

THE IMPACT OF PRE-ADOPTION STRESS ON THE ROMANIAN ADOPTEES'
TRANSITIONS TO ADULTHOOD AND ADULT ATTACHMENT: PERSPECTIVES
OF THE ADOPTEES AND THE ADOPTIVE PARENTS

by

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The Impact of Pre-Adoption Stress on the Romanian Adoptees' Transitions to Adulthood and Adult Attachment

Abstract

by

CRISTINA NEDELCU

Shortly after the 1989 Romanian Anti-Communist Revolution, the Western media exposed an unprecedented humanitarian crisis in Romanian orphanages. As a result, thousands of Romanian children were adopted into the United States, Canada, United Kingdom, the Netherlands and other countries of Western and Southern Europe. A large percentage of these children had a background of institutional care and were subjected to at least some level of pre-adoption stress. The longitudinal studies conducted in the US, Canada and the UK have demonstrated that length of time spent in institutional care and exposure to pre-adoptive stress negatively influenced the development and the attachment of Romanian adoptees at every stage up until late adolescence. This cross-sectional study of Romanian adoptees in early adulthood examines the impact of length of time spent in institutional care and pre-adoption stress on adult transitions and adult attachment. Bowlby's theory of attachment and Arnett's theory of Emerging Adulthood are the theoretical frameworks used in this study. Results from surveys of 139 adoptive parents 61 adoptees suggests that pre-adoption stress and length of time in an institution before adoption were found to no longer influence the adoptees' transitions to adulthood or their ability to feel secure in their relationships during early adulthood. Implications for practice and policy are discussed.

Key words: Romanian adoptions, adult transitions, adult attachment, institutional care, pre-adoption stress

Chapter 1

Scope of the Problem

Introduction

When the anti-Communist Revolution of 1989 overthrew Dictator Nicolae Ceausescu, Romania opened up to the world for the first time in 45 years (Gilberg, 1990; Georgescu & Calinescu, 1991; Treptow, 1996). As the Western media entered the country, journalists began relaying stories of political persecution and censorship (Gilberg, 1990; Georgescu & Calinescu, 1991; Groothues Beckett & O'Connor, 1998; Groza, Ileana & Irwin, 1999; Groza & Ryan, 2002). Disturbing images emerged of malnourished children who were housed in overcrowded institutions where child-rearing was performed with expediency and with a belief that the Communist State was a better parent than the children's parents (Groza & Ileana, 1996; Groza, Ileana & Irwin, 1999; Smyke, Koga, Johnson, Fox, Marshall, Nelson & Zeanah, 2007; Nelson, Fox & Zeanah, 2014). Among these thousands of abandoned children, suffering the most were the ones considered "defective" (Nelson, Fox & Zeanah, 2014, p. 49) or irrecoverable (Groza, Ileana & Irwin, 1999).

After a few documentaries exposed the conditions within the Romanian institutions to a worldwide audience, the Western media called attention to the desperate need for an immediate international response to the Romanian orphanage crisis (Groza & Ileana, 1996; Groza, Ileana & Irwin, 1999; Nelson, Fox & Zeanah, 2014; Riddle, Nelson, Fox & Zeanah, 2016). Adoptive families from the USA, Canada and Western Europe entered Romania to adopt these children. Adoption became suddenly an industrious field of international cooperation, often bypassing the bureaucratic and lawful channels

(Groza & Ileana, 1996; Groza, Ileana & Irwin, 1999; Borcila, 2014; Popa-Mabe, 2015).

For much of the 1990s, Romania readjusted its international adoptions policies, but the changes consisted of weak regulations, little oversight and eventually placing a moratorium on all adoptions (Nelson, Fox & Zeanah, 2014). Despite having to deal with a legal system of bureaucracy and corruption, many of the adoptive families eventually succeeded in adopting (Nelson, Fox & Zeanah, 2014; Popa-Mabe, 2015). With these adoptions, children experiencing severe adversity in depriving institutions were placed in resource rich family environments. As an intervention, adoption increases a child's chances to overcome many of the delays, deficiencies and health issues that they experienced during institutional placements (Fins, 2014; Groza & Bunkers, 2014; Nelson, Fox & Zeanah, 2014). Now, these children are in their early to late-twenties, transitioning into adulthood.

Romania: History and Background

To comprehend the long-term effects of early deprivation in the lives of Romanian adoptees over the last two plus decades, it is crucial to first understand the historical background. This history directly resulted in the abandonment of hundreds of thousands of children and in the adoption of 7788 young Romanian children with US adoptive families in the 1990's (Bureau of Consular Affairs, U.S. Dept. of State, Dec. 2016). These children arrived in the U.S. in several waves over an 11-year period between 1990 and 2001 with most adoptions occurring between 1990 and 1993 (Groothues, Beckett & O'Connor, 1998; Groza & Ryan, 2002).

Despite being the largest country in Southeastern Europe, Romania is slightly smaller than the US state of Oregon (Nelson, Fox & Zeanah, 2014). Over the centuries

Romania was often invaded and occupied by the Roman Empire, the Asian Huns, the Ottoman and the Austro-Hungarian Empire (Georgescu, 1985; Gilberg, 1990; Georgescu & Calinescu, 1991; Treptow, 1996; Nelson, Fox & Zeanah, 2014). During World War II, Romania initially joined Nazi Germany in the fight against the Soviet Union but as the war progressed and the defeat of Germany was imminent, Romania's King Michael joined forces with the Soviet Communist movement to support an armed insurrection against the fascist Romanian government of that time. He established a new government that pursued peace with the Allied forces (Treptow, 1996; Nelson, Fox & Zeanah, 2014; Popa-Mabe, 2015). In exchange for logistical support provided by the Romanian armed forces on the Eastern front, at the end of the war Romania was allowed to annex Transylvania and Moldova to create what was named Romania Mare or The Great Romania (Hitchins, 2014; Nelson, Fox & Zeanah, 2014). At the same time, after World War II Romania was placed under the political influence of the Soviets, firmly establishing a pro-Communist government. Since 1945 Romania was under Communist rule until the anti-Communist Revolution of 1989 (Georgescu & Calinescu, 1991; Ciobanu, 2014; Nelson, Fox & Zeanah, 2014). During that time, the country became part of the Eastern Soviet Bloc behind the "Iron Curtain", with the Soviets forcing Romania to contribute its natural resources and food products to the Union of Soviet Socialist Republic (USSR). The result was a steep increase in poverty as well as an enhanced dependence on Soviet rule (Nelson, Fox & Zeanah, 2014).

In 1965, Ceausescu assumed the leadership of the country. Soon after coming to power, Ceausescu quickly became known in the West as a maverick as he maneuvered independence from Soviet influences (Deletant, 2016; Pechlivanis, 2017). Within 10

years, Romania was granted a most-favored-nation trading status by the U.S. in recognition of its efforts toward independence and as a reward for Ceausescu's stance against the human rights violations of the Soviet Union in other Soviet Bloc countries (Pechlivanis, 2017).

Looking to boost industrialization and increase the wealth and independence of the small country, Ceausescu realized more man power was necessary to create an economy that could supply goods to the entire Communist world. Ceausescu undertook a massive program of urbanization, collectivism and building human capital (Gürel, 2014; Stanciu, 2015; Kligman, 2016). In the mid 1960's, Ceausescu began policies to increase the country's population: abortions were banned, divorces were restricted and women were rewarded for becoming heroes of the socialist labor by birthing at least five children (Horga, Gerdtz & Potts, 2013; Andrei & Branda, 2015; Ghetau & Arghisan, 2016; Kligman, 2016). Pronatalist incentives by the Communist state were dispensed to women, including monetary allowances that increased with family size. Mothers with four children or more were rewarded with bigger apartments, and greater incentives were provided for mothers with more than seven children (Horga, Gerdtz & Potts, 2013; Kligman, 2016). At the same time, childless women were penalized for not procreating and a childlessness tax was imposed on families without offspring, extending even to infertile couples. Ceausescu established a division of gynecologists as part of Romania's Department of State Security, which became known as the "Menstrual Police" (Nelson, Fox & Zeanah, 2014, p. 46). The group conducted interrogations and gynecological exams, taking women from their workplaces and/or schools to examine them and detect early pregnancies. Reported miscarriages were investigated. Childless women, and even

women who were not deemed to be producing children fast enough, were routinely interrogated and threatened (Horga, Gerdts & Potts, 2013; Nelson, Fox & Zeanah, 2014; Andrei & Branda, 2015; Ghetau & Arghisan, 2016; Kligman, 2016). These measures were aimed at ensuring pregnant women carried their babies to term. In addition, the communist state exerted coercion on non-pregnant women to make them give up birth control and begin multiplying (Horga, Gerdts & Potts, 2013; Nelson, Fox & Zeanah, 2014; Andrei & Branda, 2015; Ghetau & Arghisan, 2016; Kligman, 2016).

In 1974, Ceausescu began a program of geographical systematization or collectivism to modernize Romania (Calina, Calina & Croitoru, 2016). Villages were demolished, people were forced to move into assigned apartments, and towns were reconstructed, all with the goal of turning Romania into a "multilaterally developed socialist society" (Hajdu, 2013, p. 20). Systematization began as a program of rural resettlement, aiming to double the number of Romanian cities by 1990. Hundreds of villages were leveled so that the land could be rebuilt into urban industrial centers via investments in schools, medical clinics, housing and industry (Irimie, 2014; Acasandre, 2015; Kulcsar, 2015; Mihalache, 2016). Smaller villages with populations under 1,000 were deemed unnecessary (Irimie, 2014; Acasandre, 2015). Forced removal of the population and deliberate physical destruction took place.

Towns that were urbanized fared somewhat better, as old and run-down housing projects were torn down and replaced by high-rise, more modern apartment buildings (Irimie, 2014; Acasandre, 2015; Kulcsar, 2015; Mihalache, 2016). In the mid-1980's, systematization made its way to the nation's capital of Bucharest. Nearby villages were destroyed, often in service of never-to-be-completed projects such as a canal from

Bucharest to the Danube. Additionally, eight square kilometers in the historic center of Bucharest was bulldozed, including the destruction of monasteries, churches, synagogues, a hospital and a large sports stadium (Irimie, 2014; Acasandre, 2015; Kulcsar, 2015; Mihalache, 2016). In all, over 40,000 people were evicted from their homes, often with only a few days' notice, to make way for the Palace of the People, a building designed to be second in size only to the Pentagon (Irimie, 2014; Mihalache, 2016).

Collectivism increased exponentially the negative effects of Ceausescu's pronatalist policies. Collectivism in Romania resulted in the destruction of individual family homes and the relocation of families to new block housing, often in unfamiliar neighborhoods (van den Berg, 2015; Matei, 2016). This involuntary movement eventually led to the erosion of informal social networks. It further exacerbated the fear of the secret police or *Securitate*, as it was a time when anything people said could result in the loss of a job or housing, incarceration and even death (Groza & Ileana, 1996; Groza, Ileana & Irwin, 1999).

The combination of Ceausescu's urbanization, collectivism and pronatalist policies severely weakened the integrity of Romanian families. While the economic policies of Ceausescu's government made it difficult for families to afford raising multiple children and collectivism destroyed informal social support networks, state propaganda worked to convince parents that the state could raise children better than families could (Groza, Ileana & Irwin, 1999; Marshall, 2014; Nelson, Fox & Zeanah, 2014; Almas, Degnan, Nelson & Zeanah, 2016). The multiple factors of a precarious economic situation, the erosion of social networks, food shortage, widespread poverty

and propaganda substantially increased the number of children that were abandoned or voluntarily left in institutions by their parents (Groza, Ileana & Irwin, 1999; Almas et al., 2014). To care for unwanted and abandoned children, Romania began a system of institutional care based on the Soviet model of residential child care (Espinoza, 2014; Nelson, Fox & Zeanah, 2014).

Institutional Care for Romanian Children under Communism

1. General structure of the system. In 1970, the Romanian government created a law to differentiate between two different types of institutions: those for normally developing children and those for handicapped children (Rus, Stativa, Pennings, Cross, Ekas, Purvis & Parris, 2013). From birth to three years old, all abandoned children, regardless of health and developmental status, were housed in institutions called "leagane", a word that translates to mean "cradle". Some of the children placed in *leagane* were abandoned in maternity hospitals while others were placed there by families (Groza, Ileana & Irwin, 1999; Nelson, Fox & Zeanah, 2014; Berens & Nelson, 2015).

At age three, governmental teams comprised of a pediatrician and a psychiatrist or a psychologist conducted developmental screenings, separating the children into two distinct groups of either developmentally normal or handicapped. However, it should be noted that there were no consistent or objective criteria used to make this determination. In short, children who were considered developmentally normal went to institutions called homes for children, roughly equivalent to U.S. group homes (Nelson, Fox & Zeanah, 2014; Kumsta, Kreppner, Kennedy, Knights & Sonuga-Barke, 2015). The homes were state run and housed children between the ages of 3 and 18. These children attended

public schools and were cared for by a rotating staff. Approximately 60 percent of the children within the Romanian orphanage system lived in such facilities (Nelson, Fox and Zeanah, 2014; Kumsta et al., 2015). Children judged to be incapable of eventually entering the workforce or who had observable physical or mental special needs were transferred to either a residential special education institution for children deemed to have curable deficiencies or to a residential institution for children with incurable deficiencies (Groza & Ileana, 1996; Groza, Ileana & Irwin, 1999; Berens et al., 2015; Kumsta et al., 2015). The most severe deprivations occurred in the institutions for handicapped children with incurable deficiencies (Nelson, Fox & Zeanah, 2014). This group of children were grossly undernourished and had high mortality rates. Many children were mis-assessed and mis-diagnosed due to the rejection of Western knowledge and the lack of standardized assessment protocols, so even children with minor problems such as club feet, cleft plate or crossed eyes were classified as irrecoverable (Groza & Ileana, 1996; Groza, Ileana & Irwin, 1999; Clements & Read, 2008).

2. The policy of defectology. Romania's policy of screening children to determine their developmental status as normal or handicapped before placing them in institutions had its roots in the Soviet science of "defectology" (Nelson, Fox & Zeanah, 2014, p. 49). Developed in the 1920s, defectology deemed environmental influence on children unimportant, and was largely based on the medical model of the Soviet ideology for child development. Defectology viewed disabilities as states of illness or intrinsic abnormalities, thereby making such children defective or damaged for life, un-useful for society (Nelson, Fox & Zeanah, 2014). By conducting regular screenings to detect defects and then categorizing children as normal or inherently damaged, the system

ensured that the country's limited resources went to children believed to have the best prospects of becoming economically productive citizens (Nelson, Fox & Zeanah, 2014).

3. Institutions for typically developing children. The caregiving contexts of a *leagan* varied by the age of the children, by the location of the institution, and by the size of the institution. The infants were kept in a small room and spent their days lying in cribs with little stimulation or attention (Groza & Ileana, 1996; Groza, Ileana & Irwin, 1999; Clements & Read, 2008; Nelson, Fox & Zeanah, 2014). They were fed regularly but on a strict schedule. The children received extra holding or social interaction only if they happened to be a favorite of the caregivers (Nelson, Fox & Zeanah, 2014). Most infants had limited opportunity for face-to-face interaction with caregivers (Fisher, Ames, Chisholm & Savoie, 1997; Nelson, Fox & Zeanah, 2014). Caregiver-to-child ratios during the Ceausescu era might be one caregiver for 12 or 15 infants or it might be one caregiver to 20 infants, depending on the location and the size of the institution. Caregivers received no formal training and were generally assigned to one or more rooms depending upon the age of the children (Groza & Ileana, 1996; Fisher et al., 1997; Groza, Ileana & Irwin, 1999; Clements & Read, 2008; Nelson, Fox & Zeanah, 2014).

As children developed to the point of walking, they were transferred to toddler rooms (Fisher et al., 1997; Groza, Ileana & Irwin, 1999; Nelson, Fox & Zeanah, 2014). Due to the large number of children that caregivers had to attend to, the caregivers interacted with most children in a detached manner. While routinization of care, detachment and efficiency were the hallmark of care for typically-developing children, the situation was far worse for atypical children who were left to fend for themselves for hours and days at the time (Groza & Ileana, 1996; Fisher et al., 1997; Groza, Ileana &

Irwin, 1999; Clements & Read, 2008; Nelson, Fox & Zeanah, 2014).

4. Institutions for the handicapped. Handicapped children in Romanian institutions received even worse substandard care. The food was of poor quality, the facilities were unkempt, poorly maintained and even often unheated with inconsistent water availability for drinking or washing (Rosenberg, Pajer & Rancurello, 1992; Goldberg, 1997; Groza, Ileana & Irwin, 1999). In one location, Groza, Ileana and Irwin (1999) reported open sewers, the absence of screens on windows to deter flies and mosquitoes, and a pig farm on the side of the facilities.

Health care, educational services and rehabilitation programs were non-existent. Many of children in these institutions were infected with Hepatitis B (Rosenberg, Pajer & Rancurello, 1992; Goldberg, 1997; Groza, Ileana & Irwin, 1999). Western physicians who provided assistance at the facilities following the Romanian revolution documented malnutrition, growth retardation, lack of treatment for injuries, abuse, neglect and high child mortality (Rosenberg, Pajer & Rancurello, 1992; Lie & Murarasu, 2001; Sweeney & Bascom, 1995).

In 1989, an epidemic of HIV infection contracted during medical treatment was discovered predominately among institutionalized children in Romania. The children were believed to be infected through transfusions of unscreened blood and injections with improperly sterilized equipment. Plasma and whole transfusions were widely used among institutionalized Romanian children for a variety of ailments, including efforts to “strengthen” them if they were of low weight (Groza, Ileana & Irwin, 1999; Nelson, Fox & Zeanah, 2014). By 2000, 60 percent of Europe’s pediatric HIV/AIDS cases came from Romania, most occurring in infants and children living in institutions (Popovici, Apetrei,

Zolotusca, Beldescu, Calomfirescu, Jezek & Oxtoby, 1991; Hersh, Popovici, Jezek, Satten, Apetrei, Beldescu & Heymann, 1993; Novotny, Haazen, & Adeyi, 2003; Nelson, Fox & Zeanah, 2014). It was only after the anti-Communist Revolution of 1989 that the magnitude of the problem was recognized. Romanian officials responded with a significant effort to treat the infected children and to prevent new cases of infection. The Romanian medical community partnered with numerous U.S. government medical organizations, including the National Institute of Health (NIH), the Center for Disease Control (CDC), and the US Agency for International Development (USAID) to provide appropriate treatment of infected children (Popovici et al., 1991; Hersh et al., 1993; Novotny, Haazen & Adeyi, 2003; Nelson, Fox & Zeanah, 2014).

5. Humanitarian crisis. With the fall of Communism in Romania in December 1989, Western media began broadcasting images of abandoned children living in overcrowded institutions and under conditions of substandard care, poor hygiene and insufficient developmental stimulation. By this time, Romanian orphanages held thousands of children, among which an estimated 3,000 were infected with HIV. By 1990, there were over 150,000 children in institutions with over 16,000 dying annually of easily treatable illnesses (Groza, Ileana & Irwin, 1999; Nelson, Fox & Zeanah, 2014).

Western aid agencies poured into Romania in the early 1990's looking to improve the lives of the thousands of abandoned children. Along with international agencies specialized in child welfare, there emerged many Western families interested in adopting the abandoned Romanian children. However, these well-meaning families quickly learned that the process was fraught with complications, including people profiteering and posing as adoption agents when in fact they had no adoption expertise (Groza, Ileana

& Irwin, 1999; Gibbons & Rotabi, 2012). Due to the media exposure of the many issues plaguing Romania's child welfare system at the time, the country became one of the largest senders of children in international adoption (Dickens & Groza, 2004). Over 7,700 children were adopted from Romania in North America, and several thousands were adopted by families from other countries (Bureau of Consular Affairs, U.S. Dept. of State, Dec. 2016). Approximately 10,000 left Romania during this time for adoption (Dickens & Groza, 2004).

International Adoptions and Adoptions from Romania

1. International adoptions. Families who adopt internationally commonly take physical custody of the child directly from an institution. They may have a chance to visit the child at the institution a few times prior to placement. Then they put the child on an airplane, fly across the world, expose them to crowds of people in airports on their way to their destination, all the while the adoptee is surrounded by strangers and new and completely unknown smells, language, voices, food and textures. In this sense, the adoptive placement itself may inherently bring new layers of trauma to the adopted child in addition to the other traumatic events that already occurred in their early lives. The extent to which these struggles negatively affect a child's general development depends on the adoptee's ability to reach a sense of balance between pre-existing vulnerabilities and post-adoption protective factors (Haerens, 2010).

Children who are adopted internationally typically enter middle and high-income families and communities that benefit from resource-rich environments and adequate social support post-adoptive placement (Groza, Ileana & Irwin, 1999; Groza & Ryan, 2002). More recently, researchers have begun to focus on features of the adoptive

environment that may support optimal development of these children (Garvin, Tarullo, Van Ryzin, & Gunnar, 2012; Palacios & Brodzinsky, 2010). For example, positive child outcomes have been correlated with the quality of the parent–child attachment (Barth, Crea, John, Thoburn, & Quinton, 2005), communicative openness between parents and children regarding the adoption (Brodzinsky & Pinderhughes, 2002; Wrobel, Kohler, Grotevant, & McRoy, 2003; Brodzinsky, 2006) and culturally-competent parenting as a way of supporting positive development (Westhues & Cohen, 1998; Vonk, 2001; Mohanty & Newhill, 2006).

Because many children adopted internationally likely spent some time in institutions, developmental scholars and practitioners had great interest in the adjustment of children who have this type of pre-adoptive experience. International adoptions have provided researchers with the opportunity to assess the impact of early adversity on later development using a natural experiment design (Beckett, Bredenkamp, Castle, Groothues, O'Connor, Rutter, & the E. R. A. Study Team, 2002; Rutter, O'Connor & English and the ERA Study Team, 2004; Rutter, 2012). The duration of deprivation prior to adoption was considered a central explanatory variable in many of these studies. As expected, the length of time children spent in institutional settings, and the age of entry into institutional care, had a significant effect on development. The longer the period of institutionalization and the younger the age of placement in the institution the greater was the developmental deficit (Beckett et al., 2002; Nelson et al., 2007; Juffer et al., 2011).

Children experience negative consequences in multiple developmental domains as a result of being reared in conditions of severe deprivation. Difficulties include a variety of serious medical problems (Johnson, 1992; Johnson et al., 1992), physical and brain

growth deficiencies (Benoit, Jocelyn, Moddeman, & Embree, 1996), cognitive problems (Morison, Ames, & Chisholm, 1995; O'Connor, Rutter, Beckett, Keaveney, Kreppner, & the English and Romanian Adoptees [ERA] Study Team, 2000; Rutter & the ERA Study Team, 1998), speech and language delays (Groze & Ileana, 1996; Albers, Johnson, Hostetter, Iverson, & Miller, 1997), sensory integration difficulties (Chisholm & Savoie, 1992; Cermak & Daunhauer, 1997), and social and behavioral problems (Fisher et al., 1997; O'Connor, Bredenkamp, Rutter, & the ERA Study Team, 1999). These social and behavior problems include difficulties with inattention/hyperactivity (Kreppner, O'Connor, Rutter, Beckett, Castle, & Croft, 2001), disturbances of attachment (Chisholm, Carter, Ames, & Morison, 1995; Chisholm, 1998; O'Connor et al., 1999; O'Connor, Rutter, & the ERA Study Team, 2000), and a syndrome that mimics autism (Federici, 1998; Rutter, Andersen–Wood, Beckett, Bredenkamp, Castle, & Groothues, 1999).

2. Adoptions from Romania. Dickens and Groza (2004) portrayed the lives of Romanian adoptees and their adoptive families as "complicated" (p. 2). Many of these children had numerous risk factors including poverty, poor prenatal care, a history of parent abuse or neglect, parental mental health issues and/or in-utero alcohol and other drugs exposure. Consequently, many of the children adopted from Romania had high medical and social risks, much like the risks associated with children adopted from the U.S. public child welfare system (Groza & Ryan, 2002).

Despite numerous reports of positive outcomes and favorable adjustment in adoptive families (Marcovitch, Goldberg, Gold, Washington, Wasson, Krekewich, and Handley-Derry, 1997; Rutter et al., 1999; O'Connor, Marvin, Rutter, Olrick, Britner &

the ERA Study Team, 2003; Groza, Ryan & Thomas, 2008), the adoptees from Romanian institutions had significant attachment, health, developmental, learning, socio-emotional and behavior difficulties, both initially when they were young and first arrived in the country, as well as through early adolescence (Beckett et al., 2002; Abers, Barnett, Jenista & Johnson, 2005; Johnson, Browne, & Hamilton-Giachritsis, 2006; Nelson et al., 2007; Zeanah, Egger, Smyke, Nelson, Fox, Marshall & Guthrie, 2009; Juffer et al., 2011).

Some of the most compelling evidence regarding the effects of institutional care on the development and adjustment of the Romanian adoptees has been published by the English and Romanian Adoptees (ERA) study (O'Connor & Rutter, 2000; Kreppner, O'Connor & Rutter, 2001; Rutter, Kreppner, & O'Connor, 2001; Groothues, Beckett & O'Connor, 2001; Croft, O'Connor, Keaveney, Groothues & Rutter, 2001; Beckett et al., 2002; O'Connor et al. & the ERA Study Team, 2003; Beckett, Castle, Groothues, O'Connor & Rutter, 2003; Rutter, O'Connor & the ERA study team, 2004; Beckett, Maughan, Rutter and Castle, 2006; Rutter, Colvert, Kreppner, Beckett, Castle, Groothues, Hawkins, O'Connor, Stevens and Sonuga-Barke, 2007; Rutter, Kreppner, Croft, Murin, Colvert, Beckett, Castle & Sonuga-Barke, 2007; Croft, Beckett, Rutter, Castle, Colvert, Groothues, Hawkins, Kreppner, Stevens & Sonuga-Barke, 2007; Kreppner, Rutter, Beckett, Castle, Colvert, Groothues, Hawkins, O'Connor, Stevens & Sonuga-Barke, 2007; Stevens, Sonuga-Barke, Kreppner, Beckett, Castle, Colvert, Groothues, Hawkins & Rutter, 2008; Colvert, Rutter, Kreppner, Beckett, Castle, Groothues, Hawkins, Stevens & Sonuga-Barke, 2008; Castle, Groothues, Beckett, Colvert, Hawkins, Kreppner, Kumsta, Schlotz, Sonuga-Barke & Rutter, 2009; Sonuga-Barke, Kennedy, Kumsta, Knights,

Golm, Rutter, Maughan, Schlotz & Kreppner, 2017). This series of studies employed a longitudinal design and recruited a sample of Romanian children adopted by families living in the UK. The study included three groups. The first group were Romanian adoptees who experienced more than 6 months of institutionalization before the adoption, the second group were Romanian adoptees who experienced less than 6 months of institutionalization and the third group were infants adopted from the UK.

The ERA study team considered several characteristics of the adoptive parents, such as adoptive parents' education levels, their IQ scores, social class, mental health and marriage quality, concluding that variations in adoptive home environments had little or no effect on developmental outcomes of Romanian adoptees (Castle, Rutter, Beckett, Colvert, Groothues, Hawkins, Kreppner, O'Connor, Stevens and Sonuga-Barke, 2006; Kreppner et al., 2007). While these variables do relate to variations in children's experiences in an adoptive home, they provide an accurate, albeit indirect assessment, of adoptive home features that have been theoretically implicated in adoptee outcomes. In contrast, other researchers examined variables theoretically linked to child outcomes that are likely amenable to change with appropriate support and education of adoptive parents, such as warmth and stimulation in the adoptive home, the parenting style of the adoptive family and the quality of child-parent attachment (Beckett, Groothues, O'Connor & the ERA Study Team, 1998, Rutter & the ERA Study Team, 1998; Beckett et al., 2002; O'Connor et al. & the ERA Study Team, 2003; Lemare & Audet, 2006). These researchers concluded that the above mentioned variables play a significant role in mitigating behavioral problems of Romanian adoptees.

Several child related variables were considered important when assessing the

developmental outcomes of Romanian adoptees at different ages and stages of development. Length of time spent in institutional care and age at the time of the adoption were two variables that were investigated in numerous ERA studies (Rutter & ERA Study Team, 1998; Groothues, Beckett & O'Connor, 1998; Beckett, Groothues, O'Connor & the ERA Study Team, 1998; O'Connor, Bredenkamp & Rutter, 1999; Croft, O'Connor, Keaveney, Groothues & Rutter, 2001; Beckett et al., 2002; O'Connor et al. & the ERA Study Team, 2003; Beckett, Castle, Groothues, O'Connor & Rutter, 2003; Rutter, O'Connor & the ERA study team, 2004; Beckett, Maughan, Rutter and Castle, 2006). The Romanian adoptees in the UK showed marked developmental delays and various health issues at the time of entry in the country but recovered significantly in their adoptive families. The majority demonstrated significant catch-up in physical and intellectual domains by ages 4 to 6. However, residual deficits persisted in a small group (10%) of children (Rutter & ERA Study Team, 1998; Groothues, Beckett & O'Connor, 1998; Beckett, Groothues, O'Connor & the ERA Study Team, 1998; O'Connor, Bredenkamp & Rutter, 1999). Specific deficits in cognitive impairment, ADHD, disinhibited attachment and quasi-autism were found to be associated with duration of time spent in institutional care (O'Connor, Bredenkamp & Rutter, 1999; O'Connor et al., 2000; Kreppner, O'Connor & Rutter, 2001; Rutter, Kreppner & O'Connor, 2001). Groothues, Beckett & O'Connor (2001); Beckett et al. (2002) Beckett et al. (2003) Rutter et al. (2004) , Beckett et al. (2006), Rutter et al. (2007) and Kreppner et al. (2007) reported individual continuity in impairment between ages 6 and 11 that was evident in children who experienced at least six months in institutions. Persistent cognitive impairment (Beckett et al. 2006), disinhibited attachment (Rutter et al., 2007) and

clinically significant rates of quasi-autistic patterns (Rutter et al., 2007) were noted into early adolescence for the same 10% of children.

Development in the Context of International Adoption

Before Freud's (1948) theory, it was widely assumed that human development occurred in linear and progressive stages. Freud believed that personality developed through a series of childhood stages in which the pleasure-seeking energies of the ID become focused on certain erogenous areas. This psychosexual energy, or libido, was described as the driving force behind behavior (Freud, 1948).

Later, Erikson (1964) extended Freudian beliefs by focusing on the adaptive and creative characteristics of the ego and expanding the stages of personality development to include one's entire lifespan. Erikson proposed a lifespan model of development, creating five stages up to the age of 18 years, and three further stages of early, middle and late adulthood. Like Freud, Erikson (1964) maintained that personality develops in a predetermined order, with each stage building upon previous stages. Optimal development at any stage meant the successful resolution of the conflicts existent at earlier stages. Arrests during an early stage of development were considered a serious threat to subsequent development and optimal functioning of an individual. The outcome of this maturation timetable was a wide and integrated set of life skills and abilities that function together within autonomous individuals (Erikson, 1964).

More recent research by Arnett (2000; 2004) conceptualized "Emerging Adulthood" as a time of profound transformation characterized by explorations, multiple possibilities, instability, self-focus, focus on others and a feeling of being in between (Arnett & Taber, 1994; Arnett, 2000; 2004). Arnett (2000; 2004) argues that emerging

adulthood is not part of adolescence, as it is more a time in life of acquiring total freedom from parental control, making personal decisions independently for the first time, and assuming the responsibilities and consequences of one's actions. He contends that emerging adulthood is not young adulthood either, because adulthood has been historically linked to marriage and parenthood as social markers of adult status. Identity development begins in adolescence but does not become solidified until early adulthood (Erikson, 1964; Arnett, 2004). Work experiences become more focused, setting the foundation for adult work. Further, while it is a time of great potential for positive changes, emerging adulthood can also be a time of a high incidence of psychosocial problems (O'Connor, Sanson, Hawkins, Toumbourou, Letcher & Frydenberg, 2011).

One critique of Arnett's conceptualization of emerging adulthood is there is little research involving participants with experiences other than the normative group of white, middle class college students (Munson, Lee, Miller, Cole & Nedelcu, 2013). For young adults from trauma backgrounds, such as those adopted internationally from institutions, little is known about the long-term impact of adverse early experiences that were followed by placement into resource-rich adoptive families. In contrast to the adult transitions of youth who age out of foster care, which are marked by continuous struggles and numerous negative outcomes (Courtney, Piliavan, Kaylor & Nesmith, 2001), children who are adopted internationally enter resource rich families and communities (Groza, Ileana & Irwin, 1999; Groza & Ryan, 2002). Adoption gives adoptees an opportunity to have a different life outcome as opposed to if they had remained in an institution in their native country. Still, the patterns of adult transition for adoptees in general, and more specifically for adoptees that experience early deprivation, have not been yet widely

researched.

Purpose of Current Study

As the Romanian adoptees of the 1990's are now transitioning into adulthood, little is known about the long-term impact of their early experiences of severe deprivation that were followed by living in environments rich in resources and social support. The current study examines patterns of adult developmental transitions and the quality of adult attachment of Romanian adoptees who are now transitioning into young adulthood. The study seeks to understand the relationship between specific pre-adoption experiences and the Romanian adoptees' patterns of transitions and attachment styles as adults, and how these young adults compare to normative groups in terms of achieving adult transitions and adult attachment. More specifically, this study examines the effects of length of time spent in institutional care and pre-adoptive stress on Romanian adoptees' adult transitions and adult attachment. Perspectives of the adoptees and those of adoptive parents are being considered.

Research Questions

The current study will answer the following research questions:

Research question 1. After controlling for age at adoption and type of recruitment, how much variance in adult transitions can be explained by length of time spent in institutional care?

Research question 2. After controlling for age at adoption and type of recruitment, is length of time spent in institutional care likely to predict adult secure attachment?

Research question 3. After controlling for age at adoption and type of

recruitment, how much variance in adult transitions can be explained by pre-adoptive stress?

Research question 4. After controlling for age at adoption and type of recruitment, is pre-adoption stress likely to predict secure adult attachment?

Significance for Practice and Future Research

This project is innovative in that there is little information about high-risk groups with a history of trauma from institutionalization. This work has the potential to inform policy, theory and practice in the transition into early adulthood. From a theoretical perspective, a better understanding of how the effects of early deprivation can linger into early adulthood, and how they can be mitigated by environments rich in resources, contributes to adult developmental theory. The foundation of early adulthood as a developmental stage consists of the successful resolution of the polarities present in all previous stages of development, anywhere from the "trust versus mistrust" of infancy to the "identity versus role confusion" of the adolescence (Erikson, 1964). Due to exposure to severe deprivation during their first months to years of life, it is expected that many Romanian adoptees have difficulties in achieving the developmental tasks of young adult stages. Without a successful resolution of the developmental tasks of early adulthood, all subsequent stages of development may be negatively impacted. These subsequent tasks include important domains of human development such as work/career, family relationships, parenting, intimacy, generativity, creativity, integrity, etc.

This study helps expand the theory of attachment by providing a better understanding of how variables such as length of time in institutional care and pre-adoption stress may impact adult attachment styles. Secure adult attachment represents

the foundation of good marriages (Collins & Read, 1990; Kobak & Hazan, 1991; Treboux, Crowell & Waters, 2004), good quality parenting (Collins & Read, 1990; Pearson, Cohn, Cowan & Cowan, 1994; Adam, Gunnar & Tanaka, 2004) and successful social relationships (Collins & Read, 1990). In contrast, insecure adult attachment could compromise human connection, with long-standing effects in one's marriage, raising children, having friendships or taking care of older parents (Collins & Read, 1990; Kobak and Hazan, 1991; Pearson et al., 1994; Adam, Gunnar & Tanaka, 2004; Treboux, Crowell & Waters, 2004).

While it is widely known at this point that institutional care is no replacement for the loving care of families, in some parts of the world, orphanages continue to be popular as societal solutions for abandoned children (McKenzie, 1998; Selman, 2009). Depending on its findings, this study could help build a stronger case for ending institutional care as a social intervention.

Examining the concepts central to emerging adulthood beyond typical college students adds to the generalizability of the framework. Arnett's theory college (2000; 2004) applies mostly to white, middle class young adults attending. There are other groups of young adults who do not embrace these developmental pathways: children who grew up in the foster care system (Munson et al., 2013), children involved with multiple systems of care (Tanner & Arnett, 2009; Munson et al., 2013), minority children in the US (Nelson, Badger & Wu, 2004; Arnett, Hendry, Kloeppel & Tanner, 2011) or children from outside the US (Arnett, 2006) who face other life circumstances than those of middle class American adolescents.

Documenting the needs of children exposed to early adversity transitioning into

adulthood can inform how service delivery systems should be developed and funded. The results of this study will inform practitioners about specific pathways of developmental transitions embraced by Romanian adoptees and about the potential lingering effects of exposure to early life deprivation into early adulthood. If emerging adulthood as a stage of life leads to less-than-optimal development and life outcomes for Romanian adoptees, and/or insecure adult attachment styles, it is important to understand the specific variables that create these dynamics and work to alleviate or eliminate them. Romanian adoptees may have greater service needs that would require accommodations policies in educational and/or work settings. Alternatively, Romanian adoptees may not necessarily have many additional needs but may have more specific needs. Services may have to be developed or tailored to ensure that these clients successfully engage and remain engaged.

Learning about the ways in which length of time spent in institution and pre-adoption stress predict adult transitions and adult attachment will impact policy development in international adoptions. Emerging adults are notoriously known for lacking health coverage, as they are generally young and healthy (Collins, Schoen, Tenney, Doty & Ho, 2003; Callahan & Cooper, 2005; Collins, Robertson, Garber & Doty, 2012). The Affordable Care Act (ACA) of 2010, particularly its provisions about keeping young adults under their parents coverage and its provisions regarding mental health parity, helped young adults access mental health services if they needed them (Protection, P., & Act, A. C., 2010). However, at this time, the ACA is under attack and about to be abolished and replaced with a different version of healthcare that may cut funding for services (Krisberg, 2017; Wells, 2017).

Parents who adopt internationally do not benefit from federal adoption subsidies (Gunnar, Bruce & Grotevant, 2000; Gossett, 2012). Although local county agencies may cover some funds for post adoption programs, once the funds run out every fiscal year the local government coverage gets discontinued or becomes the financial responsibility of parents (Judge, 2003; Hellerstedt, Madsen, Gunnar, Grotevant & Johnson, 2008). While this may work for some of the Romanian adoptees whose families are high income and can afford to pay for services, it is an insufficient arrangement for parents who cannot afford services or for adoptees who have significant mental health needs. In addition, whatever services are provided by the state and local governments through post adoption subsidies are discontinued when the adoptee reaches the age of 18 or 21 if they are in college (Judge, 2003; Hellerstedt, et al., 2008). This makes the provisions of the ACA even more beneficial. The current study could support advocacy efforts for keeping these children medically covered as they are transitioning into adulthood. Obviously pushing for these adoptees to stay on their parents' health care plans, as prescribed by the provisions of the ACA, is an option.

If the current study determines that the most prominent dimensions of transitioning into adulthood are related to work, career, education, etc. the findings could inform new educational and/or vocational training programs for young adults. If the most prominent dimensions are found to be related to social relationships, participating in family activities, social gatherings and recreational activities will be recommended and new programs to address these needs will be advocated for.

If these children emerge with secure adult attachment after the severe deprivation they have been subjected to during their first years of life, that would be a testament of

the importance of mitigating, resilience factors, either personal or related to family environment/functioning, and an indication that policies and interventions providing support to adoptees and adoptive families are necessary and do work.

Finally, the findings of this study will have significant implications for training social workers, psychologists, educators and other service providers who work with vulnerable youth and adults throughout the life cycle.

Chapter 2

Review of the Theoretical and Empirical Literature

Overview

This chapter examines Bowlby's (1969) Theory of Attachment and Arnett's (2004) Theory of Emerging Adulthood as the theoretical frameworks for understanding the Romanian adoptees' transition into early adulthood. The literature relating to Romanian adoptions is subsequently discussed and critiqued through the lens of these two frameworks. Studies related to emerging adulthood and adoption and emerging adulthood and attachment are briefly discussed. At the conclusion of this chapter, the current study is presented with relevant research questions and hypotheses posed.

Attachment

The neuroscience of attachment. The human brain undergoes a critical period of accelerated growth from late pregnancy through the second year of life (Shore, 1997; Rice & Barone, 2000; Lipari, 2000; Schore, 2001; Walhovd, Tamnes & Fjell, 2014). Lipari (2000) reports that the human cortex adds 70 % of its mass after birth and grows to 90% of its adult size in the first 3 years of life. The expanding brain is directly influenced by genetics and biology but the environment is also an important factor in shaping and promoting healthy maturation. For brain development to reach an optimal outcome, an infant needs not only adequate nutrients, but also quality care and exposure to consistent, warm interpersonal experiences.

During the first 3 years of life, the right brain develops faster than the left side of the brain (Schore, 2010). This is due to the right side of the brain connecting vital

functions that support coping with stress and survival (Nolte, 2002; Schore, 2010). The autonomic nervous system is the part of the peripheral nervous system that controls the automatic functions of the body such as heart activity, smooth muscle (organs), and glands. This part of this brain also is divided into the “fight-or-flight” system and the “resting and digesting” system (Peters & Palay, 1970; Ekman, Levenson & Friesen, 1983; Nolte, 2002).

The limbic system is a complex system of nerves and networks in the brain whose functions are related to instinct and mood (Rajmohan & Mohandas, 2007; Isaacson & Pribram, 2013). This system controls one’s basic emotions (fear, pleasure, anger) and drives (hunger, sex, dominance, care of offspring). While the limbic system processes emotional information, the autonomic nervous system is responsible for body-based somatic aspects of emotion (Rajmohan & Mohandas, 2007; Isaacson & Pribram, 2013). Both systems undergo a critical period of growth during the first 2 years of life; the maturation of these emotional brain circuits is significantly influenced by early socio-emotional experiences (Schore, 2010; Isaacson & Pribram, 2013).

The first 3 years of life is also a time of rapid growth of neural pathways. These *neural systems* are populations of neurons forming circuits that are either tightly organized in close physical proximity to each other or are distributed throughout the brain (Coan, Schaefer & Davidson, 2006). Neuronal networks are generated by a genetically programmed production of synaptic connections, which is later followed by an environmentally driven process of competitive selection of connections that are most sensitive to environmental stimulation (Chechik, Meilijson & Ruppin, 1999). This process called “parcellation” is a central mechanism of the self-organization in the

developing brain (Chechik, Meilijson & Ruppin, 1999, p. 2070).

Recent sophisticated technologies in neurosciences allow direct observation of the interplay between biological components and the impact of environmental factors on the brain development of infants and young children. These observations have found that healthy attachment and healthy brain development are intricately intertwined.

Additionally, trauma impedes both attachment and brain development (Perry, 2000; Schore, 2001; Carrion & Wong, 2012).

Infants require consistent caregiving for optimal brain development, to build a secure attachment, and to regulate their emotional states (Cassidy, 1994; Schore, 2001; Thompson, 2008). Although infants have the capacity to feel emotions, they are incapable of creating a state of emotional homeostasis for themselves in the absence of a caregiver (Schore, 2010). Without the daily interventions of a concerned caregiver, infants become easily overwhelmed with emotional states such as fear or sadness (Spangler & Grossmann, 1993; Spangler, Maier, Geserick & von Wahlert, 2010).

The primary caregiver, usually a mother, plays an important role in the life of an infant. The mother and infant dyad is a synchronized system, which means both mother and infant pick up signals from each other and respond in ways that are designed to further maintain and protect their dyadic system (Feldman, Greenbaum, Maye & Erlich, 1997). The mother and child are interdependent; the ways in which they respond to one another impacts the subsequent responses of each. These sequences of action and reaction between mother and infant are essential for a baby's optimal development in the domains of health, mental health and socialization (Penman, Meares, Baker & Milgrom-Friedman, 1983; Feldman et al., 1997; Schore & McIntosh, 2011).

Bowlby (1969) initially believed that the key to the attachment bond was the mother soothing or regulating the baby's negative fear states. A nurturing caregiver can calm and soothe a baby as well as stimulate in him/her states of joy, interest and excitement, positive emotions that are important for healthy brain development (Bowlby, 1969, 1980; Schore & McIntosh, 2011). In the attachment relationship, an infant is developing an ability to communicate and regulate positive and negative emotional states (Bowlby, 1980; Schore & McIntosh, 2011), thus a consistent, responsive caregiver is essential to optimal development.

In the absence of a caring and responsive caregiver, an infant will eventually reach an internal state of metabolic shut down, which is a passive response to an unresponsive caregiver or to a chronically high stress situation (Shore, 1997; Daniels & Meece, 2008; Walsh, 2014). This response is known as dissociation. During even short periods of dissociation, pain numbing endogenous opiates and stress hormones such as cortisol are elevated. This increases an infant's heart rate and blood pressure (Panksepp, Herman, Vilberg, Bishop & DeEskinazi, 1981; van der Kolk, 1989; Weinberg & Tronick, 1997). At such a point, an infant enters a state of survival that precludes further development in general and brain development in particular (Panksepp et al., 1981; Porges, 1997; Weinberg & Tronick, 1997). Because the infant brain cannot develop in other ways, its availability for learning and storing information is diminished (Weinberg & Tronick, 1997; Schore, 2010). Repeated exposure to an unresponsive caregiver and chronic stress can cause brain atrophy (McEwen, 2000).

Infants without a primary caregiver experience severe stress, as well as cycles of hyper-arousal (Hennighausen & Lyons-Ruth, 2005). In hyper-arousal, the sympathetic

nervous system engages in the startle reaction, which makes the brain mediate stress by releasing stress hormones such as adrenaline, noradrenalin and dopamine (Chrousos & Gold, 1992; Hennighausen & Lyons-Ruth, 2005; Papoušek, 2007). The increased level of these hormones creates a hyper-metabolic state that can be damaging to an infant's health if it continues for a prolonged period of time. In addition, prolonged periods of stress for infants induce the release of thyroid hormones and vasopressin (Hennighause & Lyons-Ruth, 2005; Papoušek, 2007; Schore, 2010). These substances can produce somatic symptoms such as nausea, vomiting and stomach difficulties (Beebe, 2000). It is not uncommon for infants who are crying for an extended time to experience stomach aches, loss of appetite and/or frequent vomiting.

Bowlby (1969) introduced the concept of "attunement" in the mother-infant dyad (p.235). Attunement refers to the mother's ability to understand and respond appropriately to an infant's cues. When the mother-infant dyad is in attunement, secure attachment takes place (Bowlby, 1969, 1980). When the mother-infant dyad is out of sync, the infant experiences distress and a desire to get back in attunement with the mother. The process of attunement establishes the foundation for negotiating social interactions and provides a blueprint for other relationships in the child's life (Bowlby, 1969; 1980; Schore, 2010). When infants are in attunement, they are emotionally regulated (Schore, 2010). Attunement does not only involve the mother, even though the infant-mother dyad is most important due to the pair's role in survival and optimal development. Infants can also develop attunement and bonds with caregivers other than the mother (Bowlby, 1969, 1980; Davies & Cummings, 1994).

Bowlby (1969) was the first to conceptualize attunement as an attachment system.

