Neuropsychological Evaluation and Rehabilitation of the Post Institutionalized Child

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INTRODUCTION

International adoptions have become prominent worldwide with the United States receiving the largest amount of immigrant visas issued to orphans. Eastern European countries, particularly the former Soviet Union and Romania, have been attracting families from all over the world due to the high volume of available children with desirable ages, ratio characteristics, and the definitive aspect of parental rights termination which has been a subject of recent controversy in the United States. Recently, there have been landmark cases in the United States overturning long-term custody of the adoptive parents due to the resurgent interest of the biological parents years later. In general, families completing international adoptions find the procedures much more expedient and cost effective as opposed to waiting on a list for infants in the United States which can be years of waiting, or the worrisome possibility of adopting an older child who has a clear documented history of abuse and neglect. Another motivation for families moving towards international adoptions has been media presentations worldwide which have highlighted deprived children residing in Eastern European institutions. Thousands of families have flocked to these countries with the hopes of rescuing a child from life-long institutionalization.

Interest in the post-institutionalized child has gained great attention in all medical and psychological disciplines throughout the United States and in the United Kingdom. International adoption clinics have surfaced throughout the United States following pioneering efforts by Dana Johnson, M.D., Ph.D. of the University of Minnesota, International Adoption Clinic; and Laurie Miller, M.D., Director of the International Adoption Clinic at the Floating Hospital for Children in Boston, Massachusetts. As there has been a significant increase in the amount of internationally adopted children coming to the United States (up nearly 130% since 1990), the need for international adoption medical specialists has surfaced. Specialists from all disciplines of pediatrics and developmental psychology have been on the forefront of evaluating internationally adopted children of all ages. Research has shown the long-term neuropsychological and neurocognitive status of these children can often present a challenge to adoptive families as the "hidden disabilities" of the effects of institutionalization may not surface until the child is of school age.

Post-institutionalized children have been exposed to a volume of high risk pre and post-natal factors such as poor maternal care, malnutrition, fetal alcohol exposure, smoking, neurotoxins, infections, prematurity, low birth weight, and a host of other potential complications. Goldfarb (1943), Bowlby (1951) and Spitz (1945) have clearly defined the effects of institutionalization or "hospitalism" as being strong contributing factors to later neurocognitive and emotional problems, particularly bonding and attachment deficits. Johnson (et.al., 1997) along with numerous medical researchers have intensely researched the health status of children from the former Soviet Union and Eastern Europe and have further documented the high risk factors which may impact later cognitive, learning and emotional performance. Rutter (1998) discusses developmental catch-up and deficits following adoptions after severe global early deprivation and finds a strong tendency towards resilience and short-term catch-up in the younger child group (adoptions completed prior to 25 months). Rutter goes on to explain that global cognitive improvement over the long course of time is still an unknown factor in many of the Romanian adoptees who have been exposed to high risk factors.

There is controversy regarding assessment and treatment procedures for the post-institutionalized child. Many professionals believe that the effects of institutionalization and deprivation will spontaneously abate and a "wait and see" is adopted in addition to the ideology that parents should "give the child time to adjust" as opposed to implementing aggressive assessment or premature diagnoses of handicapping cognitive or emotional conditions. Federici (1998) has emphasized the importance of immediate and aggressive neuropsychological and neurodevelopmental evaluations for all children, particularly the older post-institutionalized child who may present with very prominent behavioral and adjustment difficulties, whereas the child under the age of 24 months requires time to re-stimulate and reattach. Evaluations in the child's native language are of paramount importance. Many families worldwide are adopting children greater than 4 years of age and often find the child very challenging from the first day of adoption although may have been advised by various professionals or agency personnel that there needs to be this "adjustment period" and a family system emphasizing intensive stimulation, love and bonding in order to promote "developmental catch up" and normal family adjustment.

