were rated as more securely attached than fostered children, and institutionalized children were least securely attached, but on a categorical attachment classification, there were no differences between parent-reared and fostered children (Smyke, Zeanah, Fox, Nelson, & Guthrie, 2010).

Among a sample of Scottish children who remained in the institution or were fostered or adopted after age 3 and then interviewed in their 20's, adopted children reported closer

attachments to their caregivers than those who were fostered, and institutionalized children reported the least close attachments; the same pattern was found when they were asked about their satisfaction with the quality of care they received (Triseliotis & Hill, 1990).

Sibling and peer relationships. Sibling relationships were found to be best for parent-reared British adolescents, moderate for adopted adolescents, and most conflicted for reunified adolescents (Hodges & Tizard, 1989b). Both adopted and reunified children were found to have more non-sibling peer problems, and were less likely to turn to their peers when they were anxious or depressed than parent-reared children, but differences were not found between adopted and reunified adolescents. Institution-reared children had more peer problems than any of the other groups. Some examples of peer problems included not belonging to a “crowd” that hung out together, quarrelsome, not liked by their peers, bullied other children, and do not confide in their peers (Hodges & Tizard, 1989b). Scottish children raised in institutions, and to a lesser degree those raised in foster care, tended to have low confidence in their ability to form relationships; this is not surprising given the instability of caregivers in these placement settings (Triseliotis & Hill, 1990).

Conclusion. While based on a limited number of samples, adopted children experience the fewest problems in their attachment and social relationships and are most likely to be attached to a caregiver. Fostered children show intermediate outcomes: they are retrospectively less satisfied with their care and have less confidence in their ability to form relationships. Reunified children are less likely than parent-reared and adopted children to become attached to their parents, tend to be “overfriendly” and attention- and affection-seeking, and are more likely than parent-reared children to have problems with peer and sibling relationships. Children who spent extended periods of time in an institution are the least likely to develop a later attachment

relationship, tend to have lower confidence in their ability to form relationships, and as adults are less satisfied with the quality of care they received as children. Further, institutionalized children who are randomly assigned to transfer to foster care, demonstrate better attachment relationships than those who remain institutionalized. Thus, children reared in environments with more stable and committed caregivers tend to have better attachment and relationship outcomes than those raised in less favorable environments.

Table 2 presents an overview of the studies described above. For this and subsequent tables, higher numbers indicate “better” outcomes. The scale for each study is centered around zero and uses increments or decrements of one. If it is unclear which extreme is “better,” information regarding how it was rated is provided in the table. For each outcome, the placement that is best is shaded. An across-study average for each placement type, treating each measure as an independent entry, is presented in the bottom row of each table. Although not directly mathematically comparable across placement types because different numbers of comparisons are made, these averages nevertheless suggest a pattern across studies of the most positive outcomes for adopted children, intermediate outcomes for foster care children, and reunified and institutionalized children faring the poorest. This method weights studies that have more measures disproportionately. Averages were also computed treating each study as a unit, and this did not change the order of averages except where noted.

*****Table 2 here*****

Physical Growth and Health

A similar pattern was revealed for physical growth and health outcomes with the most favorable outcomes for adopted children and the least favorable outcomes for institutionalized children. For Swedish children who had previously been institutionalized, normal psychomotor

Table 2. Attachment and social relationships

	Age	Country	N	Measure	Parent-Reared	Adopted	Foster Care	Reunified	Institution
Tizard & Rees (1974)	4½	England	30 Parent-Reared 24 Adopted 15 Reunified 26 Institution	Response to stranger: Smiled on being greeted (high=more)**	<i>Working-class</i>	<i>First 2-4 years in institution</i>		<i>First 2-4 years in institution</i>	
					-1	1		0	-1
				Approached when asked, smiling and/or talking (high=more)**	-1.5	1.5		.5	-1
Tizard & Rees (1975)	4½	England	30 Parent-Reared 24 Adopted 15 Reunified 26 Institution	Affection/Attention-seeking during testing (high=less)	<i>Working-class</i>	<i>First 2-4 years in institution</i>		<i>First 2-4 years in institution</i>	
					-1.5	-.5		1.5	.5
				Attachment	1	0		0	-1
Tizard & Hodges (1978)	8	England	29 Parent-Reared 25 Adopted 13 Restored 7 Institution		<i>Working-class</i>	<i>First 2+ years in institution</i>		<i>First 2+ years in institution</i>	
				“Overfriendly” (high=less)	1.5	-.5		-1.5	.5
				Sibling Relationships	-.5	.5		-1.5	1.5
				Attachment	1.5	.5		-.5	-1.5
				“Unusually affectionate” (high=less)	.5	-1.5		1.5	-.5
				Seek attention from strangers (high=less)	1.5	-.5		-1.5	.5
				Seek attention from teacher (high=less)	1	0		-1	
				Frequently fights or is quarrelsome	.5	-.5		-.5	
				Not much liked by other children	1	0		-1	
Tends to be on own (high=less)	1	0		-1					
Hodges & Tizard (1989b)	16	England	34 Parent-Reared 23 Adopted 11 Restored 5 Institution		<i>Matched to adopted and reunified</i>	<i>First 2+ years in institution</i>		<i>First 2+ years in institution</i>	
				Attachment	1	1		0	-1
				Sibling relationships	1	0		-1	
				Physical affection to parents (high=more)**	1	0		-1	
				Closeness with parent	0	0		0	
Peer Relationships	1	0		0	-1				
Triseliotis & Hill (1990)	20s	Scotland	Total = 124	Retrospective attachment, satisfaction with caregiving received		1	0		-1
				Confidence in ability to form relationships		1	0		-1
Smyke, Zeanah, Fox, Nelson, & Guthrie (2010)	3½	Romania	51 Parent-Reared 61 Foster Care 57 Institution	Categorical attachment classification	.5		.5		-.5
				Attachment security ratings	1		0		-1
Average*					.525***	.15***	.125	-.389	-.466

*These averages are across different and partial comparisons, so they are not directly comparable.

**Note, however, that these measurements may confound indiscriminate friendliness; while a moderate degree of friendliness with strangers and a moderately high level of affection may be considered good, such a high level of friendliness or affection may be an expression of indiscriminate friendliness.

***When averages were computed treating each study (instead of each measure) as a unit, the adopted group (.396) had a higher average than the parent-reared group (.047).

development at age 4 was most common for children who were subsequently adopted (77%), and less common for children who were subsequently reunified (56%) or fostered (53%; Larsson et al., 1986). When Guatemalan children with a history of foster care, institutional care, or a mixed care history were compared on their growth near the time of their adoption (age 3 months to 9 years), all children were below average for growth, but fostered children were least delayed, institutionalized children were most delayed, and children with mixed care histories were intermediate (Miller, Chan, Comfort, & Tirella, 2005). Likewise, Chilean children (aged 6-12 years) who had been treated for malnutrition before 2 years of age completely recovered in terms of height, weight, and weight/height ratio³ if they were adopted, but remained below normal in height and weight (but normal for weight/height ratio) if they were institutionalized (Colombo, de la Parra, & Lopez, 1992). Reunified children were at the lower limits of the normal range for height, had normal weight/height ratios, but were the lowest of all groups for weight. However, no differences were found between the neuromotor status of institutionalized children and children raised with family in a refugee camp in Eritrea (Wolff, Tesfai, Egasso, & Aradom, 1995).