This attachment system reportedly lays the groundwork for how one grows and develops bio-psycho-socially their entire life.

Bowlby's theory of attachment

1. Overview. Bowlby (1969) developed a revolutionary way of understanding the nature of bonding between infants and caregivers. Based on his observations of infants who were separated from mothers and fathers during long periods of hospitalization, Bowlby's theory provided scholars with new perspectives on evaluating the effects of primary caregivers, particularly mothers, on the well-being of infants.

2. Definitions of attachment. Bowlby defined attachment in young children as "a strong disposition to seek proximity to, and contact with a specific figure, and to do so, in certain situations, notably when frightened, tired or ill" (Bowlby 1969, p. 371). Bowlby (1969) also considered attachment to be a biologically based process designed to sustain an infant's healthy development and resulting in an enduring emotional bond between an infant and his caregiver. He believed that attachments meet an infant's physical and psychological needs and it has adaptive value for infants, by promoting survival. Ainsworth et al. (1979) noted that it may be "an essential part of the ground plan of the human species for an infant to become attached to a mother figure" (p.33). Papalia, Olds & Feldman (1992) defined attachment as a reciprocal, enduring, relationship between infants and caregivers, with both parties contributing to the relationship.

In social work practice, attachment refers to an infant's emotional connection to an adult caregiver identified as an attachment figure (Turner, 2011; Howe, 2014). The infant tends to turn selectively to that adult for comfort and makes efforts to increase proximity to the caregiver when seeking nurture and/or protection. Attachment behaviors

are specific, because attachment assumes not only seeking the presence of the attachment figure, but also making efforts to achieve proximity to that person when experiencing distress (Mooney, 2009). Attachment is dynamic; it is not only about the infant's attachment to the mother or primary caregiver but also about the caregiver's emotional connection to the infant (Mooney, 2009; Turner, 2011; Howe, 2014). Therefore, attachment is viewed not only as a connection between two people, but more so as a bond that assumes both a desire for regular contact with that person and the experience of distress during separation from that person (Ainsworth, 1979; Mooney, 2009). Attachment is also a life-long developmental process involving increasingly complex physical, cognitive and communicative strategies to interact with others (Bowlby, 1969, 1980).

3. *Functions of attachment.* The theory of evolution postulates that infants who remain physically close to their caregivers, or whom seek proximity to their caregivers when potentially dangerous situations arise, are more likely to survive and reproduce in adulthood (Hamlin, Wynn & Bloom, 2007; Kiley Hamlin, Wynn & Bloom, 2010). The attachment relationship, as conceived by Bowlby (1969, 1980), fulfills an evolutionarily adaptive function of maintaining human life. Bowlby (1969, 1980) believed that children come into the world biologically pre-programmed to form attachments with others to aid their survival. He viewed attachment behaviors as instinctive. Both infants and mothers have evolved a biological need to stay in contact with each other. Attachment behaviors initially operate like fixed action patterns sharing the same function. Bowlby (1969) argued that infants are born with the tendency to display certain innate behaviors (called social releasers) which help ensure proximity and contact with the mother or the

attachment figure (e.g., crying, smiling, crawling, etc.). The attachment system is particularly likely to be activated when infants perceive either a physical or psychological threat, discomfort or stress. Bowlby (1969, 1980) believed that the fear of strangers represents an important survival mechanism. If the caregiver is not available or is insufficiently responsive, then an infant is likely to experience distress and negative feelings. If the caregiver is available and responsive, then contact helps reduce distress, restores a sense of security and manages negative feelings.

The attachment relationship provides self-regulation that infants do not inherently possess. Although infants have the capacity to feel emotions, they are incapable of creating a state of emotional equilibrium for themselves in the absence of a nurturing caregiver (Beebe, 2000; Schore, 2010). Caregivers are external regulators who assist infants in not getting overwhelmed with intense negative emotions. Emotional regulation is crucial in development. In its absence, all energy is spent ensuring survival at the expense of growth and maturation (Beebe, 2000; Schore, 2010).

Bowlby (1984) believed that the first attachment, named monotropy, is qualitatively different from any subsequent attachments. Bowlby (1984) suggested that the nature of monotropy meant that a failure to initiate, or a breakdown of, the maternal attachment would lead to serious negative consequences, possibly including affectionless psychopathy. Bowlby's (1984) theory of monotropy led to the formulation of his maternal deprivation hypothesis. He posited that if the attachment relationship is broken or disrupted during a critical first 2 years of life period, the child will suffer irreversible long-term cognitive, social, and emotional consequences of maternal deprivation. Bowlby (1969; 1980) contended that even short-term separation from an attachment figure can

lead to distress. He described three progressive stages of distress. Initially, when the parent leaves, the child cries, screams and protests angrily. They cling onto the parent and make efforts to stop them from leaving. In the next stage, the child's protesting begins to abate and they appear to be calmer but are still upset. The child refuses others' attempts for comfort and often seems withdrawn and disengaged. If the separation continues, the child starts to engage with other people again. They will then reject the caregiver on their return and show strong signs of anger.

4. *The attachment behavioral system and internal working models.* Repeated exchanges between infants and their caregivers become organized into a pattern of actions and reactions that Bowlby labeled the *attachment behavior system* (Bowlby, 1980). The attachment behavior system is first designed to protect and comfort the infant. The attachment behavior system is at the same time instrumental in promoting healthy development (Bowlby, 1969, 1980). In the presence of internal negative stimuli (such as physical discomfort) or under external sources of anxiety (such as a loss of contact with a caregiver or any other stimuli perceived as threatening by the infant), the attachment behavior system gets activated to direct and motivate the infant to seek out soothing and protective physical proximity to the attachment figure (Bowlby, 1969, 1980).

The attachment behavior system emerges over time. A caregiver's role is to ensure protection, provide nurturance and expose infants to opportunities for play and social interactions. In response, infants learn the skills needed to function more independently and develop healthy representations of the outside world (Bowlby, 1969, 1980). Interactions that are rhythmic, well-timed and mutually rewarding tend to create secure attachments. Less secure attachments are correlated with caregivers who are

unresponsive and/or are overly intrusive (Bowlby, 1969, 1980; Isabella & Belsky, 1991; Beebe, 2000). While the quality of interactions is regarded as the most important factor building secure attachments (Isabella & Belsky, 1991; Beebe, 2000), the infant's confidence in the caregiver's capacity to protect and comfort also was correlated with the quantity of interactions (Cox, Owen, Henderson & Margand, 1992; Beebe, 2000). Thus, both quality and quantity are important for the development of a secure attachment.

Attachment styles. Differences in the quality of attachment have been highlighted by observations of infants and their caregivers from field studies and in a standard laboratory procedures called the *strange situation* (Ainsworth, Blehar, Waters & Wall, 1978). In the lab, during an approximately 20-minute period, a toddler is exposed to a sequence of events that are likely to stimulate the attachment system. The situation introduces several potentially threatening experiences, including the presence of a stranger, the departure of the mother, being left alone with a stranger and being left completely alone—all in the context of an unfamiliar laboratory setting. During this sequence, researchers have the opportunity to make systematic observations of the child's behaviors, the caregiver's behaviors and the characteristics of their interactions, as well as to compare these behaviors across varying segments of the procedure.

Patterns of attachment behavior (Ainsworth et al., 1979) have been distinguished using the strange situation methodology: 1) secure attachment; 2) anxious-avoidant; 3) anxious-resistant or ambivalent attachment; and later (Main & Solomon, 1990), (4) disorganized attachment. Secure attachment in coding schemes has been labeled as Type B attachment. Sixty to 75 percent of low-risk young children are Type B, securely attached to their primary caregivers (Hazan & Shaver, 1990; Baldwin, Keelan, Fehr, Enns

& Koh-Rangarajoo, 1996). These children use their caregiver as a base from which they can venture into strange situations, they are comforted quickly, and are reoriented towards play easily. Infants who have a secure attachment actively explore their environment and interact with strangers while their mothers are present. After separation, the infants actively greet their mothers or seek interaction. If the infants were distressed during separation, the mothers' return reduces their distress and the infants resume exploring the environment (Hazan & Shaver, 1990; Baldwin et al, 1996).

Anxious-avoidant attachment has been labeled as Type A and anxious-resistant or ambivalent attachment is labeled as Type C; these are two patterns of insecure styles of attachment. Fifteen to 25 percent of children are Type A anxious-avoidant (Vondra & Barnett, 1999). These children, during separation from their caregiver, show lower levels of distress being alone than secure children. They attend to other items in the room, avoid contact with their mothers after separation, or ignore their mother's efforts to interact. Insecure-avoidant children are more likely to have caregivers who are intrusive and controlling. An analysis of brain chemistry with insecure-avoidant children shows higher levels of the stress hormone cortisol, indicating that while the child's demeanor is placid, they are highly internally stressed (Barnett & Vondra, 1999).

A lesser number of children, 10 to 15 percent of the general population, have been classified as having insecure anxious-resistant or ambivalent attachments (Barnett & Vondra, 1999). These children do not stray far from their caregivers during stress-free periods; they show high levels of frustration and distress at being separated from their caregivers and they are not easily soothed when their caregivers return. Infants who show an anxious-resistant attachment are very cautious in the presence of strangers. Their

exploratory behavior is noticeably disrupted by the caregiver's departure. Upon the return of the caregivers these children are less likely to approach for contact and reassurance. The infants appear to want to be close to their caregiver but they are also angry so they are very hard to soothe or comfort (Barnett & Vondra, 1999; Barnett, Vondra & Butler, 1999). They are either highly angered or ambivalent towards their caregiver's attempts at calming and they resist physical contact after reaching for their caregivers. Insecurely anxious-resistant or ambivalently attached children experience a caregiver who is not responsive to their needs. As such, these children increase their efforts to be noticed by the caregiver by whatever means necessary. They are often more temperamental than their peers and are less likely to be comfortable with physical contact due to an infancy of being rejected during times of stress (Barnett & Vondra, 1999).

There are outliers who do not fit into these three attachment styles of children classified as A, B, or C (Barnett & Vondra, 1999). These children are classified as Type D attachment (Main & Solomon, 1990; Bakermans-Kranenburg, Van IJzendoorn & Juffer, 2005). Type D is a disorganized/disoriented attachment style. These children don't have a coherent attachment behavioral system, using strategies across A, B and C types (Main & Solomon, 1990; Barnett, Ganiban & Cicchetti, 1999). Type D children are often the children of abusive or neglectful caregivers. The caregivers may also display elevated symptoms of psychiatric illness. Children who are classified as having Type D attachments have been reported to be controlling, authoritarian, and punitive when interacting with peers (Barnett & Vondra, 1999; Bakermans-Kranenburg, Van IJzendoorn & Juffer, 2005). In disorganized attachment, during the reunion sequence the children behave in contradictory, unpredictable ways that seem to convey feelings of extreme fear,

utter confusion or intense anger (Belsky, Campbell, Cohn & Moore, 1996; Bakermans-Kranenburg, Van IJzendoorn & Juffer, 2005). Disorganized attachment is the most problematic.

Attachment and its impact on development. The style of attachment affects the development of a cognitive model about one's self, others and the nature of future relationships, labeled the *internal working model* (Bowlby, 1969; Collins, Clark & Shaver, 1996). When observed at home, infants who have a secure attachment cry less than less securely attached infants (Ainsworth et al, 1978; Tracy & Ainsworth, 1981). They greet their mothers more positively on reunion after every day separations and respond more cooperatively to their mothers' requests. Securely attached infants have a working model of attachment in which they expect their caregiver to be accessible and responsive. Children who are classified as securely attached experience rhythmic, meaningful and predictable interactions that contribute to their social competence. As a result, they are confident in their ability to form positive relationships with others (Weinfield, Sroufe, Egeland & Carlson, 1999).

There are significant long-term benefits having a secure attachment. Secure attachment in infancy has been associated with positive adaptive capacities at 3 to 5 years old. Securely attached infants become preschoolers who show greater resilience, self-control and curiosity (Vaughn, Egeland, Sroufe & Waters, 1979). Children who have formed secure attachments are likely to find more enjoyment in close peer friendships during their preschool years (Vaugh et al., 1979; Schneider, Atkinson & Tardif, 2001).

In an analysis of the results of more than 60 studies of the relationship of parent-child attachment and peer relations, the quality of attachment with the mother was

consistently predictive of the quality of close peer friendships well into middle school and early adolescence (Schneider, Atkinson & Tardif, 2001). Children who have secure attachments are more likely to attribute positive intentions to peers, whereas children with avoidant and anxious attachments are more likely to have problematic peer relationships. Children with a disorganized attachment style are often hostile and aggressive preschoolers (Vaughn et al., 1979; Schneider, Atkinson & Tardif, 2001).

There is significant stability in attachment from infancy to adulthood. In one longitudinal study, 50 infants who were assessed in the strange situation at 12 months old were assessed again with the Berkeley Attachment Interview at age 20 (Waters & Beauchaine, 2003). Over this 20 years period, the same secure or insecure attachment style was observed in 72% of the participants. Exposure to negative life events such as parental loss, parental divorce, or severe parental illness was associated with change in classification for about one-fourth of the participants (Waters & Beauchaine, 2003).

Securely attached adults tend to be more satisfied in their relationships. Just as children with a secure attachment possess a secure base from which they venture out and independently explore the world, a similar pattern was observed in adults. Securely attached adults tend to feel secure and connected to their romantic partners, while allowing themselves and their partners to move freely. They can be independent and inter-dependent at the same time without much effort (Firestone, 1990, 1999, Shaver & Hazan, 1987; Shaver, Wall, Kellermann, Jackson & Hawkins, 1996).

Attachment has been used to explain the nature of love relationships. Romantic relationships can be characterized along many of the same dimensions as infant attachments, including the desire to maintain physical contact with the loved one,

increased disclosure, responsiveness to the loved one, the effectiveness of the loved one in providing comfort and reassurance that reduce distress, and an element of exclusiveness or preferential response to the loved one (Hazan & Shaver, 1990). Fears about loss and abandonment are associated with anxious attachments and result in anxiety about one's current romantic relationships. Adults with anxious attachments tend to be more coercive and mistrustful, often pushing their partners away. They may have difficulty establishing and maintaining romantic relationships as they move from childhood friendships into the more demanding expectations of adult friendships, sexual intimacy and open communication (Tracy, Shaver, Albino & Cooper, 2003).

Adults with avoidant attachment have the tendency to emotionally distance themselves from their romantic partners. They seek isolation and make efforts to preserve their independence, which they perceive as being under attack while involved with a romantic partner. They often come off as focused on themselves and may be overly attending to their own comforts and needs. People with avoidant attachment tend to lead more inward lives, both denying the importance of loved ones and detaching easily from them. They often present with anxieties and defenses such as denial, displacement, rationalization and isolation of affect and can easily shut down emotionally. Even in heated or emotional situations they can turn off their feelings and not react (Shaver & Hazan, 1987; Firestone, 1990; Firestone & Firestone, 2004).

Adults with disorganized attachments live in ambivalent states of being afraid of being both too close to or too distant from others. They have a working model for romantic relationships that is marked by doubt and insecurity. On the one hand they would like to have their needs met in relationships. At the same time, they believe that

getting too close to people will hurt them. They often have fears of being abandoned but also struggle with being intimate. In other words, the person they want to go to for safety is the same person they are frightened to be close to. As a result, they have no organized strategy to get their needs met by others (Shaver & Hazan, 1987; Firestone, 1990; Firestone & Firestone, 2004). People with disorganized attachments tend to find themselves in unstable or dramatic relationships, with many highs and lows. They may even end up in abusive relationships (Firestone, 1990; Firestone & Firestone, 2004).

The parenting relationship can also be understood as an elaboration of the attachment representation. Adults who have experienced a secure attachment in their own infancy are more likely to create secure attachment in their children. Adults whose childhood attachments were unpredictable or even hostile are more likely to have difficulty coping successfully with parenting and meeting an infant's needs (Ricks, 1985; George & Solomon, 1999). For example, in an observational study, parents were examined while their infants were having inoculations. Those parents who had an avoidant attachment style were less responsive to their infants' distress at receiving an injection (Edelstein, Alexander, Shaver, Schaaf, Lovas & Goodman, 2004). However, this is not to say that the quality of adult love relationships or parental behavior are determined solely by the quality of childhood attachment. New relationships and learning experiences intervene to modify the initial attachment representation and expand one's capacity to love another person. In fact, in his later writings, Bowlby (1984) acknowledged the early experiences are not as deterministic as he first thought, recognizing that attachment style can change over the life span and is also dependent on experiences throughout life.

Factors that affect attachment. There are several factors already mentioned that contribute to secure attachment and some other factors that negatively impact attachment style. As discussed, the most important factor in the development of attachment is an infant's experience of caregiver response (Bowlby, 1969, 1980). If a child lacks a responsive caregiver because of an abusive or neglectful parent, or due to being placed in an environment such as an institution without a consistent and responsive caregiver, this has a negative impact on attachment, as both situations thwart responsiveness.

A caregiver's own attachment patterns can predict how their children form attachments (Sterlin, 2006). The Adult Attachment Interview (Main & Goldwyn, 1985; 1998) has been used to determine parental attachment styles. Mothers who described their childhood objectively and coherently, and who expressed value towards attachment relationships, often had securely attached infants and were securely attached as infants themselves (Lyons-Ruth & Jacobvitz, 1999; Van IJzendoorn, Schuengel & Bakermans-Kranenburg, 1999; Sterlin, 2006). Mothers who were unable to provide examples of positive interactions during their own childhoods and reported that their attachment figures had little to do with their current identity often created avoidant attachments with their infants and were in the avoidant category themselves. Mothers who dwelled on negative experiences, injury, who were overwhelmed and frightened, created anxious/ambivalent attachments. Finally, mothers who described childhoods of fear displayed disorganized attachment (van IJzendoorn et al., 1999; Sterlin, 2006). Thus, a caretaker's own attachment style can impact attachment with their children.

Adolescents who have strong connections (i.e., attachments) with their families, mentors or inspirational others tend to have better developmental outcomes (Selekman &

Shulem, 2007). Good family communication, family harmony, and adolescents feeling validated and understood serve a protective function against self-destructive behaviors (Wagner, Cole & Schwartzman, 1995; Rubenstein, Halton, Kasen, Rubin & Stechler, 1998; Wagner, Aiken, Mullaley & Tobin, 2000; Selekman & Shulem, 2007). Guibord, Bell, Romano and Rouillard (2011) researched adolescents age 12 to 15 who had been in the care of a child welfare agency for at least one year following removal from the primary caregiver's home due to maltreatment. Results indicated that males were less likely to experience symptoms associated with depression than females and that as age increased so did their risk for substance use. The research also indicated that a positive relationship with a female caregiver was associated with better outcomes for adolescents.

Many children who have been internationally adopted lived in institutions prior to their adoptive placements (Chisholm et al., 1995; Chisholm, 1998; O'Connor, Bredenkamp & Rutter, 1999; O'Connor, Rutter & English and Romanian Adoptees Study Team, 2000; O'Connor et al. & the ERA Study Team, 2003; Parker & Nelson, 2005; Tarullo, Bruce, & Gunnar, 2007; Nelson, Fox & Zeanah, 2014). This history of institutional placement affects attachment (Smyke, Dumitrescu & Zeanah, 2002; Zeanah, Smyke, Koga, Carlson & the BEIP Core Group, 2005; Zeanah et al., 2009; Smyke, Zeanah, Fox, Nelson & Guthrie, 2010). In a study in Romania, Smyke, Dumitrescu and Zeanah (2002) examined three groups of children: 1) toddlers living in a typical residential unit (standard care) in a large institution in Bucharest, Romania (n=32); 2) toddlers living in the same institution on a "pilot unit" designed to reduce the number of adults caring for each child (n=29); and, 3) toddlers living at home who had never been institutionalized (n=33). The three groups were studied to determine whether signs of

disordered attachment were greater in young children being reared in more socially depriving environments. Structured interviews with caregivers were administered over several months to examine attachment style and other behaviors. The researchers found that children living in the standard care unit had significantly more signs of disordered attachment than the children in the other two groups. An emotionally withdrawn and indiscriminate social pattern of attachment disorder were apparent in these children yet disorganized attachment patterns were more typical. This study concluded that poor caretaking increases attachment problems. Indiscriminate friendly behavior was common whether or not these children had a preferred attachment figure. Indiscriminate behavior was largely independent of aggression in these institutionalized young children.

In a later study, Smyke, Zeanah, Gleason, Drury, Fox, Nelson and Guthrie (2012) examined attachment in Romanian children enrolled in a randomized trial of children receiving continued institutional care (n=68), those placed in foster care after institutional care (n=68), and those who were never institutionalized (n=72). At baseline and when children reached ages 30, 42, 54 and 96 months, caregivers were interviewed with the Disturbances of Attachment Interview to assess changes in attachment in the three groups of children. The impact of gender, ethnicity, and baseline cognitive ability was also examined. The researchers reported that signs of Reactive Attachment Disorder decreased after the children's placement in foster care, and scores were indistinguishable from those of never-institutionalized children after 30 months. Signs of the attachment problems were highest in the usual care group, lower in the foster care group, and lowest in the never-institutionalized group. Early placement in foster care (before age 24 months) was associated with fewer signs of the attachment problems.

In addition to the lack of responsiveness, trauma and chronic stress negatively impact attachment. In terms of trauma, the type, severity and duration of the trauma can have a negative impact. As a proxy for severity and duration, age at adoption is a critical variable. As age at adoption increases, the duration of pre-adoptive stress or pre-adoptive trauma increases. Also, since family life has a more positive impact on child development, it is also important to examine the length of time the adoptee has been in an adoptive family. Unlike age at adoption as an indicator of pre-adoptive stress or pre-adoptive trauma, length of time in the adoptive family is an indicator of the potential for healing. As such, both age at adoption and length of time in a family (birth, foster and adoptive) will be important to examine in assessing attachment as well as other developmental outcomes.

Results about the effects of gender on attachment are somewhat mixed. Ainsworth et al. (1979) in their original study on 106 Baltimore middleclass families found no gender differences in attachment. Several more recent studies found that boys were more likely to be securely attached to their fathers than girls were (Williams & Blunk, 2003; Schoppe-Sullivan, Diener, Mangelsdorf, Brown, McHale & Frosch, 2006). Boys who have been in low-income, maltreating families have disorganized attachment more frequently (Carlson, Cicchetti, Barnett & Braunwald, 1989). Other studies consider gender a non-relevant contributor to attachment behaviors (Gloger-Tippelt, Gomille, Koenig & Vetter, 2002; Gloger-Tippelt, König, Zweyer & Lahl, 2007).

Attachment through the life span. An important question that has been the focus of empirical attention and debate concerns the degree to which individual differences in attachment are attributes of the child or are attributes of the child's

relationship with a specific caregiver. Van IJzendoorn (1995) asserted that it is “nurture” rather than “nature” that accounts for differences in attachment security (p. 388). His hypothesis was substantiated and was further supported by Howes (1999) who found a child may have different attachment classifications with different caregivers. As previously noted, a central tenet of attachment theory indicates that early experiences between young children and their caregivers provide a model for intimate relationships later in one’s life. Although this model is believed to be modifiable by subsequent experiences, Zeanah and Shah (2005) point out that the theory has posited a tendency to deny or resist changes in attachment over time. They suggest that in a stable caregiving environment, one would expect to find stable patterns of attachment, but in environments characterized by significant changes, one would expect less stability. Results from longitudinal studies do not support a linear relationship, as they demonstrate instability of attachment classifications from infancy to adulthood (Hamilton, 2000; Lewis, Feiring & Rosenthal, 2000; Waters, Merrick, Treboux, Crowell & Albersheim, 2000). Individuals whose attachment classifications changed from secure in infancy to insecure in adulthood were more likely to have experienced negative life events and children who demonstrated insecure attachment in infancy were more likely to remain insecure if they experienced negative life events (Grossmann, Grossmann & Kindler, 2005).

Pre-Adoption Stress

As mentioned earlier, the conditions in the Romanian institutions were deplorable. The Romanian orphanages failed to meet even the most basic needs of the children. There were reports that the children were often tied to beds or restrained by using pieces of clothing (Groza & Ileana, 1996, Groza Ileana & Irwin, 1999; Smyke et al., 2010;

Nelson, Fox & Zeanah, 2014). Physical and sexual abuse were common occurrences (Klass, Earls & Eisenberg, 1996; Groza, Ileana & Irwin, 1999; Gavrilovici & Groza, 2007; Frank, Rus et al., 2013; Nelson, Fox & Zeanah, 2014). Corporal punishment of all children was practiced and officially encouraged as appropriate discipline, and staff who did not beat the children were considered weak (Frank et al., 1996). Due to the abuse children received from staff, older children learned to beat the younger children (Rus et al., 2013). Often, the children would spend their day naked because the staff had failed to put clothes on them or they would be sitting in their own urine for hours or days at the time (Ward, 2011). All children, including girls, had their heads shaved, which made it difficult to differentiate the gender of the children (Conn & Crawford, 1999; Ward, 2011). They were also bathed in dirty bath water, bathed three at a time by the workers (Groza, Ileana & Irwin, 1999; Ward, 2011; Nelson, Fox & Zeanah, 2014). Children also would starve to death. Many children had delayed cognitive development and many did not know how to feed themselves (Conn & Crawford, 1999; Ward, 2011). Physical injuries included fractures that had not healed right, resulting in deformed limbs (Ward, 2011). Many children reportedly died of minor illness or injuries such as anemia (Nelson, Fox & Zeanah, 2014). Due to lack of human contact, infants developed without stimulation, which led to self-stimulation such as hand flapping or rocking back and forth. With these characteristics, children were often misdiagnosed to have mental disabilities and forced to move to institutions for the handicapped (Ward, 2011). They were given psychiatric medication to treat their behaviors, or they were tied to their beds to prevent self-harm (Ward, 2011). The harshest fate was reserved to children deemed as irrecoverable, who were considered "unproductive" and assigned to the Labor Ministry

(Nelson, Fox & Zeanah, 2014).

Excessive stress negatively impacts the developing brain. Greater number of stressors experienced early in life are linked to medical and psychological difficulties during the life span (Middlebrooks & Audage, 2008; Duke, Pettingell, McMorris & Borowsky, 2010; Shonkoff, Garner, Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption and Dependent Care & Section on Developmental and behavioral Pediatrics, 2012). Specific pre-adoptive factors such as malnutrition, pre-adoption adversity, and age at adoption (as a proxy for degree of trauma exposure) have all been considered as factors contributing to poorer outcomes (Stoch & Smythe, 1976; Lien, Meyer, & Winick, 1977; Stoch, Smythe, Moodie, & Bradshaw, 1982; Grantham-McGregor, 1995; Hack, Klein, & Taylor, 1995; Morison, Ames, & Chisholm, 1995; Fisher et al, 1997; Gunnar, 1998; Rutter & English and Romanian Adoptees Study Team, 1998; Judge, 2000; Stams, Juffer, Rispen & Hoksbergen, 2000; Kreppner et al. & the ERA Study Team, 2001; Johnson, 2002; Kadlec & Cermak, 2002; Rutter, O'Connor, & English and Romanian Adoptees Study Team, 2004; Juffer & van IJzendoorn, 2005; Lin, Cermak, Coster, & Miller, 2005; Pomerleau, Malcuit, Chicoine, Séguin, Belhumeur, Germain & Jéliu, 2005; Rutter, Beckett, Castle, Colvert, Kreppner, Mehta, Stevens & Sonuga-Barke, 2007).

The long term impact of prenatal alcohol exposure has been a particular concern among children adopted from Eastern Europe because of the widespread consumption of alcohol in the region. The damaging effects of such exposure on the developing fetus, and the prevalence of this problem among institutionalized children in Eastern Europe, were largely documented (Albers et al., 1997; Streissguth & O'Malley, 2000; Gunnar & Van

Dulmen, 2007; Miller, Chan, Tirella & Perrin, 2009; Landgren, Svensson, Strömmland & Grönlund, 2010).

Definitive identification of pre-adoptive risk factors has been difficult because of variation in methodologies, outcomes, and populations studied. Several valuable and comprehensive investigations identified pre-adoptive risk factors (including length of institutionalization, birth weight, head circumference, and weight at adoption) that correlated with cognitive and behavioral outcomes in young Romanian children adopted from extreme conditions (Johnson et al., 1992; Morison et al., 1995; Carlson & Earls, 1997; Fisher et al., 1997; Marcovitch, Goldberg, Gold, & Washington, 1997; Chisholm, 1998; Mainemer, Gilman, & Ames, 1998; Rutter & English and Romanian Adoptees Study Team, 1998; Morison & Ellwood, 2000; Rutter et al., 1999; Rutter, Kreppner, O'Connor, & the ERA Study Team, 2001; Beckett, Bredenkamp and the ERA, 2002; Hoksbergen, van Dijkum, & Stoutjesdijk, 2002).

Although duration of institutionalization has been cited as a factor directly linked to child outcomes in many studies, this also is controversial. Some investigators propose a “sensitive period” after which institutionalization is particularly detrimental. Periods ranging from two months (Groza & Ryan, 2002), four months (Chisholm et al., 1995; Fisher et al., 1997; Morison et al., 1995; Morison & Ellwood, 2000), six months (Beckett, Bredenkamp and the ERA, 2002, 2006; Kreppner et al., 2001, 2007; Rutter & English and Romanian Adoptees Study Team, 1998; Rutter et al., 2001), or as long as 24 months (Johnson, 2002; Gunnar & Van Dulmen, 2007; Nelson et al., 2007) have been proposed. There is not a definitive agreement of how long is too long. Others identify a dose-response for some of the adverse effects of institutionalization such as attachment

disturbances (O'Connor et al., 2003), inattention/ overactivity (Kreppner et al., 2001), or abnormal self-regulatory behavioral patterns (Beckett et al., 2003). Some researchers (Kreppner et al., 2001, 2007; Rutter et al., 2001) report specificity to the adverse outcomes associated with institutionalization such as inattention/overactivity but others suggest that more global deficits may occur (reviewed in Gunnar et al., 2007). Several studies have found a lack of effect of age at adoption on behavioral outcomes (Groza & Ryan, 2002), including a large meta-analysis (Juffer & van IJzendoorn, 2005). Difficulties in separating age at adoption from the quality of pre-adoption experiences, along with variability in the outcome measures, may account for some of the differences in these findings.

In summary, the previous sections discussed attachment theory and the research related to the factors that affect attachment and the role of pre-adoptive stressors on adoption outcomes. This next section picks up where most attachment theory and research ends, looking at a number of issues in the transition to adulthood besides attachment. This is roughly the period from 18 to 30 years old.

Emerging Adulthood

1. Emerging adulthood as a developmental stage. Arnett (2000) proposed a new theory of development for individuals in their late teens through the late twenties, with a specific focus on ages 18-25, otherwise considered emerging adulthood. He argued that this period is neither adolescence nor young adulthood, yet is theoretically and empirically distinct from both. Arnett (2000) describes those in the emerging adulthood phase as enthusiastic individuals who have left the security of their family to grow into their own relationships and responsibilities.

Emerging adulthood is distinguished by relative independence from social roles and from normative expectations. Having left the dependency of childhood and adolescence, although having not yet entered the daily responsibilities of adulthood, emerging adults often explore a variety of possible life directions in love, work, and world views (Arnett, 1994; 1997; 1998; 1999; 2000; 2001; 2002; 2003; 2004). Emerging adulthood is a time of life when many directions are possible, mainly because little about the future has been decided for certain. At this point in one's life, the scope of independent exploration of possibilities is greater for most people than it will be at any other period of the life course (Arnett, 2002; 2003; 2004).

For many people, the late teens through the mid twenties can be the most volitional years of life. Historically, cultural influences often limited the extent to which emerging adults were able to use this time period, because obviously not all young people are able to use these years for independent exploration. Like adolescence, emerging adulthood is a period of the life course that is culturally constructed and not universal for all young adults (Arnett, 2000; 2001; 2002; 2003; 2004).

Emerging adulthood is a new concept, developed after the cultural shift in the 1970's in America and other western countries (Arnett, 2003; 2004). In the 1970's the wide availability of birth-control, the loosening of strict sexual morality and the pursuit of higher education contributed to moving the average age of marriage and subsequent child rearing with at approximately 10 years, comparing to older generations. This cultural shift pushed the adult obligations of marriage and parenting from age 18 to 30 and later (Arnett, 2004). This contributed to emerging adulthood becoming a time of explorations, new possibilities and of solidifying identities. Arnett (2000; 2002; 2004) gives credence

to Erickson's conflict of identity versus role confusion which Erickson posited occurs during adolescence up to age 18. Arnett argues that an 18-year old adolescent, particularly within recent decades, rarely has a complete grasp on their identity as an individual within society. Arnett contends that it is nearly impossible for the conflict of identity versus role confusion to be overcome until the end of the new stage of emerging adulthood. Further, Arnett proposes the stage of emerging adulthood is decidedly not an extension of adolescence (2004). Emerging adults have the capacity for self-direction, reflection, and independent living that adolescents are not yet able to achieve due to a number of cultural and societal constraints (Arnett, 2003, 2004; Arnett, Žukauskienė & Sugimura, 2014). Adolescents must answer to teachers, parents, and the societal laws of being a minor until they reach age 18. Emerging adults, in contrast, have the freedom to move away from their parents, choose their own timeline for schooling, and, for the most part, are considered legal participants within their world (Arnett, 2004). Yet, emerging adulthood is not adulthood either.

When emerging adults are asked if they have reached adulthood, the majority answer neither no or yes, but the ambiguous "in some respects yes, in some respects no" (Arnett, 2004, p.67). This reflects a subjective sense on the part of most emerging adults that while they have left adolescence, they have not completely entered young adulthood (Arnett, 1994; 1997; 1998). Although they do not use a specific name to describe the stage they are in, they regard themselves as being in between the two stages but not necessarily in one stage or the other (Arnett, 2000).

2. Characteristics of emerging adulthood. Arnett describes five main domains of those within the stage of emerging adulthood: identity exploration, instability, a self-

focused life, feeling in-between adolescence and adulthood, a more consideration for other people and the possibility to dream, transform and create one's future (Arnett, 2004).

a) *Identity exploration.* Identity exploration during emerging adulthood includes three areas: love, work, and worldviews (Arnett, 2004). Emerging adults eventually arrive at making enduring decisions in these three areas of life after a period of considering multiple possibilities, trying out new roles, and experimenting with new ways of relating to themselves and others. Contrary to the views of Erikson (1964), who defined identity formation as the main developmental task of adolescence, Arnett (1994; 1997; 1998; 2000; 2004) views this process as a transition beginning in adolescence but taking place mostly in emerging adulthood.

With regard to love, American adolescents typically begin dating around ages 12 to 14 (Padgham & Blyth, 1991), but the early years of dating are recreational in nature and involve some level of experimentation with romantic love, companionship and sexual play (Roscoe, Diana & Brooks, 1987). Dating in adolescence often takes place in groups, as adolescents pursue recreational activities, such as parties, dances, and hanging out (Padgham & Blyth, 1991). Explorations in love tend to be focused on the *here and now* during adolescence. They are transient and experimental in nature (Feiring, 1996). Few adolescents remain involved with their high school sweethearts beyond high school.

In contrast, during emerging adulthood, dating takes place in couples and its focus is exploring emotional and sexual intimacy. Romantic relationships in emerging adulthood last longer than those during adolescence, are more likely to include sexual activity, and may include cohabitation (Lillard, Brien & Waite, 1995). Explorations in

love in emerging adulthood involve a deeper level of intimacy, and are more identity focused. Their scope is to identify the best type of partner, a real good long-term match for the personal characteristics of the young adult who is engaged in the exploration.

A similar pattern exists in regards to work. The explorations of emerging adults are much more focused and less tentative and transient, the way they are for most adolescents. In the United States, many high school students are employed part-time (Barling & Kelloway, 1999). These jobs do not provide them with specific knowledge and skill that will serve them in their future occupations, but are still instrumental in teaching adolescents discipline, money and time management (Greenberger & Steinberg, 1986; Steinberg & Cauffman, 1995; Mortimer, Harley, & Aronson, 1999). The jobs of most adolescents require limited cognitive capacities and level of skill, therefore adolescents do not regard these jobs as preparation for future careers, but as practical means to provide income to finance their leisure time and entertainment activities (Bachman & Schulenberg, 1993; Shanahan, Elder, Burchinal, & Conger, 1996; Steinberg & Cauffman, 1995).

In emerging adulthood, work experiences are preparatory and lay a foundation of adult work life. Exploring various work possibilities is strongly embedded in the process of identity exploration. Emerging adults ask themselves questions about the field of work that they would best enjoy and be good at, what would be realistic and satisfying in the long term, etc. Similarly, the emerging adults' educational choices and experiences are also strongly connected to identity exploration and preparation for future work. Many college students change majors several times, and some continue their occupational exploration well within their late 20's and early 30's by pursuing graduate school.

It is worth noting that in both of the domains of love and work, identity exploration during emerging adulthood is not the sole purpose of preparation for adult roles, but explorations geared towards securing a broader range of experiences before embracing more limiting adult roles. Emerging adults are able to explore and experiment freely, without the commitments of adult life, which are a lot more limiting. This level of freedom is likely to end during the late thirties and beyond that age. It is not uncommon for emerging adults to have many romantic and sexual experiences in the absence of parental supervision and without the pressures of marriage or other enduring commitments. Similarly, some emerging adults try out untraditional work and educational opportunities such as Americorps, Peace Corps, internships or work assignments in the other parts of the country or abroad.

Changes in worldviews are often a central part of cognitive development during emerging adulthood. According to Perry (2000), young adults go through several stages of world view formation. Those who attend college, enter the curriculum with a set of views that come from their families of origin. During college, they get exposed to a variety of experiences and points of view, which most likely modify their original worldviews. College students continue to question their views as they gain exposure to additional life events, which makes them open to examine a variety of new world views and to modify them according to new environmental input. Higher education promotes explorations and reconsiderations of worldviews (Terenzini & Pascarella, 1991). Similarly, emerging adults who do not attend college are as likely as college students to undergo changes in their world views, as a part of attaining adult status (Arnett, 1997), but not in the same way as those going to college. Regardless of educational background,

emerging adults value the process of reexamining the religions that they grew up with in their families of origin and arrive at their own set of beliefs based on their own insight and self-reflection (Hoge, Johnson, & Luidens, 1993; Arnett, 1999).

The identity explorations of emerging adulthood are exciting and liberating for many individuals, but they are not always completely positive on all fronts. Explorations in love often result in heartbreak, just like explorations in work sometimes result in a failure to achieve success. Explorations in worldviews sometimes can result in states of deep confusion, as family of origin beliefs get dismantled, but nothing compelling comes to replace them in meaningful ways (Arnett, 1999). Also, identity exploration is a process that each individual goes through on his/her own pace, which can lead to feelings of loneliness and isolation.

b) *Instability.* Identity exploration and instability go hand in hand. The continuous process of searching for oneself naturally leads to numerous changes in the areas of love, work and education, making emerging adulthood an unstable stage of life (Arnett, 1994, 1997, 2000, 2004; Arnett, Zukauskene, & Sugimura, 2014). Emerging adults have some general idea of how they are supposed to transition from adolescence to adulthood, but this transitioning plan gets frequently modified in the face of various changes related to education, work and love. The average individual changes work environments between the ages of 18 to 29 approximately 8 times, more than during any other life stage (Arnett, Zukauskene, & Sugimura, 2014). Additionally, most emerging adults have several relationships before determining which qualities are important to have in a long-term partner. These revisions of an initial tentative plan are natural consequences of the emerging adults' explorations and provide them with life lessons about themselves and

about the practical ways they can employ to build pathways to the future that they envision.

Instability is not necessarily a negative concept in terms of the transition to adulthood, but instead it is more of a way of understanding some of the processes that occur during this time. Similarly to the feelings emerging adults experience in regards to identity exploration, this time of great instability can be exciting and thrilling for some young adults. For others, the frequent changes generate vulnerability to anxiety, depression and depleted social supports.

c) Self-focus. Arnett (1994, 1997, 2000, 2004) posits that emerging adulthood is the most self-focused time in life. Children and adolescents report to parents, other family members and teachers, are part of a family system that is governed by roles and rules and are bound by standards of behavior at school, in the community and in larger society. Adolescents, although able to enjoy more freedom than younger children, still live at home with their parents and are required to comply with household rules. Teachers set rules and norms of behavior at school and impose standards of safety for communities and standards of performance to enter college and/or secure work. By age 30, 75 percent of young adults in the U.S. are married and have at least one child (Arnett, 2005; Arnett, Zukauskene, & Sugimura, 2014). This means additional sets of rules operating in their newly-created families and new standards of performance in a work field of their choosing where the young adults work hard and strive to succeed and advance with the goal of being able to support themselves, their spouses and children.

In contrast, emerging adults have the luxury to focus on themselves. Most of them are largely untied to family obligations and/or enduring work assignments. The concept

of self-focus is used positively by Arnett (2000, 2004) with respect to emerging adulthood. Being self-focused is viewed by Arnett (2000) as being normal, healthy and temporary. The goal of this self-focusing is learning to stand alone as a self-sufficient person. Self-focus allows emerging adults to develop independent living skills and learn about who they are and where they are headed in life, what they like and what they dislike (Arnett, 2000, 2004). Thus, the emerging adults' self-focus is an important stepping stone to building a foundation for adult life. Identity explorations require a process of self-focus, which Arnett (2004) regards less as a selfish endeavor and more as an intense process of the emerging adult zeroing in with the goal of figuring things out about himself, before making more enduring commitments to others in the domains of work and love.

d) The age of feeling in-between. Emerging adulthood feels like an age in-between, neither adolescence nor adulthood. It is more on the way to adulthood, but not there yet. This is mostly due to the various explorations of emerging adulthood resulting in a state of marked instability. Emerging adults are no longer bound to the restrictions of adolescence and are not yet fully committed to the responsibilities of adulthood. They do not see themselves as adolescents, but do not regard themselves as adults either. When asked whether they feel they have reached adulthood, about 60 percent of emerging adults aged 18–25 give responses that are often ambiguous. Even during late twenties and early thirties about 30 percent of Americans continue to feel in between, while the remaining 70 percent are certain that they have reached adulthood. The sense of ambiguity eventually fades away during one's 30's and 40's, when the feeling of being an adult becomes well established (Arnett, 2000; 2004).

Most emerging adults feel this sense of “in between” is a direct consequence of what they consider the most important factors in becoming an adult, things that are emerging gradually-over a long period of time, such as accepting responsibility for oneself, making independent decisions and becoming financially independent. Feeling in between also assumes the need to at least temporarily maintain some sort of a safety net, in the form of counsel and support from family and friends. This allows emerging adults to make mistakes, learn from them and move on without having to stop their developmental transition, a likely outcome in the absence of a safety net (Arnett, Zukauskene, & Sugimura, 2014).

e) The age of possibilities. Emerging adulthood is an age of high hopes and great expectations, when many possibilities are open and many different futures are possible. Emerging adults can hold on to their hopes and dreams, without yet withstanding the tests of real life. The hallmark of emerging adulthood is the possibility of change. During this limited window of time, the ranges of choices available are greater than ever before and ever after and the fulfillment of all dreams seems possible.

Emerging adults have an optimistic view about the future. They look at the future and see well-paying jobs, life-long, loving marriages, beautiful and happy children, material possessions and a long, healthy and happy life. Almost all emerging adults believe that they have a positive future, as 89 percent of emerging adults feel they will get what they want out of their lives (Arnett, Zukauskene, & Sugimura, 2014). Arnett describes the ability to dream up an optimistic future as unique to emerging adults. Positive responses to the belief that life will be better for emerging adults than it was for their parents is unique to young people in this stage of life and did not vary across social

class or mother's educational status (Arnett, Zukauskene, & Sugimura, 2014).

Emerging adults who leave behind difficult upbringings and did not yet make other commitments further restricting their moves, have an extraordinary opportunity to transform their lives during this stage. It is difficult to disentangle oneself from a troubled family when you continue to live in the same household with parents and other family members who struggle with addiction, depression, abject poverty, domestic violence, etc. During this stage, emerging adults have a chance to step away from family dysfunction, focus on themselves and heal the parts of themselves that are broken. Even those emerging adults who come from families regarded as relatively happy and healthy, individuate from parents and create their own identities during this time. However, Arnett (2000, 2004) notes that regardless of one's family background, all emerging adults carry the baggage of their families of origin with them and the extent to which they can transform their lives is still a function of these family influences.

3. Markers of adulthood. In the past, social scientists defined adulthood in terms of discrete transitions. The markers of adulthood most commonly used in the past were: leaving home, completing one's education, entering marriage, and experiencing parenthood. Arnett (2000; 2004) points out that becoming an adult today means becoming self-sufficient and learning to stand alone as an independent person. There are three criteria at the heart of emerging adults' views of the self-sufficiency required for adulthood: taking responsibility for oneself, making independent decisions, and becoming financially independent (Arnett, 2000; 2004).

Responsibility is a word that comes up over and over again in interviews when emerging adults respond to questions of what it means to be an adult, and usually it

means responsibility for oneself, not others. In part, taking responsibility for oneself means accepting responsibility for the consequences of one's actions rather than looking for someone else to blame if things go wrong. Making independent decisions is the second most important marker of adulthood. Emerging adults believe that to be considered an adult, a person has to use independent judgment in making decisions, not only on concrete topics such as where to live and what career to pursue, but also in the less tangible areas of what one's beliefs and values should be. Financial independence is a third pillar of adult status for emerging adults. They believe they need to make enough money to "pay the bills" on their own before they can be considered fully adults. Becoming an adult is also defined in terms of independence from parents. Establishing independence from parents is a gradual process that begins well before emerging adulthood, but a major thrust toward adulthood comes with moving out of one's parents' household. For many emerging adults, moving out is part of going off to college after high school. It is not just moving out itself that is important as a marker of adulthood, but the way moving out requires emerging adults to take on new responsibilities, make independent decisions, and become more financially independent. Because it is not so much moving out on their own that matters as much as taking on responsibilities, making of independent decisions, and the financial independence of moving out, emerging adults can feel they have reached adulthood even if they have returned home or never left.

Learning consideration for others is another marker of adulthood. Emerging adults tend to define what it means to be an adult by learning to stand alone as a self-sufficient person, independent of parents or anyone else and measure their progress

toward adulthood strictly in terms of themselves and their personal development. They live in an individualistic society and go through an individualistic stage of life, and the combination makes their self-focus strikingly high. Eventually they do commit themselves to others through marriage and parenthood, but first they need to demonstrate that they can fend for themselves in the world.

Still, even during emerging adulthood one does not necessarily lose sight of the rights and concerns of others. On the contrary, the individualism of their view of what it means to be an adult is tempered by an emphasis on consideration for others. Being self-focused does not mean being selfish, and becoming self-sufficient does not entail becoming self-absorbed. While becoming an adult means learning to stand alone, it also means becoming less self-oriented and more considerate of others. Some emerging adults even place consideration for others at the heart of their conception of adulthood, although these emerging adults are relatively rare. More often, they view self-sufficiency as the most important part of becoming an adult, but temper this focus with concern for others. The word “responsibility” appears to have an elastic meaning, the way emerging adults use the term. It can refer to taking responsibility for oneself - and that is how they use it most often - but it can also be used to refer to responsibility toward others (Arnett, 2000; 2004).