Given the research and current understanding regarding the damaging effects of institutionalization and the numerous high risk medical factors which may lead to neurocognitive and emotional delays and deficits, the need for aggressive neurodevelopmental and neuropsychological assessment of impairments followed by aggressive neurocognitive and psychological rehabilitation appears to be a necessary inter-vention for children coming from profoundly depriving backgrounds. While long-term follow up regarding the internationally adopted child are still being gathered, early information strongly suggests both neuropsychological and emotional sequalae of institutionalization for a large percentage of children being adopted at an age greater than 4 years. While many children appear to have been unscathed as the result of institutionalization, Johnson (1997) suggests that children who have resided in institutional care become a high risk population. Early intervention programs appear to be a critical factor in promoting optimal development and recovery from institutional damage although many "delays" may be chronic and static in nature.

COMPREHENSIVE NEUROPSYCHOLOGICAL EVALUATION OF THE POST-INSTITUTIONALIZED CHILD

The importance of comprehensive neuro-psychological and neurocognitive assessments will help determine baseline strengths and deficits, and plot out the appropriate interventional strategies. The neuropsychological definition of developmental delay is defined as a "documented impairments in neurocognitive functioning which may impact optimal intellectual, learning and emotional performance". This definition may help families understand their adoptive child's current cognitive and emotional status while aggressively addressing areas of impairment requiring immediate intervention as opposed to allowing the child to struggle unattended with cognitive deficits or continue a pattern of inappropriate emotional and behavioral manifestations.

While neuropsychological evaluation may not definitively diagnose genetic and biological factors, a detailed assessment of all areas of cognitive functioning can help suggest a "pattern analysis" or level of cognitive organization and hierarchy which may be amenable to cognitive rehabilitation strategies (Reitan, et.al. 1978; Luria, 1976). Neuropsychological evaluation of the post-institutionalized child goes well beyond assessing a fundamental "intelligence quotient". The importance of native language evaluation immediately upon arrival serves as a "baseline" for later longitudinal and cross-sectional evaluations. Many language and culture free instruments are available such as the Leiter International Performance Scales, Universal Nonverbal Intelligence Test (UNIT), Comprehensive Test of Nonverbal Intelligence (CTONI), in addition to many of the "performance measures" of standardized intelligence scales such as the Wechsler and Stanford-Binet. Additionally, simple visual-perceptual screening measures such as the Bender-Gestalt were used at the turn of the century to differentiate organic brain conditions versus psychiatric conditions versus normal populations (Bender, 1929). Projective psychological measures can also help guide the examiner regarding levels of cognitive and emotional sophistication for any child with great sensitivity given to cultural and environmental influences.

An extremely important aspect of the neuropsychological evaluation is to supplement pediatric and developmental neurology assessments. Basic evaluations of sensory-motor, visual-perceptual, memory processing and problem solving strategies are extremely important in determining the presence or absence of hard and soft neurological signs which may be indicative of brain dysfunction or specific neurological disorders which may require more urgent medical

interventions. Additionally, and of greatest importance, is the evaluation of receptive and expressive language as language functioning has the highest correlation to later impairments in other neurocognitive areas such as logic, reasoning, abstractive skills, problem solving, and the general development of academic abilities.

A controversial position may be that the post-institutionalized child has little, if any, practical experience in order to engage in and complete a battery of neuropsychological and neuro-developmental tests. While this ideology certainly has a degree of relevance, it seems exceedingly important to assess the older internationally adopted child's "baseline" level of strengths, weaknesses and, primarily depth of impairment, in order to properly advise the adoptive family regarding the degree or intensity of rehabilitation strategies necessary in order to promote more expedient improvement in multi-sensory skills. Acculturation and family "adjustment" tend to be matters of contentment as opposed to truly understanding the needs of the post-institutionalized child. Fundamental principles of developmental neuropsychology emphasize the importance of assessing both neurocognitive and neuropsychiatric factors which may be indicative of impairments of primary brain behavior relationships as opposed to solely adjustment factors. Furthermore, the role of the developmental neuropsychologist seems critical in working with families having adopted a post-institutionalized child as a better understanding regarding the "interplay" between brain development and emotions may better explain certain behavioral and emotional manifestations while more clearly defining deficits in bonding and attachment cycles (i.e., reactivity to situations, processing of new experiences and bonding/attachment patterns).