Conclusion. Compared to parent-reared norms, children's physical growth is most typical for adopted and (less so) reunified children; foster children and those with mixed care histories do moderately well, and institutionalized children generally have the poorest growth outcomes (see Table 3). Because most institutions provide adequate nutrition and medical care, delayed growth in such environments may be more likely due to deficient psychosocial factors (Blizzard, 1990; Johnson, 2000). Because institutionalized children tend to have normal weight-

³ Weight/height ratio is sometimes used to indicate whether malnutrition is involved; such children would be under weight per height. A normal weight/height ratio suggests that the delayed growth is not simply malnutrition.

height ratios, their poor growth outcomes are not likely to be due to malnutrition. Further, a quasi-experimental social-emotional intervention without change in diets increased institutionalized children's height, weight, and chest circumference (but not head circumference; The St. Petersburg-USA Orphanage Research Team, 2008).

*****Table 3 here*****

Problem Behaviors

While the majority fall within the normal range of adjustment, post-institutionalized children adopted into advantaged families (often internationally) tend to have more problems than parent-reared children with respect to inattention, hyperactivity, externalizing and aggressive behaviors, oppositional behavior, indiscriminate friendliness, personality disorders, substance abuse, eating disorders, learning disabilities, and peer problems, but their rates of anxiety and depression tend to be similar or lower than parent-reared children's rates (Gunnar, van Dulmen, & The International Adoption Project Team, 2007; MacLean, 2003; McCall, van IJzendoorn, Juffer, Groark, & Groza, in press; Rutter et al., 2010). Rates are higher for children exposed to the institution during the first 1-2 years of life and are older at adoption (Gunnar et al., 2007; MacLean, 2003; McCall et al., in press; Rutter et al., 2010), and in some studies, group differences are largely due to frequencies of children who had extreme scores (Brand & Brinich, 1999; Gunnar et al., 2007).

Rates of behavior problems. While no study has included children from all alternative placement types, Swedish adopted children have fewer psychological or behavioral disturbances than reunified children, and fostered children had the most such problems (Larsson et al., 1986). Parent-reared English children have the lowest levels of hyperactivity and inattention by teacher ratings and observational measures, followed by foster children, and institutionalized children

Table 3: Physical Growth and Health

	Age	Country	N	Measure	Parent-Reared	Adopted	Foster Care	Reunified	Institution	Mixed Care History
Larsson, Bohlin, & Stenbacka (1986)	6m	Sweden	46 Adopted 38 Foster Care 87 Reunified			<i>After 8-330 days in institution</i>	<i>After 1-437 days in institution</i>	<i>After 1-360 days in institution</i>		
				Low body weight (-2 SD of healthy children)		.5	-.5	.5		
				12m	Low body weight (-2 SD)		.5	-.5	.5	
	4y			Low body weight (-2 SD)		.5	-.5	.5		
	Retarded Psychomotor development				.5	-.5	.5			
	Normal Psychomotor development				.5	-.5	-.5			
Colombo, de la Parra, & Lopez (1992)	5y6m to 11y3m	Chile	16 Adopted** 11 Reunified** 8 Institution**	Weight for age		.5		-.5	-.5	
				Height for age		.5		.5	-.5	
				Weight for height		0		0	0	
				Head circumference for age		0		0	0	
Wolff, Tesfai, Egasso, & Aradom (1995)	4-7	Eritrea	74 Reunified^ 74 Institution	Extended Pediatric Examination for minor neurological signs				0	0	
				Grooved Peg Board				0	0	
Miller, Chan, Comfort, & Tirella (2005)	4m-9y2m	Guatemala	56 Foster Care*** 25 Institution*** 22 Mixed Care (birth family, foster care, institution)***	Height			1		-1	0
				Weight			1		-1	0
				Head Circumference			1		-1	0
				Infectious diseases			0		0	0
Average*					n/a	.389	.056^^	.136^^	-.4	0

*These averages are across different and partial comparisons, so they are not directly comparable.

** These children were all treated for malnutrition at Nutritional Recovery Centers some time in the first two years of life.

***These children were all adopted to the USA at the time of the assessment. However, because most (87%) were assessed within 4 months of the adoption, group differences are likely to reflect the care received prior to adoption.

^The children in this group were being raised with at least one parent in their homes in a refugee camp. Because this is the population that the institution-reared orphans came from, they are thought to best represent reunified children rather than typical parent-reared children.

^^ When averages were computed treating each study (instead of each measure) as a unit, the foster care group (.125) had a slightly higher average than the reunified group (.1).

had the highest levels (Roy, Rutter, & Pickles, 2000).

Two series of studies assessed children from different alternative placement types at varying ages. Generally, at older ages of assessment, parent-reared and adopted British children have the fewest behavior problems, and institutionalized and reunified children have the most (Hodges & Tizard, 1989a; Tizard & Hodges, 1978; Tizard & Rees, 1975). Results were less clear for USA fostered and adopted children, due to the limited number of fostered children in the sample (Brand & Brinich, 1999).

Several studies have compared children raised with their biological families in difficult circumstances to children in different alternative care arrangements. Children who lived with a parent, whether reunified after time in foster care in the USA (Taussig, Clyman, & Landsverk, 2001) or living in a refugee camp in Eritrea (Wolff et al., 1995), had fewer behavior problems than children who were not reunified (foster care, group placement, adopted, or kinship foster care) or in an institution, respectively. In another study, French children who were adopted and their half-siblings who were raised by their biological parents both had more behavior problems than SES-matched parent-reared children (Dumaret, 1985).

Changes in behavior problems over age. Evidence suggests that while behavior problems tend to lessen over age for adopted children, this is less common for foster children, and rare for reunified children (Bohman, 1971; Bohman & Sigvardsson, 1985, 1990; Hodges & Tizard, 1989a). While one study found that behavior problems decreased over time for foster children but not institutionalized children (Ahmad & Mohamed, 1996), a similar study found that both foster and institutionalized children showed improvements after one year in their placement (Ahmad, Qahar, Siddiq, Majeed, Rasheed, Jabar, & von Knorring, 2005). In contrast, one study found that adopted children with no history of foster care showed increases in problems over

time whereas adopted children with a history of foster care showed persistently higher rates of problems over time (Simmel, Barth, & Brooks, 2007); however, because non-fostered adopted children were assessed at an earlier age than fostered adopted children, this trend might be explained by the difference in age at assessment.

Kinship versus non-relative foster care. Kinship versus non-relative foster care differences are not as clear. Two studies found that children in kinship care had an advantage in terms of behavior problems (Berrick et al., 1994) and self-concept (Mosek & Adler, 2001), but one study found that non-relative fostered children had lower rates of behavioral or developmental problems before and during placement (Benedict, Zuravin, & Stallings, 1996).