It is a paradox of emerging adulthood that becoming more self-sufficient can also mean becoming less self-centered, that learning to stand alone can be combined with learning to be more considerate of others. The same kind of change takes place in one’s relationships with their parents. As emerging adults move away from their parents, they also become closer to them. This is healthy and developmental, a direct result of the

process of separation and individuation that is a hallmark of early adulthood.

4. Positive development in emerging adulthood. The capacity of young people to successfully embrace adult roles as they transition to adulthood is of great social and economic importance to individuals, communities, and societies. Emerging adulthood has been described as a window of opportunity for positive change in life course trajectories (Masten, 2007), as well as a period in which the incidence of risk behaviors and mental health problems is relatively high (Kessler and Walters, 1998; National Health and Medical Research Council, 2001).

While positive development is acknowledged to be a multi-dimensional construct, most studies have examined the contributions of only a small number of predictors, and only few studies have examined factors that contribute to overall positive development during emerging adulthood. Positive development has been conceptualized in various ways by different theorists and researchers, but the term generally refers to functional aspects of human behavior (such as “assets” or “strengths”) and successful developmental outcomes (such as securing employment). There are few examples of multidimensional models of positive development in the literature.

Gender is one of the variables considered in several studies as a factor influential in establishing a positive developmental trajectory in emerging adults. For example, Phelps, Zimmerman, Warren, Jeličić & Lerner (2009) examined pathways of positive youth development over grades 5–7 and found that girls were more likely to be in the high or medium trajectories. There is also some evidence that gender may moderate the relationship between positive development and assets or resources that contribute to positive development (Benson, Scales, Hamilton & Sesma, 2006). Huebner & Betts

(2002) have shown that, for female youth, attachment with parents and peers was more strongly associated with positive developmental outcomes (low delinquency and higher academic achievement), whereas, for males, involvement bonds (operationalized as time spent in school and non-school based activities) were more protective. This is consistent with a large body of research suggesting that the quality of close relationships are particularly relevant to the psychological wellbeing of females (Cyranowski, Frank, Young & Shear, 2000).

Early experiences neither ensure future positive functioning nor inoculate against problems in later adaptation (Curtis & Cicchetti, 2003). While early experiences may be critical, their influences on later functioning are likely to be mediated by later experiences (Schulenberg, Sameroff & Cicchetti, 2004). Scott, Briskman, Woolgar, Humayun & O'Connor (2011) examined child and adolescent precursors of positive functioning in emerging adulthood, including individual characteristics, relationship factors, and connections to the community, using a multidimensional positive development measure at 19–20 years. The sample consisted of 511 males and 647 females who were participants in the Australian Temperament Project, a population-based longitudinal study that followed young people's psychosocial adjustment from infancy to early adulthood. Higher levels of positive development in emerging adulthood were associated with stronger family and peer relationships, better adjustment to the school setting, higher family socioeconomic status, and better emotional control. Some significant gender differences were observed, with emotional control, family relationships, and community orientation all being stronger predictors of positive development in males than for females.

5. Studies on emerging adulthood

a. Introduction. Arnett developed a theory of emerging adulthood (2000).

Between 2005 and 2015 more than 300 empirical studies were published on diverse populations of emerging adults, focusing on different aspects of their development. For the purpose of this project, the review of studies on emerging adulthood was narrowed down to two areas: one, emerging adulthood and adoption, and two, emerging adulthood and attachment.

b. Emerging adulthood and adoption. Table 1 presents the studies published on emerging adulthood and adoption between 2000 and 2018. The majority of these studies focused on the adoptive family's communicative openness, particularly on topics related to adoption and on the adoptees' interest in searching for biological family members. This body of research informs adoptive parents about the challenges that their developing children might face during the emerging adulthood years. Ongoing, open communication and unconditional support have been identified to serve as catalysts of this developmental process.

Table 1. Empirical Studies on Emerging Adulthood and Adoption

Citation	Purpose	Sample(s)	Methodology	Major Findings
Grotevant, H. D., Rueter, M., Von Korff, L., & Gonzalez, C. (2011). Post-adoption contact, adoption communicative openness, and satisfaction with contact as predictors of externalizing behavior in adolescence and emerging adulthood. <i>Journal of Child Psychology and Psychiatry</i> , 52(5), 529-536	Study examined the relation between 1) post-adoption contact between adoptive and birth family members; 2) adoption communicative openness, and satisfaction with contact and 3) adoptee externalizing behavior in adolescence and emerging adulthood.	The sample included 190 families of infant-placed, domestic adoptees during childhood, adolescence, and emerging adulthood.	Structural equation modeling (SEM) was used to analyze predictors of externalizing behavior from adoptive parents and adolescent reports; adoption communicative openness (based on reports of adoptive mothers), and satisfaction with contact (reports by adoptive parents and adolescent).	Externalizing behavior showed moderate stability across childhood, adolescence, and emerging adulthood. Contact and adoption communicative openness were related to each other, but not to externalizing behaviors in adolescence or emerging adulthood.
Wrobel, G. M., Grotevant, H. D., Samek, D. R., & Korff, L. V. (2013). Adoptees' curiosity and information-seeking about birth parents in emerging adulthood: Context, motivation, and	Study examines whether emerging adult adoptees' curiosity mediates the associations between the predictors of internal and external barriers/facilitators and openness level and the outcome of information-	Data were drawn from a sub-sample of adoptees who participated at Waves 2 and 3 of the Minnesota / Texas Adoption Research Project (MTARP) Wave 2 data were collected between 1996 and 2001,	All variables were drawn from Wave 2 and Wave 3 adoptee interviews. At Wave 2, open-ended questions were answered on a variety of topics, including adolescents' experiences, feelings, knowledge, and attitudes	Curiosity proved to be an exceptionally strong predictor of seeking information about adoptees' birth parents. Greater curiosity yielded more information-seeking. Curiosity partially mediated the

behavior. <i>International Journal of Behavioral Development</i> , 37(5), 441-450	seeking. In addition, the content of identified barriers and facilitators are described.	from 156 adopted adolescents (75 boys and 81 girls) ranging from 11 to 20 years of age (mean age $\frac{1}{4}$ 15.7 years). Wave 3 data were collected between 2006 and 2008 from 169 adopted emerging adults (87 male, 82 female) ranging from 21 to 30 years of age (mean age $\frac{1}{4}$ 25.0 years). All children had been adopted as infants	about his/her adoption and kinship networks. At Wave 3, open-ended questions were asked about school and occupation, religion, close relationships, and adoption. Responses from both waves were coded. Openness arrangements were also coded.	impact of internal barriers upon information-seeking. The relationship between internal barriers and curiosity was positive; more internal barriers were associated with greater curiosity and more subsequent information-seeking.
Farr, R. H., Grant, Marsney, H. A., & Grotevant, H. D. (2014). <i>Adoptees' Contact with Birth Parents in Emerging Adulthood: The Role of Adoption Communication and Attachment to Adoptive Parents</i> . <i>Family Process</i> , 53(4), 656-671	Study examined how adoptees' attachment to adoptive parents and family adoption communication are related to birth parent contact during emerging adulthood.	The original sample included 190 adoptive families with children (N = 171, M = 8 years, range = 4–12) at Wave 1. At Wave 2, 156 adoptees participated (75 boys, 81 girls) and they were between 11 and 20 years old (M = 16 years). In Wave 3, which is the focus of this article, 167 emerging adult adoptees participated. The sample of adoptees was 51%	Adoptees participated in a semi-structured interview about their adoption and birth family experiences, responded to a series of online questionnaires regarding their relationships with their adoptive parents, and reported on demographic information about their employment, school history, living arrangements, and relationships. Current feelings of attachment	The results indicate that relationships with adoptive parents continue to play an important role in adoptees' experiences of birth family contact into adulthood, regardless of whether adoptees had current contact with birth parents. Overall, while adoptees were more satisfied with contact when there was current birth parent contact,

		male (N = 86 males, 81 females) and they were a mean age of 25 years (range = 21–30)		security to adoptive parents were assessed during emerging adulthood using the Inventory of Parent and Peer Attachment. Communication about adoption within adoptive families was assessed with the “Adoption Communication Scale” (ACS).	adoptees were also more satisfied with contact when communication with their adoptive parents was sensitive and open—regardless of whether there was current contact.
Farr, R. H., Grant-Marsney, H. A., Musante, D. S., Grotevant, H. D., & Wrobel, G. M. (2014). Adoptees’ Contact With Birth Relatives in Emerging Adulthood. <i>Journal of Adolescent Research</i> , 29(1), 45-66	Openness arrangements among emerging adult adoptees were explored using longitudinal data, which began in the 1980s to investigate variations in openness arrangements, contact between birth and adoptive families, and their antecedents.	See above sample		The Wave 3 Emerging Adult Demographic Questionnaire included questions about employment, school history, living arrangements, and relationships. Semi-structured interviews were conducted with adoptees. Participants recounted their adoption stories through a series of specific questions, followed by probes and further questions.	Quantitative data suggested that age, sex, and satisfaction with contact were relevant to experiences of adoption openness. Qualitative data elucidated ways that adoptees experienced contact with birth families, particularly those relevant to tasks of emerging adulthood, such as managing adult relationships and responsibilities.

Galliher, R. V., Rivas-Drake, D., Dubow, E. F., Grotevant, H. D., Lo, A. Y. H., Fiorenza, L., & Dunbar, N. D. (2017). <i>Adoptive Identity and Adjustment From Adolescence to Emerging Adulthood: A Person-Centered Approach</i> . <i>Developmental Psychology</i> , 53	The central question of this study is the following: To what degree does adoptive identity, measured during adolescence, predict adjustment difficulties in emerging adulthood, controlling for the level of adjustment in adolescence? Of particular interest were adolescents experiencing unsettled adoptive identity.	Participants included 145 adopted youth (51.7% female) who participated in Waves 2 (W2: adolescence: mean age 15.60, SD age 2.05, age range 11–20) and 3 (W3: emerging adulthood: mean age 24.90, SD age 1.96, age range 20–30) of the longitudinal Minnesota Texas Adoption Research Project (Grotevant, McRoy, Wrobel, & Ayers-Lopez, 2013). U.S.-born children were placed with their adoptive families as infants (mean age 4 weeks) through private adoption agencies in the United States.	Problem behaviors were measured using the Youth Self Report (YSR; Achenbach & Rescorla, 2001) at Wave 2 and the Adult Self Report (ASR; Achenbach & Rescorla, 2003) at Wave 3. For both the YSR and ASR, adopted individuals rated the frequency of their own behavior problems on a 3-point scale. At Wave 2, adopted adolescents completed a semi-structured interview that covered four identity domains: occupation, friendship, religion, and adoption.	Identity classification of adopted individuals during adolescence significantly predicted levels of internalizing behavior during emerging adulthood, controlling for levels of internalizing shown at adolescence. Adopted adolescents in the “unsettled” group had significantly higher levels of internalizing behavior problems during emerging adulthood than adopted individuals in the “limited” or “unexamined” group.
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c. Emerging adulthood and attachment. Table 2 presents the studies published on emerging adulthood and attachment between 2000 and 2018. These studies generally support the notion that parents provide the foundation for the development of relationship competence and high-quality intimate relationships throughout adolescence and into emerging adulthood. A majority of these studies investigate the relationship between attachment styles in childhood and support the argument that secure parental attachment relationships develop into script-like representations, which are then used to negotiate intimate relationships in a satisfying way during adulthood; insecure patterns of attachment to parents lead to a sense of insecurity during emerging adulthood.

Table 2. Empirical Studies on Emerging Adulthood and Attachment

Citation	Purpose	Sample(s)	Location of Study	Methodology	Major Findings
Pitman, R., & Scharfe, E. (2010). Testing the function of attachment hierarchies during emerging adulthood. <i>Personal Relationships</i> , 17(2), 201-216	Study investigated the shift of attachment functions from parent to peer.	Participants were undergraduate students in an introductory psychology course from two campuses of a liberal arts university. Three hundred and two students participated. Complete data were available for 267 participants, and 35 participants did not complete at least one questionnaire. The mean age of the participants was 20.08 years ($SD = 3.87$). Most participants were female (79%, $n = 210$ 221)	USA	The Relationship Scales Questionnaire (RSQ; Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994a, 1994b) was used to assess attachment in several close relationships. The Center for Epidemiological Studies Depression (CES-D; Radloff, 1977) measured affective symptomology and current depressive symptoms. The Attachment Network Questionnaire (ANQ; Trinke & Bartholomew, 1997) was used to assess the order of attachment figures in the network hierarchy.	Both attachment anxiety and avoidance were associated with distress; however, the strongest association was with attachment anxiety. Individuals who report low levels of attachment avoidance report receiving more social support than individuals who report high levels of avoidance. Findings suggest that individuals remain with their family because they hold positive views of some family members, in particular mothers, and report that they are trustworthy and available in times of distress. On the other hand, these findings also suggest that individuals may shift to peers because they hold negative views of their family (i.e., high attachment avoidance with mother and/or father) and report that they are unavailable, distrustful, rejecting, and uncaring in times of distress.
Nosko, A., Tieu, T., Lawford, H., & Pratt, M. W.	This study investigated reports of parenting and family patterns in	For the first wave, participants were recruited through 16 high schools in central Ontario, Canada.	Canada	At age 17, participants reported their gender, high school grade averages, rating of family income, and	Participants who reported having benefited from positive parent-child relations at age 17 also were more likely to report a secure adult

(2011). How Do I Love Thee? Let Me Count the Ways: Parenting During Adolescence, Attachment Styles, and Romantic Narratives in Emerging Adulthood. Developmental Psychology, 47(3), 645-657.	relation to questionnaire measures of attachment styles obtained from participants at age 26. Secondly, it investigated the relation of parenting during adolescence and attachment style to the quality of the romantic relationship at age 26. Third, they described the global themes of the romantic narratives that participants told at 26	Eight hundred and ninety-six students (544 girls, 352 boys) volunteered to take part in the longitudinal study. The fourth and most recent wave was conducted when participants were age 26; the sample consisted of 100 individuals (68 women, 32 men).		parent educational attainment. At age 26, they reported their age, relationship status, and level of education they had attained. Participants were asked at age 26 whether they were currently in a committed romantic relationship or not. When participants were 17, multiple measures of parenting style and family patterns of behavior were administered. These measures were combined in order to create an overall parent– child relations index on them as a person	attachment style at age 26. In contrast, those who reported more negative parent– child relations at age 17 reported a more avoidant attachment style at 26. Quality of parenting when participants were age 17 coherently predicted their attachment styles at age 26. Correlational analyse showed that parent– child relations reported when participants were 17 were not significantly associated with measures of the quality of their relationships at age 26 but were positively related to higher levels of intimacy as reflected in their romantic relationship stories. Among the attachment styles, one significant relationship was found: avoidant attachment was related to ratings of the quality of romantic relationships from the stories. More specifically, avoidant individuals reflected lower levels of relationship quality as expressed in their narratives.
Doumen, S., Smits, I., Luyckx, K., Duriez, B., Vanhalst, J., Verschuere, K., & Goossens, L. (2012).	The study examined attachment-related emotions as a mediating variable in the associations between identity styles and perceived peer relationship	The sample consisted of 343 undergraduate psychology students from a large university in the Dutch-speaking part of Belgium (mean age ¼ 18 years; SD ¼ 1.62; 80%	Belgium	Participants completed Version 4 of the Identity Style Inventory (ISI-4; Luyckx, Lens, Smits, & Goossens, 2010; Smits et al., 2009). Attachment anxiety and attachment avoidance were measured	For 2 out of the 3 identity styles (i.e. the information-oriented and the diffuse-avoidant identity style), a specific pattern of associations with attachment related emotions and peer relationship quality was found. The information-oriented subscale related positively to

Identity and perceived peer relationship quality in emerging adulthood: The mediating role of attachment-related emotions. <i>Journal of Adolescence</i> , 35(6),	quality among college students.	female)		with the Experiences in Close Relationship Scale – Short Form (ECR; Wei et al., 2007). Participants completed the 23-item Friendship Qualities Scale regarding the relationship with their best friend (FQS; Bukowski et al., 1994; and the 9-item state subscale of the State-Trait Loneliness Scales (STLS; Gerson & Perlman, 1979)	friendship quality, and this relationship was partially mediated by attachment avoidance. College students with high scores for the information-oriented style are more likely to be securely attached to their friends, as indexed by a negative relation with attachment avoidance. Despite the absence of the expected direct negative relation, the information-oriented style was found to relate indirectly to loneliness through its negative association with attachment avoidance, suggesting that a secure attachment to friends can inhibit or reduce loneliness.
Chopik, W. J., Moors, A. C., & Edelstein, R. S. (2014). Maternal nurturance predicts decreases in attachment avoidance in emerging adulthood. <i>Journal of Research in Personality</i> , 53, 47-53.	The study examined the development of attachment orientation from adolescence (age 14) to emerging adulthood (ages 18 and 23) and whether changes in attachment orientation were moderated by nurturing caregiving at age 3.	One hundred and three individuals (50.4% female) were participants in the Block and Block Longitudinal Study of Cognitive and Ego Development, which was initiated in 1968 at the University of California at Berkeley (for full description, see Block & Block, 2006). The sample was recruited from two preschools and participants were assessed at ages 3, 4, 5, 7, 11, 14,	USA	The study includes 4 assessment points, one in childhood and three at ages 14, 18, and 23, with identical measures of attachment orientation. At the age 3 assessment, mothers self-described their childrearing attitudes and practices using the Child-Rearing Practices Report (CRPR; Block, 1965), a 91-item Q-Sort. Attachment orientation was assessed at ages 14, 18, and 23 using subscales developed from the California Adult Q-Sort	The results evidenced that attachment anxiety decreased from age 14 to 18 and then increased from age 18 to 23. Avoidance decreased from age 14 to 23. Higher caregiver nurturance at age 3 was associated with sharper decreases in avoidance from age 14 to 23. Participants in the current study longitudinally decreased in avoidance during emerging adulthood, which is not consistent with prior cross-sectional research. The findings made a novel contribution by demonstrating that individual differences in nurturing care-giving at a very young age

		18, 23, and 32.		(CAQ; Block, 1961, 2008).	longitudinally predict divergent trajectories in attachment orientation during emerging adulthood.
Chow, C. M., & Ruhl, H. (2014). Friendship and Romantic Stressors and Depression in Emerging Adulthood: Mediating and Moderating Roles of Attachment Representations. <i>Journal of Adult Development</i> , 21(2), 106-115.	The current study hypothesized that the negative impact of friendship stressors and romantic stressors on depression would be stronger for emerging adults high in attachment anxiety	A sample of 164 emerging adults participated in the study. Participant age ranged from 18 to 21 years (M = 19.01; SD = .98).	USA	Experiences of friendship and romantic stressors were measured with items from the Recent Life Experiences Inventory (Kohn and Milrose 1993). Attachment representations were assessed using Brennan et al.'s (1998) Experiences in Close Relationships (ECR) questionnaire. Levels of depressive symptoms were assessed using depression subscale from the Brief Symptom Inventory (BSI; Derogatis and Spencer 1983).	The findings suggest that hypotheses on the mediating and moderating roles of attachment in the associations between friendship and romantic stressors and psychological outcomes do not need to compete with each other. Specifically, findings from this study indicate that attachment anxiety is useful in explaining why friendship and romantic stressors are related to depression in early adulthood. In addition, attachment avoidance and anxiety serve as moderators of the circumstances in which friendship stressors predict depression. As expected, emerging adults' attachment anxiety mediated the relationship between experiences of romantic and friendship stressors and depression.
Guarnieri, S., Smorti, M., & Tani, F. (2015). Attachment Relationships and Life Satisfaction	The study examined the influence of parental attachment (attachment to mother and father) on emerging adults' life satisfaction. In	An initial sample consisted of 707 participants (56.9 % females), aged from The sample included 385 participants (36.1 % females), aged from 18 to	Italy	The Italian version (Guarnieri et al. 2010) of the Inventory of Parent and Peer Attachment (IPPA), developed by Armsden and Greenberg (1987), was administered to assess	Results showed that romantic attachment was the stronger unique predictor of life satisfaction during this stage of life. Conversely, life satisfaction was not significantly predicted by attachment to a friend. The results

During Emerging Adulthood. Social Indicators Research, 121(3), 833-847	addition to considering direct associations between these variables, the study investigated indirect pathways through peer attachment (friend attachment and romantic attachment) in emerging adulthood	25 years ($M = 20.38$; $SD = 3.93$)		adolescents' perceptions of their attachment to their parents and peer. The Italian version (Picardi et al. 2000, 2002) of the Experiences in Close Relationships (ECR), developed by Brennan et al. (1998), was employed to assess romantic attachment. The Italian version (Di Fabio and Busoni 2009) of the Satisfaction with Life Scale (SWLS), developed by Diener and colleagues (Diener et al. 1985; Pavot and Diener 1993), was employed to assess life satisfaction	indicated that the association between attachment to friends and life satisfaction was not significant. Individuals involved in romantic relationships have been found to interact more with romantic partners than with others, such as friends. Together these results support the hypothesis that romantic attachment has a stronger direct influence on life satisfaction compared to attachment to friends, probably due to the dominant role that romantic partners achieve in emerging adults' affective world. Moreover, results show that the direct association between parental attachment and life satisfaction was significant for attachment to father but not significant for attachment to mother.
Lane, J. A., & Fink, R. S. (2015). Attachment, Social Support Satisfaction, and Well-Being During Life Transition in Emerging Adulthood. The Counseling Psychologist,	The study examines the extent to which emerging adults experiencing normative life transitions rely on attachment and social support satisfaction to maintain well-being.	A total of 213 emerging adults completed surveys.	USA	The Experiences in Close Relationships Scale–Short Form (ECR-S; Wei, Russell, Mallinckrodt, & Vogel, 2007) was used to assess adult attachment. The Social Support Questionnaire (SSQ6; I. G. Sarason, Sarason, Shearin, & Pierce, 1987) was used to assess satisfaction with available social supports. Satisfaction With Life Scale (SWLS ;	The results revealed that social support satisfaction fully mediated the association between attachment anxiety and well-being. However, social support satisfaction did not mediate the association between attachment avoidance and well-being. These findings collectively suggest that attachment anxiety, but not attachment avoidance, is associated with social support satisfaction. The association between attachment avoidance and

43(7), 1034-1058.

Watson, Clark, & Tellegen, 1988) was used to measure life satisfaction

well-being remained significant after accounting for social support satisfaction, whereas the association between attachment anxiety and well-being was fully mediated.

Passanisi, A., Gervasi, A. M., Madonia, C., Guzzo, G., & Greco, D. (2015). Attachment, Self-Esteem and Shame in Emerging Adulthood. *Procedia - Social and Behavioral Sciences*, 191, 342-346

The study hypothesized a connection between insecure attachment styles, low self-esteem and feelings of shame. In particular, it was postulated that preoccupied and fearful attachment styles would be associated with lower self-esteem and higher feelings of shame.

The study was conducted on a group of 209 university students (121 females, 58%), between the ages of 19 and 24 (M=21.66, SD=1.59).

Italy

Participants were administered three self-report measures during University lessons: the Experience of Shame Scale (ESS; Andrews, Qian & Valentine, 2002); the Rosenberg Self-Esteem (RSE; Rosenberg, 1965); and the Relationship Questionnaire (RQ; Bartolomew & Horowitz, 1991).

Statistical analyses showed that females had significantly lower self-esteem and higher experiences of shame than males. Results showed that experiences of shame were positively predicted by both preoccupied and fearful attachment styles. Emotionally dysregulated emerging adults are not expected to manage their emotional arousal, subsequently becoming overwhelmed by feelings of shame.

Schimmenti, A., & Bifulco, A. (2015). Linking lack of care in childhood to anxiety disorders in emerging adulthood: the role of attachment

This study aimed to look at the effects of childhood experiences of neglect/abuse and insecure attachment styles in the development of anxiety disorders in a high-risk sample of adolescents/emerging

The sample consisted of 160 youth just over half of whom were female (52%, 83). Participants were aged between 16 and 30 (M = 20.63, SD = 4.46).

UK

Standardized interview measures were used to assess demographic characteristics, childhood experience of neglect and abuse to age 17, attachment style at interview, and the 12-month prevalence of anxiety disorders. Interviews took place in the family homes or the

The 12-month prevalence of anxiety disorders was quite high in this sample: 18% of participants suffered from an anxiety disorder including generalized anxiety disorders, social phobia or panic with or without agoraphobia. Among participants with anxiety disorders, females had more than double the rate of males consistent with the literature (Kessler, Chiu,

styles. *Child and Adolescent Mental Health*, 20(1), 41-48

adults.

research offices, they were audiorecorded and administered by trained researchers. Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; First, Gibbon, Spitzer, & Williams, 1996). Childhood Experience of Care and Abuse (CECA; Bifulco, Brown, & Harris, 1994). The CECA interview was used to assess childhood adversities before age 17

Demler, & Walters, 2005; Wittchen, 2002). In this study, two of the CECA scales related to lack of care (i.e., the neglect and the antipathy scale) were associated with anxiety disorder. There was no association with role reversal or any of the abuse scales. Antipathy was the most robust predictor of anxiety disorders. Almost the half of the participants were rated as having an insecure attachment style. Among the insecure attachment styles at the ASI, the Anxious styles showed predictive association with the 12-month prevalence of anxiety disorders.

Kumar, S. A., & Mattanah, J. F. (2016). Parental attachment, romantic competence, relationship satisfaction, and psychosocial adjustment in emerging adulthood. *Personal Relationships*, 23(4), 801-817

This study had 4 goals: 1) to explore the relations between continuous ratings of parental attachment and psychosocial adjustment; 2) to examine whether romantic competence and romantic relationship satisfaction serve as mediators between parental attachment security and psychosocial functioning ; 3) to

A total of 188 students at a mid-sized regional university in the mid-Atlantic region of the United States participated in the current study. The sample consisted of both women (74.9%) and men (25.5%), where the average age was 19.65 years (SD =3.51

USA

In order to assess an individual's level of attachment to his or her parental figures, the study used the IPPA (Armsden & Greenberg, 1987). In order to assess an individual's level of romantic competence in his or her relationship, the study used the RCI (Davila et al., 2009). In order to assess an individual's level of satisfaction with his or her relationship, the study used the Couple Satisfaction Index (CSI; Funk & Rogge,

Study found that secure attachment relationships with both mothers and fathers were linked to positive adjustment outcomes. When examining the mediational links between participants' attachment to their mother and psychosocial adjustment, romantic competence and relationship satisfaction mediated that link to a significant degree. However, romantic competence and relationship satisfaction were not shown to be the mechanisms through which father attachment is linked to positive adjustment outcomes. The results evidenced that secure

	explore the relations between categorical patterns of parental attachment and psychosocial adjustment, and 4) to help establish romantic competence as an independent construct from romantic attachment security and mutuality.			2007). In order to assess an individual's level of satisfaction with his or her life, the study used the Satisfaction With Life Scale (SWLS). In order to assess an individual's level of overall distress, the study used the Depression Anxiety Stress Scales Short Version (DASS; Lovibond & Lovibond, 1995).	attachment to mothers and fathers predicted better individual adjustment outcomes when compared with avoidant and anxious attachment patterns. Secure attachment to mothers was also associated with better relationship functioning in terms of greater romantic competence and relationship satisfaction, when especially compared with avoidant attachment patterns, whereas secure attachment to fathers was not predictive of these relational outcomes.
Brenning, K. M., Soenens, B., Van Petegem, S., & Kins, E. (2017). Searching for the Roots of Overprotective Parenting in Emerging Adulthood: Investigating the Link with Parental Attachment Representations Using An Actor Partner Interdependence	The study was designed to investigate parental correlates of maternal and paternal overprotection, specifically during emerging adulthood. The second aim of the study was to investigate the link between the maternal variables central in Aim 1 and (a) maternal negative affect regarding home-leaving and (b) emerging adults' actual living	The sample of this study consists of 246 Dutch-speaking Belgian Caucasian families of which 246 adolescents (100%), 242 mothers (98.37%) and 218 fathers (88.62%) participated. At Wave 2 (1 year later, after graduation from secondary school), 137 mothers (55.69%) participated again.	Belgium	Attachment representations (Time 1, mother and father report): short version of the Experiences in Close Relationships Scale-Revised (Fraley et al. 2000) was used to measure maternal and paternal anxious and avoidant attachment. Overprotection (Time 1, adolescent report): perceived overprotection was measured using the six parental anxious overprotectiveness subscales of the Multidimensional Overprotective Parenting Scale (Kins and Soenens	The results suggest that parents' anxious attachment representations were associated with more separation anxiety, which in turn related to more perceived parental overprotection. Evidence was found for one significant and one marginally significant partner effect. That is, mothers' anxious attachment not only related to their own feelings of separation anxiety but also predicted more paternal separation anxiety towards the child. Further, fathers' separation anxiety not only related to perceived paternal overprotection but also predicted more maternal overprotection. Further, maternal separation anxiety was

Model (APIM). situation.
Journal of Child
and Family
Studies, 26(8),
2299-2310.

2013). At Time 2, mothers
reported upon how they
would feel (or actually felt)
about their child's home-
leaving. An adapted version
of the Negative Affect
Schedule (Watson et al.
1988) was used to tap into
maternal negative feelings.

indirectly related to maternal
negative affect regarding home-
leaving through maternal
overprotection. Finally, the present
study found support for a link
between maternal overprotection
and the actual living situation of
the emerging adult 1 year later.
Specifically, more maternal
overprotection predicted a higher
likelihood of the emerging adult
still living at home.

The proceeding discussion focused on the theory of attachment and the transition to adulthood. The last part of this chapter focuses on the specific population of interest to this study: Romanian Adoptees.

Review of Studies on Romanian Adoptions

Introduction. Studies of Romanian children adopted into various countries showed several consistencies. To date, most studies report that Romanian adoptees had significant physical and medical problems at the point of entry into their receiving countries (Johnson et al., 1992; Marcovitch et al., 1995, 1997; Groza & Ileana, 1996; Fisher et al., 1997; Rutter & the ERA Study Team, 1998; Mainemer, Gilman & Ames, 1998; Groza, 1999; Groothues, Beckett & O'Connor, 2001; Gunnar et al., 2001; Rutter, Kreppner & O'Connor, 2001; Beckett et al., 2002). Many children had cognitive delays when they first arrived in their adoptive homes (Johnson et al., 1992; Morison, Ames & Chisholm, 1995; Benoit et al., 1996; Groze & Ileana, 1996; Marcovitch et al., 1997; Groza, 1998; Groza, Proctor & Guo, 1998; Rutter & the ERA Study Team, 1998; O'Connor, Bredenkamp & Rutter, 1999; Morsion & Ellwood, 2000; Croft et al., 2001, 2007; Rutter, Kreppner & O'Connor, 2001; Beckett et al., 2002, 2006; Groza & Ryan, 2002; Horksbergen et al. 2002, 2003; Rutter et al. & the ERA Study Team, 2004; LeMare & Audet, 2006; Sonuga-Barke et al., 2017). Children who had spent little time in institutions had fewer physical, medical, and cognitive problems than did children who had spent longer periods in institutional care (Groza & Ileana, 1996; Groza, 1998; Groza, Proctor & Guo, 1998; Rutter & the ERA Study Team, 1998; O'Connor, Bredenkamp & Rutter, 1999; Morison & Ellwood, 2000; Croft et al., 2001; Rutter, Kreppner & O'Connor, 2001, 2007; Beckett et al., 2002, 2006). However, some children who had not

lived in an institution also exhibited significant problems (Fisher et al., 1997) and some children from globally depriving institutions exhibited little to no problems (Groza & Ileana, 1996; Marcovitch et al., 1997; Groze, Ileana & Irwin, 1999; Kreppner, O'Connor and Rutter, 2001; Groothues, Beckett and O'Connor, 2001; Rutter; Kreppner and O'Connor, 2001; Beckett, Bredenkamp and the ERA Study Team, 2002; Beckett et al., 2002, 2006; Rutter et al. & the ERA Study team, 2004; LeMare & Audet, 2006). As a group, the children were classified as having high risks.

The physical and cognitive development of many adopted children showed physical growth after their adoption, resulting in functioning that was in the average ranges within a few years of their adoption (Morison, Ames & Chisholm, 1995; Groza & Ileana, 1996; Groza, 1998; Markovitch et al., 1997; Rutter et al. & the ERA Study Team, 1998; Groothues, Beckett & O'Connor, 2001; Kreppner, O'Connor & Rutter, 2001; Rutter; Kreppner and O'Connor, 2001; Rutter et al. & the ERA Study team, 2004; Beckett et al., 2006; Stevens et al., 2008), except for a small group of the most impaired children. These positive changes were inconsistent with what many theories of development would have predicted. Many studies documented that most of the children displayed insecure attachment patterns, indiscriminant friendliness and disinhibited attachment, rather than a specific attachment to an adoptive parent (Morison, Ames & Chisholm, 1995; Markovitch et al., 1997; Chisholm, 1998; O'Connor, Bredenkamp & Rutter, 1999; O'Connor & Rutter, 2000; Rutter, Kreppner & O'Connor, 2001; O'Connor et al. & the ERA Study Team, 2003; Rutter et al., 2007; Stevens et al., 2008). Romanian adoptees exhibited behavioral problems. These problems, although rarely reaching the level to qualify these children for diagnosable mental health disorders, nonetheless impacted the

quality of life of the adoptee and the family through adolescence (Groze & Ileana, 1996; Mainemer, Gilman & Ames, 1998; Croft et al., 2001; Groza, Ryan & Cash, 2003; Rijk et al., 2006; Sonuga-Barke et al., 2017).

The studies of Romanian adoptees were conducted in the US, UK, Canada and the Netherlands. Several themes have emerged. First, most of the children had health problems documented early in their adoption. Second, most of the children had developmental delays from which they recovered within the first few years of adoption. Three, some peculiarities in attachment were noted. Forth, some Romanian adoptees exhibited emotional difficulties and behavioral problems. The following section discusses the Romanian adoption studies in more detail.

Health problems. Frequently reported health problems associated with institutionalized Romanian children were failure to thrive (Johnson et al., 1992; Nelson, Fox & Zeanah, 2014), intestinal parasites (Marcovitch et al., 1995), anemia (Fisher et al., 1997), the prevalence of the Human Immunodeficiency Virus (HIV), and the Hepatitis B Virus (HBV) (Johnson et al., 1992; Marcovitch et al. 1995, 1997; Nelson, Fox & Zeanah, 2014). According to the World Health Organization, the incidence of pediatric AIDS in Romania reached 1,094 documented cases, with 683 infected children (62%) living in institutions. Hepatitis B virus infection also reached epidemic proportions among Romanian infants and children adopted from institutions (Rudin, Berger, Tobler, Nars, Just & Pavic, 1990; Nelson, Fox & Zeanah, 2014).

Johnson et al. (1992) is one of the earliest studies that researched the health of Romanian adoptees coming into the United States. This clinical based study examined cases at the University of Minnesota Hospital and the New England Medical Center

between October 1990 and September 1991. Sixty-five Romanian children were evaluated, ranging in age from 6 weeks to 73 months. About two-thirds of the children had spent their entire pre-adoption lives in a Romanian orphanage. All of the children were seen within three months of their arrival in the United States. The medical team administered measures of physical growth (height, weight and head circumference), conducted complete blood cell counts to diagnose anemia and stool examinations to detect infestation with intestinal parasites. In addition, the researchers conducted developmental screenings. The study found that only 15 percent of the children were physically healthy and had normal growth. The other 85 percent of the adoptees in the sample displayed evidence of significant medical or developmental disorders. Hepatitis B virus was found in 53 percent of the children. Most children infected with Hepatitis B were older and had spent more time in orphanages than non-infected children. Of the children screened for intestinal parasites, 33 percent were found to be infected. Infected children tended to be older than non-infected children. One child had congenital syphilis. None of the children in the sample tested positive for HIV. The growth assessments revealed that weight-for-height was in the normal range but head circumference was significantly smaller.

The findings of Johnson et al. (1992) were corroborated by Zwiener, Fielman & Squires (1992) who conducted clinic base studies on a small sample of five Romanian adoptees between the ages of 1 and 4.5 years old. Four out the five children studied had chronic Hepatitis B virus infection after negative test results were reported in Romania before adoption. Similarly, DeVoid, Pineiro-Carero, Goodman and Latimer (1994) examined six Romanian adoptees between the ages of 20 and 57 months. The

methodology used was clinic base retrospective analyses of the case studies. All six children, although asymptomatic, were found at at risk for significant liver disease based on their infection with the Hepatitis B virus.

Marcovitch et al. (1995) researched the experiences of Canadian families adopting Romanian children using samples obtained through adoptive parent organizations. Members who had adopted a Romanian child were sent a survey. The sample consisted of 105 families who had adopted 130 Romanian children. Seventy-six percent of the children were adopted before the age of two; the average age of the children at the time of the study was 3. The adoptive families were predominantly well-educated, married couples between the ages of 30 and 49. About 55 percent of the children had lived primarily in an orphanage or hospital before their adoption; the rest lived with their birth parents or had spent only a brief time in an orphanage. Half of the adoptive parents described their children as generally healthy at the time of adoption. Parents who reported that their children had health problems at the point of entry in Canada noted things such as skin rashes, diarrhea, malnutrition, parasites, dehydration, ear infections, bronchitis, jaundice, and being underweight. Many children were screened in Romania for diseases such as HIV, Hepatitis B, and Tuberculosis, and most were found to be negative. However, when the children were re-tested in Canada, positive results were found for some disorders that had tested negative in Romania. This finding is consistent with the findings of the Zwiener, Fielman & Squires (1992) study, who also evidenced positive results when Romanian adoptees were re-tested, although the results of tests performed in Romania prior to the adoptive placement were negative.

Groze and Ileana (1996) explored the relationship between the pre-adoption

experiences of Romanian adoptees and their subsequent experiences in the US, gathering data from adoptive families across the U.S. via 10 support groups for families that had adopted Romanian children between 1990 and 1993. Surveys for 475 children were returned. At the time of placement, the average age of a child was 1.7 years. Ninety percent of the children had been in their adoptive home for three or more years.

According to the parents, 47 percent of the children had only lived in institutions before adoption, 33 percent of children were adopted directly from their birth families, and the rest had spent time in a combination of settings. At the time of adoption, most children were below the normal range in weight (60%) or height (49%). Parents reported problems with bed wetting (19%), the adoptee having an activity level too high for the child's age (21%), rocking or other forms of self-stimulation (16%), oversensitivity to touch, sights, or sound (18%), and under-reactivity to stimulation or pain (11%). Children who had lived in an institutional setting were more likely to be below normal weight and height at adoption, and presented with more bed wetting, self-stimulating behavior and high activity level. In addition, children who had been institutionalized for longer periods had more of these problems than did children institutionalized for shorter periods.

Fisher et al. (1997) examined the experiences of Canadian families who adopted from Romania by comparing three groups: 1) 46 children adopted from Romanian orphanages after having spent a significant time in an institution (RO); 2) 29 Romanian children adopted earlier in life with little institutional experience (RC); and, 3) 29 non-adopted children Canadian born (BC) matched by age and gender to the adopted children. The median age of the three groups of children at the time of the study was 25 months. The children in the RC group had been in adoptive homes longer than the RO children.

Parents of RO children were interviewed in their homes for approximately 2.5 hours. Interviews with parents in the CB and RC groups were conducted by telephone. Fisher et al. (1997) found that many RO children had eating problems, often refusing solid food or eating too much. Eight-five percent of the RO children had a medical problem. The other findings of this study will be discussed under the section on developmental concerns.

Marcovitch et al. (1997) continued the work of Marcovitch et al. (1995). From the original sample of 105 families, 53 percent (n=56) agreed to participation in further research. Of the 56 children, 37 were institutionalized for under 6 months and 19 were institutionalized over 6 months. The data was compared to 34 healthy Canadian born children. At the time of the assessment, the children's ages ranged from 3-5 years old. Nineteen of the children had been in an institution for longer than six months before placement, and as a result, were older than the other children. The remaining 37 children had spent less than 6 months in institution or had been adopted directly from their birth parents. Marcovitch et al. (1997) found that the previously reported health problems were completely resolved for both groups of Romanian adoptees when the adoptees were of age 3-5. More findings from this study will be discussed under the section on developmental concerns.

Mainemer, Gilman & Ames (1998) conducted a cross-sectional study of 39 Canadian families who adopted 87 children, 23 of these children were Romanian adoptees who spent 8 months or more in an institution prior to adoption, 23 were Romanian adoptees who spent less than 4 months in an institution, and 41 were Canadian born healthy children. The study used snowball sampling from families known to researchers and from families enrolled in a service program providing in-home services

to children with developmental difficulties. Parents who adopted Romanian children who spent more than 8 months in an institution prior to adoption reported more stress related to the children health and behavioral problems. Eating difficulties, rocking, banging heads and self-injurious behaviors were the type of issues mentioned by the parents.

Rutter, et al. & the ERA Study Team (1998) examined the physical development of 111 Romanian children adopted by English families before the children's 2nd birthday. Half of the children were raised entirely in an institution before their adoption, 20 percent were raised primarily in an institution, and only 9 percent had been raised in a family setting. The Romanian children were compared to a group of 52 English children who had been adopted by UK families before the age of 6 months. The children were 4 years old at the time of the study. Most of the Romanian adoptees were in poor health upon entering the UK. Half the children were below the 3rd percentile in weight at the time of adoption, 34 percent were below the third percentile on height, and 3percent were below the third percentile on head circumference. The other findings of this study will be discussed under the section on developmental concerns.

From 1998 on, UK researchers conducted follow up evaluations of the Romanian adoptees and the comparison group (Groothues, Beckett & O'Connor, 1998; Beckett, Groothues, O'Connor & the ERA Study Team, 1998; Rutter & the ERA Study Team, 1998; O'Connor, Bredenkamp & Rutter, 1999; Croft et al., 2001; Groothues, Beckett and O'Connor, 2001; Rutter, Kreppner and O'Connor, 2001; Beckett, Bredenkamp & the ERA, 2002; O'Connor et al., 2003; Rutter, O'Connor and the ERA Study Team, 2004; Beckett et al., 2006; Croft et al., 2007; Rutter et al., 2007; Stevens et al., 2008; Sonuga-Barke et al., 2017) as part of the English and Romanian Adoption Project (ERA). The

ERA project is a longitudinal, multi-method investigation of the development of children adopted into the UK from Romania starting in the early 1990's. The ERA project has followed the development of 165 adoptees from Romania who entered the U.K. between 0-42 months of age and a comparison sample of 52 non-deprived children adopted within the UK before 6 months of age. After establishing a baseline when the children were 4 years old, follow-up assessments have been undertaken when the adoptees were ages 6, 11, and 15. The findings from the assessments were striking in showing a dramatic degree of physical catch-up in the Romanian adoptees, indicating that catch-up is greater in those adopted at an early age (under 6 months). As a group, Romanian children had "caught-up" developmentally by their fourth birthday. Only 2 percent remained below the third percentile in weight, 1 percent in height, and 13 percent in head circumference. The Romanian children remained lighter and shorter than the English children but only slightly so.

Later ERA studies did not report health problems for the Romanian children. The focus of the later ERA studies was on development and attachment (Croft et al., 2001; Groothues, Beckett and O'Connor, 2001; Rutter, Kreppner and O'Connor, 2001; Beckett, Bredenkamp and the ERA, 2002; O'Connor et al., 2003; Rutter, O'Connor and the ERA Study Team, 2004; Beckett et al., 2006; Croft et al., 2007; Rutter et al., 2007; Stevens et al., 2008; Sonuga-Barke et al., 201).

Gunnar, Morison, Chilsom and Schuder (2001) compared the level of stress of 18 Romanian children who were adopted from an institution at 18 months of age or older with 15 children Romanian children who were adopted from an institution at 4 months of age or younger and with 27 Canadian born healthy and not adopted children. The stress

level was operationalized as blood cortisol levels. The findings showed no evidence of the expected absence of the normal decrease in blood cortisol levels throughout the day for children in any group. The children who were adopted from institutions at an older age exhibited higher ambulatory levels of cortisol. The cortisol levels were correlated with the length of time spent in institutional care.

LeMare and Audet (2006) conducted a longitudinal study of 36 early deprived post-institutionalized Romanian adoptees at three different points post adoption: at 11 months; 4.5 years and 10.5 years. The data collected from the Romanian adoptees was compared with data collected from children in two matched comparison groups: Canadian born non-adopted children and Romanian children with no background of institutional care. The poor physical health of the institutionalized Romanian adoptees at time 1 (11 months) was no longer apparent at time 3 (10.5 years post-adoption). At time 3, the post-institutionalized Romanian adoptees did not differ significantly from the non-institutionalized Romanian adoptees and from the Canadian born non-adopted children on indicators of puberty. Non-significant differences in weight and height among the 3 groups of children were obtained at time 3, indicating significant catch-up for the deprived post-institutionalized children who scored a lot lower at time 1.

Developmental concerns. Romanian adoptees exhibited major developmental delays at the time of placement with their adoptive families (Johnson et al., 1992; Marcovitch et al., 1995; Morison, Ames and Chisholm, 1995; Marcovitch et al., 1997; Beckett, Groothues, O'Connor & the ERA Study Team, 1998; Groothues, Beckett & O'Connor, 1998; Groza, 1998; Groza, Protcor and Guo, 1998; Rutter & the ERA Study Team, 1998; O'Connor, Bredenkamp & Rutter, 1999; Groothues, Morison & Elmwood,

2000; Beckett and O'Connor, 2001; Croft et al., 2001; Rutter, Kreppner and O'Connor, 2001; Beckett, Bredenkamp and the ERA, 2002; O'Connor et al., 2003; Rutter, O'Connor and the ERA Study Team, 2004; Beckett et al., 2006; Croft et al., 2007; Rutter et al., 2007; Stevens et al., 2008; Sonuga-Barke et al., 2017). The developmental recovery of the Romanian adoptees was remarkable over the years and was documented in many studies conducted in the US, Canada, the UK and the Netherlands (Groza & Ileana, 1996; Marcovitch et al., 1997; Groza, 1998; Groza, Proctor and Guo, 1998; Rutter and the ERA Study Team, 1998; O'Connor, Bredenkamp and Rutter, 1999; Morison & Elmwood, 2000; Rutter, Kreppner and O'Connor, 2001; Hoksbergen, van Dijkum and Stoutjesdijk, 2002; LeMare & Audet, 2006; Beckett et al., 2006; Sonuga-Barke et al., 2017).

Johnson et al. (1992) in the previously mentioned clinical based study of 65 Romanian adoptees evidenced that only 15 percent of the adoptees were healthy and developmentally normal at the time of entry to the US. The remaining 85 percentage exhibited significant developmental delays. On the developmental screening of infants 6 months or younger at the time of evaluation, 65 percent were found to be normal in all areas of development. These children had stayed in an orphanage for an average of one month. The infants who displayed evidence of developmental delays exhibited decreased strength, delayed gross motor development, neurological problems, and decreased visual attention. Of children ages 7 to 12 months at the time of the examination, only 30 percent were considered developmentally normal in all areas. Problems in this group of children included hypertonia, gross motor delays, fine motor delays, strabismus, and decreased strength or endurance. Of the children ages 12 to 73 months at evaluation, only 10 percent were normal in all areas of developmental assessment, with most children

showing delays similar to the ones of the younger children and abnormal social and emotional interactions.

