



SUMMER 2015: NEWS FROM THE UNIVERSITY OF MINNESOTA

Gunnar Lab for Developmental Psychobiology Research



Greetings from Professor Megan Gunnar

We want to thank all of the families who partnered with us in our research over the last year. You may notice that we have a new name for our newsletter. This is because we have broadened our work beyond studies of children adopted internationally. Now about half of our work is with internationally adopted children and half is with children born and raised in their families of origin here in Minnesota. The reason for the shift in research emphasis is that we are now focusing more and more on adolescent development. This is a time of challenge for families whether or not their adolescent son or daughter was adopted. As a field, we actually know little about how the body's stress systems are regulated during adolescence and this is important to understanding why this period of life is so challenging for so many children. About half of our work today is focused on understanding the developmental systems



that regulate stress in non-adopted adolescents and the other half focuses on stress and development in children adopted internationally early in life.

You will find studies from both sides of our work discussed in this newsletter. We hope you find the reports interesting. This is how we can keep you informed about the results of the studies you and your child were in and a way of

allowing you to see the work in context. In addition to our lab group, Richard Lee, who studies acculturation in internationally adopted children, has also provided some stories for this newsletter.

Again, thank you for taking part in this research. You can also find previous newsletters online at www.cehd.umn.edu/icd/research/gunnarlab.

—Regents Professor Megan Gunnar

Self-Control Study



By Jamie Lawler and Elisa Esposito

There has been a lot of talk in the media lately about the importance of “grit” or self-control for success in life. Self-control, or the ability to regulate impulses, emotions, and attention, is a crucial requirement for effectively navigating every-day life. Acquiring that self-control is major task of childhood. For internationally adopted children, who have experienced early life stress, developing these skills is often especially challenging. Our study sought to explore how to help children develop self-control skills that would enable them to function more successfully at home and in the classroom.

The primary goal of our study was to test the effectiveness of two methods for improving self-control-mindfulness training and executive function training for internationally adopted children. Mindfulness training seeks to develop self-control by making children more aware of their present senses, feelings, and actions, and teaching them ways to feel calm. Executive function training gives children direct practice in “stopping their bodies” (controlling impulses),

paying attention, remembering information, and thinking creatively. Both interventions were designed to promote self-control in school-aged children, ages 6–10.

Participants

We have now completed three waves of the Self-Control Study. Each summer for the last three years we conducted pre- and post-test studies on children and ran six week summer camps during which they came to the University of Minnesota twice each week for classes designed to help them learn self-control. A total of 133 children participated.

What We Did

Children were placed randomly in a mindfulness training group (MT), an executive function training group (EF), or a no-intervention control group. Children in the executive functioning or mindfulness-based training groups attended classes twice a week for six weeks during the summer. During each training class, the children played a variety of games designed to improve their ability to focus their attention and resist impulses. In the mindfulness-based training

group, activities included learning to pay attention to breathing and physical sensations, learning to pay attention to different feelings and thoughts, and practicing compassion exercises. In the executive functioning training group, activities centered around fun games (like “Simon Says” and “Red Light/Green Light”) that help children practice paying attention, resisting impulses, remembering information, and thinking flexibly. At the end of each class, parents received directions for a game or activity to complete with their child before the next class. These activities were designed to help transfer what children learned in class and apply it to their everyday lives.

To measure the effects of the training classes, children and parents visited our laboratory before and after the training weeks. There the children played computer games designed to measure different aspects of self-control, wore an EEG net to measure brain activity, and completed tasks that assess socioemotional development.

Four months after the end of the training period, parents were asked to fill out a set of questionnaires about their child’s behavior. We asked parents to do this so that we could see if effects of the trainings were evident several months later. Parents also forwarded a set of surveys to their child’s classroom teacher so that we could see how the children’s behavior in school might have been affected by the trainings.

Did the training work?

Yes. But the benefits were different for each type of class. In the executive function classes that played games that directly trained attention and self-control (i.e., games like BLINK and Simon Says), we found that the children showed improvements on computerized tasks that were designed



to challenge their efforts to pay attention. When we measured their brain wave activity, we saw an increase in a brain response that reflects the monitoring of errors and alerting when mistakes are made. However, we did not see any evidence in the teachers’ reports that these effects carried over into the school year. It may be that the exercises need to be continued for a longer duration to retain improvement; parents did not report continuing the exercises beyond the study.