Placement instability. Placement instability has been related to higher rates of children's problem behaviors, particularly inhibitory control and oppositional behavior (Lewis et al., 2007). It is unclear whether behavior problems are a cause or consequence of placement instability, and both directions of effects may exist. For example, changes in foster placements are a significant predictor of CBCL scores after controlling for baseline CBCL scores (Newton, Litrownik & Landsverk, 2000), but children with no behavior problems were subsequently less likely to experience multiple foster placements (Larsson et al., 1986; Newton et al., 2000).

Conclusion. In general, adopted children have fewer long-term problems than other care groups (see Table 4). Fostered children typically have a moderate level of problems, with children in stable placements faring better than those in unstable placements, but differences between kinship and non-relative foster care are unclear. Children who are reunified or who remain institutionalized tend to have the highest rates of behavior problems. While adopted children may decline in problem rates by adolescence, institutionalized and reunified children do not (the trend for foster children is mixed).

Table 4: Problem Behaviors

	Age	Country	N	Measure	Parent-Reared	Adopted	Foster Care	Reunified	Institution	
Bohman (1971)	10-11	Sweden	317 Parent reared 163 Adopted before 1y 124 Later-adopted/foster care 205 Reunified**	Teacher interview		<1y	<i>Late-adopted/foster care</i>			
					.5	-.5	-.5		-.5	
				School Health Records: Remitted to School Psychiatrist or child guidance clinic		.5	.5		-.5	
				Pedagogic and psychological analysis		1	0		-1	
				Nervous disturbances, other problems		0	1		-1	
Tizard & Rees (1975)	4½	England	30 Parent-reared 24 Adopted 15 Reunified 26 Institution	Caregiver questionnaire	<i>Working-class</i>					
						-.5	1.5		.5	-1.5
Tizard & Hodges (1978)	8	England	29 Parent-reared 25 Adopted 13 Reunified 7 Institution	Rutter Parent Questionnaire	<i>Working-Class</i>					
						0	0		0	0
					Clinic Referrals for Behavior Problems	.5	1.5		-1.5	-.5
				Rutter "B" Teacher Questionnaire	1	0		-1	0	
Dumaret (1985)	Mean (adopted): 9y3m; Mean (reunified): 10y6m	France	45 Parent-reared 27 Adopted, 18 Reunified***	Rutter "B" Teacher Questionnaire	<i>SES-matched</i>					
						.5	-.5			-.5
					.5					
Larsson, Bohlin, & Stenbacka (1986)	4	Sweden	46 Adopted 38 Foster care 87 Reunified	Physician and school records of psychological or behavioral disturbances		1		-1	0	
Hodges & Tizard (1989a)	16	England	34 Parent-reared 23 Adopted 11 Reunified	Parent interview	<i>SES-matched</i>					
						1	0		-1	
					Contact with police and psychological/psychiatric referral	.5	.5		-.5	
					Rutter "A" Parent Questionnaire	.5	.5		-.5	
					Adolescent interview	1	0		-1	
				Rutter "B" Teacher Questionnaire	1	0		-1		
Bohman & Sigvardsson (1985, 1990)	15	Sweden	160 Adopted 213 Reunified**	Teacher-rated social maladjustment	.5	.5		-.5	-.5	
	16-23		204 Fostered	Criminal Register and Excise Board Register	.5	.5		-.5	.5	

Wolff, Tesfai, Egasso, & Aradom (1995)	4-5	Eritrea	74 Reunified [^] 74 Institution	Behavior Screening Questionnaires for preschool children (parent or care-taker report)				.5	-.5	
	6-7							0	0	
Ahmad & Mohamad (1996)	4-16	Iraqi Kurdistan	30 Foster Care 24 Institution	Child Behavior Checklist (change over 1 year): Competencies			0		0	
				Problem Behaviors			.5		-.5	
Brand & Brinich (1999)	5-17	USA	9315 Parent-reared 150 Adopted 23 Foster Care	Behavior Problem Index: Age 5-11	1	<6m 0	>6m 1	-1		
				Age 12-17	1	0	-1	1		
				Mental Health Contacts	1	0	0	-1		
Roy, Rutter, & Pickles (2000)	Mean: 6.7	UK	38 Parent-Reared 19 Institution 19 Foster care	Rutter "B" Teacher Questionnaire	1			0		-1
				Rutter "A" Parent Questionnaire				.5		-.5
				Observation: Inattention	1			0		-1
				Observation: Hyperactivity	1			0		-1
Taussig, Clyman, & Landsverk (2001)	13-17	USA	86 Foster care ^{^^} 63 Reunified	Adolescent Risk Behavior Survey				.5		<i>Following foster care</i> -.5
				Pregnancy				0		0
				Tickets/arrests				.5		-.5
				Suspensions				0		0
				Youth Self-Report: Total Behavior Problems				.5		-.5
				Total Competencies				.5		-.5
Ahmad, Qahar, Siddiq, Majeed, Rasheed, Jabar, & Knorring (2005)	7-16	Iraqi Kurdistan	94 Foster care 48 Institution	CBCL Total Competencies				0		0
				CBCL Total Problems				0		0
				Post-Traumatic Stress Symptoms for Children				0		0
Average*				.711	.278	.04	-.4	-.433		

*These averages are across different and partial comparisons, so they are not directly comparable.

**The mothers of this group intended to give up their child but did not, so while these children are not technically reunified, they are classified as such because they represent the family environment that a child would be in had it not been given up for adoption.

***The children in this group are the half-siblings of children who were adopted, and were being reared by their biological mothers, so while these children are not technically reunified, they are classified as such because they represent the family environment that a child would be in had it not been given up for adoption.

[^]The children in this group were being raised with at least one parent in their homes in a refugee camp. Because this is the population that the institution-reared orphans came from, they are thought to best represent reunified children rather than typical parent-reared children.

^{^^}59 children in this group were in foster care, but there were also several children in group placements, adopted, or with a permanent guardian. Because results were presented for this group as a whole and the majority were foster children, it is characterized as a foster care group.

*****Table 4 here*****

Cognitive Outcomes

Intelligence. Similarly, intellectual outcomes tend to be best for adopted children and poorer for fostered, reunified, and institutionalized children (See Table 5; Bohman & Sigvardsson, 1985, 1990; Dumaret, 1985; Hodges & Tizard, 1989a; Tizard & Hodges, 1978; Tizard & Rees, 1974). Children who are adopted or reunified before age 4 have better outcomes than those placed after this age (Hodges & Tizard, 1989a; Tizard & Hodges, 1978).

While one study found Guatemalan fostered children to have better cognitive development than institutionalized children (Miller et al., 2005), another study of 6-year-old UK children found no difference between these groups (Roy et al., 2000). However, when the foster care environment is of particularly high quality, Romanian children who were randomly assigned to move from an institution into foster care showed higher IQs that increased with time in foster care (Windsor, Glaze, Koga, & the Bucharest Early Intervention Project Core Group, 2007), suggesting a likely causal relationship between placement setting and intelligence. In fact, the “cost” of remaining in the institution was .85 DQ points per month at 42 months of age and .59 IQ points per month at 54 months of age (Nelson, Zeanah, Fox, Marshall, Smyke, & Guthrie, 2007).