THE NEUROPSYCHOLOGY OF BONDING AND ATTACHMENT DISORDERS

While the role of the Developmental Neuro-psychologist is to evaluate intellectual-cognitive, memory processing, learning aptitude, and problem-solving strategies, a critical duty may actually be in the evaluation of a child's emotional integrity and perception of relationships. The interplay between neurocognitive development and emotions encompasses basic neurobiology which suggests that human emotions, reactions, interactions and attachments may be strongly mediated by a combination of genetic, neurochemical, neurocognitive and environmental factors. As there has been a tremendous amount of discussion regarding "attachment disorders" in the post-institutionalized child, the current psychological research focuses almost solely on the effects of deprivation and abandonment and the creation of an "attachment disorder" without a more detailed understanding of the role of innate neurocognitive functioning.

While abandonment and institutionali-zation most certainly has a profound impact on a child's ability to develop trust, bonding and security in newly adoptive relationships, an emphasis needs to be placed on the integrity of the post-institutionalized child's higher-level neurocognitive abilities with a comprehensive assessment regarding the availability of "innate skills" needed for bonding, attachment and the development of appropriate social-interactional and reciprocal behaviors. While many children with post-institutionalized attachment disorders may display a combination of unattached or even indiscriminant behaviors (Ames, 1997), many post-institutionalized children display a very intense pattern of behavioral dyscontrol; aggression and violence; destructiveness to self and others; a lack of cause-and-effect thinking; indiscriminant affections to strangers as evidenced by being inappropriately demanding and clingy; or a pattern of social withdrawal, isolation and maintaining a self-stimulating posture. A principle complaint from parents adopting an older child is that the child may be out of synchrony with their environment resulting in difficulties in providing management, structure and organization.

The concept of a "neuropsychologically-based attachment disorder" seems most appropriate for many post-institutionalized children, particularly the child who shows a history of high risk pre and post-natal factors which may have influenced neurocognitive development. For example, there is a documented interaction between growth parameters and neurologic competence in profoundly deprived institutional children assessed in Romanian institutions (Johnson and Federici et.al., 1999). Children who have shown documented medical and neurological impairments along with extended time in institutional settings typically display very pronounced impairments in the development of appropriate social-interactional skills. Combined with suspected impairments in neuro-psychological abilities, behavioral patterns can often be quite aberrant and intense in nature, often overwhelming the newly adoptive family.

Therefore, it seems only appropriate to broaden the horizon when assessing children for bonding,

attachment or general psychological dysfunction by including a comprehensive assessment of neurocognitive abilities or deficit patterns. As children from institutional settings are at highest risk for medical, neuropsychological and emotional problems, an assessment of only the psychological or behavioral manifestations provides only a partial understanding of the adjustment issues which often produce tremendous stress on the newly adoptive families and treatment providers attempting to intervene and provide services (Johnson, 1997; Federici, 1999).

Careful differential diagnosis regarding neuro-psychological versus psychosocially-based attachment disorder can help provide newly adoptive families with better parameters of understanding the post institutionalized child. Additionally, neuropsychological and neurocognitive rehabili-tation approaches should typically supercede solely psychological or psychiatric/pharmacological therapies as providing direct interventions and increasing speech and language, sensory-motor, abstractive logic and reasoning and, of greatest significance, visual-perceptual analytic abilities. These brain behavior interventions strengthen the post-institutionalized child’s ability to adequately "perceive" and process human relationships, emotions, facial expressions, social cues, and the necessary sequential "steps" needed to move towards a more healthy level of bonding and attachment. Too often, children from institutional settings are quickly categorized as having either a "reactive attachment disorder" or modicum of psychiatric syndromes ranging from Attention Deficit Hyperactivity Disorder, Bipolar Disorder, Post Traumatic Stress Disorder, varying types of depression and anxiety conditions or, very commonly, oppositional and conduct disorders or even autism/pervasive developmental disorders. While many of these psychiatric patterns may be co-morbid conditions, there needs to be a very aggressive but yet conservative approach in assessing the post-institutionalized child. Rank ordering developmental disabilities of the child as opposed to relying solely on the assessment of families or treatment providers may avoid misleading diagnoses and nonproductive therapeutic interventions.