In contrast, the mindfulness classes did not appear to help the children focus their attention more. However, these classes did appear to affect how they regulated their emotions. We saw this in the children’s brain-wave activity when they made mistakes. By the end of the training, they were generating a less intense response. We also found that parents reported that their children were less anxious if they had been through the mindfulness classes. Finally, teachers reported that children from the mindfulness classes were showing more prosocial behaviors towards other children. In

the mindfulness classes, in addition to attention training, the children were receiving training in compassion and in calming down and letting go of emotions. A number of families in the mindfulness classes reported that they continued some of the activities after the classes were over. This may help explain why mindfulness effects carried over into the school year.

In summary, our results suggest that attention and executive function training is effective at improving attention focusing and impulse control skills, while mindfulness training is more effective at improving children’s ability to regulate their emotions and act nicely towards others. The longer-term effects of mindfulness training on emotion regulation and prosocial behavior are likely due to the continued practice of these skills. Similar to brushing your teeth, practicing self-control skills regularly is necessary for improvement to happen!

Epigenetics Study

By Elisa Esposito and Jena Doom

When we hear about the “nature vs. nurture” debate in the media, it seems our biology and our environment are standing on opposite sides of a field playing tug-of-war with who we will become. In the earlier days of genetic research, scientists focused on studying our genetic code—the DNA sequence that is unique to each of us and that doesn’t change over the course of our lives. If this is the only part of the equation we focus on, it certainly seems nature and nurture are at odds. However, think about this: our genetic code is the same no matter if we are looking at a skin cell, a blood cell, or a brain cell. If that code were the only thing that mattered to development, all of our cells would be the same! What scientists are now starting to focus on is epigenetics, which examines changes on the “top” (epi means top) of our genome that regulate gene expression. Similar to a dimmer switch on a light bulb, these epigenetic changes determine how much each of our genes are turned on or off. Genes are not simply present or absent; they may be present but not turned on, or expressed. The epigenome is different in each type of cell, which is what makes cells type distinctive from one another. What we now know is that experiences after birth also influence our epigenome—so rather than nature and nurture competing against each other, they are working together to shape our biology.

Years of research have shown that early adverse experiences in life increase the risk of poor outcomes. Many researchers are looking to epigenetics as a way to understand how early experiences “get under the skin” to create long-term effects on health and behavior. In humans, various types of early life stressors (e.g., poverty, parental stress, maltreatment) create changes in the epigenome—often seen in immune cells. To date, only one other study has examined the effects of early institutional care on children’s epigenomes. It found that children who were currently living in Russian orphanages had very different epigenomes compared to children living



in poor families in Russia. Our study is the first to examine whether potential epigenetic changes in the immune system continue to persist years after children are adopted into supportive families.

During the summers of 2013 and 2014, 83 adolescents between the ages of 13 and 18 visited our lab with a parent. Fifty of these adolescents had been adopted from institutional care in Russia and Eastern Europe, and 33 had been born into their families in Minnesota. Even though the experiences between these two groups differed during the first year or two of life, all of the internationally adopted children in this study lived in comparable environments post-adoption as the MN born children for at least a decade. During the lab visit, the teenagers donated a vial of blood for epigenetic analysis and both the teens and their parents filled out questionnaires about current and past life stressors, and current functioning in multiple areas of their lives.

Epigenetics study, to page 7

Transition into the Family Study: Kindergarten Results

By Shanna Mliner and
Megan Gunnar

We've just completed the massive data collection phase of our multi-year Transition into the Family Study, including the Kindergarten Assessment portion, which took us into schools all over Minnesota and beyond! We are truly appreciative of all the time and effort participating families contributed to this longitudinal research project. Of the 185 children who were eligible for the Kindergarten Assessment, the families and schools of 167 children agreed to participate.

For the Kindergarten Assessment, trained observers visited each participating child's kindergarten classroom and sat quietly recording the child's attention and engagement in academic activities as well as social interactions with classroom peers. We also gathered 3 saliva samples to assess the child's stress hormone levels at school. Each child's teacher completed a survey about the child's behavior at school and each parent completed a survey with information about behavior and relationships at home.

