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PRESS RELEASE

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Length of Deprivation in Infants Affects Intellectual Development for Years

Following the fall of the Ceaușescu regime in Romania, the world became aware of the dreadful plight of children who had been raised in profound deprivation in institutions. In response, many American and European families adopted these children. When these children left their institutions, most were severely malnourished and severely physically and psychologically delayed. Now a new study published in the May/June issue of the journal *Child Development* finds that despite having spent at least seven-and-a-half years in their adoptive homes and having had six years of schooling, the early experiences of profound institutional deprivation continue to exert marked adverse effects on the children's IQ even at age 11.

The researchers, from King's College and the University of Southampton in the United Kingdom, New York University and the University of Rochester Medical Center, have followed these children since adoption. Earlier studies found the children showed a remarkable degree of developmental catch-up by age 4 or 6, although a minority of children had persisting deficits. This study was designed to show if this "catch-up" could be maintained at age 11.

The researchers identified four particularly striking findings:

- There were no detectable effects on IQ when the deprivation ended before 6 months. This implies that even with profound deprivation, recovery is possible if confined to this infancy period.
- For any period of deprivation in ages 6 through 42 months, the children had an IQ deficit of about 15 points. This finding suggests that the deprivation caused some type of change in the brain known as "developmental programming." This occurs when the body (including the brain) adapts to certain experiences that occur during a sensitive growth period when key physical developmental changes are also occurring. Given that this affect did not occur in children under six months, it appears that while it takes a while for developmental programming to occur, once established, the effects tend to endure.
- The children whose intellectual functioning was most impaired at 6 years showed some "catch up" between ages 6 and 11. This finding is consistent with what is known about

brain plasticity, i.e., that important cognitive and intellectual development continues into adult life and may be influenced by the environment.

- Even among the children who suffered the most prolonged institutional deprivation, there was huge individual variation in outcome. Some children suffered badly but others emerged relatively unscathed. This finding supports other research suggesting that genetic factors influence one's susceptibility to environmental hazards – a possibility that will be investigated in further research.

While the overall results show a pattern that involves both continuity and change – one common to all forms of development – the details present substantial challenges to many theoretical assumptions, notes lead researcher Dr. Celia Beckett, of King's College in London. These include the idea that:

- Children raised with early deprivation would recover completely if removed to a completely different environment. “This is not the case in this study,” said Dr. Beckett, “as there a continuing and persistent effect of deprivation after 7-½ years.”
- The “catch-up” after removal from the institution would be completed in a short period following adoption. Instead, said Dr. Beckett, “This study shows that the period for catch-up is more extensive than previously thought.”
- Deprivation beyond six months would not have any additional effect. “Our findings suggest that instead of the effects of deprivation being cumulative, there is a sensitive period of about 12 months during which exposure to deprivation can cause irreversible effects,” she said.

“Our findings in this study are encouraging,” Dr. Becket said, “since they show that the children who were most impaired at age 6 have continued to progress intellectually. We are currently studying the children at age 15 and it will be interesting to see whether this pattern continues.”

Although this study doesn't directly translate to other groups of children because of the degree of deprivation encountered by the Romanian children, Dr. Beckett notes that it suggests that even in the most severe cases of deprivation there are grounds for optimism that children will experience some continuing progress.

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Summarized from *Child Development*, Vol. 77, Issue 3. *Do the effects of early severe deprivation on cognition persist into early adolescence? Findings from the English and Romanian Adoptees study* By Beckett C, Maughan B, Rutter M, Castle J, Colvert E, Groothues C, Kreppner J, Stevens S (King's College, London), O'Connor TG (University of Rochester Medical Center), and Sonuga-Barke EJS (King's College, University of Southampton and New York University). Copyright 2006 The Society for Research in Child Development, Inc. All rights reserved.