THE TRAGIC DOWNWARD SPIRAL OF INSTITUTIONALIZATION "INSTITUTIONAL AUTISM: AN ACQUIRED SYNDROME"

Comprehensive medical and neuropsychological evaluation helps define current and future needs of the post-institutionalized child. Many children who have resided in very deprived institutional environments may present with a pattern of autistic-type behaviors which can often present as being overwhelming and confusing to newly adoptive families and treatment providers. Pervasive Developmental Disorders and autistic spectrum disorders typically involve biological and genetic abnormalities; coexisting mental retardation; varying levels of speech/language; motor and sensory impairments; stereotypic movements and ADHD patterns; obsessive-compulsive behaviors; and varying levels of impairments in social-reciprocal relationships. Newer findings in the causes and treatment of autism are focusing on a multi-factorial approach in the assessment and treatment with extra emphasis on understanding dopaminergic and serotonergic systems relevant to the pathophysiology of pervasive developmental disorders (Potenza, 1997).

A child with multi-sensory neuro-developmental delays can often be diagnosed as having mental retardation with coexisting autistic spectrum disorder. Many children from post-institutionalized settings live in an environment where there is a mix of neurologically delayed children with children who have been abandoned and neglected. While there is certainly a high incidence of children with classic neurologic disorders and neurogenetically-based autism or mental retardation, careful research and evaluation of children residing in Romanian institutions have strongly suggested a pattern of atypical autism that may be related to institutionalization or an "Acquired Syndrome" (Federici, 1996, 1998). While accurate statistics are not yet available, more cases of atypical autism in post-institutionalized children are being reported by families and treatment providers around the world.

Rutter (1998) discusses Quasi-Autistic Patterns following global privation in Romanian and Eastern European orphans. Rutter discusses "autistic features" which were evident in children raised in severely deprived environments, with these features being very similar in some respects to those found in "ordinary" autism. These quasi-autistic patterns were found to be associated with prolonged deprivation and grossly interfered with the ability of the child to develop appropriate attachments and reach optimal cognitive potential.

A child’s neurocognitive and emotional development rapidly moves towards a downward spiral

following extended time in an institution. Hopelessness and helplessness sets in, with an increase in anger, frustration and extreme loneliness and despair. For children who have a relative degree of cognitive and emotional stability at the time of institutionalization, these relative "skills" can often be compromised following an ongoing lack of human contact and stimulation, or a chronic exposure to children having significantly more neurocognitive and neurodevelopmental impairments. In particular, children who may show classic autism or mental retardation in an institutional setting typically have very pronounced self-stimulating behaviors and rituals which tend to be automatic neurologic responses, whereas the relatively stronger institutionalized child may develop or "imitate" these responses over time as a way of finding a degree of social interaction, attachment and mode of passing time. These ritualistic behavior patterns may also serve to "detach and defend" against profound anaclytic depression and despair (Spitz, 1945).

More specifically, as children in institutional settings become more resigned to the pattern of despair, trauma, emptiness and true "detachment" from an outside world, a loss of developing motor, sensory and intellectual-cognitive skills ensues. Regression begins and becomes an insidious pattern. While there may be no precise measure to assess how long this regression (and loss) of neurocognitive abilities may take, estimates suggest that for every two months of institutionalization that a child may be delayed one month in cognitive and emotional skills (Johnson 1997).

Federici postulates that, as a child's memory of the few positive experiences of life gradually fades away, he or she may regress to the most infantile (safe) stages of development. This regression can ultimately lead to a very infantile and autistic state in which the child exhibits an emotionally detached and preoccupied personality structure and presentation which is virtually indistinguishable from classic autism.