We are currently preparing all of the data for full analysis and subsequent publications. However, because many children who spent time in institutional care early in life struggle with controlling their attention, we are prioritizing an analysis of the ADHD data. Teachers and parents reported more attention problems for adopted children than non-



adopted children, with children adopted at older ages having more problems than those adopted earlier and adopted boys having more problems than adopted girls. One question we'd like to be able to answer is *How early after a child is adopted can we get a sense that he or she will need extra help learning to control their attention and activity levels?* The earlier these children can be identified, the more time there will be to focus on attention and self-regulation training. We found that children whose daily pattern of cortisol production (based on home saliva samples collected by parents) was blunted were the ones who had more attention problems in kindergarten. We have previously found that children who got comparatively less attention from adults before adoption were the ones who had more blunted daily cortisol patterns. Attention from adults helps reduce stress in babies. Thus, we think that these findings suggest that stress before adoption is

playing a role in producing attention problems in adopted children, and that by examining behavior and biology we might be able to detect which children need help with training attention before they get to kindergarten.

For now, these findings are preliminary, but we are adding more data to these analyses and will keep you posted in future newsletters about what we learn. We encourage you to check our website for any publication updates along the way: www.cehd.umn.edu/icd/research/GunnarLab

We want to again extend our sincere thanks to all of the participating families who have supported this project for so many years across the multiple sessions, home kits, and helping us work with school principals, district administrators, and classroom teachers.

Do Stressful Experiences Early in Life Affect Youths' Later Ability to Regulate Emotions?

By Amanda Burkholder

During a job interview, it's important to appear calm and confident, no matter how stressed and nervous you feel. In order to do this, you regulate your emotions and inhibit those that are undesirable to the situation. Emotion regulation is important in many aspects of our lives, and helps us respond appropriately in social situations. We begin to learn how to regulate emotions in infancy, and gradually get better at it throughout childhood and adolescence. Disruptions in this learning process may lead to later difficulties and delays in emotion regulation.

The International Adoption Project recently examined how differences in early life experiences affect the later ability of children and adolescents to regulate their emotional responses during a stressful task. This study included 9–10 year

olds and 15–16 year olds, with approximately half in each age group internationally adopted from institutional care, while the other half were non-adopted age-matched peers. The participants completed a video-recorded public speaking task and a math task to induce stress, and we collected periodic saliva samples to measure the rise of their stress response system through cortisol reactivity. We also had the participants tell us how stressed they felt after the tasks were over to capture their perceived level of stress.

Since we were particularly interested in the participants' ability to regulate their emotional responses during the stressful tasks, we later watched the videos of the speech and math tasks and recorded visible stress behaviors. We averaged these behaviors to produce a measure of “emotion expression regulation”—the ability of children to look calm and collected, even when they reported that they were nervous.