In some cases, when a child’s birth family lives in undesirable circumstances, their children have lower IQs than those in alternative care environments. For instance, French children who were adopted before 6 months of age had higher IQs than their biological siblings who remained to be raised by a biological parent (Dumaret, 1985; Schiff, Duyme, Dumaret, & Tomkiewicz, 1982). Among children who had previously been treated for malnutrition, adopted Chilean children had higher IQs than children who resided in institutions or with a biological

Table 5: Cognitive Outcomes: Intelligence

	Age	Country	N	Measure	Parent-Reared	Adopted		Foster Care	Reunified		Institution	
Tizard & Rees (1974)	4½	England	30 Parent-reared 24 Adopted** 15 Reunified 26 Institution	WIPPSI	.5	.5			-.5		-.5	
Tizard & Hodges (1978)	8	England	30 Parent-reared 20 Adopted age 2-4** 5 Adopted after age 4½** 3 Fostered after age 4½** 9 Reunified age 2-4** 4 Reunified after age 4½** 7 Institution	WISC	<i>Working class</i>		<i>Age 2-4</i>	<i>After 4½</i>	<i>After 4½</i>	<i>Age 2-4</i>	<i>After 4½</i>	
					.5	1.5	0	-1.5	0	-1.5	-.5	
Schiff, Duyme, Dumaret, & Tomkiewicz (1982)	6-14	France	32 Adopted 39 Reunified***	WISC	.5			-.5				
				ECNI (group IQ test)	.5			-.5				
Bohman & Sigvardsson (1985, 1990)	18	Sweden	275 Parent-reared 79 Adopted 90 Reunified^ 87 Fostered	Military IQ test (Logic-inductive, Linguistic, Spatial, Technical)	1	1		-1	0			
Dumaret (1985)	Mean (Adopted): 9y3m; Mean (Reunified): 11y0m; Mean (FC/Institution): 11y9m	France	47 Parent-reared 33 Adopted 22 Reunified*** 20 Foster Care or Institution	ECNI	<i>SES Matched to Adopt</i>	<i>SES Matched to Reunified</i>						
					1.5	-.5	.5		-1.5			
					WISC		1	-1	0	1		
Short WISC	1.5	-.5	.5		-1.5							
Hodges & Tizard (1989a)	16	England	11 Adopted before 4y 8 Adopted after 4y8 8 Reunified before 4y 3 Reunified after 4y 5 Institution	WAIS	<i>Before 4</i>		<i>After 4</i>		<i>Before 4</i>	<i>After 4</i>		
						1	0		-1	-1	-1	
Colombo, de la Parra, & López (1992)	6-12	Chile	16 Adopted^^ 11 Reunified^^ 8 Institution^^	WISC		.5			-.5		-.5	

Wolff, Tesfai, Egasso, & Aradom (1995)	4-7	Eritrea	74 Reunified ^{^^^} 74 Institution	Leiter International Intelligence Scale					-1	.5
				Raven Progressive Matrices						
Roy, Rutter, & Pickles (2000)	Mean: 6y8m	UK	19 Foster care 19 Institution	WISC			0			0
Miller, Chan, Comfort, & Tirella (2005)	4m – 9y2m	Guatemala	56 Foster care` 25 Institution`	University of Michigan Early Intervention Development Profile or Mullen Scales of Early Learning			.5			-.5
Nelson, Zeenah, Fox, Marshall, Smyke, & Guthrie (2007)	42m	Romania	52 Parent-reared 61 Foster care`` 57 Institution	Bayley Scales of Infant Development	1		0			-1
	54m		45 Parent-reared 59 Foster care`` 51 Institution	WPPSI-R	1		0			-1
Windsor, Glaze, Koga, & The Bucharest Early Intervention Project Core Group (2007)	30m	Romania	10 Parent-reared 10 Foster care (for <5 months) 10 Foster care (for >1 year) 10 Institution	Mental Developmental Index (derived from Bayley Scales of Infant Development – II)	1	<i>Previously in Institution</i>				
						<5m in FC	>1y in FC			
							-1	0		-1
				Average*	.7	.625	-1	-1		

*These averages are across different and partial comparisons, so they are not directly comparable.

**These groups spent at least two years in an institution prior to adoption, foster care, or reunification.

***The children in this group are the half-siblings of children who were adopted, and were being reared by their biological mothers, so while these children are not technically reunified, they are classified as such because they represent the family environment that a child would be in had it not been given up for adoption.

^The mothers of this group intended to give up their child but did not, so while these children are not technically reunified, they are classified as such because they represent the family environment that a child would be in had it not been given up for adoption.

^^These children were all treated for malnutrition at Nutritional Recovery Centers some time in the first two years of life.

^^^The children in this group were being raised with at least one parent in their homes in a refugee camp. Because this is the population that the institution-reared orphans came from, they are thought to best represent reunified children rather than typical parent-reared children.

`These children were all adopted to the USA at the time of the assessment. However, because most (87%) were assessed within 4 months of the adoption, group differences are likely to reflect the care received prior to adoption.

``These children resided in an institution prior to being randomly assigned to foster care.

parent (Colombo et al., 1992). Institutionalized Eritrean children had higher IQs than children residing with a biological parent in a refugee camp (Wolff et al., 1995).

*****Table 5 here*****

Achievement. Generally, achievement outcomes (e.g., school grades and school failure) are best for earlier-adopted children, and poorer for later-adopted and fostered children, children raised by parents who intended to give their child up for adoption but did not, and the half-siblings of children given up for adoption who remained to be raised by a biological parent; differences between the latter groups are less consistent (See Table 6; Bohman, 1971; Bohman & Sigvardsson, 1990; Dumaret, 1985; Schiff et al., 1982). While institutionalized children were only included in one study, they had the highest rates of school failure of all the alternative care arrangements (Dumaret, 1985). One study, however, found that fostered children who were subsequently reunified with a biological parent had higher rates of dropping out of school and lower self-reported grades than non-reunified fostered youth (Tausig et al., 2001).

*****Table 6 here*****

Language. Results for the few studies of language development are consistent with the patterns found in other areas of children's development (See Table 7). Eight-year-old UK children who were adopted before age 4 had better reading skills than children who were reunified after age 4 (Tizard & Hodges, 1978). While one study found no differences in language skills between fostered and institutionalized Guatemalan children (Miller et al., 2005), children who were randomly assigned to high quality foster care for at least a year had better language skills (comparable to parent-reared children) than those who resided in foster care for less than 5 months or those who remained institutionalized (Windsor et al., 2007).