Additional characteristics of Institutional Autism (or an "Acquired Syndrome"), are as follows:

Actual loss of physical height, weight and growth in the absence of a documented neurological condition. The profound negative effects of malnutrition, untreated medical problems and social deprivation may result in a degree of psychosocial dwarfism.

The child does not look to be anywhere near their actual age, nor is the sex of the child easily discerned.

A cessation of current language functioning with a documented history of appropriate language usage.

Rapid deterioration of behaviors to the point where the child exhibits primitive acting out behaviors due to profound attachment disorder and institutional trauma.

Profound nutritional and medical neglect over the course of years which may mediate body and brain development with the gradual emergence of an organic brain syndrome impairing language, attention and concentration, development of confusional behaviors and deficiencies in memory and learning.

Complete regression to self-stimulating behaviors such as rocking, head banging, hair pulling, self-injurious behaviors, and institutional language.

Regression and "detachment" from relative healthy and normal human contact to an "attachment" to others with similar pathology. This "group model" represents survival in an alternate form of social-interaction based on modeling, imitation and developing any type of attachment in order to survive institutional life.

Improvement in autistic symptoms following removal of trauma and with cognitive and emotional rehabilitation. Resurgence of autistic symptoms upon returning to institutional environment.

In promoting a better understanding of this unique and highly complex institutional autistic syndrome, families may be better prepared to adopt and raise an older child from an institutional setting. Furthermore, more in-depth understanding of a potentially institutionally autistic child

may help neuropsychologists and allied medical and mental health professionals appreciate the impact of institutional effects on neurologic and psychologic functioning which is then altered over the course of time. Awareness of acute and chronic trauma on brain behavior relationships may expedite the implementation of cognitive rehabilitation strategies to be used by families immediately after adopting a post-institutionalized child.

In summary, comprehensive neuro-psychological evaluation and proper understanding of the post-institutionalized (potentially traumatized) child may help develop an assessment and treatment model as current neurological and psychiatric categorization often does not allow for the nuances of atypical patterns. The complexities of many internationally adopted children has now presented families with a new set of challenges requiring multidiscipline interventions.

INNOVATIVE TREATMENT FOLLOWING ASSESSMENT

Medical specialists clearly outline all necessary interventions for the post-institutionalized child. Developmental neuropsychologists have attempted to augment medical assessment and interventions and provide a more detailed and precise program of interventions as opposed to often vague and obscure psychological therapies.

Post-institutionalized children under the age of 2 years certainly require a tremendous amount of stimulation, bonding and attachment as they continue to be at a very critical level of both brain and emotional development. The younger post-institutionalized child certainly has a lesser degree of risk based on a lesser amount of time spent in an institutional environment, whereas the older child may have already "progressed" to a level of regression in both neurocognitive and emotional functioning. The institutionally autistic child may have reached the most profound level of regression and require the most immediate of interventions.

Stimulation of vestibular and proprioceptive systems for the post-institutionalized child has been a widely used intervention for children of all ages (Cermak and Daunhauer, 1997). The emerging field of sensory-integration therapy has been found to be beneficial, although neurology researchers question the need for more specific interventional strategies (Pearl et.al., 1999).

The importance of careful differential diagnosis cannot be minimized in the post-institutionalized child. Proper assessment of medical, neurological, neuropsychological and psychological/psychiatric conditions seems paramount prior to establishing a treatment program. Traditionally, the "wait and see" assessment and intervention model has been utilized although with the wide spread research regarding the damaging effects of institutionalization on both cognitive and emotional development, specialists from all disciplines are now ascribing to a more aggressive treatment program. Frequently, families have embarked on long-term psychological and pharmacological treatment programs only to later find the core symptoms and disorders remained.