In the previously mentioned study of Marcovitch et al. (1995), half of the parents reported that their child had developmental delays at adoption. Children adopted directly from an institution continued to have problems after adoption but the developmental delays were not as frequently reported within the group adopted from a family. The total number of reported difficulties decreased over time. However, the length of time spent in the adoptive home was not specified for all children.

In a cross sectional study, Morrison, Ames & Chilsom (1995) compared matched groups of Romanian adoptees who spent eight months or more in institutional settings (RO) to Romanian adoptees who spent less than four months in institution before adoption (RC). The median age at the time of adoption was 16.6 months (RO) and 2.3 months (RC); the median age at the time of the study was 27.3 for both groups. In retrospective assessment, the RO children displayed delays in all areas of development when their parents first met them. At 12 months after the adoption, children who had lived in an orphanage experienced delays in more areas than children with little or no institutional experience. However, the majority of children made remarkable progress. In a hospital based prospective study of 22 Romanian children adopted by 18 Canadian families, Benoit et al. (1996) found improvement in growth and development after adoption. The mean age at adoption was 15.5 months, while the mean age at the initial assessment was 19 months and at follow up 35 months.

In their 1996 cross-sectional survey of adoptive families mentioned earlier, Groze and Ileana (1996) found that most of the children were developmentally appropriate at

the time of the assessment (average age of the children was 4.6). The most commonly reported developmental difficulty experienced between time of placement and time of assessment was delayed language skills in 30 percent of the children. Children who had lived in an institutional setting were more likely to have more delayed language as well as problems with fine and gross motor skills. In addition, children who had been institutionalized for longer periods had more of these problems than did children institutionalized for shorter periods.

In the previously mentioned follow-up study of 56 Canadian children Marcovitch et al. (1997) found that although children who had spent longer times in institutions rated lower than others on measures of adaptive functioning and behavior problems, they all were within normal ranges at when the children were between the ages of 3 and 5.

Fisher et al. (1997) found that adoptive families reported major developmental delays of their children at the point of entry in Canada. The scores on developmental measures were lower for the adoptees who were institutionalized for longer periods of time. When children were on average 30 months old, the children who were institutionalized for more than 8 months still exhibited developmental delays while the other Canadian born children and Romanian adoptees institutionalized for less than 4 months were developmentally on target.

Groza (1998) and Groza, Proctor and Guo (1998) conducted a cross sectional analysis of second wave of data of their 1996 study of parents who adopted Romanian children in the USA. Their sample included 209 adoptive families of 238 Romanian children who were 1.7 years old at the time of the adoptive placement and 4.6 years old at the time of the study. The study found that length of institutionalization was related to

developmental delays. Institutionalization between 7 and 12 months was particularly problematic and the development was worse for adoptees who spent longer than 2 years in the institution.

Meta-analyses of cross-sectional studies of adopted children from deprived backgrounds have shown that there were initial developmental deficits but that these diminish markedly after upbringing in adoptive homes (Van Ijzendoorn, Juffer & Poelhuis, 2005; Van Ijzendoorn & Juffer 2006). The findings have been used to argue that adoption represents an effective intervention for children from seriously deprived backgrounds. However, the same studies have also shown that the outcomes in terms of scholastic attainment are not consistently positive. These meta-analyses have not specifically focused on children who have experienced profound institutional deprivation (PID) but the evidence from longitudinal studies of such children has indicate that there is both a major initial cognitive deficit and then a substantial (but incomplete) cognitive recovery (Beckett et al., 2007; Maclean 2003) varying with the duration and severity of deprivation experienced (Beckett et al. 2006; O'Connor et al. 2000).

As mentioned earlier, UK researchers conducted follow up evaluations in the context of the ERA study (Beckett, Groothues, O'Connor & the ERA Study Team, 1998; Groothues, Beckett and O'Connor, 1998; Rutter & the ERA Study Team, 1998; O'Connor, Bredenkamp & Rutter, 1999; Croft et al., 2001; Groothues, Beckett and O'Connor, 2001; Rutter, Kreppner and O'Connor, 2001; Beckett, Bredenkamp and the ERA, 2002; O'Connor et al., 2003; Rutter, O'Connor and the ERA Study Team, 2004; Beckett et al., 2006; Croft et al., 2007; Rutter et al., 2007; Stevens et al., 2008; Sonuga-Barke et al., 2017). Overall, follow-up assessments undertaken when the adoptees were

ages 6, 11, and 15 showed a dramatic degree of recovery in multiple developmental domains for the Romanian adoptees. The catch-up was greater in those adopted under 6 months of age (Beckett et al. & the ERA Study Team, 1998; Groothues, Beckett & O'Connor, 1998; Rutter & the ERA Study Team, 1998; O'Connor, Bredenkamp & Rutter, 1999; Croft et al., 2001; Groothues, Beckett & O'Connor, 2001; Rutter, Kreppner and O'Connor, 2001; Beckett, Bredenkamp & the ERA, 2002; O'Connor et al., 2003). A substantial minority of Romanian continued to experience cognitive problems and behavioral difficulties in the school setting, needing additional support and/or special education (Castle et al. 2006).

Rutter, O'Connor and the ERA Study Team (1998) indicated substantial normal cognitive and social functioning after the placement with a family, but also major persistent deficits in a substantial minority of children. The findings suggested some of the early biological programming or neural damage stemming from institutional deprivation, but the heterogeneity in outcomes indicated that the effects were not deterministic. Cognitive deficits were strongly associated with institutional deprivation and even stronger associated with length of institutional deprivation. Cognitive functioning was not associated with the length of time spent in the adoptive home after the first 2 to 21/2 years, during which time the major developmental catch-up took place. The quality of parent-child interactions at age 4 did not predict a positive change in the child's cognitive level between ages 4 and 6.

O'Connor et al. and the ERA Study Team (1999) assessed the 165 children adopted from Romania into the UK and a comparison sample of 52 UK domestic adoptees from the ERA sample in a cross-sectional study, in which data was obtained

from a semi-structured interview with the adoptive parents. The researchers administered questionnaires developed specifically for this study and directly assessed the children who were 4 years old at the time of the study. The results evidenced that after initial developmental delays, the children were within the average range on all adjustment measures. Rutter, Kreppner, O'Connor & the ERA Study team (2001) compared the 165 children who were adopted from Romania in the UK and the 52 non-deprived UK children adopted in infancy included in the ERA study. The results showed that only 20 percent of the children who spent time in institutions displayed normal functioning in multiple developmental domains. The remaining 80 percent of the previously institutionalized Romanian adoptees displayed inattention and over-activity, quasi-autistic features, cognitive impairment, emotional difficulties, poor peer relations and conduct problems. While the quasi-autistic features and cognitive deficits were associated with institutional deprivation, the emotional, relational and conduct problems were not related to time spent in institutional care.

Croft et al. (2001) compared a group of 158 children adopted from Romania in the UK before the age of 42 months and 52 non-deprived UK children adopted in infancy, all part of the ERA study. A stratified random sample was drawn from 324 children adopted from Romania into families resident in UK between February 1990 and September 1992, aged below 42 months at the time of entry to the UK. Longitudinal data was collected on 110 children. Children were assessed at age 4 years and 6 years by two trained female development specialists during a 2 hours home visit. During these visits, the children were videotaped while they were interacting with their main caregiver, which in almost all cases was the mother, while they were engaged in performing a semi-

structured task. The inter-active task was based on the Etch-a-Sketch toy. The results indicated that the quality of the parent-child relationships was related to the duration of deprivation. Cognitive developmental delays mediated this association. The magnitude of this effect was modest and diminished over time. Longitudinal analyses revealed that positive changes in the parent-child relationships was most marked among children who exhibited cognitive catch-up between assessments.

Beckett et al. (2006) compared the cognitive outcomes at age 11 of 131 Romanian adoptees from institutions and 50 UK adopted children in the ERA sample. The variables examined were age on arrival and placement in the UK, child's weight at birth, child's weight on arrival as an index of malnutrition, head circumference on arrival as approximate index of brain growth on arrival; the Denver development quotient, McCarthy Scales of Children's Abilities at age 6, Wechsler Intelligence Scale for Children administered at age 11, mother's cognitive ability using the National Reading Test. The results indicated that marked adverse effects persisted at age 11 for many of the children who were over 6 months old on arrival. There was some developmental catch-up between ages 6 and 11 for the bottom 15 percent. Extra time in the adoptive home may have been influential for the most cognitively impaired children. There was marked heterogeneity of outcomes. The effects of early institutional deprivation persisted up to age 11, despite the children having spent at least 7 and a half years in their adoptive homes. Although the effects of the early institutional deprivation were remarkably persistent, there was some attenuation, with further cognitive catch-up between the ages 6 and 11. Despite this relative further catch-up, there was strong continuity in IQ between 6 and 11. The authors concluded that it takes some months for the institutional deprivation

to have an adverse impact, but once there is a negative effect, it is relatively enduring and not influenced by whether or not institutional deprivation continues. Although sub-nutrition (indexed by weight on arrival) constituted a major aspect of institutional deprivation, it had no significant effect on the cognitive outcomes at age 11. Individual differences in the adoptive families were largely unassociated with either the cognitive level at 11 or changes in cognitive level between 6 and 11.

As the children enter the developmental stages of school-age and early adolescence, they begin to confront additional challenges (Brodzinsky, Smith & Brodzinsky, 1998). One of the biggest stressors for adoptive families has been the school system (Rosenthal & Groze, 1992). Often, this relates to different learning needs and abilities of many adopted children.

Beckett et al. (2007) focused on the Romanian adoptees' scholastic attainments in reading and mathematics at the age of 11, in relation to the presence/absence of early institutional deprivation, and examined the extent to which outcomes were a function of general cognitive functioning or inattention/over-activity. The relationship between severe early institutional deprivation and scholastic attainment at age 11 in 127 children adopted from institutions in Romania was compared to the attainment of 49 children adopted within the UK from a non-institutional background, all participants in the ERA study. Three attainment scores were collected at age 11: two from the WORD (Wechsler Objective Reading Dimensions, Rust, Golombok and Trickey, 1993) basic reading and reading comprehension, and one from the WOND (Wechsler Objective Numerical Dimensions, Rust 1996), mathematical reasoning.

There were four indicators of the children's deprivation status on arrival in the

UK: weight, head circumference, development level and language on arrival, which have been found to be associated with the children's cognitive level and language development at ages 6 and 11 (Beckett et al. 2006; Croft et al. 2007). A short form of the Wechsler Intelligence Scale for Children (WISC IIIUK) was used to assess the children's cognitive abilities at age 11. The revised Rutter teacher scales for school age children, (Elander & Rutter, 1996) were used for the assessment of the level of inattention/ over-activity and emotional and conduct problems. The other areas of difficulty that have been shown to be associated with a history of institutional care were also measured in this study: autistic-like tendencies, disinhibited attachment, and difficulties in peer relationships. The total number of problems in these five areas was used to provide a measure of the degree of other difficulties that might have affected attainments. The mothers' cognitive abilities were assessed using the National Adult Reading Test or NART (Nelson & Willison, 1991). Details of the adoptive parents' educational qualifications were also gathered and classified on 3-point scale for fathers and mothers combined.

Overall, children adopted from Romania had significantly lower attainment scores than those adopted within the UK; the children within the Romanian sample who had spent six months or more in an institution had significantly lower attainment scores than those who had spent less than six months in an institution. However, there was no additional risk of low attainment associated with longer institutional care after six months. The lower scholastic attainment in the children adopted from Romanian institutions, as compared with domestic adoptees, was mediated by IQ, and to a lesser degree, by inattention/over-activity. When these factors were considered, only small between-group differences in attainment remained.

Croft et al. (2007) researched the language and cognitive outcomes at 6 and 11 years of age of 132 institution-reared Romanian children adopted into the UK under the age of 42 months, in comparison to a sample of 49 children adopted within the UK under the age of 6 months who had not experienced early deprivation, all participants in the ERA study. The child's language on arrival was assessed with the Denver Developmental Scale. Three measures were used to assess the language development at age 6: the Test of Reception of Grammar, British Picture Vocabulary Test and the Renfrew test (bus story task). Cognitive ability at age 6 was measured on the McCarthy Scales and Weschler Scales at age 11. A measure of the comprehension of written language (as assessed on the Wechsler Objective Reading Dimensions WORD) was also administered. The study found few negative effects of deprivation if the institutional placement ended before the child reached the age of 6 months. There were moderately strong inter-correlations among the language and cognitive measures, but they were relatively stable across different tests and also stable over time. For the group of children who had spent more than 6 months in deprivation, there were significant differences in their scores in comparison with those who had spent less than 6 months in deprivation. The duration of institutional deprivation above 6 months did not seem to increase the level of cognitive impairment. None of the adoptive family characteristics were determined to be related to language or cognitive outcomes. The vast majority of the children did achieve normal language and cognitive functioning: the great majority of the children without language at the time of leaving institutional care achieved cognitive and language functioning that were well within normal range by age 11. Sonuga-Barke et al. (2017) compared the 165 Romanian adoptees to the UK and the 52 UK non-deprived domestic adoptees who

participated in the ERA study at age of 23.6 years. The assessments took place in the participants' homes. Questionnaires were completed online or returned by mail. For practical and scientific reasons, different assessment instruments were used at different ages: Conners Comprehensive Behavior Rating Scale²⁰ in young adulthood; cognitive impairment was determined to be present when the participants had an IQ lower than 80. The results evidenced that Romanian adoptees who spent less than 6 months in an institution and UK controls had similarly low level of symptoms across most ages and outcomes. By contrast, Romanian adoptees who were exposed to more than 6 months had persistently higher rates than UK controls on symptoms of autism spectrum disorder, disinhibited social engagement and inattention and over-activity through to young adulthood. Cognitive impairment in the group who spent more than 6 months in an institution remitted from markedly higher rates at age 6 and 11, compared with UK controls to normal rates at young adulthood. Self-rated emotional symptoms showed a late-onset pattern with minimal differences versus UK controls at ages 11 years and 15 years and then marked increases by young adulthood with similar effects seen for parent ratings. The high deprivation group also had a higher proportion of people with low educational achievement, unemployment and mental health service use when they were younger than 11, between 11 and 14 and between 15 and 23 years old than the UK control group. A fifth of the individuals who spent more than 6 months in an institution were problem-free at all assessments. One family had an adoption breakdown. There was a significant increase in the number of both parent-rated and self-rated emotional symptoms and conduct problems in the group of adoptees who spent more than 6 months in institutional care during the transition to adulthood (late onset).

The earlier section covered in detail the findings of the studies conducted by the ERA team in Bucharest between 1998 and 2017. Similar results in regards to the developmental journeys of Romanian adoptees were reported in Canada and the US. For example, Morison and Ellwood (2000) compared data collected from 3 groups of children: 35 Romanian adoptees in Canada who spent longer than 8 months in institution (RO); 24 Romanian adoptees who spent less than 8 months in institution prior to adoption (EA) and 35 non-adopted, never institutionalized Canadian born children (CB). The median age at adoption for the Romanian adoptees was 16 months and the median length of time spent in an institution was 14 months. The average age at the time of the study was 54 months for all 3 groups. The results showed that the RO children performed at lower levels on all cognitive measures than the CB children. The performance of the children in the EA group was in between that of the RO group and the CB group. The RO children performed at lower levels than the EA children on all cognitive measures. Only 3 years post-adoption, most pre-adoptive variables such as institutionalization and pre-adoption stress no longer influenced the development of the children in the RO or EA groups. The adoptees whose parents had provided them with a more stimulating environment performed better on intelligence tests. The authors concluded that the Romanian adoptees generally made great progress since their adoption to Canada. However, most adoptees who spent longer than 8 months in institution did not get caught-up with the children who spent all their lives in a family.

Chugani, Behen, Muzik, Juhasz, Nagy and Chugani (2001) examined 10 US children adopted from Romania who were 8.8 years old at the time of the study and who resided in a Romanian orphanage for an average of 38 months prior to adoption. The data

collected from the Romanian adoptees were compared to the patterns obtained from 2 control groups: a group of 17 normal adults of mean age of 27.6 years and a group of 5 children with a mean age of 10.7 years old who had medically refractory focal epilepsy. The adoptees spent an average of 76.2 months in the adoptive home. The neuro-psychological profile of the Romanian adoptees showed low average intellectual functioning. The parents' reports of behavioral problems indicated significant behavioral difficulties with the total problems score falling in the clinical range and clinically significant elevations on the Attention and Thought Problems subscales, as well as borderline elevations on the Anxiety/Depressed and Social Problems subscale. After one year in the adoptive home, substantial catch-up in motor and language skills was reported for all 10 Romanian adoptees in the sample. Although early deprivation in the Romanian orphans was associated with dysfunctions in a number of brain regions, including the orbital cortex, pre-frontal infralimbic cortex, lateral temporal cortex, medial temporal structures and brain stem, the authors concluded that chronic stress endured in the Romanian orphanages during infancy resulted primarily in altered development of the limbic structures. Altered functional connections in these circuits may represent the mechanism underlying persistent behavioral disturbances in the Romanian orphans.

In their cross-sectional survey of adoptive families of Romanian adoptees, Groze and Ileana (1996) reported that most of the 475 children included in their study were developmentally appropriate. Children who had difficulties and presented developmental delays were more likely to come from institutions. In their study of 209 families who adopted 238 Romanian adoptees, Groza (1998) and Groza, Proctor and Guo (1998) found that length of institutionalization was related to developmental delays. Institutional

placements between 7 and 12 months were slightly problematic and developmental outcomes were worse for the adoptees who were institutionalized for more than 2 years.

Groza, Ryan and Thomas (2008) examined executive functioning in Romanian adoptees, by investigating if the respondents with different roles in the child's life (parent versus teacher) assessed the child's executive functioning significantly differently and if there were significant differences in executive functioning levels based on the developmental time period in which the child moved from a non-family to family setting. The authors also examined the predictive relationship of the child's pre-adoptive placement (family versus non-family settings), as well as the relationship between the parent-child, and executive functioning (as assessed by the teacher). The adoptive parent participants in this study (n=123) consisted of the third wave of adoptive families from a longitudinal study. This represented a retention rate of 53% of the original sample from the second wave of the study (n=230). The participants were sent survey questionnaires that included demographic and historical data about the child, as well as information on the parent and family characteristics. A modified version of this questionnaire has been used in previous adoption studies (Rosenthal & Groze 1992; Groze & Ileana 1996). Also included in each packet mailed to the adoptive parents were instruments to be distributed to the child's teacher for completion. For the 123 participating families, 71 teacher packets were completed for a 57.7% return rate. To examine the overall level of parent-child relationship satisfaction, a previously validated scale used in several other adoption studies was utilized (Rosenthal and Groze 1992; Groze and Ileana 1996; Groza and Ryan 2002; Groza, Ryan & Cash, 2003). Ratings of children's executive functioning were obtained via the parents and teachers' completion of the Behavior Rating Inventory of

Executive Function (BRIEF) developed by Gioia et al. (2002).

Most respondents (92.7 percent) were adoptive mothers, who indicated the adoption had been, in general, smoother than expected for about a third of the families. Slightly over 50% felt that it had progressed in line with their expectations. Nevertheless, almost 15% of families conveyed that the adoption had been more challenging than expected. Despite this, almost all (94.3%) of the adoptive parents stated that they never considered disrupting the adoption. Most families (95.1%) had been in contact with other adoptive families, with the majority of those finding the experience to be very (56.1%) or somewhat (34.1%) helpful.

The child's age was, on average, 10 years old. The child's average age when placed with the family was under 2 years old. The children, on average, have been living with their adoptive families for a little over 8 years, with 89% living in the adoptive home for over seven years. Almost 19% of the adopted children had never spent any time in an institutional setting. However, 20.3% of the children in this sample had been institutionalized for over three years. The remaining children spent varying amounts of time institutionalized.

Surprisingly, being in a non-family setting until ages 12 to 24 months improved the child's executive functioning. The authors believed that these results must just be an anomaly for this specific group of children who were the survivors of horrific circumstances. They attributed this effect to the ability of only resilient children obtaining what they needed for optimal growth and development. Although there were significant differences for children placed into families at an older age with a longer placement history associated with adverse effects on the children's executive functioning, this study

highlighted that a child's relationship with his/her adoptive parents was the most important variable to understanding parental perception of their child's level of executive functioning. Groza, Ryan & Thomas (2008) concluded that family processes that shape a child's day-to-day life were more important than the effect of incidents in the child's pre-adoptive history.

Attachment concerns. A challenge of deep concern is a child's attachment with the adoptive family. Attachment patterns, given a stable caregiving environment and repeated, reinforced relationship experiences, are expected to become established and to stay stable once children move from a deprived environment to a resource-rich family environment (Bowlby 1969, 1980; Weinfield, Whaley & Egeland, 2004). Steele, Hodges, Kaniuk, Hillman and Henderson (2003) noted that within three months of being placed in a new environment, positive changes in attachment could be discerned in children.

Early parent-child attachment processes tend to be more problematic in adoptive families than in birth families (Juffer & Rosenboom, 1997). One factor may be a mismatch between parent and child (Geerars, Hart & Hoksbergen, 1991). Such patterns of mismatched parent-child interaction further exacerbate the children's risk for developmental and socio-emotional problems. In the case of international and trans-racial adoptions, cultural differences, appearances and dissimilarities between adoptive parents and adoptees may also complicate the process of reciprocal identification (Juffer & Rosenboom, 1997). Such problematic attachment relationships are associated with a higher risk of later behavior problems (Erickson, Sroufe & Egeland, 1985; Elicker, Englund & Sroufe, 1992). Conversely, sensitive responsiveness is one of the key determinants of a secure attachment relationship (Ainsworth et al. 1979). Stams, Juffer &

van IJzendoorn (2002) reported maternal sensitive responsiveness in early and middle childhood was a predictor of an adopted child's adjustment in middle childhood. Children who were adopted attained better social and cognitive outcomes when they were more securely attached to their parents and their parents displayed greater sensitivity and responsiveness while interacting with them (Stams, Juffer & van IJzendoorn, 2002).

It is well documented that children who have been institutionalized and adopted internationally are at risk for attachment problems due, at least in part, to their pre-adoptive history of institutionalization (Chisholm et al., 1995; Marcovitch et al., 1997; Chisholm, 1998; Rutter & the ERA Study Team, 1998; O'Connor, Bredenkamp & Rutter, 1999; O'Connor & Rutter, 2000; Rutter, Kreppner & O'Connor, 2001; O'Connor et al., 2003; Rutter et al., 2007; Stevens et al., 2008). Research on institutionalization has also revealed that even when the basic needs of children are met in an orphanage, they suffer from a lack of a sensitive and responsive caregiver with whom they can attach (Bowlby, 1951; Provence & Lipton, 1962; Spitz, 1945; Tizard & Hodges, 1978; Tizard & Rees 1974, 1975).

Early research suggested that effects of institutionalization were damaging and permanent (Goldfarb, 1943; Spitz, 1945). However, as theory and methodology have advanced, more recent research on institutionalization has indicated that the effects of orphanage life are malleable and often amenable to change for many children (Juffer & Rosenboom, 1997). Children come to their newly adoptive families with different effects of institutionalization (van IJzendoorn & Juffer, 2006). Families are not always certain how to read and respond to children's cues to help facilitate attachment with children who have been raised in institutions. The studies conducted over the years in the US,

Canada and the UK evidenced some disturbances in attachment and some peculiar forms of attachment in Romanian adoptees (Chisholm et al., 1995; Marcovitch et al., 1997; Chisholm, 1998; Rutter & the ERA Study Team, 1998; O'Connor, Bredenkamp & Rutter, 1999; O'Connor & Rutter, 2000; Rutter, Kreppner & O'Connor, 2001; O'Connor et al., 2003; Rutter et al., 2007; Stevens et al., 2008).

Chisholm et al. (1995) conducted a longitudinal study examining indiscriminate behavior patterns and attachment of children adopted from Romania in Canadian families. Attachment security was assessed by a measure adapted from the Attachment Q-sort (Waters & Deane, 1985) and a videotape of a separation and reunion episodes based upon the Strange Situation (Ainsworth et al., 1979). The videotaped episodes were coded with the Preschool Assessment of Attachment (PAA; Crittenden, 1988-94). Chisholm examined 46 children who had been adopted after spending at least 8 months in a Romanian orphanage (RO). Two comparison groups consisted of Canadian-born children (CB) who were not adopted ($n = 46$) and Romanian children (RC) adopted into Canadian families before the age of 4 months ($n = 37$). The three groups were all matched within one month of age and by sex. The children who were adopted had been placed with their adoptive families for at least 26 months. The average age of children at the time of the adoption was 19 months. The RO children scored significantly lower on security of attachment than did either the RC or CB children. The RO children displayed significantly more indiscriminately friendly behaviors.

A later study of the same sample by Chisholm (1998) found that RO children scored significantly lower on the security of attachment measure than did the CB and RC groups. The RC children's security of attachment did not differ from the CB children. The

authors found that the primary difference in attachment patterns between the RO and CB groups was the ambivalent attachment behavior exhibited by RO children. Although RO, RC and CB parents did not differ on their parent attachment scores (e.g., parent levels of commitment to the parenting role), it was only in the RO group that parent attachment was correlated significantly with the child's attachment score. The authors concluded that although even low scores on parent attachment may be good enough for CB and RC children, the RO children possibly required a higher level of parental commitment in the form of more emotional warmth and a greater ability to read children's cues.

The researchers hypothesized that uncommunicative behaviors and behavioral problems exhibited by RO children may have made it more difficult for their parents to respond to them in ways appropriate for the development of secure attachment. The researchers further noted that the RO children's attachment security scores were unrelated to both their age at adoption and the length of time they had been in their adoptive families. RO children's lower scores on security of attachment were attributed to the extended period of neglect and social deprivation they experienced while institutionalized.

In their study of 56 families from Ontario who adopted children from Romania between January 1990 and April 1991 (described earlier), in addition to measuring health and developmental outcomes, Markovitch et al. (1997) also assessed child-mother attachment using the strange situation procedure (Ainsworth et al., 1979). The procedure was videotaped and each child-parent pair was classified by reunion behaviors into one of five attachment patterns: secure (B) or optimal, and four insecure patterns: avoidant (A), dependent (C), controlling (D), or insecure-other (I-O).

The researchers found a significantly lower frequency of secure attachment for all of the adopted children than for a comparison group of healthy 4-year olds whom the authors had employed in another study. In addition, none of the children in the adopted group were found to be avoidantly attached to their mothers, and this was the most common form of insecure attachment in the comparison group. The authors speculated that avoidant attachment was not adaptive in the environments from which the adopted children came, and suggested that children with an avoidant attachment might not have survived in an institution. They also suggested that the adoptive parents were unlikely to ignore their adopted children's distress and so the children were unlikely to receive the kind of care in their adoptive homes that would lead to avoidant attachment.

There were no significant differences in attachment between the two groups of adopted children. The authors speculated that the lack of difference may be caused by "false secures" among the institutionalized group: children who are indiscriminately friendly to many adults. The measures of child-parent attachment indicated that the rate of secure attachment was significantly lower than in the comparison group (30% vs. 42%). Avoidant attachment, the most common form of insecurity in the comparison group (and most normative samples) was completely absent in the adoptee sample. Both dependent and controlling attachment were over-represented in the adoptee relative to the comparison group. Comparison of home and institution groups revealed no significant differences.

To determine whether attachment was related to behavior problems, the authors conducted a MANOVA on CBCL scores (Total, Internalizing, Externalizing) with attachment group (secure, dependent, controlling) as the independent variable. Although

securely attached children consistently had the lowest CBCL scores, attachment group differences were small and not significant. However, when considering children scoring over the clinical cut-off on the Total CBCL scale, 20 percent of secure children, 36 percent of dependent children, and 44 percent of those in the controlling/insecure-other group scored above the clinical cut-off.

Follow-up studies of children receiving their initial care in institutions who were later adopted into well-functioning families have shown that abnormalities in social relationships frequently persisted (Hodges & Tizard, 1989; Chisholm, 1998; Maclean, 2003; O'Connor, Rutter, & the ERA Team, 2000; Smyke, Zeanah & Dumitrescu, 2002). This has been true for children experiencing relatively good quality institutional care (apart from the multiple rotating caregivers) as well as for those in grossly depriving institutions. The abnormalities in social relationships have been described in terms of a lack of close confiding relationships, somewhat indiscriminate friendliness, a relative lack of differentiation in the response to different adults, a tendency to readily to go off with strangers, and a lack of checking back with a parent in anxiety-provoking situations (Maclean, 2003; O'Connor, Rutter, & the ERA Team, 2000; Smyke, Dumitrescu, & Zeanah, 2002). It was argued that the effects might reflect some form of biological programming. This represents an effect on brain structure and functioning that has come about as a means of adaptation to the environmental circumstances operating at a sensitive period of development (Rutter, 2006).

In addition to assessing the Romanian adoptees developmental milestones, the ERA team examined also the children's patterns of attachment at ages 4, 6 and 11. The ERA sample was the same one described earlier (Rutter & the English and Romanian

Adoptees study team, 1998; O'Connor, Bradenkamp and Rutter, 1999; O'Connor, Rutter & the ERA Study Team, 2000; Rutter, Kreppner and O'Connor, 2001; Rutter et al., 2007; Stevens et al., 2008; O'Connor et al. & the ERA Study team, 2011). In short, a randomly selected, age-stratified sample of 165 children adopted into UK families who came to England before the age of 42 months was studied systematically. Of these, 111 were assessed at 4 years of age, with the remaining 54 already being too old to be seen at that age. Instead, these 54 children were assessed in the same way as all others at age 6 and the original 111 who were seen at age 4 were re-examined at age 6. The entire group of 165 children were assessed at age 11. Each time the experimental groups were compared with a control group consisting of 52 non-deprived UK-born children adopted by UK parents and placed before the age of 6 months.

Information on attachment was derived from a semi-structured interview with the parent, using a protocol that the ERA researchers developed themselves. At age 4, O'Connor et al. & the ERA Study Team (1999) found that approximately 20% of children had attachment disturbances. Results revealed a close association between the length of time in an institution and the severity of attachment disturbances. The findings also provided important information regarding the construct of attachment disorder (O'Connor et al. & the ERA Study Team, 1999). However, variability was substantial in the duration of deprivation among those exhibiting moderate to high levels of attachment disorder behaviors. No such behavioral patterns were found in many children who experienced severe deprivation up to 2 years of age. O'Connor et al. & the ERA Study team (1999) found some evidence for a distinction between inhibited and disinhibited behaviors. However, an interesting finding was the rate of mild attachment disorder

symptoms being elevated in the non-deprived U.K. adoptee comparison group. This was presumed to reflect methodological error rather than a "true" level of disturbance, and was interpreted as reflective of a potential difficulty in assessing attachment disturbance using semi-structured parent interviews.

Similar findings were reported by O'Connor et al. & the ERA Study Team (2003) who examined the quality of the child and adoptive parent attachment in a sample of 111 children adopted from Romania and a comparison group of 52 non-deprived UK domestic adoptees who were all part of the ERA study. The children were 4 years old at the time of the assessment. The results evidenced that compared to non-deprived adoptees, children who experienced severe deprivation were less likely to be securely attached and more likely to show atypical patterns of attachment behavior. Within the sample of deprived adoptees, there was dose-response association between duration of deprivation and disturbances in and atypical attachment behaviors. The researchers concluded that problematic attachment behaviors resulting from institutionalization are different than attachment disturbances resulting from other types of situations that put children at risk.

At age 6, analyses revealed a close association between duration of deprivation and severity of attachment disorder behaviors, which were correlated with attention and conduct problems and cognitive levels, but nonetheless appeared to represent a distinct set of symptoms/behaviors (O'Connor, Rutter & the ERA Study Team, 2000; Rutter, Kreppner & O'Connor, 2001). O'Connor, Rutter & the ERA Study Team (2000) found that 70 percent of the children exposed to profound deprivation of more than 2 years did not exhibit marked problems. The researchers concluded that early deprivation may have

long term effects on the formation of later selective attachment behaviors, but only on a minority of children. The attachment disturbance was not explained by behavioral problems, cognitive delays or the severity of institutional deprivation (O'Connor, Rutter, & the ERA Study Team, 2000). Those children that demonstrated disinhibited attachment behavior at age 4 continued to present with the same patterns of attachment disturbance at age 6. These findings were corroborated by Rutter, Kreppner & O'Connor (2001) who found that 20 percent of the children who spent the longest time in institutions showed normal functioning and emotional difficulties, poor peer relationships and conduct problems were unrelated to the patterns of attachment.

There was marked stability in individual differences in attachment disorder behaviors and little evidence of a mean decrease over the 2-year follow-up period. At age 11, Rutter et al. & the ERA Study Team (2007) were interested in finding to what extent disinhibited behavior patterns observed in Romanian adoptees at age 6 years old persisted to age 11, if these attachment patterns varied depending on the child's background of institutional care and if they were associated with psychopathology. The authors stipulated that persistence of this disinhibited attachment patterns could derive from biological programming or could reflect the post-adoption environment. Measures included parental reports, a strange situation procedure modified for use in the home and systematic standardized investigator ratings of the children's behavior. The results indicated that disinhibited attachment, as reported by parents, showed a high degree of persistence from ages 6 to 11, but also a reduction over time in its frequency. Investigator ratings validated the parental reports but suggested that much of the fall in rate of disinhibited attachment was a function of the parental measure being less

developmentally appropriate at age 11 than it had been at 6. Disinhibited attachment was strongly associated with institutional rearing, but there was not a significant increase in relation to duration of institutional deprivation beyond the age of 6 months. Mild, but not marked, disinhibited attachment was quite frequent in non-institutionalized adopted children. In the institution-reared children, disinhibited attachment was associated with a marked increase in service usage and associations with other forms of psychopathology. The authors concluded that disinhibited attachment constitutes a valid, and handicapping, clinical pattern that is strongly associated with an early institutional rearing.

The data collected by the ERA team rendered some interesting findings, which raised the questions of a potential link between a history of institutionalization and the development of autism-like symptoms. Despite the evidence that autism constitutes a disorder that is strongly influenced by genetic factors, patterns that appear to mimic autism have been reported in children exposed to profound early institutional deprivation (Rutter et al. & the ERA Study Team, 2007). Rutter et al. & the ERA team (2007) found that at 4 years of age, the pattern of autistic-like behavior was indistinguishable from that seen in a prospectively studied sample of “ordinary” children diagnosed with autism. By age 6, the quasi-autistic features in the sample of children from Romanian institutions had diminished and several atypical features were noted. The children showed more flexibility in communication than would ordinarily be expected with autism; several showed substantial social approach (albeit of an abnormal kind), and a few showed indiscriminate friendliness.

Rutter et al. & the ERA team (2007) noted a high frequency of repetitive stereotyped patterns that developed after the children left institutions and joined their

adoptive families. These behaviors were distinct from the social deficits seen in severely deprived children within an institutional setting. Rutter et al. & the ERA Study Team (2007) hypothesized that the impaired social relationships might have something in common with the indiscriminate friendliness associated with disinhibited attachment mentioned earlier. However, the authors assumed that by the time the children had reached age 11, the distinctively autistic features would have faded away and be replaced by disinhibited attachment disorder.

Rutter et al. & the ERA (2007) used the same ERA sample described elsewhere, but for the purpose of investigating attachment, attention was confined to the 144 children in the ERA sample, who had experienced institutional care. The children's social behavior and emotional functioning were assessed by a combination of parental interviews and questionnaires completed by parents and teachers, and a videotaped play session that included a separation from and a reunion with the mother (Rutter et al. & the ERA Study Team, 2007), together with investigator ratings of the children's behavior. As mentioned earlier when referring to the studies completed by the ERA team in Romania, cognitive functioning at the time of the entry in to UK was evaluated through parental retrospective completion of the Denver scale (Frankenburg, Fandal & Thornton, 1987) and individual testing of the children at ages 4 and 6 was undertaken using the McCarthy scales (1972). The Wechsler scales (1991) were used to assess cognitive functioning at 11 years (Beckett et al., 2006). Rutter et al. & the ERA Study Team (2007) identified a quasi-autistic pattern of attachment in these children and speculated that this peculiar form of attachment was a non-specific consequence of the cognitive impairment seen in some of the children, even though if that was the case, the persistence of the quasi-

autistic pattern had to be evident only in those who showed cognitive impairment at age 11. If so, any persistence of the quasi-autistic pattern had to be limited to the children who presented with these problems in social cognition. That was not always the case with this pattern of attachment.

For the follow-up at age 12, the Western Psychological Services version of the Autistic Diagnostic Interview (Rutter, Le Couteur & Lord, 2003) was administered. In addition, the Autism Diagnostic Observation Schedule (ADOS), (Anderson, Lord, Risi, DiLavore, Shulman, Thurm, Welch & Pickles, 2007), was employed. Twenty-eight children, all from Romanian institutions, for whom the possibility of quasi autism had been raised, were assessed using the Autism Diagnostic Interview-Revised (ADI-R) and the Autism Diagnostic Observation Schedule (ADOS) at the age 12. Results indicated that 16 children were found to have a quasi-autistic pattern; a rate of 9.2% in the Romanian institution-reared adoptees with an IQ of at least 50 as compared with 0 percent in the domestic adoptees. Additionally, there were 12 children with some autistic-like features, for whom the quasi-autism designation was not confirmed. The follow-up of the children showed that a quarter of the children lost their autistic-like features by age 12. Disinhibited attachment and poor peer relationships were also present in over half of the children with quasi-autism. The findings at ages 12 confirmed the reality and clinical significance of the quasi-autistic patterns seen in over 1 in 10 of the children who experienced profound institutional deprivation.

In their study of Canadian adolescents who were adopted from Romania, Lemare and Audet (2014) measured attachment from the perspectives of both adolescents and their parents. The parent measure, completed by mothers, was a composite of two

subscales from the Parenting Stress Index: the Attachment and Reinforcement scales and was labeled Parent Attachment. The adolescent measures of attachment included the Total Attachment to Mother and Total Attachment to Father scores from the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987). Communicative openness and exposure to Romanian culture were additionally assessed with an adolescent self-report measure developed for this research (Audet & LeMare, 2011). The findings indicated that measures of attachment, communicative openness about adoption, and exposure to culture of origin were unrelated, despite their apparent common conceptual link to sensitive parenting. Attachment and communicative openness were each significantly and negatively correlated with behavior problems; exposure to culture of origin was not. Hierarchical regressions revealed independent contributions of attachment and communicative openness to predicting behavior problems in post-institutionalized adolescents.

Groza and Muntean (2016) examined a convenience sample of 63 Romanian domestically adopted adolescents and their parents in a cross-sectional study. The range of the adoptees' ages at the time of the study were between 11 and 16. Fifty percent of the adoptees were 12 or younger and 75 percent were 14 and younger. The sample included 35 percent males and 65 percent females. At the time of the adoption, the age of the adoptees ranged between 1 to 72 months. Both parents and children were interviewed: the parents had a development interview PDI and the children had a friends and family interview FFI for children. The interviews were taped. Following the recordings, the audio records were transcribed. The research team reviewed the transcripts and the coding was decided as a group. The results indicated that 46 percent of the adoptees had

insecure attachment. The quality of the parent-child relationships in early adolescence was mostly positive. The results were consistent between adoptive parents and adoptees. The researchers concluded that classifying an adolescent as secure versus insecure was not helpful because at any time, adolescents can change and react to various things happening in their lives. Conceptualizing attachment security as a continuum might be more helpful for assessing attachment in adolescents.

In conclusion, children who experienced loss of birth parents and subsequent institutional deprivation are at an elevated risk for attachment difficulties in their adoptive homes. Research has demonstrated that, relative to non-adopted and non-institutionalized adopted peers, Romanian adoptees are at increased risk for attachment insecurity, with those who experience longer deprivation being at greater risk than those adopted at a younger age (Chisholm, 1998; Fernyhough, Audet & Le Mare, 2002; O'Connor, Rutter, & the English and Romanian Adoptees Study Team, 2000; Rutter et al., 2007; Bakermans-Kranenburg, Van IJzendoorn & Juffer, 2005).

Yet, attachment theory also suggests that expectations of the social world can change in response to changing social experiences (Bowlby, 1984). Early institutional care does not automatically equal attachment problems if parenting in the adoptive home is appropriately responsive (Hodges, Steele, Hillman, Henderson & Kaniuk, 2005). Moreover, whether secure attachments are formed with adoptive parents is vital to the adjustment of adoptees, which is a position supported by research showing that adopted children with insecure attachments had greater behavior problems than those who established secure relationships with their adoptive parents (Marcovitch et al., 1997; Chisholm, 1998).

Mental and behavioral health. Behavioral and emotional problems were reported over the years, as the Romanian adoptees grew older and adapted to their new environments (Fisher et al., 1997; Marcovitch et al., 1997; Mainemer, Gilman and Ames, 1998; Groza, 1999; Kreppner, Groothues, Beckett and O'Connor, 2001; Gunnar et al., 2001; O'Connor and Rutter, 2001; Rutter, Kreppner and O'Connor, 2001; Beckett et al., 2002; Groza & Ryan, 2002; Hoksbergenter, van Dijkum and Stoutjesdijk, 2002; Hoksbergenter et al., 2003; Beckett et al., 2003; LeMare & Audent, 2006; Stevens et al., 2008).

In a cross-sectional study which compared second wave data from a survey administered to adoptive families of Romanian children who were identified via US adoptive parent support groups (n=216) and data collected from parents of children who have been adopted through the US public child welfare system and were randomly chosen to participate in a study of child welfare adoption (n=61), Groza (1999) found that the Romanian adoptees as a group presented with more behavioral problems than typical children of the same age, but those problems were not as severe as those of children who received mental health services. The behaviors of Romanian adoptees were similar to those displayed by domestically adopted children through the US public child welfare system. The conclusion was that any history of institutionalization resulted in more behavior difficulties. On average, all adoptees were 5.6 years old at the time of the study and had been in their adoptive homes for 4 years.

Fisher et al. (1997) adding to the Morrison, Ames & Chilsom (1995) study reported that RO children had higher total behavior problem scores and higher internalizing scores on the CBCL than the CB or RC children. The CB and RC children

did not differ on these two scores. The three groups did not differ on externalizing scores. The total, internalizing, and externalizing scores for the RO children were all positively correlated with the time they had spent in the orphanage (i.e., increased problems for those spending more time in an institution). While 84 percent of the RO children displayed at least one stereotyped behavior, such as body rocking or stereotyped hand movements, only one RC child and no CB children displayed stereotyped behaviors. Sibling problems and peer problems were reported more often for the RO children than for the CB children. When improvement in the problematic areas since adoption was examined for the RO children, 85 percent of eating problems and 98 percent of stereotyped behavior problems were found to have improved or be resolved. Sibling and peer problems were both improved by 60 percent.

In a cross-sectional and retrospective study conducted in the UK, Beckett et al. & the ERA Study Team (2002) interviewed the adoptive parents of 144 children who were adopted from Romania to the UK. The children were 6 years old at the time of the data collection. The parents were asked questions about their children behavior both at the time of leaving institutional care and at the time of the study. Fifteen percent of the children were still experiencing difficulties with chewing and swallowing solid food at age 6. Forty-seven percent of the institutionally reared children rocked at the time of UK entry and 24 percent engaged in self-injurious behaviors. By age 6, the percentages were 18 and 13 respectively. Eleven percent of the children displayed unusual sensory interests at the time of arrival. At 6 years old, 13 percent of the children presented with unusual sensory interests. The primary factor affecting the prevalence and persistence of the behaviors was the length of time the children had spent in institutional care.

In their study of the 83 Romanian adoptees who were placed with 74 Dutch families, Hoksbergen, Van Dijkum and Stoutjesdijk (2002) found that at the time of the adoptive placement, only 13 percent of the children did not exhibit significant psychological problems. The rest of the children struggled with behavioral issues, which greatly impacted the adoptive family level of stress and general life satisfaction.

Groza and Ryan (2002) compared data collected from 238 children living in 209 families (second wave of data collection of 1994 study) with a random domestic sample of 61 adoptees, generated from a longitudinal study of special needs children who had been adopted through the US public child welfare system. This cross sectional study used questions developed for this specific study, based on the findings of the previous studies. The authors concluded that the behaviors of the domestic and international adoptees were more similar than they were different and the most significant predictor of the children's behavior was a negative pre-adoption history of abuse and/or institutionalization and the quality of the current parent-child relationship.

Hoksbergenter et al. (2003) administered ADHD and autism questionnaires, a trauma questionnaire and the Child Behavior Checklist (CBCL) to 72 Dutch couples who adopted 80 children from Romania. The adoptees were 8 years old at the time of the study. Fifteen percent of the children scored in the clinical or borderline clinical range on ADHD and presented with externalizing problems on the CBCL. Twenty percent of the adoptees scored in the clinical range of PTSD. The children who scored high on the PTSD ratings also scored high on behavior problems.

Stevens et al. (2008) administered Rutter scale, Wenchsler Intelligence Scale, Stroop Color-Word Interference test and the backwards digit span sub-test on the WISC

III-UK to 144 previously institutionalized Romanian adoptees, 21 Romanian adoptees who did not spend time in institutions and a comparison group of 52 UK domestic adoptees. All children were assessed at ages of 6 and 11. The Rutter scales measuring inattention and overactivity (I/O) were completed by parents and teachers. The results indicated that the previously deprivation-related I/O persisted into adolescence, but high levels of I/O at 6 years old only moderately predicted similarly high levels of I/O at 11 years of age. The dose–response relationship between I/O and duration of deprivation was marked by a clear step-like increase in risk at around 6 months of institutional deprivation consistent with a threshold model of early-deprivation-related risk. By 11 years, deprivation related I/O impairment was more common in boys than girls. Deprivation-related I/O was associated with conduct problems. The disinhibited attachment of the sort displayed by the deprived children in the current sample might also be present as an important clinical feature in at least a subsample of ADHD cases. The evidence suggests that I/O is a fairly stable domain of impairment for this group of children and the risk for I/O continues to be associated with institutional deprivation into early adolescence.

In a longitudinal study of Romanian adoptees, Sonuga-Barke, Schlotz, and Kreppner (2010) found little evidence for increases in behavior problems across the ages of 6, 11, and 15 years, but at all ages the Romanian adoptees had higher levels of behavior problems than did a comparison sample. As previously noted, length of deprivation prior to adoption has been an important explanatory variable in research on international adoptees' developmental outcomes, including any problem behaviors.

LeMare and Audet (2014) examined behavior problems in adolescents adopted

from Romanian institutions where they experienced extreme and global deprivation. Consistent with prior studies of behavior problems in international adoptees, the authors focused on parent-reported CBCL internalizing, externalizing, and total behavior problems and addressed several issues. First, they investigated rates of clinically-significant behavior problems in their adolescent sample. Second, they looked at the association between adolescent behavior problems and duration of deprivation. Third, LeMare and Audet (2014) examined three variables -attachment, communicative openness, and exposure to culture of origin-which have emerged as important predictors of adoptee outcomes. Fourth, they assessed the contributions of each of these variables to explaining behavior problems beyond duration of deprivation.