However, Eritrean institutionalized children had better receptive language skills than

Table 6: Cognitive Outcomes: Achievement

	Age	Country	N	Measure	Parent-Reared	Adopted	Foster Care	Reunified	Institution
Bohman (1971)	10-11	Sweden	317 Parent reared 163 Adopted before 1y 124 Later-adopted/foster care 205 Reunified**	Swedish grades		<1y	Later adopted/Foster care		
				Mathematics grades	1.5	.5	-1.5	-.5	
Schiff, Duyme, Dumaret, & Tomkiewicz (1982)	6-14	France	32 Adopted 39 Reunified***	School failures		.5		-.5	
Dumaret (1985)	Mean (Adopted): 9y3m; Mean (Reunified): 11y0m; Mean (FC/Institution): 11y9m	France	33 Adopted 22 Reunified*** 20 Foster Care or Institution	School failures		1	-1	0	-1
Bohman & Sigvardsson (1990)	15	Sweden	Ns not reported for this analysis	School failures		<1y	Later adopted/Foster care		
					1	0	-1	-1	
Taussig, Clyman, & Landsverk (2001)	13-17	USA	86 Foster care^ 63 Reunified	Dropping out of school				Following foster care	
				Grades			.5	-.5	
Average*					1.167	-.1875	-.583	-.429	-1

*These averages are across different and partial comparisons, so they are not directly comparable.

**The mothers of this group intended to give up their child but did not, so while these children are not technically reunified, they are classified as such because they represent the family environment that a child would be in had it not been given up for adoption.

***The children in this group are the half-siblings of children who were adopted, and were being reared by their biological mothers, so while these children are not technically reunified, they are classified as such because they represent the family environment that a child would be in had it not been given up for adoption.

^59 children in this group were in foster care, but there were also several children in group placements, adopted, or with a permanent guardian. Because results were presented for this group as a whole and the majority were foster children, it is characterized as a foster care group.

Table 7: Cognitive Outcomes: Language

	Age	Country	N	Measure	Parent-Reared	Adopted	Foster Care	Reunified	Institution	
Tizard & Hodges (1978)	8	England	11 Adopted before 4y 3 Reunified after 4y	Neale Analysis of Reading Ability		<i>Before 4y</i>		<i>After 4y</i>		
						.5		-.5		
Wolff, Tesfai, Egasso, & Aradom (1995)	4-7	Eritrea	74 Reunified** 74 Institution	Receptive Language (Token test)				-.5	.5	
				Language Pragmatics				0	0	
Miller, Chan, Comfort, & Tirella (2005)	4m – 9y2m	Guatemala	25 Foster care 25 Institution	Expressive Language			0		0	
				Receptive Language			0		0	
Windsor, Glaze, Koga, & The Bucharest Early Intervention Project Core Group (2007)	30m	Romania	10 Parent-reared 10 Foster care (for <5 months) 10 Foster care (for <1 year) 10 Institution	Total number of intelligible utterances			<i>Previously in institution</i>			
						.5		<5m in FC	>1y in FC	
				Total number of words	.5		-.5	.5		-.5
				Number of different words	.5		-.5	.5		-.5
				Mean length of utterance in words	.5		-.5	-.5		-.5
				Percentage of intelligible utterances	.5		-.5	.5		-.5
				Total number of consonants	.5		-.5	.5		-.5
				Number of different consonants	.5		-.5	.5		-.5
				Mean length of utterance in consonants	.5		-.5	.5		-.5
				Receptive-Expressive Emergent Language Scale: Receptive	.5		-.5	.5		-.5
				Receptive-Expressive Emergent Language Scale: Expressive	.5		-.5	.5		-.5
				Average*				.5	.5	-.045

*These averages are across different and partial comparisons, so they are not directly comparable.

**The children in this group were being raised with at least one parent in their homes in a refugee camp. Because this is the population that the institution-reared orphans came from, they are thought to best represent reunified children rather than typical parent-reared children.

children residing in a refugee camp with a biological parent, likely due to the poor circumstances in the refugee camp; there were no group differences for language pragmatics (Wolff et al., 1995).

*****Table 7 here*****

Correlates of cognitive outcomes.

Time in institutions. One common correlate of cognitive outcomes is the length of time children are in alternative care, particularly institutions. Earlier-adopted children have better scores on measures of cognition and language than later-adopted children (Miller et al., 2005). Further, when children are adopted (Tizard & Hodges, 1978) or randomly moved into high quality foster care (Nelson et al., 2007) at an earlier age, they show greater benefits in their cognitive abilities over time (stable scores when other groups show declines, or more increases over time). While one study suggests that the length of time outside of an institution was correlated with language outcomes (Windsor et al., 2007), another suggests that it is not the length of time in an adoptive home, but rather the length of privation (i.e., time in an institutional environment) that relates to outcomes (O'Connor, Rutter, Beckett, Keveaney, Kreppner, & the English and Romanian Adoptees Study Team, 2000).

Children's relationship to caregiver. A child's relationship with a caregiver may relate to cognitive outcomes. Institutionalized children with a known preferred caregiver had better language outcomes (Windsor et al., 2007), and children whose mothers believed that her child is attached to her had higher IQs (Tizard & Hodges, 1978). Further, when child-caregiver interactions were improved through a quasi-experimental intervention in an institution, children improved on several measures of cognitive development, and benefits were greater the longer children remained exposed to the intervention (St. Petersburg-USA Orphanage Research Team,

2008). A caregiver-child relationship may be related to the amount of caregiver-child interaction and thus the amount of language and cognitive stimulation children receive.

Conclusion. Cognitive outcomes, including intelligence, achievement, and language ability, tend to be best for children who are adopted and poorer for children who are fostered, reunified, or institutionalized. Children who enter a family environment at earlier ages are advantaged relative to those who enter such an environment later, but the quality of each environment also appears to have an impact. In particular, children who have a relationship with a caregiver have better cognitive outcomes than those without a relationship.

Discussion

The available evidence suggests that certain empirical trends are consistent across nations, decades, and outcome measures (see Tables 2-7). Children who are adopted, especially those adopted at early ages, tend to resemble parent-reared peers in their likelihood of forming an attachment relationship, physical growth, the prevalence of behavior problems, and intelligence and achievement. Fostered children tend to do less well than adopted children; it is unclear whether foster children placed with kin or non-relatives have better outcomes, but children who are in stable foster placements have better outcomes than those who change placements frequently. Children who are reunified with birth parents consistently display poorer outcomes, often similar to children who are institutionalized; however, those who remain in institutions for extended periods of time typically have the poorest outcomes in all domains of any of these groups.

Scientific Implications

These results are consistent with the characteristics of these care environments (Table 1).

Adoptive parents are typically the most socially and economically advantaged; they choose to be parents usually with no other (e.g., financial) motives, and commitment to the child is high. Foster and reunified parents might have less commitment to the child—foster families because the placement often is temporary and comes with financial incentives, and reunified families because factors led to the child’s outplacement may persist to some extent. Reunified families additionally are of lower educational and financial status, which may limit the parent’s ability to support the child’s development through sensitive, responsive care. Institutions generally have multiple and changing caregivers who usually provide insensitive, unresponsive care in an environment that does not facilitate caregiver-child relationships, so institutionalized children typically have the least favorable developmental status.

However, much variation exists within each type of placement; some institutions provide substantially more sensitive and responsive care than others, and some foster families have more commitment, training, and resources than others. Several studies (Gavrin & Sacks, 1963; The St. Petersburg-USA Research Team, 2008; Windsor et al., 2007) have demonstrated that high quality care even in institutional and foster environments can contribute to relatively improved outcomes for children. But, even children in high-risk families may have better developmental outcomes than those in institutional care (Dobrova-Krol, van IJzendoorn, Bakermans-Kranenburg, & Juffer, 2010). Thus, quality of care may be as much or more important than the specific care environment, especially the extent to which the young child experiences warm, sensitive, and contingently-responsive care and relationships with a few stable caregivers.