Traditional psychological and family therapies have been recommended such as holding time to address attachment disorders and behavioral dyscontrol (Federici, 1998; Hughes, 1998; Keck and Kupinsky, 1998 and Welch 1998). The most common complaint families present to mental health providers involves a newly adoptive child's deficiencies in behaviors, self-control, aggressive and destructive outbursts, mood changes, low frustration tolerance, social skills and indiscriminant attachment behaviors. Psychological therapies emphasizing bonding and reattachment, rage reduction and family restructuring are certainly critical, but for the child with neuropsychological impairments or institutional autistic characteristics based on extended time in an institutional environment, an aggressive and innovative approach is recommended. Additionally, speech and language and sensory-integration therapies have been widely used as a form of cognitive and neurological remediation, but are typically not implemented immediately upon the child joining their newly adoptive family.

For the older adopted child who presents with a pattern of cognitive and emotional delays as the result of extended institutionalization with questionable co-morbid brain dysfunction, Federici (1998) developed a therapeutic family program which has been found to be highly effective but yet controversial in comparison to more traditional family therapy approaches.

In order to effectively and aggressively work with the post-institutionalized child, a "detoxification

from institutionalization" program was created. The following steps outline the basic principles of this gradual detoxification and rehabilitation program:

Pre and post-adoptive counseling to families regarding the high risk factors in children from institutional settings.
For a minimum of 3-to-6 months, keeping up the "institutional life" in terms of native language, food and routines.
Restraint in exposure to social and environmental stimuli.
Initial focus of caretakers to remain somewhat detached and objective as opposed to promotion of indiscriminant attachments.
Avoidance of "splitting" attachments by having secondary or alternate caretakers.
Intense focus on behavioral control and immediate compliance with parental and home directives.
Proper use of holding techniques for aggressive outbursts which are to be expected.
Gradual and incremental detoxification off the institutional mentality and introduction into new environment, relationship and routines.
Complete "adults only" supervision by primary caretakers only.
Continually assess neurocognitive and emotional strengths and deficit patterns.
Continual behavioral rehearsal, role playing, conditioning and counter-conditioning techniques.
Continual positive reinforcement for any and all type of prosocial behavioral and cultural/environmental transitions.
Well supervised school routines.
Needs of the post-institutionalized child must outweigh the needs of the parents to provide "immediate love and affection".
All privileges and activities earned with a family "contingency plan".
Conservative pharmacological interventions.

Of primary importance is providing theolder post-institutionalized child a safe and highly structured environment needed for restructuring cognitive and behavioral patterns associated with institutional life. As this program involves aggressive family and professional interventions, the child and family is continually modified, rehearsed and reinforced regarding new modes of interaction as opposed to allowing long periods of time to elapse without immediate interventions and corrections. While this type of program may present as a controversial and somewhat uncomfortable approach to many families and mental health providers, the short and long-term needs of the post-institutionalized child must outweigh the short-term needs of the families who may be desperate to attach and create family harmony immediately.

Following the transition of a child from institutionalization to their new (and often over-stimulating) home, additional neuropsychological interventions can be implemented:

Sensory-integration therapy.
Language therapies, particularly auditory processing training.
Occupational/sensory input-output therapies.
Logic/problem solving therapy.
Cognitive therapies (rational restructuring).
Neurolinguistic programming.
Computers assisted training to improve visual-perception and language.
Reality therapy.
Concrete behavioral rehearsal and role playing.
Behavior modification (earning program).
Brain rehabilitation techniques.
Supervised social and play therapy.
Ongoing conservative medication interventions.

SUMMARY

The developmental neuropsychologist offers valuable information to the medical, neurological, occupational, physical, educational and psychological treatment provider working with the post-institutionalized child. Precision and accuracy in neurocognitive assessment promotes a better understanding of brain behavior relationships and emotional development. The neuropsychologist offers a unique perspective regarding neurodevelopmental delay syndromes, particularly in the differential diagnosis of organic versus functional disorders, in addition to providing an additional

perspective regarding pervasive developmental disorders versus Institutional Autism: An Acquired Syndrome.

The neuropsychology of bonding and attachment disorders is a critical part of assessment as neurocognitive rehabilitation techniques may be a valuable tool in teaching the post-institutionalized child brain improvement strategies which can enhance their ability to process and organize human emotions and enhance a greater depth of interpersonal relating. With the increasing number of internationally adopted children of all ages coming to the United States, a multidiscipline team of medical experts will provide further research into the long-term effects of institutionalization while also developing the subspecialty known as International Adoption Medicine.