As mentioned before, since 1992, Canadian researchers (Markovitch et al, 1995, 1997; LeMare and Audet, 2002; 2006) have followed a sample of children drawn from the population of all children adopted from Romania by families in British Columbia, Canada, in 1990 and 1991 (this sample was described earlier). At the most recent phase of data collection, when the longitudinal participants were approximately 16 years old, LeMare and Audet (2014) expanded the sample by recruiting another group of Romanian adoptees from across Canada, also adopted from institutions. Recruitment occurred through postings on adoption websites, postings in newsletters, and through word of mouth. Participants in this study included 80 adolescents (mean age = 15.74 years): 36 were longitudinal participants and 44 were participating for the first time. Parents of all participants were contacted by telephone, during which the nature and purposes of the research were explained to them. After receiving verbal consent, a package was sent to the parents that included information on the study for both parents and adolescents,

contact information for the principal investigator, consent forms for parents and adolescents, measures to be completed by both parents and adolescents, and a self-addressed stamped envelope for return of the questionnaires.

The duration of deprivation was measured with an index of duration of deprivation. Behavior problems were assessed with the parent form of the Child Behavior Checklist (CBCL; Achenbach, 1991). The findings indicated that rates of clinically-significant behavior problems were comparable to rates found in younger post-institutionalized adopted children. The association between duration of deprivation before adoption and behavior problems indicated relatively less-lasting impact of deprivation on the behavior problems of adolescents who were adopted prior to 2 years of age.

Studies of Romanian adoptees have been conducted in the United States, Canada and the UK.

Table 3 presents the empirical studies that have been conducted in the US from the early 1990's until 2018.

Table 4 presents the empirical studies that were conducted in Canada between early 1990's and 2018.

Table 5 presents the empirical studies that were conducted in the UK between early 1990's and 2018.

Table 3. Summary of Empirical Studies of Romanian Adoptees Conducted in the USA

Reference	Age of Romanian Adoptee	Sample(s)	Methodology	Major Findings
Johnson, Miller, Iverson et al. (1992)	Ranging in age from 6 weeks to 6.1 years	65 Romanian adoptees	clinic based study	Only 15% of the adoptees in the sample were determined to be physically healthy and developmentally normal
Zwiener, Fielman, & Squires (1992)	1-4.5 years	5 Romanian adoptees	clinic based case studies	4 out of the 5 adoptees in the sample had chronic Hepatitis B virus (HBV) infection after negative test results were reported in Romania before adoption
DeVoid, Pineiro-Carrero, Goodman, & L a timer (1994)	20-57 months	6 Romanian adoptees	clinic base study & retrospective analysis of case studies	Case study analyses of these Romanian adoptees reemphasize the potential for significant liver disease in asymptomatic children with HBV infection
Groze & Ileana (1996)	4.6 years old on average	475 Romanian adoptees	A cross-sectional survey from a convenience sample of adoptive families of Romanian children located by way of 10 parent support groups throughout the USA	Most of the children were developmentally appropriate. Parents reported good parent-child relationships, a few adoptees had behavior difficulties, and the adoptions were very stable. Children who had difficulties were more likely to have come from institutions, but pre-placement history was not related to adoption outcomes
Groza (1998); Groza,	6 years old on average	238 children living in 209 families	Cross-sectional analysis of second wave of data; parents identified via parent support	Length of institutionalization was related to developmental delays. Institutionalization between 7-12 months of age was problematic.

Proctor & Guo (1998)			groups in the USA	Development was worse for adoptees who lived in an institution for over 2 years
Groza (1999)	7 years old on average	Romanian adoptees were from the above study (n=216). The comparison sample (n=61) was comprised of children adopted through the public child welfare system	Cross-sectional survey analysis of second wave data; parents identified via parent support groups. The comparison sample was generated from the first year of a longitudinal study of children who had been adopted through the public child welfare system	The Romanian adoptees as a group had more behavior problems than typical children, although the problems were not as severe as children receiving mental health services. The behavior of Romanian adoptees was similar to domestically adopted children who were placed through the public child welfare system.
Chugani, Behen, Muzik, Juhász, Nagy, & Chugani, (2001)	Mean age 8.8 years	10 children (6 males, 4 females)	Sampling methodology not specified; the Romanian adoptees were compared with two control groups: a group of 17 normal adults (9 males, 8 females, mean age 27.6 years) and a group of 7 children (5 males and 2 females, mean age 10.7 years) with medically refractory focal epilepsy	Neuropsychological profile suggested low average global intellectual functioning. Parent report of behavioral problems indicated significant behavioral difficulties with Total Problems <i>T</i> score falling in the clinical range. There were clinically significant elevations on the Attention and Thought Problems subscales, as well as borderline elevations on the Anxiety/Depressed and Social Problems subscales. At 1 year in the adoptive home, substantial “catchup” in motor and language skills was reported in all 10 children.
Groza & Ryan (2002)	10 years old on average	Romanian Adoption Sample: 238 children living in 209 families at the second wave of data collection. Public Child Welfare Adoption Sample: random domestic sample of 61 adoptees was generated from the longitudinal study of special needs children who had been adopted through the public child welfare	Cross-sectional study Romanian sample came from 1996 study using convenience sampling; domestic sample was random sample from 1992-96 study of Iowan public child welfare adoptions.	The most significant predictor of the children's behavior was a negative pre-adoption history of abuse and/or institutionalization and negative characteristics of the parent-child relationship. The domestic and international adoptees' behavior is more similar than it is

		system		different
Groza, Ryan & Cash (2003)	11 years old on average	See Groza & Ryan (2002) but this article includes only the Romanian sample	Cross-sectional. Questionnaire from previous studies	The sample of persons adopting children from Romania were financially stable, middle-aged individuals, living primarily in committed two-parent relationships with multiple children in the home. Placement history appeared to have minimal long-term adverse behavioral health effects. The parent–child relationship was a strong resource. Strong relationship between parental negative reports and child behavior problems. Earlier child behavior and parent–child relationship satisfaction were important predictors
Ryan & Groza (2004)	12 years old on average	68 families who adopted domestically through a Romanian NGO were compared to 209 US families who adopted internationally	Cross-sectional. CBCL Parent-child relationship scales	The families from the US were older and had more children in their families compared to Romanian adoptive families. Children adopted by families living in the US were significantly older and had spent much longer time as well as key developmental periods in institutions or orphanages. This history was related to adverse effects on child behavior. The parent–child relationship was a strong resource for parents in both countries, with parents experiencing overall positive evaluations about the child
Pearlmutter, Ryan, Johnson, & Groza (2008)	10.06 years old in average (SD = 2.35 years)	91 parents of 120 Romanian adoptees; children in latency age (the average age of the child at placement with the family was 1.77 years old (SD = 2.41)	Cross-sectional. Behavioral and Emotional Rating Scale (BERS)	Although many had spent various amounts of time in institutions during key developmental periods, parents were still able to talk about and assess strengths in these children. Those children institutionalized after 2 years had significantly lower strength scores than

McKail, Hodge, Daiches, & Misca (2017)	Age ranging from 21 to 28 years (mean age = 24.7 years old).	10 adoptees recruited from social media; (nine females, one male),	Life story analysis online video	<p>children adopted into families at earlier stages. There were significant differences based on length of time in an institution, but this history had minimal long-term adverse effects on parental identification of children's behavioral and emotional strengths. When they were examined in latency age early history was superseded by the perceived gains made in the adoptive family</p> <p>Central to narratives was a quest of self-discovery via search & reunion, throughout which adoptees were confronted with bureaucratic and personal barriers. Search was not an indicator of unhappiness in adoption. It is essential that birth certificates, information regarding biological family members, and medical history are appropriately documented and accessible to adoptees</p>
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Table 4. Summary of Empirical Studies of Romanian Adoptees Conducted in the Canada

Reference	Age of Romanian Adoptee	Sample(s)	Methodology	Major Findings
Marcovitch, Cesaroni, Roberts, & Swanson (1995)	The median age at adoption was 6 months (range = 5 days to 9 years); 76% of children adopted before the age of 2 years. 13% of the adoptees were six years old and older	130 Romanian adoptees	Canadian family sample recruited through a support group (SPARK); response from 42% of families contacted; cross sectional design	Half of the parents reported that at adoption their child was unhealthy. Medical difficulties, eating problems, and developmental delays were most frequently reported. Children adopted directly from an institution continued to have problems after adoption, but developmental delays were not as frequently reported within the group of children who were adopted from a family. The total number of reported difficulties decreased over time
Chisholm, Carter, Ames, & Morison (1995)	RO-median age 18.5 months (range 8-53 months); CB-matched group to RO; RC-matched to RO group; mean age at adoption 2.3 months (range 0-4 months). No differences between groups on gender or age at time of study	3 groups recruited to study; 46 Romanian adoptees (RO) are children who spent 8 months or more in an institution; 46 Canadian born non-adopted children (CB); 29 were Romanian adoptees who spent less than 4 months in an institution before adoption (RC)	Targeted recruitment of community groups; RO group interviewed mostly in home while CB & RC groups interviewed over the phone; cross-sectional study	RO children scored significantly lower on security of attachment than did either the RC or CB children. RO children displayed significantly more indiscriminately friendly behavior
Morison, Ames, & Chisholm	Median age in months at adoption was 16.6 (RO) &	Romanian adoptees (RO) are children who spent 8 months	RO group interviewed mostly in home while RC group interviewed	In a retrospective assessment, RO children displayed delays in all areas of development

(1995)	2.3 (RC) & median age at time of study was 27.3 for both groups	or more in an institution were compared to Romanian adoptees who spent less than 4 months in an institution before adoption (RC); Matched group of 24 RO & RC	over the phone; cross-sectional study	when their parents first met them; after almost a year after adoption, children who had lived in an orphanage experienced delays in more areas than children with little or no institutional experience. However, the majority of children made remarkable progress in the adoptive home
Benoit, Jocelyn, Moddemann, & Embree (1996)	Mean age at adoption was 15.5 months (SD=13). Mean age at initial assessment was 19 (SD=12) months and at follow-up, 35 (SD=13) months	22 Romanian children adopted by 18 Manitoba families	Hospital based prospective study	There were improvements in growth and development after adoption; some children continued to demonstrate behavior associated with early deprivation
Fisher, Ames, Chisholm, & Savoie (1997)	RO were 31.5 months on average (18–76) at time of the study; CB were 31 months on average (19–77); RO were on average 15.0 (8–26) at the time of adoption; RC were on average 2.0 months (birth–4)	Romanian adoptees (RO) are children who spent 8 months or more in an institution; Canadian born non-adopted children (CB); (RC) Romanian adoptees who spent less than 4 months in an institution before adoption; 34 (RO), 29 (RC) & 46 (CB); RC & RO were matched by age & gender	RO group interviewed mostly in home while CB & RC groups interviewed over the phone; cross sectional design	RO children scored higher than CB and RC children for total problems and internalizing problems; behavior problems were correlated with the length of time in institutional care
Marcovitch, Goldberg, Gold, Washington, Wasson, Krekewich, & Handley-Derry (1997)	3-5 years old at time of assessment	56 Romanian orphans adopted in Ontario, Canada; 37 were institutionalized for under 6 months and 19 were institutionalized over 6 months. Attachment data was compared to 38 4-year old healthy children from other	Canadian family sample recruited through a support group (SPARK); cross sectional design	Children were reaching developmental milestones and experiencing few behavior problems. Time in institution was related to both developmental status and behavior problems. Rate of secure attachment was significantly lower in adoptees

		studies by the author		versus non-adoptees
Mainemer, Gilman, & Ames (1998)	Same as reported in the 1995 study by Chisholm, Carter, Ames, & Morison but a subsample of this study	39 families who adopted 43 children; 23 RO children, 41 CB & 23 RC children matched by age at time of interview, sex and other demographics	Snowball sampling from families known to researchers and a service program providing in-home services to children with developmental difficulties; cross-sectional design	Parents who adopted the RO children reported more stress; parenting stress was related to children's behavior problems
Chisholm (1998)	Same as reported in the 1995 study by Chisholm, Carter, Ames, & Morison but a subsample of this study; 54.5 months of age, on average, at time of study and 3 years after adoption	43 children and their parents (RC & CB), 27 (RO)	Targeted recruitment of community groups; RO group interviewed mostly in home while CB & RC groups interviewed over the phone; cross-sectional study	Although RC children did not score differently than the other two groups of children on the parent-reported attachment security measure, they did display significantly more insecure attachment patterns and more indiscriminately friendly behavior
Morison & Ellwood (2000)	RO, EA & CB was on average 54 months at time of study; study was approximately 3 years after adoption	The Romanian Orphanage (RO) group comprised 35 children who had spent at least 8 months (range 8 to 53 months) in a Romanian orphanage prior their adoption to Canada. Their median age at adoption was 16 months (range 8 to 68 months), and the median length of time children had spent in an institution was 14 months (range 8 to 53 months). sample size reduced to 24 adoptees in each group	Cross-sectional; different data collected at 2 points in time; retrospective reporting by adoptive parents	RO children performed at lower levels on all cognitive measures than CB children. The EA performance was between that of the RO group and the CB group, and RO children performed at lower levels than EA children on all cognitive measures. 3 years post-adoption, most pre-adoptive variables such as institutionalization no longer influenced the development of the children. Adoptees whose parents had provided them with a more stimulating environment did better on intelligence tests.

Gunnar, Morison, Chisholm & Schuder (2001)	Between 4 and 18 months	18 Romanian children adopted from an institution age 18 months or older were compared to 15 children adopted early (less than 4 months) and 27 Canadian born not-adopted children	Cross sectional; sample was from larger study.	There was no evidence of the lack of the normal decrease in cortisol levels over the day for any group. The older adopted Romanian children exhibited higher ambulatory cortisol levels. Cortisol levels were correlated with length of institutional care.
Le Mare & Audet (2006)	Ranging from 4.5-10.5 years of age	36 early-deprived post-institutionalized Romanian orphans. Data were collected for each child at three time points: at 11 months postadoption, at 4.5 years of age and at 10.5 years of age. Compared with those from children in two matched comparison groups (Canadian-born [CB] nonadopted children and early-adopted [EA] Romanian children without institutional experience).	Longitudinal questionnaire	The poor physical health of the RO children at time 1 was no longer apparent at time 3. At time 3, the RO children did not differ from the CB or EA children on indicators of puberty. Non-significant differences in height and weight among the R O, CB and EA groups were obtained at time 3, indicating significant growth catch-up.
Le Mare, Audet, & Kurytnik (2007)	Adoptees had been in their adoptive homes for 11 months, at age 4.5 years and 10.5 years	Children adopted from Romanian orphanages following a minimum of eight months' institutional experience (RO: $n = 36$); children from Romania who were destined for orphanages, but were adopted early in infancy (EA: $n = 25$); and Canadian born non-adopted children (CB: $n = 42$)	Information regarding service use and needs was obtained through parent interviews when the children had been in their adoptive homes for 11 months (Phase 1), at age 4.5 (Phase 2) and age 10.5 (Phase 3). Child Behavior Checklist. Academic achievement was measured with both parent and teacher reports. Academic achievement and service info were non-standardized measures	Higher rates of service use and unmet service needs across time in the RO group. Adoptive parents had a lower threshold for referring their children for clinical services than do non-adoptive parents. RO children have consistently experienced a higher rate of and more serious difficulties than children in either the EA or CB groups. Despite

having academic and behavioral skills similar to those found in the CB group, there was a trend for EA families who used increasingly more services over time, to the extent that at Phases 2 and 3 they did not differ in overall rate of service use from the RO families.

Deprivation that ends within the first six months of life is less likely to have a lasting impact on I/O. At Phase 3, ADHD was diagnosed at rates of 34%, 2.5%, and 9% in the Romanian Orphans, Canadian Born and Early Adopted groups, respectively. Similar rates (except in the Early Adopted group where the rate doubled) were found at Phase 4. Aspects of caregiving in the adoptive home were found to predict I/O at age 10.5. Observed impacts of an appropriately stimulating and nurturing home environment and attachment on I/O at 10.5 years. Children's reports of their attachments at age 10.5 were also related to I/O after the effect of nurturance, and stimulation in the adoptive home at age 4.5 was accounted for.

Audet & Le Mare (2011)	Between 15.75 and 17.6 years of age on average	At Phase 4 the children were on average just under 17 years old and the sample comprised 24 Romanian Orphans (median age 17.6 years; 12 male), 33 Canadian born children (median age 16.94; 14 male) and 16 Early Adopted (median age 15.75; 9 male) youth	Longitudinal study. Inattention/overactivity (I/O) was measured at Phases 2, 3 and 4 with the parent form of the Attention Problems subscale from the Child Behavior Checklist. Diagnosis of ADHD. Phase 2: The Home Observation for Measurement of the Environment. Parent-child interactions were video-recorded at Phase 2 while children worked on solving the Tower of Hanoi puzzle, the Teaching Task Rating Scales and the Parent-Child Interaction Scales. A composite score of the 4 parent-child interaction variables, labeled Parent Interaction Style, was computed based on a principle components factor analysis. Parenting Practices Questionnaire Inventory of Parent and Peer Attachment
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Le Mare. & Audet (2011)	Age at adoption ranged from 2 weeks to 68 months ($M = 18$ months; $SD = 16.63$ months). Twenty-six participants were adopted prior to 6 months of age ($M = 2.14$ months; $SD = 1.39$ months), 35 were adopted between the ages of 6 and 24 months ($M = 16.31$ months; $SD = 4.79$ months), and 19 were older than 24 months at the time of adoption ($M = 41$ months; $SD = 12.07$ months).	Participants in the study included 80 (39 male) adolescents (mean age = 15.74 years; $SD = 2.25$ years), 36 were longitudinal participants (20 male; mean age = 14.95, $SD = 2.55$, range = 10–20 years), and 44 were participating for the first time (19 male; mean age = 16.69, $SD = 1.33$, range = 15–21 years).	Questionnaire designed for the study on communication openness	Not one youth reported feeling “completely comfortable” talking about his or her adoption. The vast majority of youth (approximately 70%) reported that they perceived their parents to be completely comfortable talking about their adoptions, birth mothers, and birth fathers. An even greater number of adolescents in each study (approximately 80%) reported satisfaction with the amount of adoption-related discussion in their homes. The study found no sex differences in adolescents’ perceptions of their own or their parents’ communicative openness.
Graham, Nilsen, Mah, Morison, MacLean, Fisher, Brooks, & Ames, (2014)	54.3months for LA, 54.6 for CB & 54.4 EA), age at adoption (15 months for LA, EA is 1.8 months	One group was comprised of children who spent a minimum time of 8 months in Romanian orphanages prior to being adopted into Canadian homes (later-adopted; LA group; $n = 28$; $M = 54.3$ months; 15 boys). The two other groups, acting as comparisons, were comprised of Canadian-born, never-institutionalized children living with their birth families (CB group; $n = 27$; $M = 54.6$ months; 14 boys), and children who were adopted from	The utterances produced by the mothers and the children were transcribed using Codes for the Human Analysis of Transcripts format. Children’s attachment patterns were coded from the separation reunion procedure-- children’s attachment patterns were coded using the Preschool Assessment of Attachment. Stanford-Binet Intelligence Scale, 4th edition. Children’s behavior problem scores on the Child-Behavior Checklist/4–18) and the Social Skills Rating	Children who had spent more than 8 months in a Romanian orphanage (later adoptees) did not differ in the types of communicative intents produced in unstructured interactions from their earlier adopted peers. Mothers of later-adopted children adopted from Romanian orphanages used more frequent regulatory language than mothers of earlier-adopted or Canadian-born children. Results suggest that children from adverse conditions adopted into healthier

		Romania prior to spending no more than 4 months in an orphanage (earlier adopted; EA group; $n = 21$; $M = 54.4$ months; 11 boys)	System	environments do not show long-term differences in pragmatic or social language usage.
Le Mare & Audet (2014)	Participants included 80 (39 male) adolescents (mean age = 15.74 years; $SD = 2.25$ years): 36 were longitudinal participants (20 male; mean age at assessment = 14.95, $SD = 2.55$, range = 10–20 years) and 44 were participating for the first time (19 male; mean age at assessment = 16.69, $SD = 1.33$, range = 15–21 years).	A total of 26 participants were adopted prior to 6 months of age ($M = 2.14$ months, $SD = 1.39$ months), 35 were adopted between the ages of 6 and 24 months ($M = 16.31$ months, $SD = 4.79$ months), and 19 were over 24 months of age at time of adoption ($M = 41$ months, $SD = 12.07$ months). Approximately half of each age-at-adoption group was male.	Cross-sectional study	About a quarter to a third of adolescents displayed clinically significant levels of Internalizing, Externalizing, and Total Behavior Problems. Little change from childhood to adolescence in overall rates of behavior problems. Rates of clinically significant behavior problems among globally deprived PI adoptees are about double the 14% rate found in the general population. The percentage of adolescents with scores in the clinical/borderline range was much higher in the group adopted after 24 months than in the other two age-at-adoption groups but the relationship between age and problems was modest.

Table 5. Summary of Empirical Studies of Romanian Adoptees Conducted in the UK

Citation	Age of Romanian Adoptee	Sample(s)	Methodology	Major Findings
Rutter & the English and Romanian Adoptees (ERA) Study Team (1998)	Age 4	54 Romanian adoptees who entered the UK between 24 and 42 months; and 52 within country adoptees placed before the age of 6 months & selected through a range of local authority and voluntary adoption agencies	The study was drawn from the 324 children adopted from Romania into UK Families who adopted between February 1990 and September 1992, aged below 42 months at the time of entry to the U.K.	The children from Romania were severely developmentally impaired at the time of adoption; children adopted under 6 months of age had almost complete catch-up in physical growth and cognitive level. The same positive pattern existed for children adopted when older although the catch-up was not as complete. Age at adoption, also a proxy for duration of deprivation, was predictive of deficits at time of adoption only
Groothues, Beckett, & O'Connor (1998)	Age 4	117 children adopted from Romania compared to a group of 52 UK adopted children. The children were assessed at four years and their mothers interviewed; the children had been with the adoptive family for at least two years	Subgroup from the Rutter & ERA study (1998); cross-sectional study	Overall the outcomes in both groups was very positive; adoptions did not disrupt or dissolve, parental satisfaction was high & adoption was reported to have a positive impact on the marriage
Beckett, Groothues, O'Connor, & the ERA Study Team (1998)	Age 4	95 families with 112 children in the sample where the adopted child had a sibling, either adopted or a birth child of the family. The children had been with the adoptive family for at least two years. Same sample as the 1998 Groothues, Beckett, & O'Connor	Subgroup from the Rutter & ERA study (1998); cross-sectional study	Very high level of reported satisfaction and remarkably low level of negative adoption outcomes; having siblings were not a predictor of adjustment

study

O'Connor, Bredekamp, & Rutter (1999)	Age 4	165 children adopted into the United Kingdom from Romania and a comparison sample of 52 domestic (in-country) adoptees	Subgroup from the Rutter & ERA study (1998); cross-sectional study	After initial delays, most children were within the average range on a number of adjustment measure. Attachment disorder behaviors were positively associated with duration of deprivation but a substantial number of children did not exhibit disordered attachment behaviors
O'Connor & Rutter (2000)	Age 6	165 children adopted from Romania and 52 adoptees from the U.K., were assessed at age 6 years; longitudinal data (at ages 4 and 6 years) were available on the 111 Romanian adoptees placed in U.K. homes before 24 months of age and on all U.K. adoptees	Longitudinal and cross sectional data	70% of the children exposed to profound deprivation of more than 2 years did not exhibit marked/severe attachment disorders/problems. Early deprivation may have long-term effects on the formation of later selective attachment behaviors. Attachment disturbance is not explained by behavioral disturbance, cognitive delay, or severity of institutionalization deprivation. Those children that demonstrated disinhibited attachment behavior at age 4 continued to do so at age 6
Kreppner, O'Connor, & Rutter, (2001)	Age 4 and age 6	This study compared 165 children that were adopted in the United Kingdom after severe deprivation with 52 within-UK adoptees who had not suffered deprivation.	Matched group; cross-sectional analysis of longitudinal study	Parent and teacher ratings of enduring inattention/overactivity were found in relationship to the extent of early severe deprivation. The effects of duration of deprivation were specific to I/O and were not accounted for by low birth weight, malnutrition, or cognitive

				impairment. The effects of duration of deprivation on I/O did not decrease over time
Rutter, Kreppner, & O'Connor, (2001)	Age 4 and age 6	A group of 165 children adopted from Romania before the age of 42 months were compared at 4 years and 6 years with 52 non-deprived UK children adopted in infancy	Matched group; cross-sectional analysis of longitudinal study	Attachment problems, inattention/overactivity, quasi-autistic features and cognitive impairment were associated with institutional deprivation. Emotional difficulties, poor peer relationships and conduct problems were not related. 20% of children who spent the longest time in institutions showed normal functioning
Groothues, Beckett, & O'Connor, (2001)	Mothers were contacted around the time of their children's 6th birthday and interviewed.	The final sample of 165 children included 22 placed between 0 - 3 months, 36 placed between 3 - 6 months, 23 placed between 6 - 12 months, 20 placed between 12 - 18 months, 16 placed between 18 - 24 months, 26 placed between 24 - 30 months, 16 placed between 30 - 36 months, and 6 placed between 36 - 42 months	A stratified random sample was drawn from 324 children adopted from Romania into families resident in England between February 1990 and September 1992, aged below 42 months at the time of entry to the UK	The main finding at age six years was that the overall picture of outcome was very positive. There were no disruptions between age four and age six years, and the level of parental satisfaction with the adoptions was very high. The adoptive parents in the Romanian children had not made many demands on support agencies. The level of the children's behavior problems best explained parent negativity about the adoption.
Croft, O'Connor, Keaveney, Groothues & Rutter (2011)	Data were collected at age 6 years old data with some 4 years old data added in analysis.	A group of 158 children adopted from Romania before the age of 42 months were compared with 52 non-deprived UK children adopted in infancy. Longitudinal data were on 110 children.	A stratified random sample was drawn from 324 children adopted from Romania into families resident in England between February 1990 and September 1992, aged below 42 months at the time of entry to the	The adoptive parent-child relationship quality was related to duration of deprivation and that cognitive developmental delay mediated this association. The magnitude of this effect was modest and diminished over time.

			UK.	Longitudinal analyses revealed that positive change in parent-child relationship quality was most marked among children who exhibited cognitive catch-up between assessments.
Beckett, Bredenkam, Castle, Groothues, O'Connor, Rutter, et al. (2002)	Data were collected at age 6	144 children from Romania adopted by UK families	Adoptive parents were interviewed; questions about behavior both at the time of leaving institutional care and age 6. Questions developed for the study, Autism Screening Questionnaire & Rutter Scales. Cross-sectional and retrospective	Forty-seven percent of the institutionally reared children rocked at the time of UK entry and 24% engaged in self-injurious behavior. By age 6 years, the percentages were 18% and 13%, respectively. Eleven percent of the children were displaying unusual sensory interests at the time of arrival, and at 6 years 13% of the children did so. Fifteen percent of the children were still experiencing difficulties with chewing and swallowing solid food at age 6 years. The primary factor affecting the prevalence and persistence of the behaviors was the length of time the children had spent in institutional deprivation.
O'Connor, Marvin, Rutter, Olrick, Britner & the ERA Study team (2003)	The children were assessed at four years	Child-adoptive parent attachment quality at age 4 years was examined in a sample of 111 children adopted from Romania and a comparison group of 52 nondeprived within-United Kingdom adoptees.	See previous ERA studies; a modified strange situation-reunion assessment was designed	Compared with non-deprived adoptees, children who experienced early severe deprivation were less likely to be securely attached and more likely to show atypical patterns of attachment behavior. Within the sample of deprived adoptees, there was a dose-response association between duration of deprivation and

Beckett, Castle, Groothues, O'Connor, & Rutter (2003)	Age 6	Sample of 165 children, 144 of whom had experienced institutional deprivation, and a UK adoptee group of 52 non-deprived UK adoptees.	Cross-sectional analysis of data. Parents were asked about health problems at placement (related retrospectively) and any ensuing problems up to the age 6 assessment. McCarthy scale for cognitive abilities. Autism Screening Questionnaire. Attachment problems were assessed from questions	disturbances in atypical attachment behavior. At the time of UK entry, over half of the children adopted from Romania had marked health problems. Inattention/over-activity at age six was found to be more likely in children who had been exposed to prenatal and postnatal health risks.
Rutter, O'Connor, & English and Romanian Adoptees Study Team (2004)	At age 6	See studies referenced previously. 144 Romanian adoptees reared from infancy in very depriving institutions for periods up to 42 months were compared with 52 nondeprived UK-born children placed into adoptive families before the age of 6 months.	Longitudinal study. Weight at the time of the child's entry to the UK, which indexed nutritional deprivation, and head circumference. McCarthy Scales of Children's Abilities. Attachment disturbance was derived from a semi-structured interview	Substantial normal cognitive and social functioning after the provision of family rearing but also major persistent deficits in a substantial minority. Findings suggests some form of early biological programming or neural damage stemming from institutional deprivation, but the heterogeneity in outcome indicates that the effects are not deterministic. Cognitive impairment were had a strong association with institutional deprivation and a strong association with the length of institutional deprivation. Cognitive functioning was unassociated with the length of time in the adoptive home after the first 2 to 2 1/2 years

Beckett, Maughan, Rutter, Castle, et al. (2006)	Ages 6 and 11	131 Romanian adoptees from institutions were compared with 50 U.K. adopted children.	Longitudinal. Age on arrival and placement in the U.K. Weight at birth. Weight on arrival as an index of malnutrition; head circumference on arrival as an approximate index of brain growth at arrival; and the Denver developmental quotient. At age 6, McCarthy Scales of Children's Abilities. At age 11, Wechsler Intelligence Scale for Children. Mother's cognitive abilities using the National Adult Reading Test	Marked adverse effects persisted at age 11 for many of the children who were over 6 months on arrival. There was some catch-up between ages 6 and 11 for the bottom 15%; extra time in the adoptive home may have been influential for the most cognitively impaired children there was marked heterogeneity of outcomes. The effects of early institutional deprivation persist up to age 11 years, despite the children having spent at least 712 years in their adoptive homes.
Rutter, Colvert, Kreppner, Beckett, Castle, Groothues, Hawkins, O'Connor, Stevens, and Sonuga-Barker (2007)	Children were assessed at ages 4, 6, and 11 years	Sample included 58 children placed before 6 months (27 girls), 59 children placed between 6 and under 24 months (33 girls), and a further 48 late-placed adoptees who entered the UK between 24 and 42 months of age (31 girls)' 111 Romanian adoptees. Comparison sample consisted of 52 UK-born children (18 girls) who were placed into adoptive families between 0 and 6 months of age.	Duration of institutional deprivation. Individual institutional care retrospective Denver scales. Educational qualities of the adoptive homes. Possible family functioning risk factors. Disinhibited attachment. Investigator ratings of physical contact at age 6. Attachment security-- Strange Situation procedure modified for use in the home was used at age 6. Quality of peer relations at age 11-- Rutter parents' and teachers' scales. Ratings of children's interaction with the investigator at age 11. Problem behaviour in preschool and school-age children (Elander & Rutter, 1996). Quas-autisms: Autism Diagnostic Interview. Short form of	Ten percent received a diagnosis of attachment disorder by professionals; Of these, three exhibited no signs of disinhibited attachment at age 11 years, four exhibited mild disinhibition, and three exhibited marked disinhibited attachment, as assessed by us on the basis of parental reports. <i>Raises questions about the validity of professional assessment.</i> First, the evidence showed that the ratings of disinhibited attachment based on parental information agreed moderately well with independent blind ratings by interviewers of inappropriate physical contact during the child assessments at age 6 and violation of boundaries during the

			the Wechsler Intelligence Scale for Children WISC-III-UK Edition	assessments at age 11.
Rutter, Kreppner, Croft, Murin, Colvert, , Beckett, Castle, & Sonuga-Barke, (2007).	Ages 4, 6 and 11	144 children who had experienced an institutional upbringing in Romania and who were adopted by UK families was studied at 4, 6, and 11 years, and compared with a non-institutionalised sample of 52 domestic adoptees. Twenty-eight children were selected to receive the ADI-R and the ADOS. These comprised 20 cases from the original report (i.e., the original 10 cases, and the additional 10 children with query quasi-autism	Parental interview and questionnaire. Denver scales (age 4). Weschler scales. McCarthy scales. Social and Communication Questionnaire. At age 12, Western Psychological Services version of the Autistic Diagnostic Interview. Autism Diagnostic Observation Schedule. At age 11 Theory of Mind (ToM) understanding using the Strange Stories task. Diagnostic Analysis of Nonverbal Accuracy	The 16 children with a confirmed quasi-autistic pattern (see analytic strategy section) comprised 11.1% of the 144 children who experienced an institutional upbringing in Romania. Over 1 in 10 of the children who experienced an institutional rearing in Romania showed a definite quasi-autistic pattern as assessed on a lifetime basis. Nearly as many showed features that had raised a query as to whether they might have quasi-autistic features. The great majority of the institution-reared children did not show quasi-autistic features.
Croft, Beckett, Rutter, Castle, Colvert, Groothues, Hawkins, Kreppner, Stevens, & Sonuga & Barke, (2007)	Age 6 and 11	Language and cognitive outcomes at 6 and 11 years of age were compared between a sample of 132 institution-reared Romanian children adopted into UK families under the age of 42 months, and a sample of 49 children adopted within the UK under the age of 6 months who had not experienced either institutional rearing or profound	Child's language on arrival (Denver Developmental Scales). Three measures were used to assess the language development at age 6: the Test of Reception of Grammar, British Picture Vocabulary Test, & Renfrew test (Bus story task). Cognitive ability at age 6 was measured on the McCarthy scales & Weschler scales at age 11. A measure of the comprehension of written language as assessed on the Wechsler Objective Read-ing Dimensions (WORD)	Few negative effects of deprivation if it ended before the age of 6 months. There were moderately strong inter-correlations among the language and cognitive measures, but they were relatively stable across different tests and also stable over time. For the group of children who had spent more than 6 months in deprivation there were significant differences in their scores in comparison with those who had spent less than 6 months in deprivation. The duration of institutional deprivation above 6 months did not seem to increase the

Kreppner, Rutter, Beckett, Castle, Colvert, Grothues, Hawkins, O'Connor, Stevens & Sonuga-Barke, (2007)	Age 11	A hundred and forty four children who were reared from infancy in very depriving institutions, the group of non-institution-reared Romanian children serves as an additional comparison group as it allows for the direct comparison between two groups of children from similar underprivileged family backgrounds during the time period in question but which differ in terms of specific risks associated with institutional care. The Romanian children were compared with a group of 52 children born and adopted within the U.K. before the age of 6 months	Part of longitudinal study. Parents were asked to provide information on whether or not mental health professionals were consulted for the adopted child. Duration of deprivation was indexed by a continuous measure of the children's age (in months) when they entered the U.K. (for the Romanian adoptees). The quality of individual care in the institution(s) was assessed through the parental interview at the time of the first visit to the family. Specific items in the interview with the adoptive parent provided information on obstetric and birth difficulties.	level of cognitive impairment. Pervasive impairment was significant in children experiencing institutional deprivation for 6 months of life, with a minority within this group showing no impairment. Most of the children showing no evidence of impaired functioning on our criteria had not experienced a need for either mental health or special educational services. A substantial proportion of children exposed to profoundly depriving institutional conditions function normally at age 11 most of them had already been functioning normally at age 6. Despite at least 7 years' rearing in a well-functioning adoptive family, about half of the children continued to show multiple impairments.
Hawkins, Beckett, Castle, Groothues, Sonuga-Barke, Colvert, Kreppner, Stevens, & Rutter (2007)	Age 11	Child adoption interviews were conducted with 180 of the 217 children in the total sample, yielding an overall response rate of 83 per cent. Broken down into groups, 47 out of 52 UK adoptees took part (90.4%), 46 out of 58 children adopted from Romania when less than six months of age participated (79.3%) and 87 out of 107 children adopted from Romania when over six months of age took part (81.3%) in the child	Interviewers conducted the adoption interviews with children in their homes that were videoed and audio tape-recorded. The tapes were then coded for the children's responses by a different researcher. Adopted adolescent interview schedule. Assessment of the children and were based on the Rutter scales, clinical diagnosis and parental interviews.	Attitudes towards adoption did not vary according to the type of adoption. There were differences between the groups in two areas (feeling different from adoptive families and difficulty talking about issues) more prevalent in the children who were older upon adoption.

adoption interview

Hawkins, Beckett , Rutter, Castle, Groothues , Kreppner, Stevens, & Sonuga- Barke (2007)	Ages 11 and 15	Adolescent inter-country ($n = 122$) and domestic ($n = 40$) adoptees and their adoptive parents	Adopted adolescent interview schedule in the Minnesota/ Texas Adoption Research Project. Rosenberg self-esteem questionnaire. Questions created for project	Perceptions differed between adopted young people and their adoptive parents in key areas: how curious adoptees were about their background and how easy it was to talk. Around 20% of the adoptees believed that their parents did have problems in addressing adoption and birth family issues at home. Those who found it hard to talk were also more likely to have lower self-esteem at age 15 and to have had emotional or conduct difficulties at age 11; however, the direction of any causation was not evident, and the effects were modest.
Sonuga-Barke & Rubia (2008)	The mean age of testing was around 13 years.	Compared the symptom and neuropsychological profiles of children with a history of I/OA and early severe deprivation (D-I/OA: $n = 13$) with standard clinical ADHD cases (S-ADHD; $N = 20$) and children who had experienced deprivation but were not pervasively I/OA (ERA-controls; n $= 22$).	Parental account of children's symptoms (PACS) standardized interview. Different forms of motor and cognitive inhibitory control were taken from the MARS task battery	Children with D-I/OA were more neuro-psychologically impaired than S-ADHD despite the fact that only boys showed a persistent pattern of ADHD symptoms. This sex difference appeared to be due to remission of symptoms for girls but not for boys between ages 6 and 11. Both male and female D-I/OA groups displayed more neuropsychological impairment than S-ADHD children in terms of intelligence and inhibitory control.

Colvert, Rutter, Kreppner, Beckett, Castle, Groothues, Hawkins, Stevens, & Sonuga-Barke (2008)	Longitudinal study assessed at 6 and 11 years.		<p>The Strange Stories task was used to assess ToM and the Stroop task was used to assess EF, both at age 11. Institutional deprivation as assessed by the child's age at the time of leaving the institution to come to the UK. Measurement of head circumference. Initial developmental visit at age 4 (or age 6 for the children who came to the UK later) when parents were asked to provide a retrospective account of the child's developmental level at the time of arrival in the UK using the Denver Developmental Assessment. Cognitive functioning at age 11 was assessed using a short form of the Wechsler Intelligence Scales for Children & at age 6 using the McCarthy scales for children's abilities.</p>	<p>Theory of Mind (ToM) and Executive Function (EF) have been associated with autism and with attention deficit hyperactivity disorder (ADHD). There is evidence for a possible mediating role for ToM and EF in the development of some apparently deprivation-specific difficulties in institutionalization history. The pattern of correlates with deprivation-related indices was similar to that found for IQ and scholastic attainment. The findings for quasi-autism are the most straightforward. This pattern occurred in almost one in six of children who experienced institutional deprivation that lasted beyond 6 months of age, but in none of the within-UK adoptees and in none of the Romanian children who did not experience institutional care.</p>
Beckett, Hawkins, Rutter, Castle, Colvert, Groothues, Kreppner, Stevens, & Sonuga-Barke (2008)	Ages 4, 6 and 11	<p>All adoptive parents (165) completed the interview when the child was 4 or 6 years old, 159 at age 11 and 140 at age 15; 133 of the Romanian adoptees completed the adoption interview at age 11 and 121 of them at age 15. The sample was compared to a group of families who had adopted babies in the UK (n = 52)</p>	<p>Unstandardized bi-cultural attitudes questions. Rosenberg measure of self-esteem. Measures were also taken of the children's behavioural and cognitive difficulties at ages six and 11</p>	<p>There was an association between the adoptive parents' interest in the importance of Romanian identity and the interest in Romania taken by their adopted children, but this was significant only if this was a sustained interest. Identifying with a dual or original nationality was not associated with higher self-esteem. The majority of the young people who saw themselves as English were</p>

Colvert, Rutter, Beckett, Castle, Groothues, O'Connor, Stevens & Sonuga-Barke (2008)	Age 11	The mean age at placement for the within- UK group was 2.54 months (SD =1.53). For the Romanian children who had experienced institutional deprivation and were brought to the United Kingdom before 6 months of age (n =58) it was 3.98 (SD ¼ 1.11) months, whereas for the 6 to 24 month age group (n ¼ 59) it was 14.89 (SD = 5.14) and for the 24 months and above group (n = 48) it was 30.40 months (SD = 4.89). The group of Romanian children who did not experience institutional care had a mean age at placement of 9.10 months (SD = 10.81),	Rutter scales-- Ratings were obtained from both mothers, fathers & teachers. Strengths and Difficulties Questionnaire. Weight, height, head circumference at UK entry professionally obtained. Denver Developmental Assessment at 4 or 6. Measures developed by the project for disinhibited attachment, quasi-autistic features (developed from Autism Screening Questionnaire), cognitive impairment (at age 6 was assessed using the McCarthy scales for children's abilities) & Inattention/overactivity forms one of the subscales of the revised Rutter scales.	also interested in Romania. Emotional difficulty was significantly more prevalent at age 11 in the Romanian group than in a within-UK adoptee group-- The first main finding was that, at age 11, in contrast to the findings at age 6, emotional disturbance was significantly more common in adoptees who experienced institutional deprivation than in those who did not. The presence of early problems did not account fully for the onset of later emotional problems. The findings with respect to behavioral disturbance were more ambiguous-- there was no statistically significant increase between 6 and 11 years. The second major finding was that the higher level of emotional disturbance in the institution-reared adoptees was largely a consequence of it arising in children who had shown at least one of the four apparently deprivation-specific patterns of disturbance at age 6.
Castle, Groothues, Beckett, Colvert, Hawkins, Kreppner, Kumsta, Schlotz, Sonuga-Baker, Stevens, & Rutter (2009)	Longitudinal study; children were age 11	The study was based on 165 children adopted from Romania into U.K. families between February 1990 and September 1992, as described by Rutter and the English and Romanian Adoptees Study Team (1998), and	The measure of parental evaluation of the adoption was based on the parental interview. The interview, lasting approximately 3 hours, was semi-structured and elicited extensive information on the child and family. The children's views of	Higher levels of stress because of children's problems contribute to the variation in parental satisfaction. It is clear that the vast majority of parents in the study valued their adoptions very highly

		a group of 52 U.K.-adoptees placed before age 6 months.	their adoption were recorded and independently coded at age 11.	
Stevens, Kumsta, Kreppner, Brookes, Rutter, & Sonuga-Barke (2009)	See previous ERA studies; data from age 15	Sample total: N=217; male: n=108; female: n=109) from the English and Romanian Adoptees (ERA) longitudinal study	The analysis includes mothers' and fathers' ratings of sADHD. Strengths and Difficulties Questionnaire. Child and Adolescent Psychiatric Assessment (CAPA) interview. McCarthy Scales of Children's Abilities DNA was collected using oral swabs	The effect of institutional deprivation on the risk for sADHD was moderated by a dopamine transmitter. Carriers of the DAT1 10R-6R haplotype within the group of children that experienced over 6 months institutional deprivation had significantly higher. ADHD scores from childhood to mid-adolescence than those with the low risk haplotype and those not exposed to extended early deprivation in either haplotype group.
Kreppner, Rutter, Marvin, O'Connor, and Sonuga-Barke (2011)	Ages 4, 6 and 11		Interviews recorded. Modified Separation–Reunion Procedure. Attachment Quality using Cassidy and Marvin system (A, B, C, D). The same behavioral systems coding scheme as at age 4 years was applied to the children's behavior in the separation–reunion procedure. Disinhibited attachment as assessed through a parental interview. Attachment Q-set Scale. At age 6 years, the child's interaction with the investigator (a stranger) was assessed over the course of three tasks—puppets, Bus Story and balloons	Security (meaning the use of the parent as a secure base and no negative behavior on reunion) was the modal categorical rating in both the institution-reared and comparison groups, but the category of anomalous non-normative behavior (meaning a lack of any ordered attachment behavior as covered by the standard ratings), previously labeled 'insecure-other', was more common in the institution-reared children. Between 4 and 6 years, there tends to be a rather marked shift from insecurity to security.

Rutter, Kumsta, Schlotz, & Sonuga-Barke (2012)	See previous studies	In these new analyses, the authors focused on deprivation-specific patterns and used the same composite comparison group (apart from requiring both groups to exclude those with subnutrition). There were 114 young people in the original composite comparison group, of whom 81 did not show subnutrition	See previous studies	The evidence that “pure” psychosocial deprivation had a major effect in leading to DSPs is strong and highly consistent. Subnutrition had a significant, but relatively small, effect on intelligence. No previous study has provided a clear distinction between “pure” psychosocial deprivation and deprivation that also involves subnutrition. Malnutrition (rather than subnutrition) could have potentiated the ill effects of psychosocial deprivation in Romanian institutions-- if malnutrition plays a role, it is most unlikely to be indexed by the degree of subnutrition
Kumsta, Kreppner, Kennedy, Knights, Rutter, & Sonuga-Barke (2015)	Age 0 to 15 years old			Summary of findings of the ERA study up to age 15 years in Romanian adoptees.
Kennedy, Kreppner, Knights, Kumsta, Maughan, Golm, Rutter, Schlotz & Sonuga-Barke (2016)	The average age at young adult follow-up for the UK comparison group was 23.2 (22–25, SD = .77) years and for the Romanian adoptees 23.6 (22–26, SD = .81) years.	From longitudinal study; sample was split into two groups. The first (LoDep) combined the UK comparison group and Romanian children who had less than 6-month institutional deprivation.. This LoDep group was contrasted with Romanian adoptees who experienced between 6- and 43-months institutional deprivation (HiDep	Rates of ADHD were estimated at age 15 years and in young adulthood (ages 22–25 years) in individuals at low (LoDep; non-deprived UK adoptees and Romanian adoptees with less than 6-month institutional exposure) and high deprivation-related risk (HiDep; Romanian adoptees with more than 6-month exposure). ADHD indices. Modified Child and Adolescent Psychiatric Assessment (CAPA) interview.	ADHD rates in the LoDep group were similar to the general population in adolescence (5.6%) and adulthood (3.8%). HiDep individuals were, respectively, nearly four (19%) and over seven (29.3%) times more likely to meet criteria, than LoDep.. Compared with ‘typical’ ADHD appears to be unusually persistent across the transition from adolescence to adulthood- deprivation-related ADHD results

			<p>Conners Comprehensive Behaviour Rating Scale—parent reported & young adult report. Estimates of ADHD symptoms were also available at ages 6 and 11 years, based on the 3 inattention/overactivity items of the Rutter scale.</p>	<p>from early established deep-seated neurobiological alterations, the persistence and severity of which are determined by the scale of the exposure and its timing. It was equally common in males and females whereas ADHD is more commonly diagnosed in boys.</p>
<p>Sonuga-Barke, Kennedy, Kumsta, Knights, Golm, Rutter, Maughan, Schlotz, & Kreppner (2016)</p>	<p>See previous references</p>		<p>Parent reports, available at all ages, to conduct a like-for-like comparison of six neuro-developmental and mental health outcomes across all ages. Self-ratings of emotional and conduct problems at 11, 15 & young adulthood. Hyperactivity, sustained attention and distractibility, measured using items from the Revised Rutter scale¹⁸ at ages 6 and 11 years, the Strengths and Difficulties Questionnaire¹⁹ at age 15 years and the Comprehensive Behavior Rating Scale²⁰ in young adulthood.</p>	<p>Time-limited exposure to severe adversity, occurring because of institutional deprivation in early childhood, can have a profound and lasting psychological impact despite subsequent environmental enrichment in well-resourced and supportive families. Twenty one percent of the Rom>6 group were problem free from age 6 years and had positive young adult outcomes. Extended early deprivation was associated with low educational attainment and unemployment in early adulthood.</p>
<p>Kumsta, Marzi, Viana, Dempster, Crawford, Rutter, Mill, & Sonuga-Barke (2016)</p>	<p>See previous ERA studies</p>	<p>Comparison between individuals experiencing extended (more than 6 months; n = 16) or limited (less than 6 months; n = 17) deprivation. The two groups were compared with a subgroup of individuals from the within-UK adoptee group (n = 16)</p>	<p>Oral cell samples were collected at the age of 15 and DNA was isolated. Previous measures already mentioned</p>	<p>Evidence for significant alterations in DNA methylation in response to severe early-life social adversity. DNA methylation across the nine CpG sites. In the CYP2E1 DMR was also associated with ToM performance and cognitive impairment. The CYP2E1 protein is a member of the cytochrome P450 (CYPs) super family of enzymes,</p>

Sonuga-Barke,
Kennedy, Kumsta,
Knights, Golm, Rutter,
Maughan, Schlotz. &
Kreppner (2017)

Longitudinal
study; see
previous
references. The
average age at
young adult
assessment was
23.6 years

165 Romanian and 52 UK
adoptees and their adoptive
families were recruited in the years
following their entry into the UK
between February, 1990, and
September, 1992

Assessments took place in the
individuals' homes. Questionnaires
were completed online or returned
by post. For practical and scientific
reasons, different assessment
instruments were used at different
ages. Conners Comprehensive
Behavior Rating Scale²⁰ in young
adulthood. Cognitive impairment
was judged present when individuals
had an IQ of less than 80

with a role in the metabolism of
various exogenous compounds
including drugs of abuse and
neurotoxins.