However, causal inferences cannot be made because of the scientifically imperfect nature of this literature. Children are not randomized to different care alternatives (with one exception: The Bucharest Early Intervention Project), so child, parent, and other factors may selectively

influence a child's placement setting, a child's age at placement, and children's outcomes. For example, the "best" children may be put up for adoption whereas the most delayed or problematic may remain in the institution, although many studies are of children placed in the first few months of life before many risk factors are apparent. But, selection bias is unlikely to explain all the group differences, because substantial group differences exist when children are randomly assigned to placement alternatives (Nelson et al., 2007; Windsor et al., 2007; Zeanah et al., 2005). Future research should compare the quality of care within each care alternative to examine the specific aspects of quality that influence children's development in these contexts.

Practice/Policy Implications

Despite these scientific limitations, this literature is at least one reflection of these environments as they have tended to exist. The following discussion considers improvements that are recommended for each placement alternative.

Biological families. While remaining in or reunification with the biological family is the first choice according to the United Nations Convention on the Rights of the Child (1989) and the Hague Convention on Protection of Children (1993), reunified children have much poorer outcomes than those who are adopted or fostered. Remaining or reunification with biological parents may be preferred because many cultures have strong preferences for bloodlines and long-standing aversions to fostering or adopting "someone else's child," and because biological parents should have the right and responsibility to raise their own children. It can be argued that "the best interest of the child," which is the criterion for placement of the international conventions, must take into account the cultural context in addition to the child's development.

Moreover, comparing reunified children with adopted and fostered children may be socially inappropriate—low-income, lower-educated, and challenged people have a right to bear

and raise children, and the development of those children should not be expected to be as favorable as children reared in more advantaged families. Thus, perhaps reunified children are doing as well as would be expected of children raised by parents in similar circumstances. Only a few studies make such a comparison and selective placement is a likely confound. However, at least one series of studies (Tizard & Hodges, 1978; Tizard & Rees, 1974, 1975) suggests that London children who were reunified (to mostly working-class families) had more problem behaviors and lower IQs than parent-reared working-class comparison children. But, it is almost impossible to identify families that do not give up a child who are the same in most regards as families who do give up a child.

Societies should consider creating or improving services aimed at keeping children in their biological families and avoiding outplacement as well as services to help such families provide as beneficial an environment as possible. Reunified families may face special challenges related to the problems that caused them to relinquish the child in the first place, guilt or regret about relinquishing the child, or not really wanting the child back.

Foster/kinship care. In general, foster care is better than institutional care, but the quality of the foster care system is likely to make a substantial difference. If foster parents are simply paid to care for children, the benefits to children may be less than if foster parents are selected for their commitment and parenting skills; trained, supported, and monitored to provide high quality care; and given specialized support services for problems that may be legacies of the child's previous experience. In some countries (e.g., Ukraine), some of these services are offered and foster care is considered permanent, which may promote commitment and therefore more positive outcomes for children. Foster parents also might be salaried instead of paid per child to remove the financial incentives to have too many foster children. However, if payments amount

to less than the cost of caring for a child, few would see the payment as an incentive to become a foster parent. Children should be placed with a foster family as early as possible, and kinship care might have the same provisions as non-relative fostering (although it can be prone to abuses of the system).

Adoption. Adopted children have the best outcomes of all alternative care settings. But adoption is not always culturally valued, and societies may feel no incentives should be offered to adoptive in contrast to foster parents. For example, in the Russian Federation, financial incentives currently are offered to parents to produce their own children to replace the population, and to foster parents; but, large numbers of children reside in institutions and similar incentives are not offered to adoptive parents. Public awareness campaigns may help make adoption more acceptable in countries where biological lineage is emphasized; and low-resource countries tend to have few people who can afford to adopt, so financial incentives for adoption may be necessary. In some countries, adoptive parents are paid, because it takes a financial burden off the state at less cost.

Early transfer out of institutions. Children who depart institutions for family-care environments at an early age do better than those placed later. But lengthy judicial and administrative procedures, children not having clear status (e.g., abandoned or no birth certificate), inability to obtain signed legal relinquishment of the child in a reasonable period of time, and procedures providing extensive rights to biological parents to reclaim a child all tend to extend the time children remain in institutions before family placements. Indeed, in some countries (e.g., Ukraine), these factors plus the fact that adoptive and foster parents prefer typically developing infants and very young children mean that only a small percentage of children in institutions are actually “eligible” for adoption or foster placement (Groark, McCall,

& Li, 2009). It seems that a better balance needs to be reached between the rights of biological parents and government/judicial procedures on the one hand and the rights, opportunities, and life chances of the children on the other; but, biological parents must not be hurried unnecessarily into making a decision before they are ready.

The role of institutions. There are high numbers of orphaned children in many countries, and this is likely to persist because of natural disasters, wars, HIV, unprotected intercourse, and plagues. Many countries have limited resources to devote to supporting family care and a limited number of adoptive and foster parents. Thus, it is likely that institutions will not be completely eliminated in the near future. Further, in some low-resource or war-torn countries, institutions may be the best of limited and undesirable alternatives; in these situations, institutionalized children may show comparable developmental outcomes to community reared children (Whetten et al., 2009), or remember the institution positively (Wolff & Fesseha, 1998). However, this is not to say that the institutional care was necessarily “good,” but rather that the care received in the community was not substantially better. Further, in desperate times, the kinship care network can break down, because parents favor their biological children when resources are very limited (Christiansen, 2005). In fact, in countries with very few resources, like Malawi, orphans may be more likely to have their basic physical needs met in institutions than in foster care (Zimmerman, 2005).

Although advocates often find it an anathema, institutions could be improved (e.g., The St. Petersburg-USA Orphanage Research Team, 2008), and in some circumstances, especially when family alternatives are limited, this may be an appropriate and necessary intermediate step. For instance, regular medical and developmental assessments should be performed; consistent caregivers should be evaluated, trained, and monitored; children should be involved in decisions

regarding their care to the extent that they are capable; institutions should be integrated into the community and provide age-appropriate educational and recreational opportunities to resident children; and care must be respectful of resident children's cultural, ethnic, and linguistic identities (Bunkers & Groza, 2009).

One hypothesis that emerges from this literature is that the quality of care between and within each alternative makes a substantial contribution to children's development over and above the type of care. If so, then societies might consider ways to improve and support the ability of parents and caregivers in all alternative arrangements to provide the best care possible under the prevailing circumstances. Most primarily, infants and young children should have only a few committed, stable caregivers with whom they can form a relationship, and caregivers should be provided with the financial and social service resources necessary for them to effectively care for the children in their care.