REFERENCES

Albers, L. H., Johnson, D.E., Hostetter, M.K., Iverson, S., and Miller, L.C. (1997) Health of Children Adopted from the Former Soviet Union and Eastern Europe. Journal of the American Medical Association, 278, 922-924.

Ames, E.W. (1997). The Development of Romanian Orphanage Children Adopted to Canada. Burnaby, B.C.: Simon Frasier University.

Bender, L. (1929) Assessment of Organic Conditions, Orthopsychiatry.

Bowlby, J. (1951) Maternal Care and Mental Health. World Health Organization Monograph No. 2. Geneva: World Health Organization

Cermak, S.A. & Daunhauer, L.A. (1997) Sensory Processing in the Post-Institutionalized Child. The American Journal of Occupational Therapy, 51, 500-507

Federici, R. (1996) Institutional Autism: An Acquired Syndrome. The Post: The Parent Network for the Post-Institutionalized Child, 14, November-December

Federici, R. (1998) Help for the Hopeless Child: A Guide for Families (with Special Discussion on Assessing and Treating the Post-Institutionalized Child): Dr. Ronald S. Federici and Associates

Galler, J. and Ross, R. (1998) Malnutrition and Mental Development. The Post: The Parent Network for the Post-Institutionalized Child, 6: 1-7

Goldfarb, W. (1943) Effects of Early Institutional Care on Adolescent Personality. Journal of Experimental Education, 12, 106-129

Goldfarb, W. (1945) Psychological Privation in Infancy and Subsequent Adjustment. American Journal of Orthopsychiatry, 14, 247-255

Goldfarb, W. (1947) Variations in Adolescent Adjustment of Institutionally Reared Children. American Journal of Orthopsychiatry, 17: 449-457

Hughes, D. (1997) Facilitating Developmental Attachment. Jason Aronson

Johnson, D.E. (1997) Adopting the Institutionalized Child: What Are the Risks? Adoptive Families, 30, 26-29

Johnson, D.E., Aronson, J.E., Cozzens, D., Federici, J., Federici, R., Pearl, P., Sbordone, R., Storer, D., Zeanah, P., and Zeanah, C. (1999) Growth Parameters Help Predict Neurologic Competence in Profoundly Deprived Institutionalized Children in Romania. Pediatric Research (in press).

Johnson, D.E., Aronson, J.E., Federici, R., Faber, S., Tartaglia, M., Daunhauer, L., Windsor, M. and Georgieff, M.K. (1999). Profound, Global Growth Failure Afflicts Residents of Pediatric Neuropsychiatric Institutes in Romania. Pediatric Research (in press).

Keck, G. & Kupecky, R. (1998) Adopting the Hurt Child. Pinon Press

Luria, A.R. (1976). The Working Brain. Pergammon Press.

Pearl, P., Johnson, D., Federici, R., Tartaglia, M., Gaillard, W., Lavenstein, B, McClintock, W., Conry, J. and Weinstein,

S. (1999). Neurological and Medical Evaluation of Institutionalized Children in Romanian Orphanages. Journal of Pediatric Neurology (in press)

Potenza, Marc (1997). New Findings on the Causes and Treatment of Autism. Journal of Child Psychiatry, Vol.2

Rutter, M. (1998). Developmental Catch Up, and Deficit, Following Adoption After Severe Global Early Privation. English and Romanian Adoptees (ERA) Study Team. Journal of Child Psychology and Psychiatry, 39, 465-476.

Rutter, M. (1999). Quasi-Autistic Patterns Following Severe Early Global Privation. Journal of Child Psychology and Psychiatry (in press)

Spitz, R. (1945). Hospitalism: An Inquiry Into the Genesis of Psychiatric Condition in Early Childhood. The Psychoanalytic Study of the Child, Vol.1 (page 53-74). New York, International Universities

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