Romanian adoptees who experienced
less than 6 months in an institution
(n=67 at ages 6 years; n=50 at young
adulthood) and UK controls (n=52 at
age 6 years; n=39 at young
adulthood) had similarly low levels
of symptoms across most ages and
outcomes. By contrast, Romanian
adoptees exposed to more than 6
months in an institution (n=98 at ages
6 years; n=72 at young adulthood)
had persistently higher rates than UK
controls of symptoms of autism
spectrum disorder, disinhibited social
engagement, and inattention and
overactivity through to young
adulthood

Summary. It is evident that children adopted internationally from Romania faced many challenges after adoption. Specific risks and difficulties faced by adoptees with an institutionalization history include delays in emotional, social, and physical development (Spitz 1945; Bowlby 1951; Provence & Lipton 1962; Dennis 1973; Freud & Burlingham, 1973; Tizard & Rees 1974, 1975; Tizard & Hodges 1978; Kaler & Freeman 1994), increased risk for adult psychiatric problems (Frank et al., 1996), learning problems (Goldfarb 1943; McGuinness, McGuinness & Dyer, 2000) such as poor reading ability (Pringle & Bossio, 1960; Mapstone, 1969), emotional and behavioral difficulties (Ames 1992; Rutter, Taylor & Hersov, 1995; Rutter & the ERA study team 1998; Hoksbergen et al. 2005), and deficits in intellectual functioning (Goldfarb 1943, 1944; Goldfarb Braunstein & Lorge, 1956). However, many children with delays at the time of placement recovered after a year or more in their adoptive families, and about two-thirds or more completely overcame such difficulties (Groza 1996; Bascom, 1997; Jenista 1997; Rutter & the ERA study team, 1998).

Current Study

This is the fourth wave of a longitudinal study of Romanian adoptees that have been raised in the United States since the early 1990's and are currently transitioning into adulthood. As these children are undergoing the challenges of emerging adulthood, we are interested in learning whether their adult transitions follow the normative paths described by Arnett (1997, 2001, 2003, 2004) or if their transitional patterns are somewhat different as a result of their specific experiences.

Based on the theoretical frameworks used in the study as well as the previous

research conducted on Romanian adoptees, hypothesis have been added to the research questions posed in Chapter 1.

Research Questions and Hypotheses

Based on previous research and theory, this study aims to answer the following research questions about Romanian adoptees in early adulthood.

Research question 1. After controlling for age at adoption and type of recruitment, how much variance in adult transitions can be explained by length of time spent in institutional care?

Hypothesis 1. The longer time the Romanian adoptees spent in institutional care before adoption, the more problematic are their adult transitions after controlling for age at adoption and type of recruitment.

Research question 2. After controlling for age at adoption and type of recruitment, is length of time spent in institutional care likely to predict adult attachment?

Hypothesis 2. Romanian adoptees who spent longer time in institutional care are likely to feel less secure in their adult relationships, when age at adoption and type of recruitment are controlled for.

Research question 3. After controlling for age at adoption and type of recruitment, how much variance in adult transitions can be explained by pre-adoptive stress?

Hypothesis 3. The higher the scores on the pre-adoptive stress, the more problematic are the Romanian adoptees' adult transitions, when age at adoption and type

of recruitment are controlled for.

Research question 4. After controlling for age at adoption and type of recruitment, is pre-adoptive stress likely to predict adult attachment?

Hypothesis 4. Romanian adoptees who scored higher on pre-adoptive stress are likely to feel less secure in their adult relationships, when age at adoption and type of recruitment are controlled for.

Summary of Rationales for Hypotheses:

The vast majority of children adopted from Romania spent various amounts of time in institutional care before adoption and many of them were abandoned as infants or within the first year of life (Groza & Ileana, 1996; Markovitch et al., 1995, 1997; Rutter et al., 1995, 1998, 1999, 2000, 2006, 2007; Rutter & O'Connor, 1999; Nelson et al., 2014). Longitudinal studies continue to document that children who spent longer time in institutions encountered more challenges initially and had less positive developmental outcomes (Markovitch et al., 1997; Marvin & O'Connor, 1999; O'Connor et al. & the ERA team, 1999; Rutter & the ERA team, 1995, 1999). The move from environments of profound physical and emotional deprivation to resource rich families provided Romanian adoptees with new opportunities for recovery from these early traumatic experiences and developmental delays (Groza & Ileana, 1996; Groza, 1997; Rutter, 1995; Rutter & the ERA team, 1998; Groza, Ryan & Thomas, 2008). The majority of Romanian children showed remarkable recovery in numerous developmental domains in the few years post-adoption (Markovitch et al., 1995, 1997; Rutter, Kreppner & O'Connor, 2001; Rutter & the ERA team, 1998; Rutter et al. & the

ERA Study Team, 2007; LeMare & Audet, 2006; Merz, McCall & Groza, 2013) but for a small percent of children the Romanian adoptees did not accomplish a full recovery (Beckett et al., 2006; Rutter, Taylor & Hersov, 1995). The adoptees who had a more difficult time catching up to their peers were those who were institutionalized for a longer period of time (Markovitch et al., 1995, 1997; Rutter, Kreppner & O'Connor, 2001; Rutter & the ERA team, 1998; Rutter et al. & the ERA Study Team, 2007; Zeanah, Smyke & Dumitrescu, 2002; Zeanah, Nelson, Fox, Smyke, Marshall, Parker & Koga, 2003; Zeanah & Smyke, 2008) and perhaps those children who were in more globally depriving institutional settings (Merz, McCall & Groza, 2013). Educational achievement is one of the slow recovery areas for many Romanian adoptees (Beckett et al., 2006; Groza, Ryan & Thomas, 2008; Zeanah & Smyke, 2008). Since educational attainment is an important factor in achieving successful outcomes during emerging adulthood, we expected that children who spent longer time in institutional care will have more problematic adult transitions (H01).

In addition to development, longitudinal studies of children adopted from Romanian institutions have provided support for the premise that institutional care is associated with serious disturbances of attachment (Rutter et al., 1995; Rutter & the ERA team, 1998; Zeanah, Smyke & Dumitrescu, 2002). These studies have demonstrated an insecure and problematic attachment for many Romanian adoptees (Chisholm et al., 1995; Chisholm, 1998; Marcovitch et al., 1997; O'Connor et al., 1999; Zeanah, Smyke & Dumitrescu, 2002; Zeanah et al., 2005; Zeanah, Smyke & Settles, 2006; Nelson, Fox & Zeanah, 2013). At the same time, a large body of work has

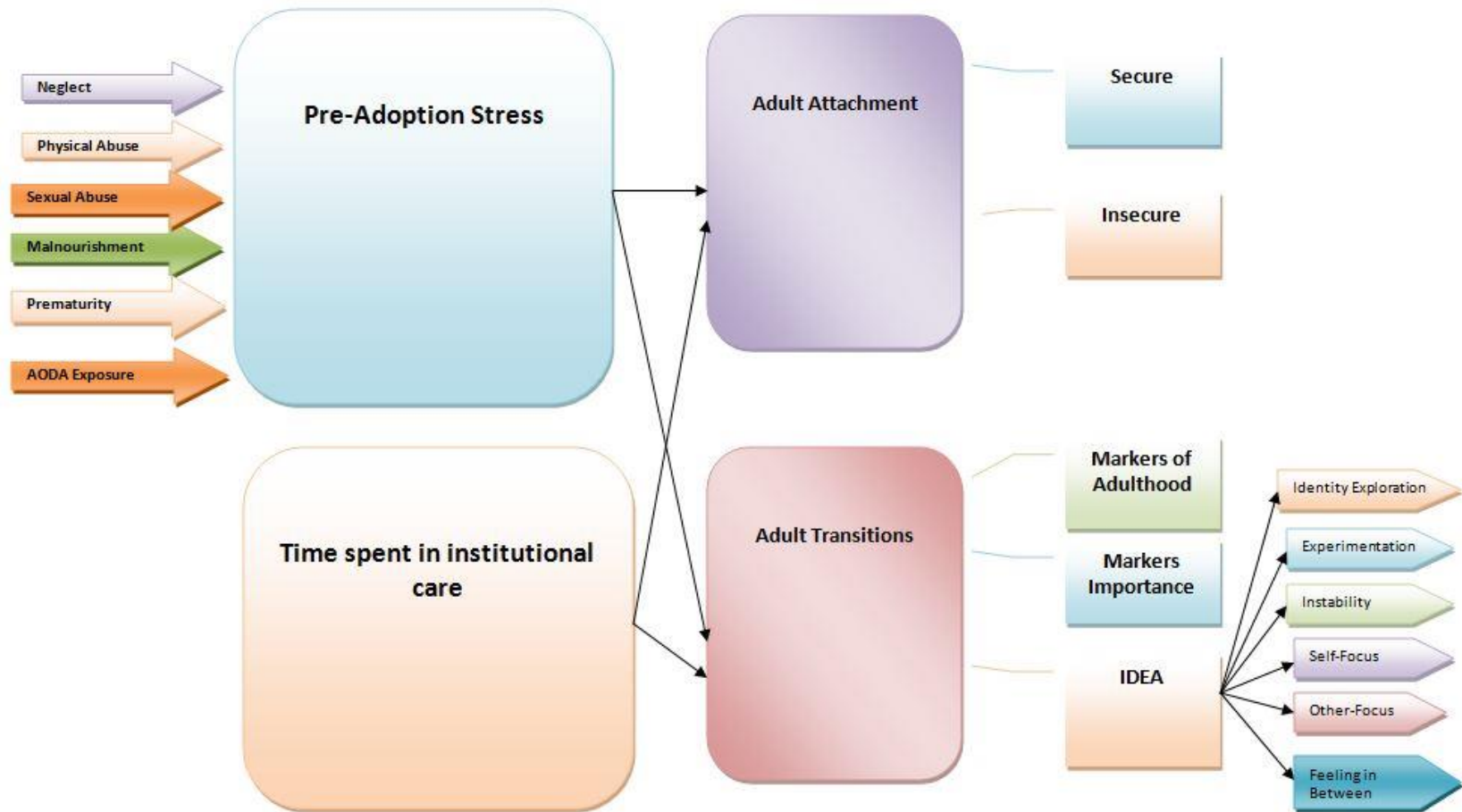
documented that the vast majority of Romanian adoptees were successful in building secure attachments with their parents over time (O'Connor, Rutter & the ERA team, 1998, 2000; O'Connor et al., 2003; Rutter et al, 2007). But insecure attachment and some forms of attachment problems continued to persist in some of these children up to adolescence (LeMare & Audet, 2006; Zeanah, Smyke & Dumitrescu, 2002; Zeanah et al., 2005; Zeanah, Smyke & Settles, 2006). As with other developmental outcomes, children who spent longer time in institutional settings had more attachment problems or difficulties (Goldberg, Marvin & Markovitch, 1996; O'Connor, Rutter & the ERA team, 1998; Rutter et al., 1999). H3 states that Romanian adoptees who spent longer time in institutional care are likely to feel less secure in their adult relationships. Since a large body of work to date indicates that children who spent longer time in institutional care had more attachment disturbances, we expected to detect a similar pattern of insecure attachment in adulthood.

The adoptive child brings unique challenges as a subsystem to the larger adoptive family system (Rosenberg, 1992). One of the stressors is the pre-adoptive history that the child brings to the family. This history includes the prenatal history, which in most adoptions information is unknown, scant or inaccurate (Groza & Ileana, 1996; Groza, Ileana & Irwin, 1999). Also the quality of experiences from birth to placement is important. This history can affect the health, mental health, development and psychosocial functioning of the child after adoption. The vast majority of children adopted internationally have a history of institutionalization and often experience neglect, physical abuse and/or sexual abuse, either as victims or witnesses (Gavrilovici

& Groza, 2007). Abused children's behavior difficulties include acute anxiety, depression, panic on separation from familiar people or situations, provocation, poor impulse control, marginal peer relationship, aggressiveness, and attachment difficulties (Erikson, 1968, 1969, 1975; Bowlby, 1977, 1984; Green, 1978; George and Main, 1979; Yates, 1981; Wodarski, Kurtz, Gaudin Jr. & Howing, 1990; Harper & Marshall, 1991; Koverola, Pound, Heger & Lytle, 1993). Children who spent formative months or years in institutions are at greater risk for severe behavior and emotional problems (Bender & Yarnell, 1941; Goldfarb 1943, 1945; Wolkind, 1974). Given the many challenges encountered by adoptees, we hypothesized Romanian adoptees who scored higher on pre-adoptive stress are likely to feel less secure in their adult relationships (H4).

Figure 1 below presents the conceptual model of the project.

Figure 1: Conceptual Model



Chapter 3

Methodology

This chapter presents the methods and measures used in this study. It describes the research design and provides definitions of key concepts. The last section of this chapter specifies the data analyses plan.

Institutional Review Board

The research project followed the protocols for authorization by the Institutional Review Board (IRB# 2015-1099). Since the project is associated with the Jack, Joseph and Morton Mandel School of Applied Social Sciences (MSASS), the IRB application and reviews were handled by the primary investigator and submitted to the IRB at CWRU. At this time, all necessary authorizations and reviews have been submitted and approved on a timely basis.

Definition of Concepts

The concepts used in the study are presented in Table 6.

Table 6. Definition of Concepts

	Definition
Romanian adoptee	An individual who has been legally adopted from Romania
Adoptive parent	An individual who has legally adopted one or more minor children from Romania
Adult attachment	Ability to establish and sustain emotionally significant interpersonal bonds in adulthood

Adult transitions	Indicators that a young adult is becoming self-sufficient and learning to be an independent person, such as: financial independence from parents, moving out of the parent's home, moving into professions and careers, etc. (Arnett, 2000, 2004).
Emerging adulthood	Distinct period (which is not adolescence nor early adulthood) characterized by identity explorations, exploration of possibilities, instability, being self-focused, feeling in-between, and focusing more on others (Arnett, 2004).
Pre-adoptive stress	A state of physical, mental or emotional strain resulting from adverse biological and/or environmental circumstances prior to adoption.
Institutionalization	Children's placement in a state run residential care setting, characterized by routinization of care
Type of recruitment	The participants in this study have been recruited in two ways. Some participants came from the longitudinal studies conducted between 1993 and 2015, while other participants were recruited through social media

Table 7 presents the study's 4 research questions and corresponding hypotheses.

Table 7. Research Questions and Hypotheses

Research Questions	Hypotheses
RQ1: After controlling for age at adoption and type of recruitment, how much variance in adult transitions can be explained by length of time spent in institutional care?	H1: The longer time the Romanian adoptees spent in institutional care before adoption, the more problematic are their adult transitions after controlling for age at adoption and type of recruitment.
RQ2: After controlling for age at adoption and type of recruitment, is length of time spent in institutional care likely to predict adult attachment?	H2: Romanian adoptees who spent longer time in institutional care are likely to feel less secure in their adult relationships, when age at adoption and type of recruitment are controlled for.
RQ3: After controlling for age at adoption and type of recruitment, how much variance in adult transitions can be explained by pre-adoptive stress?	H3: The higher the scores on the pre-adoptive stress, the more problematic are the Romanian adoptees' adult transitions, when age at adoption and type of recruitment are controlled for.
RQ4: After controlling for age at adoption and type of recruitment, is pre-adoptive stress likely to predict adult attachment?	H4: Romanian adoptees who score higher on pre-adoptive stress are likely to feel less secure in their adult relationships, when age at adoption and type of recruitment are controlled for.

Study Population

The study population is young adults who were adopted from Romania from 1990 to 1994. To be included in this study, the adoptee had to be between the ages of 18 to 30, know that they are adopted, have the capacity to give informed consent, and were willing to participate in the study. The following adoptees were excluded from this study: the adoptee was younger than 18 or over 33, the person did not know that they are adopted, or the adoptee did not have the capacity to give informed consent. If the person did not have access to a computer but could be interviewed, we did not exclude them.

Study Design

This is the fourth wave of a longitudinal study of Romanian adoptees that have been raised in the United States since the early 1990's and are currently transitioning into adulthood. The intent was to study this group of children and their families over time to gain a better understanding of their experiences.

Data was collected both from adoptive parents and adoptees via two different surveys, using survey monkey online or a mailed survey. One survey was set up for adoptees and the other one was set up for adoptive parents. The online surveys for parents and adoptees were password protected. Only those who met the inclusion criteria were given the password to access this site; the password allowed them to only see their own survey.

Samples (Adoptive Parent and Adoptee)

In the first wave in 1994, a cross-sectional survey was used from a convenience sample of adoptive families of Romanian children. Families were located by way of 10 parent support groups throughout the country. The mailing list was comprised of over 2000 names of adoptive families. 1925 surveys were sent to families on the mailing lists. Ninety seven percent of the families were successfully located ($n = 1867$); this conclusion was made because their surveys were not returned as a wrong address. For these surveys, data were collected on 475 children residing in 399 families, which is about 16% of all adoptions from Romania between 1990 and 1993. The strengths and weaknesses of the original sample are discussed elsewhere (Groze & Ileana, 1996).

In 1995, the families who participated in the first year of the study and provided their addresses ($n=330$) were contacted for a second time; this was 83% of the Wave 1

sample. Data were collected on 238 children living in 209 families at the second wave of data collection, representing a response rate of 63% of successfully contacted families.

In 1999, families in the second wave were contacted again. The third wave consists of 123 children in 102 adoptive families. This represents a retention rate of 53% of the sample from the second wave of the study ($n=230$) and a retention rate of 37% of the first wave.

In 2015, families who gave permission to be contacted for future research ($n=342$) were contacted again. These were families from both Wave 2 and Wave 3. There was no contact with the families since 1995 (Wave 2) or 1999 (Wave 3). A commercial search engine was engaged to verify addresses (beenverified.com). A number of families could not be located even with commercial search engine ($n=94$). The families for which the mailing was not returned were considered successfully located ($n=248$). 98 families responded. This represents a retention rate of 30% of the sample from the first wave of the study for whom addresses were given ($n=330$) and a retention rate of 47% of the sample from the second wave ($n=209$). Overall, of surveys distributed, the response was 40% for adoptive parents.

In addition, using social media and snowball sampling, Romanian adult adoptees and adoptive parents of Romanian adoptees were contacted to participate in the study. This resulted in an additional 20 adoptive parents who joined the study. Thus, the sample of adoptive parents is 139.

This study focuses on the data from the last wave; as such, the data will be cross-sectional. There are several problems with the sampling. First, the original sample was a convenience sample and results cannot be generalized to other adoptive families. Second,

the low response rate for the estimated number of families contacted is a concern. Third, there is no way to ascertain the experiences of families who did not participate in the study. The sample also has several strengths. The families were geographically dispersed. Also, the sample are a community sample; they were not concentrated at a specific site or recruited from specific medical or psychiatric settings.. While we cannot generalize results, we can be conclusive about the families at the specific point in time they participated in the research (Groze & Ileana, 1996; Groza, Ileana & Irwin, 1999).

Keeping in mind the sensitive nature of the study and the fact that adoptees may not know of their adoptive status, contact with the adoptees was established through the parents. This methodology was used in a study of adult adoptees placed domestically (in-country) in India (see Groza, Park & Oke, 2012).

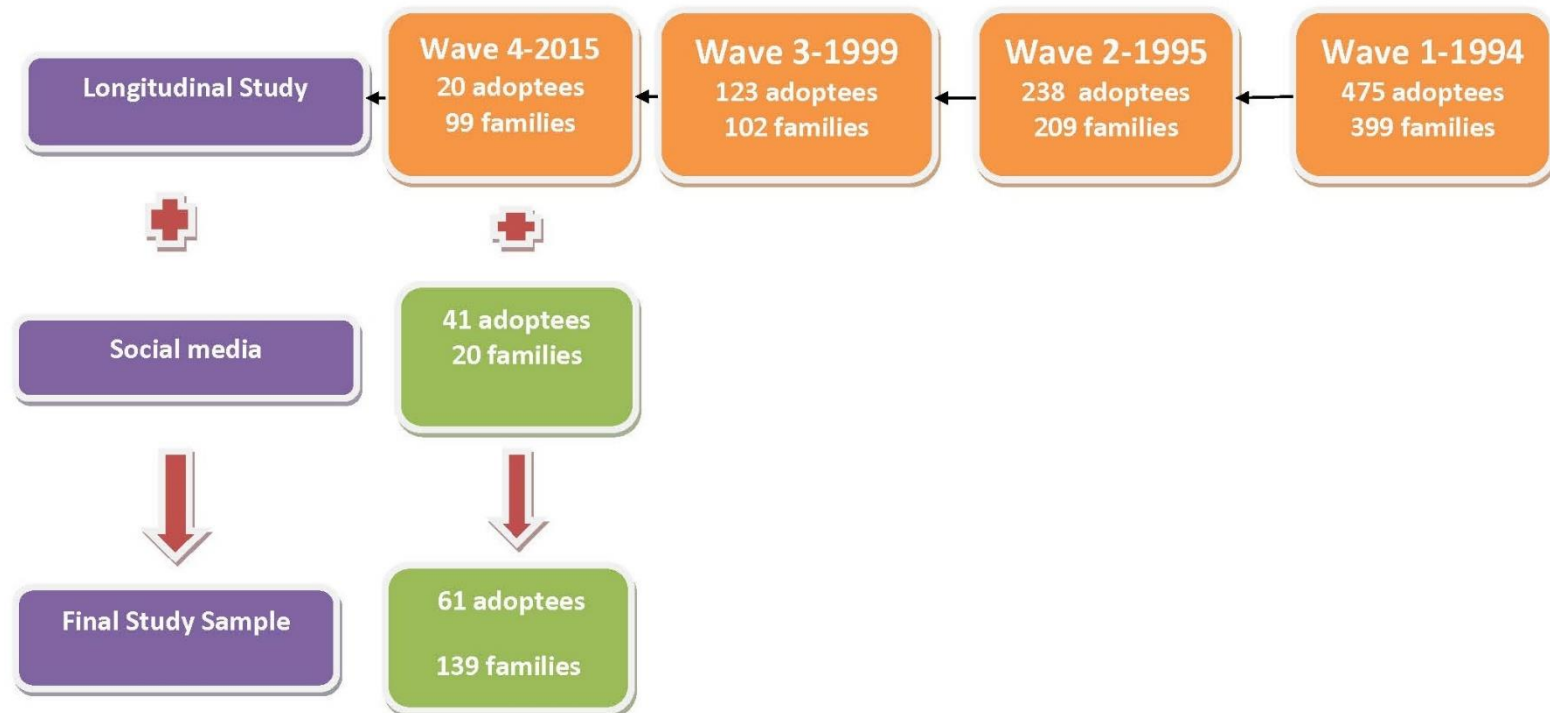
In stage 2 of this study, only the adoptees who knew that they had been adopted and the parents provided contact information were involved in the study. To operationalize this intent, adoptive parents were asked to verify twice that the adoptee knows about the adoption. If the adoptive parent in the first question reported the adoptee knows but in the second question reported no or leave it blank, we did not contact the adoptee. Only adoptees that the parents verified twice that they know they were adopted and provided contact information were contacted. Ninety seven adoptive parents (82%) reported we could contact their adult adoptee but only 36 (37%) provided contact information.

Most adoptees were contacted via a letter or using the information provided to us by the adoptive parents such as by email or text messaging, except those that participated via social media. When we established contact (either initiated by adoptees or by us), we

mailed them a consent form that gave them access to a website or mailed them the survey, whichever they preferred. The email or text messages reiterated the importance of having a voice in impacting policy and practice in international adoption and being able to share their adoption stories if they chose to. Due to missing data and low response rate from the adoptees, data collection was opened two times. Data were collected from 61 adoptees; 20 of the adoptees were from the longitudinal study and the remaining were from social media.

Figure 2 is a flowchart representing recruitment efforts.

Figure 2: Flowchart for Sample Recruitment



Dependent, Independent and Control Variables

Table 8 presents the dependent, independent and control variables in the current study and specifies the nature of each variable.

Table 8. Type (Independent, Dependent and Control) and Nature (Categorical, Ordinal, Interval or ratio) of Variables

Variable	Variable type: dependent, independent or control	Nature of variable: categorical, ordinal, interval or ratio
Adult transitions	Dependent	Both interval and categorical (1-6)
Adult attachment	Dependent	Interval, categorical (1-4) and categorical (1-2)
Length of time spent in institutional care (months)	Independent	Ratio
Pre-adoptive stress	Independent	Interval
Age at adoption (months)	Control	Ratio
Type of recruitment	Control	Categorical (1-2)

Measures

Copies of all measures are included in the Appendix. This section provides an explanation of the measures and psychometric properties, when available.

Adult transitions. Three measures were used to examine adult transitions: **1) Markers of Adulthood; 2) Markers Importance; and, 3) a shorter version of the Inventory Emerging Adulthood (IDEA).** These items were completed by the adoptees.

Markers of Adulthood. Markers of Adulthood is a composite score of 12 variables

measuring the achievement of adult status on the adoptees' surveys: 1) Financially independent from parents; 2) Have settled into a long-term career; 3) Drive safely and close to the speed limit; 4) Not deeply tied to parents emotionally; 5) Committed to a long-term love relationship; 6) Make own decisions; 7) Have become capable of supporting a family financially; 8) Have become capable of running a household; 9) Accept responsibility for the consequences of actions; 10) Have established a relationship with parents as equal adults; 11) Have learned always to have good control over emotions and 12) Have become less self-orientes and developed greater consideration for others. Each item was rated using a 3-point Likert Scale to assess how true each statement was for that individual and for that particular characteristic of adulthood (1 = Very True, 2 = Somewhat True, 3 = Not true). All of the items were worded positively and higher scores indicated greater achievement of adult status. The composite Markers of Adulthood scale has an observed range from 0 to 36. Markers of Adulthood is continuous and measured on a level that approximates interval level characteristics.

Markers Importance. Markers Importance is a composite score of 16-items measuring the importance of various markers of adulthood on the adoptees' surveys: 1) Financially independent; 2) No longer living in parents' household; 3) Finished with education; 4) Married; 5) Have at least one child; 6) Settled into a long-term career; 7) Purchased a house; 8) Drive an automobile safely and close to the speed limit; 9) Be not deeply tied to parents emotionally; 10) Committed to a long-term love relationship; 11) Make independent decisions; 12) Accept responsibility for the consequences of one's actions; 13) Be employed full-time; 14) establish a relationship with parents as equal adults; 15) Learn always to have good control over one's emotions and 16) Become less self-oriented and developed greater consideration for others. Each

item was rated using a 4-point Likert Scale to rate how true each statement was for that individual (1 = Very Important, 2 = Quite Important, 3 = Slightly Important, 4 = Not at all Important). All of the items were worded positively and higher scores indicated positive beliefs about transition to adulthood. The composite Markers Importance scale has an observed range from 0 to 64, with higher scores representing more importance assigned to achieving adult transitions. Markers Importance is continuous and measured on a level that approximates interval level characteristics.

Inventory of the Dimensions of Emerging Adulthood (IDEA)-administered only to adoptee. As discussed in detailed in Chapter 2, Arnett has proposed that Emerging Adulthood is characterized by five distinctive features: identity explorations, the age of instability, the self-focused age, the age of feeling in-between, and the age of possibilities (Arnett, 2004). In developing the Inventory of the Dimensions of Emerging Adulthood (IDEA), Arnett, Reifman, and colleagues (2007) generated items designed to map onto the aforementioned five dimensions. An additional dimension, known as *other-focus*, was also developed; although not part of the primary conceptualization of EA, it represents a counterpoint to self-focus.

The Inventory of the Dimensions of Emerging Adulthood (IDEA; Reifman et al., 2007) was used to measure the degree to which individuals endorsed the emerging adult dimensions. The IDEA asks participants to contemplate an approximated five year period, which includes the current point in their lives, the last few years, and the next few years.

Participants responded to 31 questions on a Likert-type scale ranging from (1) strongly disagree to (4) strongly agree. One sample item for each of the emerging adult dimensions are as follows: age of feeling in-between (“Is this period of your life a time of being not sure whether

you have reached full adulthood?”), period of identity exploration (“Is this period of your life a time of finding out who you are?”), age of possibilities (“Is this period of your life a time of many possibilities?”), age of instability (“Is this period of your life a time of unpredictability?”), time of self-focus (“Is this period of your life a time of focusing on yourself?”), and other-focus, counterpart to time of self-focus (“Is this period of your life a time of responsibility to others?”).

Reifman and colleagues (2007) provided a key for researchers to use to decipher the specific items within each subscale. For instance, the subscale for time of identity exploration consisted of seven items (i.e., IDEA questions 12, 23, 24, 25, 26, 27, 28). Reifman and colleagues (2007) further indicated that the six subscales of the IDEA measure displayed strong internal consistency with alphas between .70 to .85 and other research reported similar findings (Miller, 2011).

The subscale measuring time of self-focus produced the lowest alpha reliability coefficient among the subscales but the remaining five subscales have consistently produced sufficient measures of internal consistency. Zaluski (2012) reported an alpha of .63 for the subscale measuring time of self-focus, with all other subscales generating alphas of .70 and higher. Likewise, McCourt (2004) reported an alpha of .66 for self-focus with all other subscales having an internal consistency of .71 or higher. Cronbachs alpha was .63 for time of self-focus, .66 for time of feeling in between, .74 for age of identity exploration, .75 for other-focus, .78 for age of possibilities, and .80 for time of instability.

For this study, we used a shorter version of IDEA, which is a 29-item scale with each item being rated by using a 4-point Likert Scale to determine the level of agreement with each statement (1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Somewhat Agree, 4 = Strongly

Agree).

Adult attachment. Adult attachment was examined by using the Revised Attachment Scale (RAAS); the RAAS data was collected from both adoptees and adoptive parents. RAAS is an 18-item scale measuring the respondent's feelings about romantic relationships (Collins, 1996). Each item was rated using a 5-point Likert Scale from 1=Not at all characteristic of me to 5=Very characteristic of me to rate how characteristic of that individual was the item listed. This scale contains 3 subscales, each composed of six items. The three subscales are CLOSE, DEPEND, and ANXIETY. The CLOSE scale measures the extent to which a person is comfortable with closeness and intimacy. The DEPEND scale measures the extent to which a person feels he/she can depend on others to be available when needed. The ANXIETY subscale measures the extent to which a person is worried about being rejected or unloved.

A scoring protocol converts the three dimensional scores into four categories of attachment; they are secure, preoccupied, dismissing or fearful attachment (Collins, 1996). The classification is based on the comparison of an individual's raw subscale scores against the theoretical mean cut-off points of a score of 3 on the three dimensions, with the CLOSE and DEPEND subscales scores being combined into one indicator called CLOSEDEP. This rule allows for assigning an individual: (a) the secure style, if he/she achieves a score higher than the cut-off point on the CLOSEDEP subscales and a score below the cut-off point on the ANXIETY subscale; (b) the preoccupied style, if he/she achieves a score higher than the cut-off point on both subscales; (c) the dismissive style if he/she achieves a score below the cut-off point on both subscales and (d) the fearful style if he/she achieves a score below the cut-off point on the CLOSEDEP subscales and above the cut-off point in the ANXIETY subscale.

In order to perform logistic regression analyses to answer the research questions 2 and 4 and investigate the hypotheses 2 and 4, two dummy variables have been created: attachmstyle1 and attachmstyle2. Attachmstyle1 reflects data collected from the adoptive parents and attachmstyle2 represents data collected from the adoptees. Both variables were coded 0 for insecure attachment and 1 for secure attachment. Both variables were obtained by recoding the variable representing the 4 categories of attachment mentioned above so that the preoccupied, dismissive and fearful attachment styles represented insecure attachment, while the secure dimension remained unchanged.

Pre-adoption history-data gathered from adoptive parents. A focused pre-adoptive history was conducted, including a detailed timeline with placement history. Pre-adoptive stress is measured by the Pre-Adoptive Stress Scale (PASS) which is a composite score of six variables on the adoptive parents and adoptees' surveys: *born premature, prenatal malnourished, AODA exposure, neglect, physical abuse and sexual abuse*. Each of these variables was coded as *0=none/no, 1=unknown, 2=suspected, and 3=yes*. The composite PASS has an observed range from 0 to 18. High scores on the PASS reflected higher reported pre-adoptive stress. PASS is continuous and measured on a level that approximates interval level characteristics.

Social and demographic characteristics –data gathered from adoptees and adoptive parents. Detailed data collection forms have been developed to gather social and demographic information from adoptive parents and adoptees. Data included current age, age at time of adoption, gender of parent participating in the study, year of adoption, education of parents and marital status of the parents at adoption and time of the study.

Data Analysis Plan

Preliminary Analyses

All data analyses completed for this study was conducted using the statistical software IBM SPSS Statistics 23-24. Data was examined for any conflicts against the original surveys. This was done by checking each variable for scores that are out of range (not within the range of possible scores) and finding and correcting errors in the data file. Once the data file was checked and cleaned of errors, the data file was inspected and the nature of all variables was explored.

Descriptive statistics. The descriptive phase of the data analysis analyzed the characteristics of the sample: number of subjects included in the sample, number and percentage of males and females in the sample, the range and mean of ages and any relevant background information.

To obtain descriptive statistics for categorical variables, frequencies were run, which provided information on how many people gave each response for each category. For continuous variables, Descriptive statistics were run, which provided summary statistics such as means, medians and standard deviations. Descriptive statistics also provided information concerning the distribution of scores on continuous variables: skewness and kurtosis. The skewness value provides an indication of the symmetry of the distribution and kurtosis provides information about the *tailedness* of the distribution.

Assessing normality. Since many statistical techniques that were used assume that the distribution of scores on the dependent variable is normal, normality was assessed. Normal is used to describe a symmetrical, bell-shaped curve, which has the greatest frequency of scores in the middle and has smaller frequencies towards the extremes (Gravetter & Wallnau, 2004). Normality was assessed by obtaining skewness and kurtosis values, with histograms and by

using the exploring option of the Descriptive statistics.

Missing data. The data file was inspected for missing data, by examining whether the missing values were random or whether there was any systematic pattern. Decisions were made regarding how to deal with missing values for each statistical analysis. The Exclude cases pairwise option was used for the majority of analyses, because it excludes the subject only if they are missing the data required for that specific analysis. These cases were still included in any of the analyses for which they had the necessary information.

Checking for outliers. Since the majority of statistical analyses are sensitive to outliers, the data was examined to identify outliers, by using histograms, box plots, by checking the scores to see whether they were within the range of possible scores for that particular variable and by looking at the trimmed means. When outliers were identified, decisions were made about changing or removing these values in the data file.

Data manipulation. Once the data file was checked for accuracy, the raw data was manipulated into forms that could be used for conducting the specific analyses that tested our hypotheses. This process included: adding up the scores for each items that made up the scales and the subscales, transforming skewed variables into categorical variables to perform analyses of variance, collapsing continuous variables into categorical variables and reducing or collapsing the number of categories of a categorical variable.

Analyses for Each Research Question

Research Question 1. Multiple hierarchical regressions were used to determine how well the independent variable length of time spent in institutional care was able to predict adult transitions. Because we wanted to control for the variables age at adoption and type of

recruitment, the independent and control variables were entered into the regression equation in steps or blocks with the independent variable of the length of time spent in institution being assessed in terms of what it added to the prediction of the dependent variable IDEA after the previously entered variables: age at adoption and type of recruitment have been controlled for. The control variables age at adoption and type of recruitment were entered in Block 1 and then length of time spent in institutional care were entered in Block 2. The dependent variables used to investigate research question 1 were Markers of Adulthood, markers Importance and the 6 subscales of IDEA. Once all sets of variables were entered, the overall regression models were assessed in terms of its ability to predict the dependent variables. The relative contribution of each block of variables was assessed in each of the 8 regression analyses performed for research question 1.

Research question 2. Logistic regression was used to determine whether length of time spent in institutional care was likely to predict secure or insecure adult attachment. Because we wanted to control for the variable of age at adoption and type of recruitment, the independent and control variables were entered into the regression equation in steps or blocks. The control variables age at adoption and type of recruitment were entered in Block 1 and then length of time spent in institutional care was entered in Block 2. Once all sets of variables were entered, the overall regression model was assessed in terms of its ability to predict either secure or insecure attachment.

Research question 3. Multiple hierarchical regressions were used to determine how well the independent variable PASS was able to predict adult transitions. Because we wanted to control for the variables of age at adoption and recruitment type, the independent and control

variables were entered into the regression equation in steps or blocks. The control variables age at adoption and type of recruitment were entered in Block 1 and then PASS was entered in Block 2. Once all sets of variables were entered, the overall regression models were assessed in terms of its ability to predict the dependent variable IDEA. The dependent variables used to investigate research question 1 were Markers of Adulthood, markers Importance and the 6 subscales of IDEA. Once all sets of variables were entered, the overall regression models were assessed in terms of its ability to predict the dependent variables. The relative contribution of each block of variables was assessed in each of the 8 regression analyses performed for research question 1.

Research question 4. Logistic regression was used to determine whether PASS was likely to predict secure or insecure adult attachment. Because we wanted to control for the variables of age at adoption and type of recruitment, the independent and control variables were entered into the regression equation in steps or blocks. The control variables age at adoption and type of recruitment were entered in Block 1 and then PASS was entered in Block 2. Once all sets of variables were entered, the overall regression model was assessed in terms of its ability to predict either secure or insecure attachment.

Assumptions of OLS Hierarchical Regression and Logistic Regression.

Sample size. Stevens (1996, p.72) recommends that "for social science research, about 15 subjects per predictor are needed for a reliable equation". Tabachnick & Fidell (2007, p. 123) give a formula for calculating sample size requirements, taking into account the number of independent variables that the researcher wishes to use ($N > 50 + 8m$ where m =number of independent variables). More cases are needed if the dependent variable is skewed. In this regression model, there are 2 independent variables: length of time spent in institution and PASS.

According to the guidelines described by Stevens, a sample size of 30 would be sufficient to meet this assumption. To satisfy the Tabachnick & Fidell (2007) requirement, a sample larger than 66 was necessary. The sample size for the adoptive parents is well above this number. The sample size of the adoptees is slightly below the standard suggested by Tabachnick & Fidell (2007). The implications of the adoptees' small sample size will be discussed in Chapter 5.

Multicollinearity and singularity. This assumption refers to the relationship between the independent variables. Multicollinearity exists when the independent variables are highly correlated ($r=.9$ and above). Correlation analyses were used to describe the strength and the direction of the linear relationship between the independent variables. Singularity occurs when one independent variable is actually a combination of other independent variables, for instance when both subscales scores that the total score of a scale are included). There is no singularity in our data.

Normality, linearity, homoscedasticity, independence of residuals. These assumptions were checked from the residuals scatterplots which were generated as part of the multiple regression procedures in SPSS. Residuals are the differences between the obtained and the predicted dependent variable scores. The residuals scatterplots allowed us to check normality: the residuals should be normally distributed about the predicted dependent variables scores; linearity: the residuals should have a straight line relationship with predicted scores of the dependent variables and homoscedasticity: the variance of the residuals about the predicted scores of the dependent variables should be the same for all predicted scores.

Confidentiality and Data Management.

Data returned by mail are entered into SPSS and stored on the mainframe at MSASS. The

paper copies are secured in a lock file. Survey Monkey was also used to collect adoptee data (and adoptive parent data if they choose to use this site rather than the forms sent to them). Survey Monkey has procedures in place to secure data collected. Data were downloaded from Survey Monkey once the subscription ended. For the mailed survey, a consent form is included in the packet that a family can return with the survey. For the web survey, before they can access the survey, they had to review and electronically sign the web form.

Chapter 4

Findings

This chapter presents the data analyses. First, descriptive statistics about the characteristics of the Romanian adoptees and their adoptive parents are presented. Adoptee and family characteristics are described using means, standard deviations, medians, and ranges for continuous data, frequencies and proportions for categorical data. The independent and dependent measures were subjected to tests of reliability and data reduction/index constructions for the different measures of adult transitions. Differences between the longitudinal sample and those who were recruited through social media were examined. Additional analyses focused on three groupings: the first group was parent and adoptee both responded to the study, the second group was adoptee only responded, and third group was parent only responded. Advanced statistical analysis included chi-square, t-tests, general linear regression, and logistical regression to provide answers to the four research questions posed.

Characteristics of the Sample

Sample bias. Several characteristics of adoptees as reported by both the adoptees and the adoptive parents were examined using independent sample t-tests to identify differences between the adoptees in the longitudinal sample and those who were recruited through social media; the variables included age at the time of the study, age at the time of the adoptive placement, pre-adoptive stress, and length of time in institutional care before adoption. Assumptions were checked and met. There was only one significant difference between type of recruitment; the sample recruited through social media comprised younger adoptees at the time of the study ($M=23.4$) compared to those

enrolled from the longitudinal study ($M=25.6$) ($t=3.451$, $p=.001$). There were no significant differences for age at the time of placement, pre-adoptive stress, or length time in institutional care. A chi-square test examined differences by gender, educational level and employment status. Assumptions were checked and met. There was no statistically significant difference on any of these variables between the groups recruited through social media compared to the longitudinal study group.

The characteristics of adoptees as reported by the adoptive parents were examined for differences between the adoptees who responded to participate in the study and those who did not respond to the study for the following variables: age at the time of the study, age at time of the adoptive placement, pre-adoptive stress, and time spent in institutional care before adoption. Assumptions were checked and met. There were no significant differences for any of these variables between those who chose to participate and those who did not participate.

Characteristics of adoptive parents were examined for differences between the parents from longitudinal sample and those who were recruited through social media; the variables examined were age of the reporting parent at the time of the study, age at the time of the adoptive placement, the parents' reported interest in adopting again, and the parents' interest in adopting again the same child. Assumptions were checked and met. There were no statistically significant differences between the two groups of adoptive parents on any of these variables.

Additional analyses were performed to examine the characteristics of adoptees based on the three groups mentioned previously. Of the 159 cases, 40 (25.2%) belonged to the both parent and adoptee responded category labeled as BOTH, 21 (13.2%)

belonged to the adoptee only responded labeled as ADOPTEE, and 98 (61.6%) belonged to the parent only responded category labeled as PARENT. In BOTH, there were 25 female adoptee (64.1%) and 14 male adoptees (35.9%). In the ADOPTEE group, there were 10 females (47.6%) and 11 males (52.4%). In the PARENT group, parents reported on 46 females (50.5%) and 47 males (49.5%). Assumptions were checked and met. There were no significant differences in gender between the three groups based on a chi-square test.

Further analysis of the three group examined the special needs of the adoptee. A chi-square statistic was used and assumptions were checked and met. There was no reported data regarding the special needs of the adoptee for the adoptee only responded group. The results indicate that the BOTH group and PARENT group were significantly different in regards to the special needs of the adoptee ($\chi^2=12.71$, $df=1$, $n=66$, $p<.05$). There were 56.4% ($n=22$) reported adoptees with special needs in the BOTH group compared to 75.9% ($n=66$) in the PARENT group.

The variables of age at the time of the study, length of time in adoptive home, length of time in institutional care before adoption, pre-adoptive stress, and age at placement were all examined for group differences using a one-way ANOVA tests. Assumptions were checked and met. There was a statistically significant difference in age at the time of the study ($p<.05$) between the 3 groups ($F(2, 84)=4.16$, $p=.01$). Despite reaching statistical significance, the actual difference in mean scores between the groups was small. The effect size, calculated using eta square, was .02. Post-hoc comparisons using the Tukey HSD test indicated that the mean score of age at the time of the study for the BOTH group ($M=25.8$, $SD=1.88$) was significantly higher than the ADOPTEE group

(M=23.9, SD=2.83) and from the PARENT group (M=25.5, SD=2.86).

Adoptive parents' data. The sample of adoptive parents used in this study is 139. 87.4 % (n=118) of the surveys were completed by the adoptive mother. A slight majority of families in this sample adopted girls (n=73, 54.9%). The majority of mothers (n=76, 60.4%) were between the age of 30 and 40 at the time of adoption. The same was true for the fathers (n=67, 59.8%). At their last birthday, 56.4% of mothers (n=71) and 61.2% of fathers (n=66) were between the ages of 60 and 70. A large percentage (n=82; 65.6%) of parents adopted as a married couple and are still married. Only 12.8% (n=16) are no longer together. Out of those, a small percentage (n=4; 2.8%) were widowed.

Most of the adoptees (n=107; 89%) were placed before 1991 (16% in 1990 and 63% in 1991) with placements occurring through 1999. Table 9 presents the distribution of adoptions over time.

Table 9. Year of Adoption (n=133)

Year	N	%
1989	2	1.5
1990	21	15.8
1991	84	63.2
1992	5	3.8
1993	2	1.5
1994	7	5.3
1995	3	2.3
1996	1	.8
1997	4	3.0
1998	3	2.3
1999	1	.8

Adoptee data. Table 10 presents data on time variables used in this study related to the adoptee.

Table 10. Descriptive Data of Adoptee Characteristics Reported Adoptive by Adoptive Parents

	N		Mean	Std. Deviation	Min	Max
	Valid	Missing				
Current age of adoptee (years)	136	3	25.3	2.636	18.00	38.00
Age at placement (months)	135	4	23.0	29.275	.00	144.00
Time in adoptive placement (years)	133	6	25.4	1.928	18.00	28.00
Time in institutional care before adoption (months)	68	71	29.5	27.065	.25	138.00

The average age of adoptees at the time of the study was 25 years with a range of 18 to 38 years. Age at placement was reported by most parents; when it was missing it was calculated based on year of birth and year of adoptive placement. As a result, the number of missing cases is very small (n=4). At the time of adoption, adoptees were 23 months old on average (SD = 29.3). The length of time in the adoptive home has been 25 years on average (SD=1.9).