References

- Ahmad, A., & Mohamad, K. (1996). The socioemotional development of orphans in orphanages and traditional foster care in Iraqi Kurdistan. *Child Abuse & Neglect, 20*, 1161-1173.
- Ahmad, A., Qahar, J., Siddiq, A., Majeed, A., Rasheed, J., Jabar, F., & von Knorring, A. L. (2005). A 2-year follow-up of orphans' competence, socioemotional problems and post-traumatic stress symptoms in traditional foster care and orphanages in Iraqi Kurdistan. *Child: Care, Health, & Development, 31*, 203-215.
- Ainsworth, M. D. S. (1979). Attachment as related to mother-infant interaction. In J. S. Rosenblatt, R. A. Hinde, C. Beer, and M. Busnel (Eds.), *Advances in the study of behavior* (pp. 1-51). New York, NY: Academic Press.
- Andrews, R. (1971). When is subsidized adoption preferable to long-term foster care? *Child Welfare, 50* (4), 194-200.
- Aviezer, O., Sagi, A., Resnick, G., & Gini, M. (2002). School competence in young adolescence: Links to early attachment relationships beyond concurrent self-perceived competence and representations of relationships. *International Journal of Behavioral Development, 26*, 397-409.
- Beeman, S., Kim, H., & Bullerdick, S. (2000). Factors affecting placement of children in kinship and nonkinship foster care. *Children and Youth Services Review, 22* (1), 37-54.
- Bellamy, J. (2008). Behavioral problems following reunification of children in long-term foster care. *Children and Youth Services Review, 30*, 216-228.
- Benedict, M., Zuravin, S., & Stallings, R. (1996). Adult functioning of children who lived in kin versus non-relative family foster homes. *Child Welfare, 75*, 529-549.
- Berrick, J., Barth, R., & Needell, B. (1994). A comparison of kinship foster homes and foster

- family homes: Implications for kinship foster care as family preservation. *Children and Youth Services Review*, 16, 33-63.
- Blizzard, R. M. (1990). Psychosocial short stature. In F. Lifshitz (Ed.), *Pediatric endocrinology* (pp. 77-91). New York, NY: Marcel Dekker.
- Bohman, M. (1971). A comparative study of adopted children, foster children and children in their biological environment born after undesired pregnancies. *Acta Paediatrica Scandinavica, Supplement 221*.
- Bohman, M., & Sigvardsson, S. (1985). A prospective longitudinal study of adoption. In A. R. Nicol (Ed.), *Longitudinal studies in child psychology and psychiatry: Practical lessons from research experience* (pp. 137-155). New York: Wiley.
- Bohman, M., & Sigvardsson, S. (1990). Outcome in adoption: Lessons from longitudinal studies. In D. M. Brodzinsky & M. S. Schechter (Eds.), *The psychology of adoption* (pp. 93-106). New York: Oxford University Press.
- Bowlby, J. (1969/1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.). New York: Basic Books.
- Brand, A., & Brinich, P. (1999). Behavior problems and mental health contacts in adopted, foster, and nonadopted children. *Journal of Child Psychology and Psychiatry*, 40 (8), 1221-1229.
- Bunkers, K., & Groza, V. (2009). Best Practices for Institutional Care. Unpublished manuscript. Received by email on April 28, 2009.
- Christiansen, C. (2005). Positioning children and institutions of childcare in contemporary Uganda. *African Journal of AIDS Research*, 4, 173-182.
- Colombo, M., de la Parra, A., & Lopez, I. (1992). Intellectual and physical outcome of children

undernourished in early life is influenced by later environmental conditions.

Developmental Medicine and Child Neurology, 34, 611-622.

Dobrova-Krol, N.A., Van IJzendoorn, M.H., Bakermans-Kranenburg, M.J. & Juffer, F. (2010).

Effects of perinatal HIV infection and early institutional rearing on physical and cognitive development of children in Ukraine. *Child Development*, 81, 1-15.

Dozier, M. & Lindhiem, O. (2006). This is my child: Differences among foster parents in commitment to their young children. *Child Maltreatment*, 11, 338-345.

Dumaret, A. (1985). IQ, scholastic performance, and behaviour of sibs raised in contrasting environments. *Journal of Child Psychology and Psychiatry*, 26, 553- 580.

Duyne, M., Dumaret, A., & Tomkiewicz, S. (1999). How can we boost IQs of “dull children”? A late adoption study. *Proceedings of the National Academy of Sciences*, 96, 8790-8794.

Egeland, B., & Sroufe, L. (1981). Attachment and early maltreatment. *Child Development*, 52, 44-52.

Fraser, M., Walton, E., Lewis, R., Pecora, P., & Walton, W. (1996). An experiment in family reunification: Correlates of outcomes at one-year follow-up. *Children and Youth Services Review*, 18, 335-361.

Gavrin, J. B., & Sacks, L. S. (1963). Growth potential of preschool-aged children in institutional care: A positive approach to a negative condition. *American Journal of Ortho-Psychiatry*, 33, 399-408

Groark, C. J., McCall, R. B., & Li, J. (2009). Characterizing the status and progress of a country's child welfare reform. *International Journal of Child & Family Welfare*, 4, 145-160.

Gunnar, M., van Dulmen, M., & The International Adoption Project Team (2007). Behavior

- problems in post-institutionalized internationally adopted children. *Development and Psychopathology*, 19, 129-148.
- Hague Convention on the Protection of Children and Co-Operation in Respect of Intercountry Adoption, (1993). Found at http://www.hcch.net/index_en.php?act=conventions.text&cid=69, accessed November 30, 2008.
- Hodges, J., & Tizard, B. (1989a). IQ and behavioural adjustment of ex-institutional adolescents. *Journal of Child Psychology and Psychiatry*, 30, 53-75.
- Hodges, J., & Tizard, B. (1989b). Social and family relationships of ex-institutional adolescents. *Journal of Child Psychology and Psychiatry*, 30, 77-97.
- Hoksbergen, R. (1999). The importance of adoption for nurturing and enhancing the emotional and intellectual potential of children. *Adoption Quarterly*, 3, 29-41.
- Johnson, D. E. (2000). Medical and developmental sequelae of early childhood institutionalization in Eastern European adoptees. In C. A. Nelson (Ed.), *The effects of early adversity on neurobehavioral development. Minnesota Symposium on Child Psychology*, 31 (113-162). Mahwah, NJ: Lawrence Erlbaum.
- Landry, S. H., Smith, K. E., & Swank, P. R. (2006). Responsive parenting: Establishing early foundations for social, communication, and independent problem-solving skills. *Developmental Psychology*, 42, 627-642.
- Landry, S.H., Smith, K.E., Miller-Loncar, C.L., & Swank, P.R. (1997). Predicting cognitive-linguistic and social growth curves from early maternal behaviors in children at varying degrees of biological risk. *Developmental Psychology*, 33, 1040-1053.
- Larsson, G., Bohlin, A., & Stenbacka, M. (1986). Prognosis of children admitted to institutional care during infancy. *Child Abuse & Neglect*, 10, 361-368.

- Lau, A., Litrownik, A., Newton, R., & Landsverk, J. (2003). Going home: The complex effects of reunification on internalizing problems among children in foster care. *Journal of Abnormal Child Psychology*, *31*, 345-359.
- Lewis, E., Dozier, M., Ackerman, J., & Sepulveda-Kozakowski, S. (2007). The effect of placement instability on adopted children's inhibitory control abilities and oppositional behavior. *Developmental Psychology*, *43*, 1415-1427.
- Lindhiem, O., & Dozier, M. (2007). Caregiver commitment to foster children: The role of child behavior. *Child Abuse and Neglect*, *31*, 361-374.
- Litrownik, A., Newton, R., Mitchell, B., & Richardson, K. (2003). Long-term follow-up of young children placed in foster care: Subsequent placements and exposure to family violence. *Journal of Family Violence*, *18* (1), 19-28.
- MacLean, K. (2003). The impact of institutionalization on child development. *Development and Psychopathology*, *15*, 853-884.
- McCall, R.B., van IJzendoorn, M.H., Juffer, F., Groark, C.J., & Groza, V.K. (in press). Children without permanent parents: Research, practice, and policy. *Monographs of the Society for Research in Child Development*.
- Miller, L., Chan, W., Comfort, K., & Tirella, L. (2005). Health of children adopted from Guatemala: Comparison of orphanage and foster care. *Pediatrics*, *115*, 710-717.
- Mosek, A., & Adler, L. (2001). The self-concept of adolescent girls in non-relative versus kin foster care. *International Social Work*, *44*, 149-162.
- Nelson, C., Zeanah, C., Fox, N., Marshall, P., Smyke, A., & Guthrie, D. (2007). Cognitive recovery in socially deprived young children: The Bucharest early intervention project. *Science*, *318*, 1937-1940.

- Newton, R., Litrownik, A., & Landsverk, J. (2000). Children and youth in foster care: disentangling the relationship between problem behaviors and number of placements. *Child Abuse & Neglect, 24* (10), 1363-1374.
- O'Connor, T. G., Rutter, M., Beckett, C., Keaveney, L., Kreppner, J. M., & the English and Romanian Adoptees Study Team (2000). The effects of global severe privation on cognitive competence: Extension and longitudinal follow-up. *Child Development, 71*, 376-390.
- Oosterman, M., Schuengel, C., Slot, N.W., Bullens, R.A.R., & Doreleijers, T.A.H. (2007). Disruptions in foster care: A review and meta-analysis. *Children and Youth Services Review, 29* (1), 53-76.
- Roy, P., Rutter, M., & Pickles, A. (2000). Institutional care: Risk from family background or pattern of rearing? *Journal of Child Psychology and Psychiatry, 41*, 139-149.
- Rutter, M., Sonuga-Barke, E.J., Beckett, C., Castle, J., Kreppner, J., Kumsta, R., Schlotz, W., Stevens, S., & Bell, C.A. (2010). Deprivation-specific psychological patterns: Effects of institutional deprivation. *Monographs of the Society for Research in Child Development, 75*(1).
- Schiff, M., Duyme, M., Dumaret, M., & Tomkiewicz, S. (1982). How much could we boost scholastic achievement and IQ scores? A direct answer from a French adoption study. *Cognition, 12*, 165-196.
- Simmel, C., Barth, R., & Brooks, D. (2007). Adopted foster youths' psychosocial functioning: A longitudinal perspective. *Child and Family Social Work, 12*, 336- 348.
- Smyke, A.T., Zeanah, C.H., Fox, N.A., Nelson, C.A., & Guthrie, D. (2010). Placement in foster care enhances quality of attachment among young institutionalized children. *Child*

- Development, 81* (1), 212-223.
- Spieker, S. & Booth, C. (1988). Maternal antecedents of attachment quality. In J. Belsky and T. Nezworski (Eds), *Clinical implications of attachment*. Hillsdale, NJ: Erlbaum, 95-135.
- Taussig, H., Clyman, R., & Ladsverk, J. (2001). Children who return home from foster care: A 6-year prospective study of behavioral health outcomes in adolescence. *Pediatrics, 108* (e10).
- The St. Petersburg-USA Orphanage Research Team. (2005). Characteristics of children, caregivers, and orphanages for young children in St. Petersburg, Russian Federation. *Journal of Applied Developmental Psychology: Child Abandonment, Special Issue*.
- The St. Petersburg-USA Orphanage Research Team. (2008). The effects of early social-emotional and relationship experience on the development of young orphanage children. *Monograph of the Society for Research in Child Development, 291*, 73 (3).
- Tizard, B. & Hodges, J. (1978). The effect of early institutional rearing on the development of eight year old children. *Journal of Child Psychology and Psychiatry, 19*, 99-118.
- Tizard, B. & Rees, J. (1974). A comparison of the effects of adoption, restoration to the natural mother, and continued institutionalization on the cognitive development of four-year-old children. *Child Development, 45*, 92-99.
- Tizard, B., & Rees, J. (1975). The effect of early institutional rearing on the behaviour problems and affectional relationships of four-year-old children. *Journal of Child Psychology and Psychiatry, 16*, 61-73.
- Triseliotis, J. (1984). Identity and security in adoption and long-term fostering. *Early Child Development and Care, 15* (2), 149-170.
- Triseliotis, J. (2002). Long-term foster care or adoption? The evidence examined. *Child and*

Family Social Work, 7, 23-33.

Triseliotis, J., & Hill, M. (1990). Contrasting adoption, foster care, and residential rearing. In D. M. Brodzinsky & M. S. Schechter (Eds.), *The psychology of adoption* (pp. 107-120). New York: Oxford University Press.

UNAIDS, UNICEF, USAID (2004). Children on the Brink: 2004. A joint report of new orphan estimates and a framework for action. Washington, DC USAID.

United Nations (1989). *Convention on the Rights of the Child*. United Nations, Geneva.

van den Dries, L., Juffer, F., van Ijzendoorn, M., & Bakermans-Kranenburg, M. (2009).

Fostering security? A meta-analysis of attachment in adopted children. *Children and Youth Services Review*, 31, 410-421.

Whetten, K., Ostermann, J., Whetten, R., Pence, B., O'Donnell, K., Messer, L., Thielman, N., & The Positive Outcomes for Orphans (POFO) Research Team (2009). A comparison of the wellbeing of orphans and abandoned children ages 6-12 in institutional and community-based care settings in 5 less wealthy nations. *PLoS ONE*, 4 (12): e8169.

Windsor, J., Glaze, L., Koga, S., & The Bucharest Early Intervention Project Core Group (2007). Language acquisition with limited input: Romanian institution and foster care. *Journal of Speech, Language, and Hearing Research*, 50, 1365-1381.

Wolff, P., Tesfai, B., Egasso, H., & Aradom, T. (1995). The orphans of Eritrea: A comparison study. *Journal of Child Psychology and Psychiatry*, 36 (4), 633-644.

Wolff, P., & Fesseha, G. (1998). The orphans of Eritrea: Are orphanages part of the problem or part of the solution? *American Journal of Psychiatry*, 155 (10), 1319-1324.

Zimmerman, B. (2005). Orphan living situations in Malawi: A comparison of orphanages and foster homes. *Review of Policy Research*, 22, 881-917.

Zeanah, C. H., Smyke, A. T., Koga, S. F., Carlson, E., & The Bucharest Early Intervention Project Core Group (2005). Attachment in institutionalized and community children in Romania. *Child Development*, 76(5), 1015-1028.