Approximately 8.63% (n=12) of adoptees never spent time in institutional care but went from the birth family or a foster family directly to their adoptive family. On average, adoptees spent 29.5 months in institutional care (SD=27.1) before adoption with a range of .25 months to 138 months. Approximately 35% (n=44) reported the adoptee spending 30+ months in institutional care.

Because the average age at the time of the adoptive placement was 23.0

(SD=29.28) months and the time spent in institutional care was an average of 29.5 (SD=27.07) months, data was further inspected and two cases were identified as outliers with the age at placement being more than 120 months. These cases were deleted in subsequent analysis which resulted in a sample of 131 adoptees who spent on average 14.23 months (SD=21.92) in institutional care and had an average age at the time of the adoptive placement of 20.56 months (SD=23.88).

Approximately 69% (n=88) of parents reported their child had special needs after adoption. These special needs included: ADHD (n=25, 17.5%), learning disabilities (n=27, 18.9%), attachment difficulties (n=18, 12.6%), autism (n=6, 4.2%), speech and developmental delays (n=30, 21%), OCD (n=3, 2.1%), ODD (n=3, 2.8%), mental retardation (n=7, 4.9%), anorexia (n=3, 2.1%), anxiety (n=13, 8.1%), depression (n=16, 11.4%), bipolar disorder (n=5, 3.5%), PTSD (n=2, 1.4%), sensory integration disorder (n=2, 1.4%), and deafness (n=2, 1.4%); these data are not mutually exclusive. Only about one-fifth of parents (n=24, 18.8%) stated that they specifically chose to adopt a child with special needs; most did not.

Sixty one adoptees responded to the survey for a response rate of 36%. Of those who responded, 57.4% (n=35) are female and 42.6% (n=26) were male. The majority of adoptees are between the ages of 24 and 27 (n=43, 69.5%), with just one adoptee being over the age of 30 (1.6%) and 2 adoptees (3.3%) being under 20 years old. Slightly more than one-third (n=23; 37.7%) have a bachelor's degree and another 39.5% (n=18) have some college or an associates degree. Only two adoptees (3.3%) have less than a high school degree. Approximately 78% (n=47) feel that they have met or exceeded their parents' academic expectations whereas approximately 22% (n=13) feel they have not

met the expectations.

Seventy seven percent (n=34) of adoptees are currently employed at least part-time. Approximately 5% (n=3) are disabled and not able to work. Eighty two percent (n=50) of adoptees report Very Good or Excellent health (see Table 11).

Table 11: Adoptee Health Status per Adoptee Report

	N	%
Excellent	30	49.2
Very Good	20	32.8
Good	8	13.1
Fair	2	3.3
Poor	1	1.6
Total	61	100.0

Adoption Outcomes

To assess adoption outcomes, several questions were included in the study. When asked if they would adopt again, 61% (n=70) of the adoptive parents responded yes, 15.7% (n=18) responded maybe or I don't know, and 22.8% (n=26) stated no. Those that reported no included a number of parents who reported they were too old to adopt again. However, when asked if they would adopt this same child again, 86.9% (n=113) of the adoptive parents stated they would versus 3.1% (n=4) that reported they would not adopt this child again. When asked if they felt their child met their expectations thus far, 70.4% (n=88) of the parents reported their child met or exceeded their expectations; almost a third (29.6%, n=37) stated the adoptee did not meet their expectations.

The adoptees whose parents said that they would adopt them again were compared with the adoptees whose parents said that they would not adopt them in terms of recruitment type, the adoptee's age at the time of the adoptive placement, the adoptee's

current age, and the adoptee's pre-adoptive stress level. No significant differences were found.

Independent Variables

The independent variables in this study are **1) length of time in institutional care** and **2) pre-adoptive stress**.

1) Length of time in institutional care. It is important to note that a maternity hospital, orphanage/other group care and childcare facility are all types of institutional care facilities. The adoptees spent an average of 29.5 months (SD=27.06) in institutional care with a range from 0.25 to 138 months. After the outliers have been delted, the adoptees spent an average of 34.4 month (SD=25.23) in institutional care with a range from 0.25 to 126 months.

Table 12 presents the distribution of adoptees by type of placement setting prior to adoption.

Table 12. Adoptee Distribution by Type of Setting (N=138)

Placement	N	%
Foster Family	15	10.9
Maternity Hospital	47	34.1
Orphanage/Other Group Childcare Facility	65	47.1
Other	6	4.3

2) Pre-adoptive Stress abbreviated as PASS. Parents reported on six pre-adoptive stressors to the child. Neglect (n=51; 36.7%) was the most frequent pre-adoptive experience followed by suspected malnourishment (n=40; 28.8%). About one-fifth (n=26; 18.7%) of adoptees were reported to have alcohol or other drug exposure in utero.

Only 11.5% (n=16) of parents reported physical abuse, 8.6% (n=12) reported a history of premature birth and 2.9% (n=4) reported sexual abuse. These items were combined so that a higher score reflected more pre-adoptive stressors. The mean score of PASS was 2.7 (SD=2.41). Table 13 presents parent reports of pre-adoptive stressors.

Table 13: Parents Reports of Pre-Adoptive Stressors

	Suspected		Yes		No	
	N	%	N	%	N	%
Neglect	20	14.4	51	36.7	15	10.79
Physical abuse	13	9.4	16	11.5	18	12.95
Sexual abuse	11	7.9	4	2.9	46	33.09
Premature	8	5.8	12	8.6	11	7.91
Alcohol or drug exposure in utero	26	18.7	4	2.9	14	10.07
Malnourished	40	28.8	23	16.5	6	4.32

To assess whether the 6 items that were summed to create PASS formed a reliable scale, Chronbach Alpha was computed. The alpha for the 6 items was .53, which indicates that the items form a scale has less than moderate reliability. In an effort to increase the reliability of the 6 items PASS scale, we performed 4 additional reliability tests in which we removed one item at the time and created a 5 items indexes for each test. None of these tests yielded a higher Cronbach alpha than the one obtained by leaving all the 6 items in the PASS index. All 6 items remained combined in subsequent analyses.

The severity of different negative pre-adoptive experience was also measured. Of those reporting neglect, 77.4% (n=48) reported the neglect as severe or very severe. Of those reporting physical abuse, 80.8% (n=31) reported the abuse as severe or very severe. Of those reporting sexual abuse, 62.5% (n=5) reported the abuse as severe or very severe. Severity was not used in subsequent analysis as there is too little data.

Dependent Variables

The two dependent variables in this study are **1) adult transitions** and **2) adult attachment**.

1) Adult transitions. As previously mentioned, 3 measures were used to examine adult transitions: **a) Markers of Adulthood; b) Markers Importance;** and, **c) a shorter version of the Inventory Emerging Adulthood (IDEA).** The IDEA has 6 subscales: identity exploration, experimentation/possibilities, negativity/instability, self-focus, other-focus and feeling in between. These measures were completed by the adoptees only. Each of these measures are discussed in detail in Chapter 3.

a) Markers of Adulthood. Table 14 presents the descriptive data for the Markers of Adulthood scale.

Table 14. Descriptive Data on Individual Items for Markers of Adulthood (N=61)

Markers of Adulthood	M	SD
Financially independent from parents	1.84	.76
Have settled into a long-term career	2.08	.78
Drive safely and close to the speed limit	1.36	.66
Not deeply tied to the parents emotionally	2.23	.67
Committed to a long-term love relationship	1.80	.84
Make own decisions	1.26	.48
Capable to supporting a family financially	2.26	.75
Capable of running a household	1.64	.73
Accept responsibility for consequences of actions	1.18	.47
Have established a relationship with parents as an equal adult	1.56	.65
Have learned to always have good control over emotions	1.56	.62
Have become less self-oriented and developed greater consideration for others	1.82	.59

To assess whether the 12 items that were summed to create the Markers of Adulthood formed a reliable scale, Chronbach Alpha was computed. The alpha for the 12 items was .86, which indicates good reliability (George & Mallery, 2003).

b) Markers Importance. Table 15 represents descriptive data for the Marker Importance scale.

Table 15. Descriptive Data on Individual Items Comprising the Markers Importance Scale (N=61)

	M	SD
Financially independent	1.4426	.59230
No longer living in parents' household	1.5246	.62200
Finished with education	1.9508	.90233
Married	3.0820	1.08467
Have at least one child	3.2951	.98901
Settled into a long-term career	2.4098	.90143
Purchased a house	2.8000	1.10162
Drive an automobile safely and close to the speed limit	1.6230	.83992
Be not deeply tied to parents emotionally	2.9344	.79307
Committed to a long-term love relationship	2.7049	.93709
Make independent decisions	1.2131	.41291
Accept responsibility for the consequences of your actions	1.0984	.30027
Be employed full-time.	1.8197	.76394
Establish a relationship with parents as an equal adult	1.5738	.69424
Learn always to have good control of your emotions	1.3279	.53918
Become less self-oriented, develop greater consideration for others	1.9672	.68233

To assess whether the 16 items that were summed to create the Markers Importance formed a reliable scale, Chronbach Alpha was computed. The alpha for the 16 items was .75, which indicates acceptable reliability (George & Mallery, 2003).

c) **IDEA**. Table 16 presents descriptive data for the 29 items of the IDEA measure used in the study.

Table 16. Descriptive Data for Each Item of the IDEA Scale (N=61)

Time of....	M	SD
many possibilities	3.54	.74328
exploration	3.39	.66530
confusion	2.75	.92477
experimentation	2.74	.65579
personal freedom	3.15	.79238
Feeling restricted	1.92	.82250
responsibility for yourself	3.52	.64824
feeling stressed out	3.13	.78476
instability	2.49	.94204
optimism	3.36	.77530
high pressure	3.28	.83927
finding out who you are	3.57	.64444
settling down	2.21	.98514
responsibility for others	2.39	.84219
independence	3.57	.64444
open choices	3.51	.64866
unpredictability	2.80	.77071
commitment to others	2.54	1.00952
self-sufficiency	3.33	.70051
many worries	2.93	.89198
trying out new things	3.33	.56925
focusing on yourself	3.31	.62024
planning for the future	3.72	.48755
seeking a sense of meaning	3.54	.67265
deciding on your own beliefs and values	3.59	.61582
learning to think for yourself	3.67	.62507
feeling adult in some ways but not others	3.05	.88367
gradually becoming an adult	3.30	.64572
being not sure whether you have reached full adulthood	2.57	1.03115

These items were combined in 6 subscales. Table 17 presents descriptive data for each of the 6 IDEA subscales.

Table 17. Descriptive Data for the IDEA Subscales (N=59)

	M	SD
Identity Exploration	3.6197	.43620
Experimentation Possibilities	3.3016	.46708
Negativity/Instability	2.7588	.62572
Other-focused	2.3825	.87101
Self-focused	3.3743	.47205
Feeling in-between	2.9831	.74129

To assess whether the 6 subscales of the IDEA were reliable, Chronbach Alpha was computed for each. The alpha for the **Identity Exploration** subscale was .76, which indicated acceptable internal consistency reliability (George & Mallery, 2003). The alpha for the **Experimentation/Possibilities** subscale was .75, which indicates acceptable internal consistency reliability (George & Mallery, 2003). Cronbach alpha for the **Negativity/Instability** subscale was .86, which indicates good reliability (George & mallery, 2003). Cronbach alpha for **Other-Focused** was .91, which indicates strong reliability (George & Mallery, 2003). The alpha for the **Self-Focus** subscale was .76, which indicates acceptable reliability (George & Mallery, 2003) and Cronbach alpha for **Feeling in Between** was .76, which indicates acceptable internal consistency (George & Mallery, 2003).

2) Adult attachment. Adult attachment was measured with the Revised Adult Attachment Scale (RAAS) that was completed by both adoptees and their parents. The RAAS items were recoded to reflect secure and insecure attachment. According to the adoptive parents, 77.8 % (N=98) of the adoptees had secure attachment, and 22.2% (N=28) had insecure attachment. According to the adoptees, 52.8% (N=19) of the adoptees had secure attachment and 47.2% (N=17) had insecure attachment.

Control variables

The control variables used in this study are: **1) age at adoption; 2) length of time in the adoptive home; and, 3) type of recruitment**

1. Age at adoption. At the time of placement, adoptees were 23 months old on average ($SD = 29.3$), with a range between 0 and 144 months. However, because age at adoption and length of time in institutional care are highly correlated, only length of time in institutional care is included in multivariate analysis.

2. Length of time in the adoptive home. Since placement, it has been approximately 25 years on average ($SD=1.9$), with a range between 18 and 28 years.

3. Type of recruitment: The vast majority of adoptees came from the longitudinal study (76.1%, $N=159$), while 23.9% ($N=159$) of adoptees were recruited through social media.

Summary of Measures

Table 18 presents the measures used in this study.

Table 18. *The Measures Used in the Study.*

Type of Variable	Variable Label	Measure	Subscales (if applicable)
Independent Variables	1. Length of time spent in institution before the adoption	Months spent in institution before adoption	
	2. Pre-adoptive stress	PASS	
Control Variables	1. Adoptee's age at the time of the adoptive placement <i>Note: This variable has been subsequently removed due to high correlations with length of time in the adoptive home</i>	Months old at time of the adoption	
	2. Length of time spent in the adoptive home. <i>This variable has been subsequently removed due to high correlations with length of time spent in institution prior to adoption</i>	Years spent in adoptive home	
	3. Type of recruitment	Longitudinal study and social media	
Dependent Variables	1. Adult transitions	1. Markers of Adult Transitions	
		2. Markers Importance	
		3. Inventory of Dimensions of Emerging Adulthood	1) Identity Exploration 2)

	(IDEA)	Experimentation/Possibilities
		3) Negativity/Instability
		4) Self-focus
		5) Other-focus
		6) Feeling in Between
2. Adult attachment	The Revised Attachment Scale (RAAS)	1) Secure
		2) Insecure

Bivariate Analyses

Because all the variables were normally distributed and the assumption of linearity was not markedly violated, Pearson correlations were computed to examine the inter-correlations of variables.

Table 19 presents the bivariate correlations between the independent variables, the control variables and the dependent variables, including the subscales of IDEA.

Table 19: Correlation Matrix: Independent, Dependent and Control Variables, Including the 6 Subscales of IDEA

	Length of time in PASS	Length of time in the institution	Age at time of adoptive placement	Markers of Adulthood	Markers Importance	Identity exploration	Experimentat ion/Possibilit ies	Negativity/In stability	Self-Focus	Other- Focused	Feeling in Between	
Length of time in institution	1	.211	.296**	.509**	-.167	-.151	.221	.382	.578**	.085	.297	-.001
PASS		1	.237**	.043	.072	.202	.117	.137	.054	-.040	-.077	.128
Length of time in the adoptive home			1	.424**	.111	.091	.098	-.282	.091	-.161	-.127	-.053
Age at time of adoptive placement				1	-.178	.212	-.072	.347**	-.107	-.234	.018	-.273*
Markers of Adulthood					1	.418**	.320*	-.303*	.540**	.577**	.338**	.464**
Markers Importance						1	-.158	.346**	.395**	-.322*	.399**	.015
Identity exploration							1	.451**	-.066	.455**	-.084	-.233
Experimentation/Possibilities								1	-.311*	.666**	.064	-.231
Negativity/Instability									1	-.270*	.371**	.323*
Self-Focus										1	.211	.374**
Other-Focused											1	.390**
Feeling in Between												1

P* < .05; p** < .01

Several pre-adoptive variables were correlated. There was a small negative correlation between length of time spent in institution and length of time spent in the adoptive home, $r=-.30$, $p<.01$, with longer time spent in institution being associated with shorter time spent in the adoptive home. There was a strong positive correlation between length of time spent in institution and age at the time of adoptive placement, $r=.51$, $p<.01$, with longer time spent in institution being associated with older age at the time of the adoptive placement. There was a strong negative correlation between length of time spent in institution and negativity/instability, $r=-.58$, $p<.01$, with longer time spent in institution being associated with the adoptees scoring lower on indicators of negativity and instability during their transition to adulthood. There was a small negative correlation between PASS and length of time spent in the adoptive home, $r=-.24$, $p<.01$, with a higher level of pre-adoptive stress being associated with less time spent in the adoptive home. Several time variables were correlated. There was a moderate positive correlation between length of time spent in the adoptive home and the adoptee's age at the time of the adoptive placement, $r=.42$, $p<.01$, with longer time spent in the adoptive home being associated with an older age of the adoptee at the time of the adoptive placement. Many of the adult transitions variables were correlated with time variables. There was a negative moderate negative correlation between age at the time of the adoption and the Experimentation/Possibilities subscale of IDEA, $r=-.35$, $p<.01$, suggesting that adoptees who were older at the time of the adoptive placement tend to score lower on experiment less and search less for possibilities. There was a small negative correlation between age at the time of the adoptive placement and the Feeling in Between Subscale of IDEA, $r=-.27$, $p<.05$, with children who were older at the time of the adoptive placement reporting

lower scores in terms of feeling in between developmental stages during emerging adulthood. There was a moderate positive correlation between Markers of Adulthood and Markers Importance, $r=.42$, $p<.01$, suggesting that adoptees with higher scores on indicators of having reached adulthood score higher on importance to the indicators that reflect adult status. There was a moderate negative correlation between Markers of Adulthood and the Identity Exploration subscale of IDEA, $r=-.32$, $p<.05$, suggesting that adoptees who are report higher scores in their transition to adulthood score lower on identity exploration. . There was a moderate negative correlation between Markers of Adulthood and the Experimentation/Possibilities subscale of IDEA, $r=-.30$, $p<.05$, with adoptees who score higher on markers of adulthood scoring lower on experimentation and possibilities. There was a strong positive correlation between Markers of Adulthood and the Negativity/Instability subscale of IDEA, $r=.54$, $p<.01$, suggesting that adoptees who are score higher in their transition to adulthood score higher on negativity and instability. There was a strong negative correlation between Markers of Adulthood and the Self-Focus subscale of IDEA, $r=-.58$, $p<.01$, with adoptees who scored higher on Markers of adulthood scoring lower on focusing on themselves. . There is a moderate negative correlation between Markers of Adulthood and the Other-Focused subscale of IDEA, $r=-.34$, $p<.01$, suggesting that adoptees scoring higher in their adult transition tended to score lower on focusing on other people. There was a moderate positive correlation between Markers of Adulthood and the Feeling in Between subscale of IDEA, $r=.47$, $p<.01$, with adoptees scoring higher in their adult status scoring score higher on feeling in between developmental stages.

A number of the adult transition scales and subscales were correlated. There was a

moderate negative correlation between Markers Importance and the Experimentation/Possibilities subscale of IDEA, $r = -.35$, $p < .01$, suggesting that adoptees who score higher on adult status scored lower on experimentation and possibilities. There was a moderate positive correlation between Markers Importance and the Negativity/Instability subscale of IDEA, $r = .40$, $p < .01$, with adoptees who report more importance to their adult transitions also report more negativity and instability. There was a moderate negative correlation between Markers Importance and the Self-Focus subscale of IDEA, $r = -.32$, $p < .05$, suggesting that adoptees who report more importance to their transition to adulthood report less focus on themselves. There was a moderate negative correlation between Markers Importance and the Other-Focused subscale of IDEA, $r = -.40$, $p < .01$, with adoptees reporting More Importance to their adult transitions reporting less focus on others.

There was a moderate positive correlation between the Identity Exploration and the Experimentation/Possibilities subscales of IDEA, $r = .45$, $p < .01$, suggesting that adoptees who score higher on identity exploration also score higher on experimentation and possibilities. There was moderate positive correlation between the Identity Exploration and the Self-Focus subscales of IDEA, $r = .46$, $p < .01$, with adoptees scoring higher on identity exploration also scoring higher on self-focus.

There was a moderate negative correlation between the Experimentation/Possibilities and the Negativity/Instability subscales of IDEA, $r = -.31$, $p < .05$, suggesting that adoptees who score higher on experimentation and possibilities score lower on negativity and instability. . There was a strong positive correlation between the Experimentation/Possibilities and the Self-Focused subscales of IDEA, $r = .67$, $p < .01$, with

adoptees scoring higher on experimenting and looking for possibilities also scoring higher on being self-focused. There was a small negative correlation between the Negativity/Instability and the Self-Focus subscale of IDEA, $r=-.27$, $p<.05$, suggesting that adoptees who score higher on negativity and instability score lower on self-focus. There was a moderate negative correlation between the Negativity/Instability and the Other-Focus subscale of IDEA, $r=-.37$, $p<.01$, with adoptees scoring higher on negativity and instability scoring lower on focusing on other people. There was a moderate positive correlation between the Negativity/Instability and the Feeling in Between subscale of IDEA, $r=.32$, $p<.05$, suggesting that adoptees who score higher on negativity and instability also score higher on feeling in between developmentally.

There was a moderate negative correlation between the Self-Focus and the Feeling in Between subscale of IDEA, $r=-.37$, $p<.01$, suggesting that adoptees who score higher on self-focus score lower on feeling in between. There was a moderate negative correlation between the Other-Focus and the Feeling in Between subscale of IDEA, $r=-.39$, $p<.01$, suggesting that adoptees who score higher on focusing on others score lower on feeling in between developmentally.

Multivariate Analyses

Multiple regression was selected as the appropriate statistical test to use because it provides for the ability to estimate the effect of each independent variable on a dependent variable when the dependent variable is continuous (Cohen, Cohen, West, & Aiken, 2013). Multiple regression Ordinary Least Squares (OLS) hierarchical regression with three entry blocks was used to determine how well the independent and control variables predicted the scores on the subscales of the dependent variables. Use of the hierarchical

as opposed to single entry method allowed for the examination of specific variance accounted for by each block of independent and control variables (Cohen, et al, 2013). Identification of significant F value changes after each entry block, allowed for assessment of the goodness of fit of the model by determining whether each block's addition produced a significant change in the amount of variance explained. The Beta coefficients and significance levels for each variable in each of the final models allowed for identification of the specific variables that accounted for the variance. This allows for comparison to determine whether each of the outcome variables is significantly associated with the same covariates. The results of each of the multivariate analyses are discussed below.

Age at the time of adoptive placement and length of time in institutional care are positively correlated ($r=.51$, $p<.001$). Age at the time of the adoptive placement is also significantly positively correlated with length of time in the adoptive home ($r=.42$, $p<.01$). The length of time in institutional care is significantly negatively correlated with length of time in adoptive placement ($r=-.31$, $p<.01$). Therefore, age at the time of the adoptive placement and length of time in the adoptive home were dropped from multivariate analyses, while length of time in institutional care was kept. This decision is consistent with other studies because of the correlations between these 3 time variables.

Because there was a statistically significant difference in age between the adoptees from the longitudinal sample and those recruited through social media, type of recruitment was entered in each regression analysis as a control variable.

Transition to adulthood variables: Markers, Markers Importance and IDEA

1. *Markers.* To determine how well length of time spent in institutional care and

pre-adoptive stress predicted the adoptees achievement of adult status, when controlling for type of recruitment, hierarchical linear regressions were computed. The assumptions of linearity, normally distributed errors and uncorrelated errors were checked and met. None of the regression models were statistically significant.

2. *Markers Importance.* To determine how well length of time spent in institutional care and pre-adoptive stress predicted the importance that the adoptees assigned to completing their transition to adulthood, when controlling for type of recruitment, hierarchical linear regressions were computed. The assumptions of linearity, normally distributed errors and uncorrelated errors were checked and met. None of the regression models were statistically significant

3. *Identity Exploration.* To determine how well length of time spent in institutional care and pre-adoptive stress predicted the adoptees' explorations for identity, when controlling for type of recruitment, hierarchical linear regressions were computed. The assumptions of linearity, normally distributed errors and uncorrelated errors were checked and met. None of the regression models listed above were statistically significant.

4. *Experimentation/Possibilities.* To determine how well length of time spent in institutional care and pre-adoptive stress predicted the adoptees' experimentation and search for possibilities, when controlling for type of recruitment, hierarchical linear regressions were computed. The assumptions of linearity, normally distributed errors and uncorrelated errors were checked and met. None of the regression models were statistically significant.

5. *Negativity/Instability.* To investigate how well length of time spent in

institutional care and pre-adoptive stress predicted the adoptees perception of negativity and instability during early adulthood, a hierarchical linear regression was computed. Collinearity diagnostics and the Durbin-Watson test for auto-correlation were conducted. The Durbin-Watson $d = 2.217$ is between the two critical values of $1.5 < d < 2.5$; therefore, we can assume that there is no first order linear auto-correlation in the data. Multicollinearity was examined for the regression models. Tolerance should be > 0.1 (or $VIF < 10$) for all variables. The requirement for tolerance was met. Therefore, multicollinearity was not a problem.

Significant results are presented in table 20; multivariate analysis for all variables is in the Appendix.

Table 20. Results of OLS Regression with the Negativity/Instability Subscale of IDEA as the Dependent Variable and Length of Time in Institution, Pre-Adoptive Stress and Type of Recruitment Included, n=15

Predictors	Model 1			Model 2			Model 3		
	B	SE(B)	β	B	SE(B)	β	B	SE(B)	β
Length of time in institutional care	-.107**	.042	-.578	-.108*	.046	-.585	-.109*	.046	-.592
PASS				.027	.265	.025	-.062	.292	-.058
Type of recruitment							-1.663	2.118	-.206
R ² change		.334*			.001			.035	
	R ² =.334; F(1,13)=6.506*			R ² =.001; F (2,12)=3.010			R ² =.035; F(3,11)=2.148		
P<.05; p<.01									

The first model containing length of time in institutional care is statistically significant ($F=6.506$, $df=1$, $p=.024$) indicating that the length of time that the adoptees spent in institutional care prior to adoption significantly predicts the scores for the negativity/instability subscale. This model explains 33.4% of the variance in negativity/instability. Adding pre-adoptive stress in step 3 and type of recruitment in step 4 did not significantly add to the variance in negativity/instability.

In the final model, only 3.5 % of the variance in negativity/instability could be explained by length of time spent in institution, pre-adoptive stress scores and type of recruitment. Only one variable contributed to the variance explained in this model: length of time in institutional care ($B=-.109$, $p<.05$). Pre-adoptive stress ($B=-.062$) and type of recruitment ($B=-1.663$) did not significantly add to an explanation of the variance.

6. *Self-focused.* To determine how well length of time spent in institutional care and pre-adoptive stress predicted the adoptees' focus on themselves, when controlling for type of recruitment, hierarchical linear regressions were computed. The assumptions of linearity, normally distributed errors and uncorrelated errors were checked and met. None of the regression models were statistically significant.

7. *Other-focused.* To determine how well length of time spent in institutional care and pre-adoptive stress predicted the adoptees' focus on others, when controlling for type of recruitment, hierarchical linear regressions were computed. The assumptions of linearity, normally distributed errors and uncorrelated errors were checked and met. None of the regression models were statistically significant.

8. *Feeling in between.* To determine how well length of time spent in institutional care and pre-adoptive stress predicted the adoptees' feeling in between

developmental stages, when controlling for type of recruitment, hierarchical linear regressions were computed. The assumptions of linearity, normally distributed errors and uncorrelated errors were checked and met. None of the regression models were statistically significant.

Attachment variables. These are reported by both the adoptive parents and the adoptees.

1. Attachment data reported by the adoptive parents. Hierarchical logistic regression was conducted to assess whether length of time spent in institutional care, pre-adoptive stress or type of recruitment significantly predicted whether the adoptees had secure attachment in early adulthood, according to the data reported by the adoptive parents. The assumptions of observations being independent and independent variables being linearly related to the logit model were checked and met. None of the 3 models considered were statistically significant.

2. Attachment data reported by the adoptees. Hierarchical logistic regression was conducted to assess whether length of time spent in institutional care, pre-adoptive stress or type of recruitment significantly predicted adoptees secure attachment in early adulthood, according to the data reported by the adoptees. The assumptions of observations being independent and independent variables being linearly related to the logit model were checked and met. None of the 3 models were statistically significant.

Summary of Findings

This study used a sample of 139 adoptive parents and 61 adoptees. Data was collected from adoptive parents and children who participated in a longitudinal study of Romanian adoptions and from adoptees and adoptive parents who were recruited through

social media via survey monkey, Facebook postings and mailed surveys. The analysis comparing characteristics of adoptees in the longitudinal sample and adoptees recruited via social media revealed only one significant finding: the adoptees in the social media sample were younger at the time of the study than those enrolled from the longitudinal study.

Additional analyses focused on three groupings: parent and adoptee both responded to the study, adoptee only responded, and parent only responded. The parent only group reported significantly higher special needs for the children they have adopted than the group where the parents and adoptees both responded. A significant difference was identified between 3 groups in terms of the adoptee's age at the time of study. The adoptee's age at the study reported by the adoptee only group was significantly younger than the adoptee age at the time of the study reported by the adoptee and parent group and the parent only group.

The two dependent variables, one representing a conceptualization of adult transitions and the other representing a conceptualization of adult attachment, were examined. Adult transitions were assessed by using by 3 measures: Markers of Adult Transitions, Markers Importance, and the Inventory of Dimensions of Emerging Adulthood (IDEA). IDEA has 6 subscales: identity exploration, experimentations and possibilities, negativity/instability, self-focus, other-focus and feeling in between. Adult attachment was measured with the Revised Scale of Adult Attachment (RAAS). The Adult Attachment variable was recoded to reflect secure and insecure attachment.

Bivariate analyses indicated that longer time spent in institutional care was associated with shorter time spent in the adoptive home, with older age at the time of the

adoptive placement, and with the adoptees scoring lower on indicators of negativity and instability during their transition to adulthood.

Higher levels of pre-adoptive stress were associated with less time spent in the adoptive home. Longer time spent in the adoptive home was associated with an older age of the adoptee at the time of the adoptive placement.

Adoptees who were older at the time of the adoptive placement tended to experiment less, search less for possibilities, and also reported feeling less in between developmental stages during emerging adulthood. Adoptees who reported higher scores on indicators of having reached adulthood assigned more importance to the indicators that reflected adult status. In addition, adoptees who reported being further along in their transition to adulthood tended to explore less their identity status, were less focused on experimentation or looking for possibilities, and tended to experience more negativity and instability. Adoptees who reported higher scores on indicators of adulthood demonstrated less focus on themselves, less focus on others, and experience more negativity and instability. Adoptees who assigned more importance to their transition to adulthood tended to experiment less but showed more negativity and instability. At the same time, adoptees who assigned more importance to their transition to adulthood reported less focus on themselves and others.

Adoptees who report exploring their identity also reported experimenting more, looking more for new possibilities, and have more self-focused. Adoptees who experiment more report less negativity and experience less instability, while at the same time focus more on themselves. Adoptees who experience more negativity and instability report more feeling in-between developmental stages and focused less on other people.

Adoptees reporting more focus on themselves and those who focused more on others tend to feel more in-between developmental stages during early adulthood.

For all of the dependent variables (Markers, markers Importance and the 6 subscales of IDEA), an OLS regression was used to test the relationship between that dependent variable, the independent variables (length of time in institutional care and PASS) and the control variables (type of recruitment). The majority of these analyses did not produce statistically significant results. For the subscale of negativity and instability the first model, including length of time in institutional care was significant. For the Negativity/Instability subscale of IDEA, only length of time spent in institution contributed to the variance explained in this model. Pre-adoptive stress and type of recruitment did not significantly add to an explanation of the variance in any of the models.

Hierarchical logistic regressions were conducted to assess whether length of time spent in institution, pre-adoptive stress or type of recruitment significantly predicted whether or not the adoptees had secure attachment in early adulthood, according to the data reported by the adoptive parents and also according to the data collected from adoptees themselves. None of these analyses produced statistically significant results.

Chapter 5

Discussion and Implications

This chapter provides a discussion and implications of the findings presented in Chapter 4. It examines the results in the context of the existing literature and of the two theoretical frameworks used in this study (Bowlby's Attachment Theory and Arnett's Emerging Adulthood). Implications for practice and program development are proposed. The strengths and the limitations of the study are presented. Future research is discussed.

Brief Overview of Findings

The research questions and hypotheses had to be reformulated because age at adoption and length of time spent in institution were so highly correlated as to be impossible to determine independent effects; this is a finding consistent with other studies with adoptee populations that have a history of institutionalization (Johnson et. al., 1992; Markovitch et al., 1995, 1997; Groza & Ileana, 1996; Rutter et al., 1995, Groza, 1997; Rutter & the English and Romanian Adoptees study team, 1998; Groza, Ryan & Scott, 2003; Groza, Ryan & Thomas, 2008; Zeanah et al., 2002, 2003, 2006, 2013; LeMare & Audet, 2006). The reformulated questions and hypothesis follow.

Reformulated Research Questions and Hypotheses

The updated research question # 1 examines how much variance in adult transitions can be explained by length of time spent in institutional care when controlling for type of recruitment. Hypothesis 1 states that the longer time the Romanian adoptees spent in institutional care before adoption, the more problematic are their adult transitions after controlling for type of recruitment.

Results did not support hypothesis 1. The length of time spent in institutional care

was not predictive of adult transitions when type of recruitment was controlled for in a multivariate statistical model.

The updated research question #2 examines whether length of time spent in institutional care predicts secure attachment, when type of recruitment is controlled for. Hypothesis 2 states that the longer time the Romanian adoptees spent in institutional care, the less secure they feel in their adult relationships, when type of recruitment is controlled for. Results did not support hypothesis 2. In the multivariate model, the length of time spent in institutional care was not predictive of secure adult attachment.

The updated research question # 3 examines how much variance in adult transitions can be explained by pre-adoptive stress, after controlling for type of recruitment. Hypothesis 3 states that the higher the scores on pre-adoptive stress, the more problematic are the adult transitions of Romanian adoptees after controlling for type of recruitment. Results did not support hypothesis 3. Pre-adoptive stress did not predict adult transitions in a multivariate statistical model.

The updated research question #4 examines whether pre-adoptive stress predicts secure attachment, after controlling for type of recruitment. Hypothesis#4 states that the higher Romanian adoptees score on pre-adoptive stress, the less secure Romanian adoptees feel in their adult relationships. Results did not support hypothesis 4. Pre-adoptive stress was not predictive of adult attachment.

The data were analyzed multiple ways in order to see if different analyses would yield significant results. This included factor analyses of the transition to adulthood and attachment measures and subjecting the resulting subscales to multivariate analyses. No results were significant even after trying alternative ways to analyze the data. When

gender was included as a control variable, the results were not statistically significant either.

Adult Transitions Implications

These results indicate that the negative effects reported early in the lives of Romanian adoptees did not continue to exert a major influence as they entered adulthood for the adoptees that participated in the study. This finding is contrary to many theories that suggest early negative experiences in early life predict development throughout the lifespan (Watson, 1928; Erikson, 1964, 1968; Bowlby, 1951; 1969, 1980; Skinner, 1989). The cumulative effects hypothesis (O'Connor et al., 2003), also referred to as the continuation of adversity hypothesis (Rutter et al. 2004) or the cumulative deficit hypothesis (Jensen 1974), posits that early experiences affect later outcomes but are predicated on the assumption of the continuation of depriving circumstances. However, many developmental theorists were not well acquainted with the life circumstance changes experienced by adoptees who leave noxious situations to be raised in a resource rich family life. Conceptualizing human development as a series of stages with their assigned developmental tasks and crises, while providing some advantages for social work practice, nonetheless decontextualizes the experiences of individuals by removing considerations such as the quality of the environment, changes in circumstances, stable relationships invested in a child's life, and cultural resources that can enhance developmental trajectories (Munson et al., 2013).

The recovery of Romanian adoptees could be also attributed to resilience. Psychological resilience is defined as an individual's ability to successfully adapt to life tasks in the face of social disadvantage or other adverse conditions (Pines, 1984; Rutter,

1987; Schorr, 1988; Werner & Smith, 1992; Peciullo, 2016) Resilience is the ability to bounce back from a negative experience with "competent functioning" (Ungar, 2013, p. 256). Resilience is a process rather than a trait that individuals either have or do not have. It is individuation through a structured system with gradual discovery of personal and unique abilities (Rutter et al. & the ERA Study Team, 2008). The theme of resilience was present throughout the adoption literature from the first studies conducted in the 1940's until the present time. For example, Goldfarb (1945) studied a group of children between the ages of 10-14 who entered an institution at a mean age of 4-5 months and remained in institution for an average of 3 years; they were compared to a sample of children who were placed in foster homes at a mean age of 14 months and remained in family care their entire lives. Children were matched with the first group on age and gender. Although the institutionalized children demonstrated more cognitive delays and behavioral problems, almost half (42%) were determined to be socially and emotionally well-adjusted at age 10. Pringle and Bossio (1960) explored the development and educational achievement of institutionalized children at ages 7, 11 and 14.

Developmental and educational difficulties persisted throughout middle childhood but at age 14 nearly 30% were well adjusted, contrary to developmental models. Tizard and Rees (1974) and Tizard and Hoges (1978) reported positive adjustment in samples of adopted children who were school age at the time of the study and placed for adoption after spending early life in an institution. The researchers all concluded that institutional care did not necessarily lead to emotional or behavioral problems in all children; some were able to overcome the difficult circumstances and adapt well to their environments. They were resilient.

While the earliest reports of Romanian adoptees emphasized problems, many researchers also commented on resilience. Once placed in adoptive homes, the majority of Romanian adoptees recovered developmentally (Marcovitch et al., 1995, 1997; Groza & Ileana, 1996; Fisher et al., 1997; Rutter et al., 1998; 2000; Groothues, Beckett & O'Connor, 2001; Nelson et al., 2007; Audett & LeMare, 2006; Zeanah et al., 2009; Juffer et al., 2011). Groza (1997) estimated that approximately 80 percent of the Romanian adoptees were resilient: they either did not have a demonstrable negative effect from institutions or recovered developmentally from their early deprived experience. However, a small group of Romanian adoptees, around 10%, continued to have difficulties (Rutter et al. & the ERA Study Team, 1998; O'Connor, Bredenkamp & Rutter, 1999; Rutter, Kreppner & O'Connor, 2001; Croft et al., 2001; Beckett et al., 2002; Rutter, O'Connor & the ERA Study team, 2004; Beckett et al., 2006; Croft et al., 2007; Sonuga-Barke et al., 2017). Their finding suggest that 90 percent were resilient.

Although there is a well-recognized dosage-effect for length of time spent in institutional care and developmental outcomes (Rutter, Taylor & Hersov 1995; Rutter & the ERA Study Team, 1998; 2000), there is also strong evidence that many Romanian adoptees recovered from the effects of institutionalization, particularly when the length of time spent in institution was shorter than 24 months (Bascom, 1997; Groza 1997; Jenista 1997; Rutter & the ERA Study Team, 1998, 2000). The adoptees in the current study spent an average of 29 months in institution which is only slightly longer than the 24 months threshold mentioned in previous studies. However, few studies have been conducted on the Romanian adoptees in late adolescents or young adults. A recent UK study by Sonuga-Barke, Kennedy, Kumsta, Knights, Golm, Rutter, Maughan, Schlotz

and Kreppner (2017) used data from the English and Romanian Adoptees study to assess whether deprivation-associated adverse outcomes that the Romanian adoptees presented during infancy, latency and middle childhood persisted into adolescence and young adulthood. The researchers investigated symptoms of autism spectrum disorder, inattention and overactivity, disinhibited social engagement, conduct disorder, emotional problems, and cognitive impairment during childhood (ages 6, 11, and 15 years) and in young adulthood (22–25 years). Romanian adoptees were divided into those who spent less than 6 months in an institution and those who spent more than 6 months in an institution. The study employed a comparison group of UK adoptees who did not experience deprivation. Romanian adoptees who experienced less than 6 months in an institution and the never institutionalized UK children had similarly low levels of symptoms across most ages and outcomes. By contrast, Romanian adoptees exposed to more than 6 months in institution had higher rates than UK group into young adulthood on scales measuring autism spectrum disorder, disinhibited social engagement, inattention and overactivity. Cognitive impairment in the group who spent more than 6 months in an institution reduced from markedly higher rates at ages 6 years and 11 years compared with UK controls to normal rates at the time of young adulthood. A fifth of individuals that spent more than 6 months in an institution were problem-free in young adulthood. The results in this study as well as the Sonuga-Barke and colleagues (2017) study suggest that pre-adoptive stress does not exert a continued negative impact on developmental outcomes in most Romanian adoptees' transition into early adulthood.

It is important to recognize the neuroscience research in this area to help understand the results. Developmental recovery after traumatic events is a result of

neuroplasticity. Neuroplasticity is the brain's ability to change and adapt to changing environmental stimuli by growing new neurons and creating new neural connections or pathways (Klorer, 2005; Siegel, 2010; Berens & Nelson, 2015). Neuroplasticity is what enables the brain to recover after trauma and/or injury (Klorer, 2005). During adolescence, under the influence of massive new hormonal messages, the brain is being reshaped and reconstructed by biological changes (Spessot, Plessen & Peterson, 2004). Information highways are speeded up through the process of myelination; some old pathways are closed down through a process called pruning while other pathways are re-routed and reconnected to other destinations. Life experiences also shape the pruning and sprouting process in the brain (Giedd, 2004; Spessot, Plessen & Peterson, 2004). The brain is much more changeable and modifiable than had previously been believed (Giedd, 2004; Rajmohan & Mohandas, 2007; Isaacson, 2013; Isaacson & Pribram, 2013; Berens & Nelson, 2015). Damaged or delayed neural circuits resulting from childhood trauma can be corrected, reshaping the brain anatomy and consequent behavior (Rajmohan & Mohandas, 2007; Kapczinski, Vieta, Andreazza, Frey, Gomes, Tramontina & Post, 2008; Isaacson, 2013; Isaacson & Pribram, 2013; Berens & Nelson, 2015). This brings hope to the children whose early experience compromised brain development. Their brain is different but different does not mean deficient.

In addition, adoptees in adolescence share the experience with typical teens in that until the mid-twenties the pre-frontal cortex is under-developed. This is a part of the brain that when fully developed continuously exchanges information with the emotional area of the brain or the limbic system; the limbic system is the portion of the brain that deals with emotions, memories and arousal or stimulation. In the adult, the pre-frontal cortex and the

limbic system are in balance, each one synching with the other (Rajmohan & Mohandas, 2007; Isaacson, 2013; Isaacson & Pribram, 2013). When the limbic system signals high emotional reactivity, stimuli originating in the pre-frontal cortex provide regulation. Life experiences and the quality of the environment play a role in this process of balancing emotional and rational responses to events.

Although the negative consequences of adversity happen synchronously when children are subjected to negative circumstances, recovery tends to happen asynchronously, with certain aspects improving earlier and more successfully than others (Palacios, Roman, Moreno, Leon & Penarrubia, 2011). Romanian adoptees recovered first from physical delays and health issues (Johnson et al., 1992). The psychological recovery happens later and takes longer (Rutter & the ERA team, 1998, 2000). At the time of this study the Romanian adoptees have spent 20 years or more with their families. Once they moved into their adoptive homes, they were provided with positive life experiences and quality care. Since the brain is still being reshaped before and during adolescence and early adulthood, the modified neural circuits resulting from severe childhood trauma are likely to have been “rewired”, resulting in the positive neuro-developmental outcomes. In the light of the information provided on neuro-plasticity, it is evident that the findings of the current study support this neuroscience although this study did not include any neuroscience measures.

Adult Attachment Implications

The results suggest that neither time spent in an institution nor pre-adoptive stress predict attachment as Romanian adoptees as they transition into early adulthood. The results are contrary to traditional attachment theory that predicts that the absence of a

consistent caregiver in early life results in attachment problems (Bowlby, 1969, 1977, 1980; 1984). With the exception of 2 adoptees who were placed into their adoptive homes directly from their biological families, all the other adoptees in the current sample were institutionalized for some amount of time. Longitudinal studies when the Romanian adoptees were young children demonstrated strong associations between institutional care and attachment difficulties (Chisholm et al., 1995; Rutter et al., 1995; Marcovitch et al., 1995, 1997; Chisholm, 1998; O'Connor et al., 1998, 2000; Zeanah, Smyke & Dumitrescu, 2002; Zeanah, Smyke & Settles, 2006) compared with domestically adopted infants who spent no time in institutional care. Some children adopted from Romanian institutions exhibited symptoms of clinical disorders of attachment during infancy, latency and school age periods (Chisholm et al., 1995; Chisholm, 1998; Rutter et al., 1998, 2000; O'Connor et al., 1999, 2000). Romanian adoptees did form attachments following early deprivation but subsequent attachment relationships were less likely to be secure and more likely to be atypical including indiscriminate friendliness (Chisholm, 1998; Chisholm et al., 1995; Rutter & the ERA Study Team., 1998, 2000; O'Connor et al., 1999, 2000). Results of the current study do not indicate attachment disturbance following institutional care in early adulthood. A vast majority of the adoptees were securely attached (78 % according to data reported by parents and 53%, according to data reported by adoptees). Findings are hopeful about the long term attachment of most Romanian adoptees.

Other Findings

The pre-adoptive stresses reported by the parents in our study was low, but this could be due to the parents not possessing sufficient information about the medical and

historical background of the children they have adopted. It was common for parents who adopted internationally to have limited information regarding the child's pre-adoption history (Smyke, Dumitrescu & Zeanah, 2002; Zeanah et al., 2003; Parker, Nelson & the BEIP Core Group., 2005; Nelson et al., 2007). The majority of adoptive parents in our study reported neglect as the main cause of pre-adoptive stress. This is consistent with other studies on Romanian adoptions/adoptees (Markovitz et al., 1995, 1997; Rutter & the ERA Study Team, 1999).

While 19 percent of parents stated that they specifically chose to adopt a child with special needs, approximately 69 percent of parents reported their child had special needs after the adoption for which they were unaware/unprepared. This discrepancy between the percent of adoptive parents who parented children with special needs compared to those who intended to parent a child with special needs suggests this was an additional stress on the families.

Despite unexpected challenges, 61% of families responded they would adopt again and a striking 87 % reported they would adopt the same child again. Many who reported they would not adopt again indicated they were too old to adopt. When asked if they felt their child met their expectations thus far, 70 percent reported they met or exceeded their expectations and only 30 percent stated they had not met their expectations. The positive feelings reported by adoptive parents regarding the adoption and their adoptive children is consistent with the findings of other studies both on Romanian adoptions and adoptions to the US of children from other countries (Markovitz et al., 1995; Groza & Ileana, 1996; Markovitz et al., 1997; Groothues, Beckett & O'Connor, 1998; Groothues, Beckett and O'Connor, 2001; Croft et al. 2011; Groza, Ryan

& Cash, 2003; Ryan & Groza, 2004; Rijk et al., 2006; Rutter et al., 2007; Groza, Ryan & Thomas, 2008; Pearlmutter et al., 2008; Sonuga-Barke et al., 2017).

The findings of this study indicate that the early adult development of the Romanian adoptees is not markedly different from those reported by Arnett (2000, 2004) who studied predominantly white, middle class, college enrolled or college graduates in emerging adulthood. Like the normative sample, more than one-third (38%) of the Romanian adoptees in our study had a bachelor's degree or were high school graduates (44%) currently enrolled in college.

In one category, we noted discrepancies between the data reported by adoptees comparing to the data reported by the parents. According to the parents, 78% of adoptees have a secure attachment style. According to the adoptee data, only 53% of the adoptees report a secure attachment. While this is difficult to interpret, it would make sense that the adoptees kept some of their struggles and insecurities private and unknown to their parents. This is a potential area of future study.

Practice Implications

The current study is a story of optimism and hope for social work practitioners. Although the Romanian adoptees have been subjected to severe deprivation early in their lives, their continued recovery during young adulthood is hopeful.

The findings of the current study supports social work practitioners regard emerging adulthood as a process of continued growth and development. With the knowledge that recovery continues far into the life cycle, adoption practice has to shift focus from regarding the adopted child as the bearer of a multitude of risk factors to building supports for the adoptive family and the child throughout the entire time span of

the adoption. Different types of issues emerge at different stages and ages of development. Since many adoptive families experience some challenges with their children, the findings of this study can be utilized by clinicians in making the case that developmental recovery is possible for adopted children but perhaps in a time frame that does not match parental or professional expectations. This knowledge may prevent some adoption from becoming negative or dissolving. Adoptees continue to grow and develop long after the early negative experiences they encounter.

Social work practitioners can encourage parents to interpret their adoptees' behaviors in a positive light. For example, learning that being self-focused during emerging adulthood is not selfishness but a necessary ingredient of identity building and world-view formation could be beneficial to parents who may otherwise struggle to understand and cope with challenges during this stage of life. Parents can be helped to better support and encourage the young emerging adult during their explorations of career choices, work and love rather than push them into suddenly assuming adult roles.

Since the results of the current study found that length of time spent in institutional care and pre-adoptive stresses are not significant predictors of adult attachment and adult transitions in early adulthood, it makes sense to assume that there may be other factors affecting adult attachment and adult transitions such as the characteristics of the adoptive family, the quality of the post-adoption environment, peers, etc. This issue will be discussed in the research implications.

Policy Implications

The policy implications of the current research will be discussed within the context provided by the Hague Convention of 29 May 1993 on Protection of Children

and Cooperation in Respect of Inter-country Adoption (hereafter labeled as the Hague), which was developed to establish safeguards ensuring that inter-country adoptions take place in the best interests of the children and with respect for the children's fundamental rights. From a policy-practice perspective, this policy and the principles of the policy should be known by social work practitioners, implemented, evaluated and the subject of advocacy for refinements and changes to the policy. The Hague added substantive safeguards and procedures to the broad principles established in the United Nations Convention on the Rights of the Child. The Hague was not intended to serve as an uniform law of adoption. While making the rights and interests of the child paramount, it also respects and protects the rights of families of origin and adoptive families. The Convention makes clear that the receiving countries and the countries of origin must share the burdens and benefits of regulating inter-country adoptions. It sets out which functions within the adoption process are to be performed by each participating entity. The Hague established the following principles:

1. The best interest of the child is paramount. The Hague establishes rules to ensure that the adoption takes place in the best interest of the child. For instance, the sending country must ensure that the child is adoptable and that national solutions were implemented first. Information about the child and his/her biological family have to be preserved and the adoptive families must be thoroughly evaluated to make sure that they are equipped to provide for the child's specific needs over the life span. Given the finding that children can recover from early adversity, social workers can better balance the short-term versus long-term best interests of the child. Children's best interest remain in being connected to a family.

2. The solidarity principle. This principle means that countries must agree that the first priority is for a child to be raised by his/her birth family and/or extended family whenever possible. If that is not possible, other forms of permanency should be explored within the country of origin. Only after careful consideration of the available national solutions, inter-country adoption should be considered and only if it is in the child's best interest. As a general rule, institutional care should be considered a last resort for a child in need of permanency. However, this process may inadvertently be negative for children as they remain in a temporary home or group care while the process takes place.

3. Safeguards to protect children from abduction, sale and trafficking.

Countries should put in place safeguards to make sure that children are not abducted, sold or trafficked. Birth families have to be protected from exploitation, inducement to place a child, and undue pressure in relinquishing parental rights. The safeguards are supposed to ensure that only children who are in need of a family are adoptable and get adopted, preventing financial gain and corruption. The agencies and individuals involved in inter-country adoptions have to get accredited according to the requirements of the Convention. In the US, the State Department has ultimate authority for accreditation of US adoption agencies participating in intercountry adoption. Social workers should be well-acquainted with policy standards, striving to implement the best practice for each standard if they work in agencies delivering intercountry adoption services. Birth parents can have no inducement to place their child and the highest ethical standards must be met for agencies participating in inter-country adoption.

4. Cooperation between countries and within countries. Countries are supposed to work together and ensure the protection of children. This principle is

implemented through international cooperation between accredited bodies performing under central authorities for countries participating in intercountry adoption.

5. Automatic recognition of adoption decisions. Every adoption is recognized by law in all other countries who are signatories of the Hague. The Hague gives immediate certainty to the status of the child, and eliminates the need for a procedure re-adoption in the receiving country.

6. Competent authorities, central authorities and accredited bodies. The Hague requires that only competent authorities should perform intercountry adoption functions. The Hague imposes certain general obligations such as cooperation with one another through the exchange of general information concerning inter-country adoptions.

7. Guides for good practice. Two guides were developed to support the implementation and practical operation of the Hague. These guides identify matters related to planning for, establishing and operating the legal and administrative framework to implement the Hague and developed a set of accreditation criteria for achieving greater consistency in professional standards and practices.

Most adoptions in the current study took place in 1990 and 1991. At that time, the Hague Convention was not yet fully developed nor implemented. Social and political conditions in Romania were chaotic. In January 1990, just one month after the Romanian anti-Communist Revolution, the Western media covered the first stories about thousands of Romanian children living under horrific conditions in institutions (Groze & Ileana, 1996). In response, US families arrived in Romania with the intention of adopting the babies they had seen on television (Groza & Ileana, 1996). This resulted in legally and logistically ambiguous adoption processes. The legal framework for how to process

adoptions of foreign nationals of Romanian children was inexistent in 1990 and 1991.

The standards that were later stipulated by the Hague were not implemented during the first wave of Romanian adoptions to the US. Many of the children abandoned in maternity hospitals and orphanages had no appropriate documentation to make them legally adoptable, and some were placed without access to background information to share with their adoptive parents. At least for the adoptions that were performed immediately after the anti-Communist Revolution of 1989, national solutions were not first explored and/or implemented.

After Romania became one of the countries participating in the Hague, the Romanian Adoption Committee became the legal body in charge with accrediting US adoption agencies interested in facilitating the adoption of Romanian children to the US. From that point forward, the best interest of children was considered paramount in placing Romanian children for inter-country adoptions but widespread corruption continued to play a role in the selection and approval of prospective adoptive parents. When asked about their adoption experiences, many of the parents in the current study talked about the confusion and corruption they have encountered while traveling to Romania to adopt.

The confusing post-Communist legal system in Romania and the ambiguous child protection practices immediately after 1989 resulted in a gray market where international adoptions were facilitated by entrepreneurial individuals who used their personal connections to secure placements in exchange for charging a fee. At some point, things got so bad that parents who abandoned their children were returning to the orphanages to reclaim them and make sure that they were the ones benefitting from the transactions

instead of the governmental workers involved or the Government itself. In 2001, the Romanian Government placed a moratorium on international adoptions, and officially banned the practice 4 years later, citing widespread corruption in adoption practices and concerns about human trafficking.

After the implementation of the Hague, the process of preparing the child and adoptive family for the placement was accomplished by two different agencies, one American and one Romanian. The American agency was responsible with the family's pre-adoption training, home-study assessment and the family's preparation before meeting the child. The Romanian agency was responsible with the children's assessment and the child's preparation prior to placement, the matching process, setting up a pre-placement visits schedule, and providing background information about the child. The post-adoptive service was conducted by the American agency after the child joined the family in the USA.

To reach successful outcomes, procedures had to be implemented to ensure systemic collaboration between the US adoption agency and the Romanian agency certified to handle the adoption of a particular child. This was difficult to coordinate and from time-to-time, breaks in communication occurred, with parents reporting instances when they only met the child once and then they were allowed to take off with the child without any other subsequent pre-placement visits or instances in which the children were not adequately prepared for meeting the family and for placement. Obviously, there are numerous factors that can make this process cumbersome and difficult to navigate. Some are related to discrepancies in social work education and standards of practice between the two countries. Other factors are cultural; language, customs, traditions, are

expectations are different between the countries. And other factors are economic. For example, for almost 40 years, the Romanian Communist regime did not acknowledge the existence of any social issues in a society that was supposed to be perfect and ideal by definition. Therefore, there was no formal professional training in Romania in the area of Social Work. The first Western based non-profit organizations that got established in Romania in the early 1990's provided training and logistic assistance but the first cohorts of graduates in Social Work were not ready for direct practice for at least 4-5 more years. This made for a huge discrepancy in education and standards of practice between the US agency and the Romanian central authority supervising the adoption proceedings for the children. In addition, in Romania, secrecy in adoptions was the cultural norm. This impeded efforts to develop effective domestic adoption programs and due to the stipulations of the Hague, inadvertently delayed the placement of Romanian children for international adoptions.

Romanian adoption workers felt threatened by political systems that opposed placing children internationally. In Communist countries, these threats took extreme forms. Immediately after the fall of Communism in Romania when there was chaos and confusion in the country, the forces of the old Communist political regime exerted great pressure on adoption workers to stop international adoptions. Many of these workers felt that their lives were in danger as they were advocating for finding loving families for the Romanian orphans.

Designing policies and procedures for matching children and families based on meeting the children's needs, not based on the family's wishes or demands, is of utmost importance. Many agencies developed matching protocols which compared families to

each other in regards to their ability to meet the physical, social, medical, developmental and psychological needs of the child(ren) considered for placement. In the case of the Romanian children, background information was scarce and in many instances not available at all. The vast majority of children in the Romanian institutions were abandoned, which means that no information at all was available at the time of the adoption. Children were moved from facility to facility without parental notification and without records following them. This impacted the adoptions on many different levels. First, the matching process could not be properly conducted because some of the needs of the child were unknown. Second, the family could not be provided with medical and social information that was crucial for the family's ability to meet his/her needs. Last, abandoned children had an ambiguous legal status that had to be resolved prior to adoption so that they could successfully go through the immigration proceedings. The lack of availability of important information in some instances delayed unnecessarily the process of adoption, which meant that the child was kept in an institution longer. This situations did not serve the best interest of children.

Although difficult to implement due to logistics, many Romanian agencies developed pre-placement visits policies, ensuring the child's progressive exposure to the adoptive family based on the child's level of comfort with the process and not on the family's eagerness to speed up the process to secure a placement as quickly as possible. Nonetheless, in some situations, there were flaws in the matching process and in the ways the pre-placement visits were executed.

In addition to the policy implications linked to the Hague, there is one more issue that warrants discussion. Many families who adopted internationally struggle with

accessing post-adoption services since they did not qualify for federal or state adoption subsidies and only limited services were available, affordable or provided. Adoption subsidies and post-adoption services should be available to all adoptive parents, regardless of the child welfare system from which they have adopted, either domestic or international. Adopted children, just like biological children, should be added to the parents' health care plans. The Affordable Care Act (ACA) allows these children to remain on their parents insurance until age 26. This is tremendously helpful to adoptive families in need of post-adoption services that they may not otherwise be able to afford. During the past year, the ACA has been under attack and it is unclear if these policies will remain in place in the future and if these children will continue to benefit from them.

Strengths and Limitations

This study is unique in the sense that it is among the few studies to date to examine the population of Romanian adoptees who are transitioning into early adulthood. The distinctive design involving data collection from both the adoptees and their families allows for corroboration of information from two different sources and creates the possibility of researching various adoption-related issues from both perspectives. In addition, the longitudinal nature of the original study on which this cross-sectional analysis was based allows researchers to examine this group of children and their families over time.

However, there are several limitations. There are several problems with the sampling as discussed previously. Self-reporting is a weakness. All measures were self-reports. One limitation of self-report measures is that they are subject to bias, such as social desirability, acquiescence, extremity and/or central tendency bias. Social

desirability bias refers to the fact that in self-reports, people will often report inaccurately on sensitive topics in order to present themselves in the best possible light. This can be due to both self-deception and other-deception. Adoptive parents may want to portray themselves as great parents, since parenting was such a great investment of time, emotions and resources. Conversely, adoptees may want to make their stories more compelling by adding things intended to impress the researchers.

Acquiescence bias is a category of response bias in which respondents to a survey have a tendency to agree with all the questions or to indicate a positive connotation. Acquiescence is sometimes referred to as "yea-saying" and is the tendency of a respondent to agree with a statement when in doubt. Extremity bias is the tendency of the subjects to respond to the extremes. Central tendency bias is the tendency for respondents to give marks at the middle point of the scale. Since adoptees are going through a period of life which is busy and filled with many demands, struggles and uncertainty and since the contact information for some of them was provided by their parents, it is quite possible that some adoptees in our study could have gone through the questionnaires expeditiously, possibly introducing some of these types of biases. To the extent that bias is uniform within the group under study, it will inflate or deflate individual responses but not alter their rank order. In the case of social desirability bias if some individuals respond more to social pressure than others their placement within the overall distribution of responses could change. This could be particularly relevant for the responses provided by the adoptees who are developmentally more sensitive to peer pressure during this stage of life. This could account for some of the discrepancies between the responses provided by the adoptees in comparison to the data provided by their parents.

The attachment difficulties of Romanian adoptees at ages 4, 6 and 11 were not classified as insecure attachment but as atypical attachment. Atypical is not part of the original nomenclature used to describe attachment patterns; they were either secure, anxious, avoidant or disorganized. The attachment measure used in this study may not be appropriate for capturing aspects of attachment formation that may be atypical, such as disinhibited social relatedness and indiscriminate friendliness, or we may simply not be familiar with what "atypical" attachment looks like in early adulthood.

This particular study, although the 4th wave of a longitudinal study, is a cross sectional one time snap shot. As it is usually the case with cross-sectional studies, they cannot be used to analyze behavior over a period to time, they are not helpful in determining cause and effect and the timing of the snapshot is not guaranteed to be representative. It is a descriptive study and not a predictive study.

Implications for Future Research

This study opened up a new line of inquiry in regards to the impact of early environmental factors on later adult transitions and adult attachment in early adulthood. Family functioning factors could be of outmost importance in mitigating the effects of early deprivation and helping adoptees fully recover and live healthy lives. Although Romanian adoptees have been extensively researched as younger children, family's functioning as predictors of development and attachment during adulthood are understudied. The same is true for other environmental factors such as participation in school or community activities, peer groups, support systems, therapy, the presence of mentors, and influence of others in the life of the adoptee.

A more in-depth inquiry using qualitative or mixed methods approaches would

enhance our understanding of the ways in which adoptees make sense of their adoption experiences in adulthood. Exploring the similarities and differences between these adoptee and adoptive perspectives could reveal other important variables and could bring light into the topic of adult attachment formation, which is very personal and difficult to investigate. Unfortunately, the CWRU IRB refused to allow us to talk about adoption with their adoptees in our protocol. One IRB reviewer decided that talking to adoptees about their adoption would be upsetting although researchers have been doing the same thing for decades.

Researching emerging adulthood in various vulnerable populations is important. What identity formation, exploring and self-focus mean for white, college educated, middle class young adults may carry a completely different meaning for young adults transitioning out of child welfare or mental health systems, for international adoptees, and for immigrant youth, to name just a few. The research of emerging adulthood in vulnerable populations is still new. New studies will teach the public, practitioners and policy makers about the most important predictors of positive outcomes in adulthood and how to best support the emerging adults in their transitions from various experiences in infancy through adolescence.

Emerging adults eventually arrive at making enduring decisions in multiple areas of life after a period of trying out new roles, possibilities and ways of relating to others and themselves. Future research can identify the factors that are instrumental in supporting both the experimentation of emerging adulthood and the settling in new adult roles. Emerging adults have some general idea of how they are supposed to transition from adolescence to adulthood, but this transitioning plan gets frequently modified in the

face of various changes related to macro and micro forces such as economic changes, educational experience, work opportunities and intimate or romantic relationships.

Summary

The Romanian adoptees recovery is a lengthy process in which factors that had an impact early in their development and attachment lost their strength as the adoptees matured. Adoption is increasingly viewed as an important intervention (Groza, Ryan & Cash, 2003; Groza, Ryan & Thomas, 2008; Pearlmutter, Ryan, Johnson & Groza, 2008). When children cannot live with their biological families, adoption stands as a positive, powerful alternative. It is through adoption that hundreds of thousands of children worldwide get to have loving families and get to benefit from dramatically improved life circumstances.

The most important finding of the current study is the notion that early history can be overcome for most adoptees by living in an adoptive family. The adoptees in this study emerged largely unaffected by their earlier exposure to institutional care and pre-adoptive stress by the time they have reached adulthood. This is a story of hope, resilience and survival, which is inspiring to other parents contemplating adoption and to adoption practitioners.

Appendix 1-Study Instruments

1. Welcome to the Survey of Romanian Adult Adoptees

Thank you for participating in the survey. Your participation is important.

You are being asked to participate in a study about adult adoptees placed from Romania with the scope of understanding how they are transitioning into early adulthood. You were selected as a possible participant because you are an adult adoptee from Romania age 18 to 30. Please read this form and contact us with any questions that you have before agreeing to be in the research. Researchers at Case Western Reserve University (CWRU) are conducting this study.

Background Information

The purpose of this research is to understand the pattern of adult transitions for Romanian adoptees who had various types of early life experiences prior to their placement for adoption.

Procedures

Researchers from CWRU are obtaining your consent to participate and will be asking you questions. If you agree to be a participant in this study, we will ask you to answer some questions about your health, mental health, social networks and early adult experiences. We expect the survey to take about 30 to 60 minutes.

Risks and Benefits to Being in the Study

This research has no known risks. Some questions may make you feel uncomfortable and you may choose to not answer. There are no direct benefits to you for participating in this study. However, the information you provide will help to develop policies, programs and services that may help other adult adoptees in the future.

Compensation

You will receive no payment or compensation for your participation.

Confidentiality

The records of this research will be kept private. In any report or publication, we will not include any information that will make it possible to identify you as a participant. Research records will be kept in a locked file, and access will be limited to the researchers and the University review board responsible for protecting human participants at Case Western Reserve University.

Voluntary Nature of the Study

Your participation is voluntary. You can choose not to participate in the research. If you choose not to participate, it will not affect your current or future relations with Case Western Reserve University. There is no penalty or loss of benefits for not participating or for discontinuing your participation. You can stop participating at any time.

Contacts and Questions

The researchers conducting this study are Professor Victor Groza and doctoral candidate Cristina Nedelcu. If you have any additional questions, concerns or complaints about the study, you may contact the principal investigators by email at the following addresses: victor.groza@case.edu or cristina.nedelcu@case.edu. If the researchers cannot be reached, or if you would like to talk to someone other than the researcher(s) about: (1) questions, concerns or complaints regarding this study, (2) research participant rights, (3) research-related injuries, or (4) other human subjects issues, please contact Case Western Reserve University's Institutional Review Board at 00-1-216-368-6925 or write: Case Western Reserve University; Institutional Review Board; 10900 Euclid Ave.; Cleveland, OH 44106-7230 USA.

This form is for your records.

1. Statement of Consent

I have read the above information. I have received answers to the questions I have asked. I consent to participate in this research. I am at least 18 years of age.

☐ Yes

☐ No

2. Please type your name. Your name is not tied to the answers you give. It is only for the consent form.

2. Survey of Adult Romanian Adoptees

Whenever you see the asterisk (*) this means you are required to answer the question to move to the next page.

3. What is the date?

Date / Time MM DD YYYY
 / /

* 4. What is your code? (We will have given you the code. If you forgot, please contact us via email found in the consent form).

5. In what ZIP code is your home located? (enter 5-digit ZIP code; for example, 00544 or 94305)

* 6. Are you male or female?

☐ Female

☐ Male

* 7. In what year were you born? (enter 4-digit birth year; for example, 1976)

* 8. Age at last birthday

- ☐ 18
- ☐ 19
- ☐ 20
- ☐ 21
- ☐ 22
- ☐ 23
- ☐ 24
- ☐ 25
- ☐ 26
- ☐ 27
- ☐ 28
- ☐ 29
- ☐ 30
- ☐ 31 or older

9. What is the highest level of school you have completed or the highest degree you have received?

- ☐ Less than high school degree
- ☐ High school degree or equivalent (e.g., GED)
- ☐ Some college but no degree
- ☐ Associate degree
- ☐ Bachelor degree
- ☐ Graduate degree

10. Which of the following categories best describes your employment status?

- ☐ Employed, working full-time
- ☐ Employed, working part-time
- ☐ Not employed, looking for work
- ☐ Not employed, NOT looking for work
- ☐ Retired
- ☐ Disabled, not able to work

11. Did you feel as though you met your adoptive parents' academic expectations?

- ☐ Met expectations
- ☐ Exceeded expectations
- ☐ Did not meet expectations

* 12. We also want to talk to your adoptive parents about your adult transitions. Are you willing to give us their contact information?

- ☐ Yes
- ☐ No

13. Please give us their name, mailing address, phone and email (if they have one).

14. First, please think about this time in your life. By "time in your life," we are referring to the present time, plus the last few years that have gone by, and the next few years to come, as you see them. In short, you should think about a roughly five-year period, with the present time right in the middle.

For each phrase shown below, please place a check mark in one of the columns to indicate the degree to which you agree or disagree that the phrase describes this time in your life. For example, if you "Somewhat Agree" that this is a "time of exploration," then on the same line as the phrase, you would put a check mark in the column headed by "Somewhat Agree" (3).

Is this period of your life a

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
time of many possibilities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of exploration?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of confusion?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of experimentation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of personal freedom?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
time of feeling restricted?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of responsibility for yourself?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of feeling stressed out?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of instability?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of optimism?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of high pressure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of finding out who you are?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of settling down?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of responsibility for others?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of independence?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of open choices?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of unpredictability?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of commitment to others?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of self-sufficiency?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of many worries?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of trying out new things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of focusing on yourself?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of planning for the future?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time for seeking a sense of meaning?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time for deciding on your own beliefs and values?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of learning to think for yourself?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of feeling adult in some ways but not others?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
time of gradually becoming an adult?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
time of being not sure whether you have reached full adulthood?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Indicate the importance of each of the following in determining whether or not a person has reached adulthood.				
	Very Important	Quite Important	Slightly Important	Not At All Important
Financially independent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No longer living in parents' household	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Finished with education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Married	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have at least one child	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Settled into a long-term career	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchased a house	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drive an automobile safely and close to the speed limit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Be not deeply tied to parents emotionally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Committed to a long-term love relationship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make independent decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accept responsibility for the consequences of your actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Be employed full-time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Establish a relationship with parents as an equal adult	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learn always to have good control of your emotions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Become less self-oriented, develop greater consideration for others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Do you feel like you have reached adulthood?

- ☐ Yes
- ☐ No
- ☐ In some ways yes, in some ways no

17. Indicate how ADULT you feel with each of the following persons, if applicable:

	Fully Adult	Partly Adult	Not at all Adult	Not Applicable
Father	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mother	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sibling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Romantic partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Co-workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. For the following questions, indicate the extent to which the statement currently applies to you.

	Very True	Somewhat True	Not True
Financially independent from parents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have settled into a long-term career	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drive safely and close to the speed limit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not deeply tied to parents emotionally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Committed to a long-term love relationship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make own decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have become capable of supporting a family financially	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have become capable of running a household	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accept responsibility for the consequences of actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have established a relationship with parents as an equal adult	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have learned always to have good control over emotions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have become less self-oriented and developed greater consideration for others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Indicate which of the following apply to you.

	Yes	No
Living in parents household	<input type="radio"/>	<input type="radio"/>
Finished with education	<input type="radio"/>	<input type="radio"/>
Have purchased a home	<input type="radio"/>	<input type="radio"/>
Employed full-time	<input type="radio"/>	<input type="radio"/>
Have become a parent	<input type="radio"/>	<input type="radio"/>

20. We want to know about the family that raised/parented you and how you see them now. Answer each

item independently, without asking anyone else in your family.

	Strongly Disagree	Generally Disagree	Undecided	Generally Agree	Strongly Disagree
Family members are involved in each others lives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our family tries new ways of dealing with problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We get along better with people outside our family than inside.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We spend too much time together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are strict consequences for breaking the rules in our family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We never seem to get organized in our family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members feel very close to each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parents equally share leadership in our family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members seem to avoid contact with each other when home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members feel pressured to spend more free time together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are clear consequences when a family member does something wrong.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard to know who the leadership is in our family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members are supportive of each other during difficult times.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discipline is fair in our family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members know very little about the friends of other family members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Generally Disagree	Undecided	Generally Agree	Strongly Disagree
Family members are too dependent on each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our family has a rule for almost every possible situation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Things do not get done in our family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members consult other family members on important decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family is able to adjust to change when necessary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members are on their own when there is a problem to be solved.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members have little need for friends outside the family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our family is highly organized.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is unclear who is responsible for things (chores, activities) in our family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members like to spend some of their free time with each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We shift household responsibilities from person to person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our family seldom does things together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We feel too connected to each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our family becomes frustrated when there is a change in our plans or routines.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is no leadership in our family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Generally Disagree	Undecided	Generally Agree	Strongly Disagree
Although family members have individual interests, they still participate in family activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have clear rules and roles in our family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members seldom depend on each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We resent family member for doing things outside the family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is important to follow the rules in our family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our family has a hard time keeping track of who does various household tasks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our family has a good balance of separateness and closeness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When problems arise we compromise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members mainly operate independently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members feel guilty if they want to spend time away from the family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Once a decision is made, it is very difficult to modify that decision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our family feels hectic and disorganized.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members are satisfied with how they communicate with each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members are very good listeners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members express affection to each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Generally Disagree	Undecided	Generally Agree	Strongly Disagree
Family members are able to ask each other for what they want.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members can calmly discuss problems with each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members discuss their ideas and beliefs with each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When family members ask questions of each other, they get honest answers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members try to understand each others feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When angry, family members seldom say negative things about each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family member express their true feelings to each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. How satisfied are you with:

	Very Dissatisfied	Somewhat Dissatisfied	Generally Satisfied	Very Satisfied	Extremely Satisfied
The degree of closeness between family members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your family's ability to cope with stress.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your family's ability to be flexible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your family's ability to share positive experiences.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The quality of communication between family members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your family's ability to resolve conflicts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The amount of time you spend together as a family .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The way problems are discussed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family members concern for each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The fairness of criticism in your family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How your adoption questions were discussed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 22. In general, would you say your health is:

- ☐ Excellent
- ☐ Very Good
- ☐ Good
- ☐ Fair
- ☐ Poor

* 23. Compared to one year ago, how would you rate your health in general now?

- ☐ Much better now than one year ago
- ☐ Somewhat better now than one year ago
- ☐ About the same as one year ago
- ☐ Somewhat worse now than one year ago
- ☐ Much worse now than one year ago

* 24. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

	Yes, limited a lot	Yes, limited a little	No, not limited at all
<u>Vigorous activities</u> , such as running, lifting heavy objects, participating in strenuous sports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<u>Moderate activities</u> , such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lifting or carrying groceries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climbing <u>several</u> flights of stairs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climbing <u>one</u> flight of stairs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bending, kneeling or stooping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking <u>more than a mile</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking <u>several hundred yards</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking <u>one hundred yards</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bathing or dressing yourself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 25. During the **past 4 weeks**, how much of the time have you had any of the following problems with your work or other regular daily activities **as a result of any emotional problems** (such as feeling depressed or anxious)?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
Cut down on the <u>amount of time</u> you spent on work or other activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<u>Accomplished less than</u> you would like	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Were limited in the <u>kind</u> of work or other activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Had <u>difficulty</u> performing the work or other activities (for example, it took extra effort)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 26. How much **bodily** pain have you had during the **past 4 weeks**?

- ☐ None
☐ Very Mild
☐ Mild
☐ Moderate
☐ Severe
☐ Very Severe

* 27. How TRUE or FALSE is **each** of the following statements for you?

	Definitely true	Mostly true	Don't know	Mostly false	Definitely false
I seem to get sick a <u>little</u> easier than other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am as healthy as anybody I know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I expect my health to get worse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My health is excellent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 28. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
Did you feel full of life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you been very nervous?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you felt so down in the dumps that nothing could cheer you up?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you felt calm and peaceful?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did you have a lot of energy?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you felt downhearted and depressed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did you feel worn out?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you been happy?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did you feel tired?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 29. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

- ☐ Not at all
- ☐ Slightly
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

30. During the **past 4 weeks**, how much of the time have you had any of the following problems with your work or other regular daily activities **as a result of your physical health?**

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
Cut down on the <u>amount</u> of time you spent on work or other activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accomplished <u>less</u> than you would like	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Were limited in the <u>kind</u> of work or other activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Had <u>difficulty</u> performing the work or other activities (for example, it took extra effort)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 31. During the **past 4 weeks**, how much did pain interfere with your normal work (including both work outside the home and housework)?

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

32. The following questions concern how you generally feel in important close relationships in your life. Think about your past and present relationships with people who have been especially important to you, such as family members, romantic partners, and close friends. Respond to each statement in terms of how you generally feel in these relationships.

Please use the scale below by placing a number between 1 and 5 for each item.

	Not at all characteristic of me				Very characteristic of me
I find it relatively easy to get close to people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it difficult to allow myself to depend on others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often worry that other people don't really love me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not at all characteristic of me			Very characteristic of me		
I find that others are reluctant to get as close as I would like.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I am comfortable depending on others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I <u>don't</u> worry about people getting too close to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I find that people are never there when you need them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I am somewhat uncomfortable being close to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I often worry that other people won't want to stay with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
When I show my feelings for others, I'm afraid they will not feel the same about me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I often wonder whether other people really care about me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I am comfortable developing close relationships with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I am uncomfortable when anyone gets too emotionally close to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I know that people will be there when I need them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I want to get close to people, but I worry about being hurt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I find it difficult to trust others completely.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
People often want me to be emotionally closer than I feel comfortable being.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I am not sure that I can always depend on people to be there when I need them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

	Not at all characteristic of me						Very characteristic of me
33. The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with the statement.							
	Strongly Disagree						Strongly Agree
I'm afraid that I will lose my partner's love.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often worry that my partner will not want to stay with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often worry that my partner doesn't really love me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry that romantic partners won't care about me as much as I care about them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often wish that my partner's feelings for me were as strong as my feelings for him or her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry a lot about my relationships.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When my partner is out of sight, I worry that he or she might become interested in someone else.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I rarely worry about my partner leaving me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My romantic partner makes me doubt myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not often worry about being abandoned.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree						Strongly Agree
I find that my partner(s) don't want to get as close as I would like.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes romantic partners change their feelings about me for no apparent reason.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My desire to be very close sometimes scares people away.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It makes me mad that I don't get the affection and support I need from my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry that I won't measure up to other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner only seems to notice me when I'm angry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer not to show a partner how I feel deep down.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel comfortable sharing my private thoughts and feelings with my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it difficult to allow myself to depend on romantic partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am very comfortable being close to romantic partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't feel comfortable opening up to romantic partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer not to be too close to romantic partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get uncomfortable when a romantic partner wants to be very close.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree						Strongly Agree
I find it relatively easy to get close to my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's not difficult for me to get close to my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I usually discuss my problems and concerns with my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It helps to turn to my romantic partner in times of need.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tell my partner just about everything.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I talk things over with my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am nervous when partners get too close to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel comfortable depending on romantic partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it easy to depend on romantic partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's easy for me to be affectionate with my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My partner really understands me and my needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. The following questions are about your friends.							
	Almost always or never true	Not very often true	Sometimes true	Often true	Almost always or always true		
I like to get my friends point of view on things I am concerned about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
My friends can tell when I am upset about something.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
When we discuss things, my friends care about my point of view.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		

	Almost always or never true	Not very often true	Sometimes true	Often true	Almost always or always true
Talking over my problems with friends makes me feel ashamed or foolish.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish I had different friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends understand me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends encourage me to talk about my difficulties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends accept me as I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the need to be in touch with my friends more often.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends don't understand what I'm going through these days.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel alone or apart when I am with my friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends listen to what I have to say.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel my friends are good friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends are fairly easy to talk to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I am angry about something, my friends try to be understanding.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends help me to understand myself better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends care about how I am feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel angry with my friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can count on my friends when I need to get something off my chest.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I trust my friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Almost always or never true	Not very often true	Sometimes true	Often true	Almost always or always true
My friends respect my feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get upset a lot more than my friends know about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It seems as if my friends are irritated with me for no reason.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can tell my friends about my problems and troubles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If my friends know something is bothering me, they ask me about it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 35. During the **past 4 weeks**, how much of the time has your **physical health or emotional problems** interfered with your social activities (like visiting with friends, relatives, etc.)?

☐ All of the time
☐ Most of the time
☐ Some of the time
☐ A little of the time
☐ None of the time

36. What did we not ask that you think is important for us to know about you, your life or your transition to adulthood?

About you:

About your life:

About your transition to adulthood:

3.

37. If you are willing to be interviewed, please provided us with your name, city and state (so we know your time zone), phone number, and email. Let us know the best way to contact you.

If you don't want to be interviewed, leave this blank.

Appendix 2

Questionnaire for Adoptive Parents of Romanian Children

CODE:

Please mark clearly your response.

1. For the person completing this form, what is your relationship to the child?

- ☐ a. (Adoptive) Mother
- ☐ b. (Adoptive) Father
- ☐ c. (Adoptive) Step-Mother
- ☐ d. (Adoptive) Step-Father

2. How old was the adoptive child when she or he came into your home? _____ months old

What was the year of adoption? _____

3. How old is the adoptee now? _____ years

What is their year of birth _____

4. What is the gender of your child?

- ☐ a. Male
- ☐ b. Female

5. Where was your child during the following periods of his or her life?

Birth-6 months

- ☐ In birth family
- ☐ In foster family
- ☐ In maternity hospital
- ☐ In orphanage
- ☐ Adopted
- ☐ Other (specify): _____

6-12 months

- ☐ In birth family
- ☐ In foster family
- ☐ In maternity hospital

- ☐ In orphanage
- ☐ Adopted
- ☐ Other (specify): _____

12-18 months

- ☐ In birth family
- ☐ In foster family
- ☐ In maternity hospital
- ☐ In orphanage
- ☐ Adopted
- ☐ Other (specify): _____

18-24 months

- ☐ In birth family
- ☐ In foster family
- ☐ In maternity hospital
- ☐ In orphanage
- ☐ Adopted
- ☐ Other (specify): _____

Over 24 months

- ☐ In birth family
- ☐ In foster family
- ☐ In maternity hospital
- ☐ In orphanage
- ☐ Adopted
- ☐ Other (specify): _____

6. What was the total amount of time the child spent in each of these before adoption?

- ☐ In birth family
_____months
- ☐ In foster family
_____months
- ☐ In maternity hospital
_____months
- ☐ In orphanage
_____months
- ☐ Other (specify): _____
_____months

7. Was your child neglected before adoption?

- ☐ a. Yes ☐ b. No ☐ c. Suspected ☐ d. Don't know

If yes, how severe was the neglect?

- A. Very severe
- B. Moderately severe
- C. Not very severe

8. Was your child physically abused before adoption?

- ☐ a. Yes ☐ b. No ☐ c. Suspected ☐ d. Don't know

If yes, how severe was the physically abuse?

- ☐ Very severe
- ☐ Moderately severe
- ☐ Not very severe

9. Was your child sexually abused before adoption?

- ☐ a. Yes ☐ b. No ☐ c. Suspected ☐ d. Don't know

If yes, how severe was the sexual abuse?

- ☐ Very severe
- ☐ Moderately severe
- ☐ Not very severe

10. Was your child born prematurely?

- ☐ a. Yes ☐ b. No ☐ c. Suspected ☐ d. Don't know

11. What your child exposed to alcohol or drugs before they were born, prenatally?

- ☐ a. Yes ☐ b. No ☐ c. Suspected ☐ d. Don't know

12. Did you child experience prenatal malnourishment?

- ☐ a. Yes ☐ b. No ☐ c. Suspected ☐ d. Don't know

13. Did your child have special needs after the adoption?

- ☐ a. Yes ☐ b. No

Please describe the special needs:

14. Did you choose to adopt a child who has special needs?

- ☐ a. Yes ☐ b. No

15. Does your child know he or she is adopted?

- ☐ a. Yes ☐ b. No

16. If you said that your child knows that he or she has been adopted, who disclosed the fact of adoption?

- ☐ a. Both Adoptive Parents
☐ b. Adoptive Mother Only
☐ c. Adoptive Father Only
☐ d. Adoptive Step-Mother Only
☐ e. Adoptive Step-Father Only
☐ f. Other Adoptive Siblings
☐ g. Extended Relatives
☐ h. Neighbors
☐ i. Friends
☐ j. Other

(Specify: _____)

17. How old was your child when the adoption was first

disclosed? _____ years old

18. How was the adoption disclosed? Please describe.

19. What was the adoptee's reaction to the disclosure?

20. When you and your child talked about adoption, who usually started the conversation?

- ☐ a. We (almost) never talked about adoption
☐ b. Adoptive Parents

- ☐ c. Adoptive Mother
- ☐ d. Adoptive Father
- ☐ e. Adoptee
- ☐ f. Adoptive parents and child equally
- ☐ g. Other people (siblings, relatives, friends)
- ☐ h. Internet

21. At what age did your child understand she or he was adopted? ____ years

22. At what age did your child seemed to have accepted his or her adoption? _____ years

23. What is the situation of today in terms of the adoption status?

- ☐ a. Seems to be in the process of accepting it
- ☐ b. Sometimes asked questions related to adoption
- ☐ c. This topic is forgotten/ very rarely talked about-
- ☐ d. Other _____

24. As far as your adoptive child's life goes so far, do you feel as though your child has:

- ☐ a. Met expectations
- ☐ b. Exceeded expectations
- ☐ c. Did not meet expectations

25. What is the highest level of education each parent completed?

Mother

- ☐ a. Some high school
- ☐ b. High school graduate
- ☐ c. Some college

- ☐ d. College graduate
- ☐ e. Master's degree or more

Father or second parent

- ☐ a. Some high school
- ☐ b. High school graduate
- ☐ c. Some college
- ☐ d. College graduate
- ☐ e. Master's degree or more

26. What was each parent's age (if there are two) at the time of the adoption?

_____ Mom _____ Dad or second parent

27. What is each parent's age now?

_____ Mom _____ Dad or second parent

28. Did you experience a change in your marital status after adoption?

- ☐ adopted as single parent and still a single parent
- ☐ adopted as a single parent and got married
- ☐ adopted as a married couple and still married
- ☐ adopted as a married couple and got divorced
- ☐ doesn't apply

29. Are you a same sex parenting household?

- ☐ a. Yes
- ☐ b. No

30. Has your son or daughter

- A. learned to count in Romanian? __yes __no
- B. learned to some words or phases in Romanian? __yes __no
- C. been exposed to Romanian culture? __yes __no
- D. eaten Romanian food? __yes __no
- E. celebrated Romanian holidays? __yes __no
- F. made Romanian friends? __yes __no
- G. Romanian artifacts around the house? __yes __no
- H. visited Romania? __yes __no

31. Thinking back about the adoption, what was the best thing about it?

32. Thinking back about the adoption, what was the worst thing about it?

33. Would you adopt again?

- ☐ a. Yes
- ☐ b. Maybe
- ☐ c. I don't know
- ☐ b. No

34. Would you adopt this child again?

- ☐ a. Yes
- ☐ b. Maybe
- ☐ c. I don't know
- ☐ b. No

35. What is one thing you wish you would have done differently in your adoption?

36. What is one thing you would recommend to parents who are

considering intercountry adoption?

37. Can we contact your adopted son or daughter?

☐ a. Yes

☐ b. No

38. Please verify again that your child knows he or she is adopted.

☐ a. Yes, she or he knows

☐ b. No, she or he does not know

The current contact information of your son/ daughter-

Address:

Phone Number:

Cell phone

Email Address:

Appendix 3

The Revised Adult Attachment Scale (Collins, 1996)

The following questions concern how you *generally* feel in *important close relationships in your life*. Think about your past and present relationships with people who have been especially important to you, such as family members, romantic partners, and close friends. Respond to each statement in terms of how you *generally* feel in these relationships.

Please use the scale below by placing a number between 1 and 5 in the space provided to the right of each statement.

1-----2-----3-----4-----5	
Not at all	Very
characteristic	characteristic
of me	of me
1)	I find it relatively easy to get close to people.
2)	I find it difficult to allow myself to depend on others.
3)	I often worry that other people don't really love me.
4)	I find that others are reluctant to get as close as I would like.
5)	I am comfortable depending on others.
6)	I don't worry about people getting too close to me.
7)	I find that people are never there when you need them.
8)	I am somewhat uncomfortable being close to others.
9)	I often worry that other people won't want to stay with me.
10)	When I show my feelings for others, I'm afraid they will not feel the same about me.
11)	I often wonder whether other people really care about me.
12)	I am comfortable developing close relationships with others.
13)	I am <u>un</u> comfortable when anyone gets too emotionally close to me.
14)	I know that people will be there when I need them.

- 15) I want to get close to people, but I worry about being hurt.
- 16) I find it difficult to trust others completely.
- 17) People often want me to be emotionally closer than I feel comfortable being.
- 18) I am not sure that I can always depend on people to be there when I need them.

Appendix 4

Table 20. Results of OLS Regression with Experimentation Subscale of IDEA as the Dependent Variable and Length of Time in Institution, Pre-Adoptive Stress and Type of Recruitment Included, n=58

Predictors	Model 1			Model 2			Model 3		
	B	SE(B)	β	B	SE(B)	β	B	SE(B)	β
Length of time in institutional care	.033	.022	.382	.032	.024	.370	.035	.024	.401
PASS				.040	.185	.059	.024	.189	.035
Type of recruitment							-1.157	1.499	-.212
R ² change	.146			.003			.044		
	R ² =.146; F(1,57)=2.225			R ² =.149; F (2,56)=1.054			R ² =.193; F(3,55)=.878		
P<.05; p<.01									

Appendix 5

Table 21. Results of OLS Regression with Feeling in Between Subscale of IDEA as the Dependent Variable and Length of Time in Institution, Pre-Adoptive Stress and Type of Recruitment Included, n=57

Predictors	Model 1			Model 2			Model 3		
	B	SE(B)	β	B	SE(B)	β	B	SE(B)	β
Length of time in institutional care	.001	.024	-.001	-.002	.025	-.029	-.003	.027	-.031
PASS				.087	.198	.134	.088	.209	-.057
Type of recruitment							.067	.209	.136
R ² change	.000			.017			.000		
	R ² =.007; F(1,56)=.095			R ² =.011; F (2,55)=.065			R ² =.011; F(3,54)=.043		

P<.05; p<.01

Appendix 6

Table 22. Results of OLS Regression with Identity Exploration Subscale of IDEA as the Dependent Variable and Length of Time in Institution, Pre-Adoptive Stress and Type of Recruitment Included, n=58

Predictors	Model 1			Model 2			Model 3		
	B	SE(B)	β	B	SE(B)	β	B	SE(B)	β
Length of time in institutional care	.018	.022	.221	.017	.023	.205	.018	.024	.222
PASS				.047	.182	.074	.039	.190	.061
Type of recruitment							-.572	1.506	-.112
R ² change	.049			.005			.012		
	R ² =.049; F(1,57)=.665			R ² =.054; F (2,56)=.341			R ² =.066; F(3,55)=.259		

P<.05; p<.01

Appendix 7

Table 23. Results of OLS Regression with Markers Importance as the Dependent Variable and Length of Time in Institution, Pre-Adoptive Stress and Type of Recruitment Included, n=58

Predictors	Model 1			Model 2			Model 3		
	B	SE(B)	β	B	SE(B)	β	B	SE(B)	β
Length of time in institutional care	-.032	.059	-.151	-.044	.061	-.202	-.040	.064	-.185
PASS				-.151	.416	.481	.394	.502	.232
Type of recruitment							-1.576	3.976	-.115
R ² change	.023			.057			.013		
	R ² =.023; F(1,57)=.301			R ² =.080; F (2,56)=.521			R ² =.093; F(3,55)=.375		
P<.05; p<.01									

Appendix 8

Table 24. Results of OLS Regression with Markers as the Dependent Variable and Length of Time in Institution, Pre-Adoptive Stress and Type of Recruitment Included, n=58

Predictors	Model 1			Model 2			Model 3		
	B	SE(B)	β	B	SE(B)	β	B	SE(B)	β
Length of time in institutional care	-.031	.051	-.167	-.036	.054	-.181	-.026	.053	-.140
PASS				.165	.425	.113	.109	.419	.074
Type of recruitment							-4.063	3.317	-.344
R ² change		.028			.012			.115	
	R ² =.028; F(1,57)=.374			R ² =.040; F (2,56)=.250			R ² =.155; F(3,55)=.674		

P<.05; p<.01

Appendix 9

Table 25. Results of OLS Regression with Other-Focused Subscale of IDEA as the Dependent Variable and Length of Time in Institution, Pre-Adoptive Stress and Type of Recruitment Included, n=58

Predictors	Model 1			Model 2			Model 3		
	B	SE(B)	β	B	SE(B)	β	B	SE(B)	β
Length of time in institutional care	.028	.026	.289	.031	.027	.319	.029	.028	.296
PASS				-.110	.212	-.145	-.097	.220	-.127
Type of recruitment							.940	1.745	.154
R ² change	.083			.020			.023		
	R ² =.083; F(1,57)=1.181			R ² =.103; F (2,56)=.691			R ² =.126; F(3,55)=.530		

P<.05; p<.01

Appendix 10

Table 26. Results of OLS Regression with Self-Focused Subscale of IDEA as the Dependent Variable and Length of Time in Institution, Pre-Adoptive Stress and Type of Recruitment Included, n=58

Predictors	Model 1			Model 2			Model 3		
	B	SE(B)	β	B	SE(B)	β	B	SE(B)	β
Length of time in institutional care	.009	.029	.085	.010	.031	.098	.010	.032	.094
PASS				-.050	.242	-.060	-.047	.254	-.057
Type of recruitment							.174	2.012	-.057
R ² change	.007			.003			.001		
	R ² =.007; F(1,57)=.095			R ² =.011; F (2,56)=.065			R ² =.011; F(3,55)=.043		

P<.05; p<.01

Appendix 11

Table 27. Summary of Logistic Regression Analysis Predicting Attachment (Data Reported by Adoptive Parents)

Variable	B	SE	Odds Ratio	p
Institutcare	-.017	.012	.983	.169
PASS	.070	.123	1.073	.568
Type of recruitment	.904	.863	2.469	.295
Constant	.283	2.333	1.327	.904

Appendix 12

Table 28. Summary of Logistic Regression Analysis Predicting Attachment (Data Reported by Adoptees)

Variable	B	SE	Odds Ratio	p
Institutcare	-.008	.045	.992	.850
PASS	.556	.313	1.744	.075
Type of recruitment	2.274	2.376	9.719	.338
Constant	-11.721	6.339	.000	.064

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