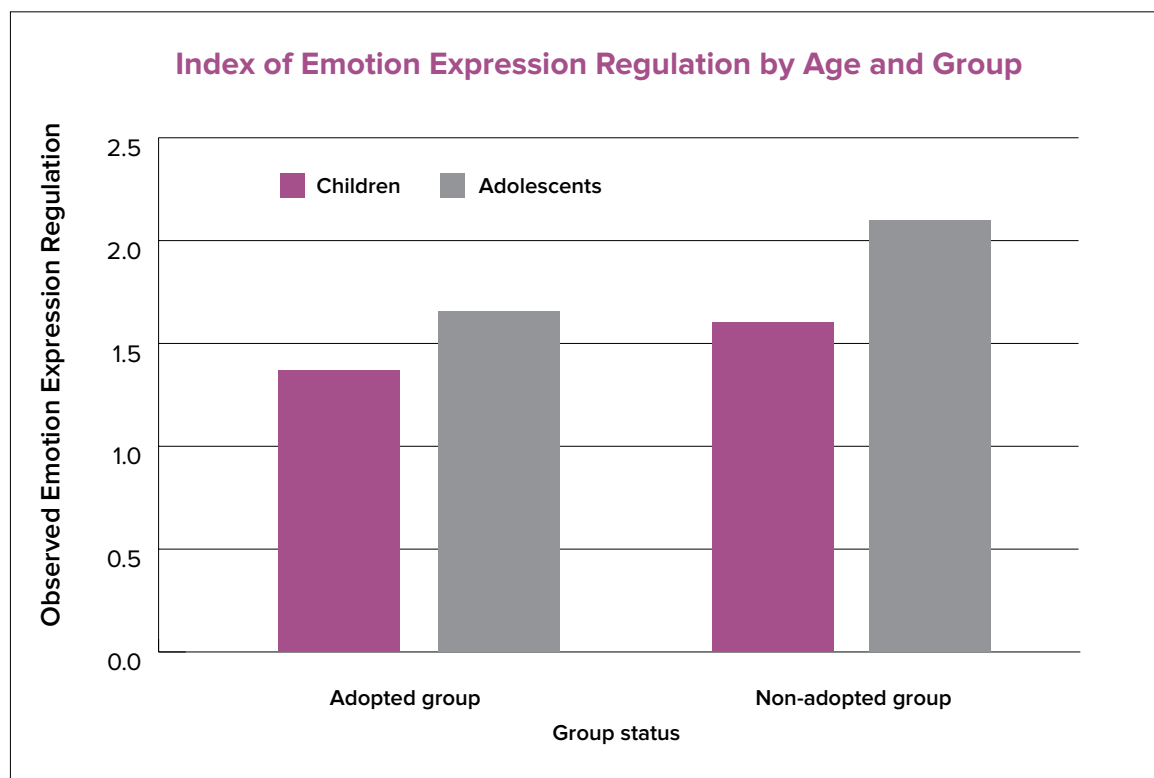


Figure 1. Emotion expression regulation in children and adolescents.



As shown in Figure 1, adolescents were better able to regulate their emotional expressions than were the children. However, beyond that, non-adopted children were better regulators than

were adopted children. This was true even when we took into account how much stress hormone a child or adolescent produced and how nervous they said they were.

These results suggest that the roots of emotion regulation are established early in life, and appear less developed in children who missed out on supportive care during that early period. This means that these children may need some extra training to help strengthen this ability. It is important to realize that in each group, some children were better and some worse at regulating their emotional expression and there was a lot of overlap between adopted and non-adopted groups as well. This is true of everything we study. Some children who experience early adversity perform like those who have not experience adverse early life care while others do not. Studying what helps some children be so resilient is a very important endeavor. One factor may be grit or self-control.

Epigenetics study, from page 4

Because most of the epigenetic marks on the genes of each cell go into determining cell type, our first task was to sort the cell types. When we did that, we found that as a group the teenagers who were adopted had a different pattern of immune cells in circulation compared to the non-adopted teens. The previous study of children in Russian orphanages found that children living in institutions and those living in their low-income families of origin all had the same pattern of cell-type, so we do not think the differences were due to being in an institution. We are planning to follow

up on this finding to determine what it means for the immune systems of adopted children, and will likely invite the families in our study to return.

Once we controlled for differences in cell types, we found epigenetic differences on fewer than two dozen genes. Several of the epigenetic differences indicated that the adopted children had been exposed to cigarette smoke, which makes sense given the prevalence of smoking in Russia/Eastern Europe. It seems likely that these epigenetic changes reflected adaptation to second-hand smoke.

This preliminary study sheds some light on the enduring effect our early environment can have on our biology. What we still don't know is how much a supportive adoptive family subsequently changes how a child's genes work. To better understand that process, we would have to measure the epigenomes of children starting when they are first adopted and assess changes over time as they adapt into their new family environment. Studies like this will be very important in helping us understand the role of adoptive families in fostering resilience.

Talking about Race and Ethnicity and Ethnic Identity Development among Korean Adolescents



*By Alison Hu, Kayla N. Anderson
and Richard M. Lee*

In 2007, over 400 families with adopted Korean American children and adolescents participated in our survey examining their unique life experiences. By analyzing the data from this survey, we have learned about how adoptive families are negotiating ethnic and racial issues within and outside of the family and its impact on development and well-being. For instance, a recent study under review by Alison Hu, Kayla Anderson, and Richard M. Lee examined 120 mother and adolescent reports of ethnic and racial socialization and the extent to which these experiences related to ethnic identity development. Ethnic socialization refers

to parents teaching their children about Korean culture and heritage so the child will develop a connection and pride with being Korean. Racial socialization refers to parents talking about racism and discrimination with their children and how to cope with such encounters. Ethnic identity refers to having pride in being Korean and having a clear understanding of what being Korean means. We found that mothers on average reported engaging in more racial and ethnic socialization than adolescent reports of their mother's parenting. This discrepancy in perceived parenting practices is quite common in the literature. Our previous published research using a different sample of Korean adoptees and their parents has found that adolescent reports (compared to parent reports) better match observed family

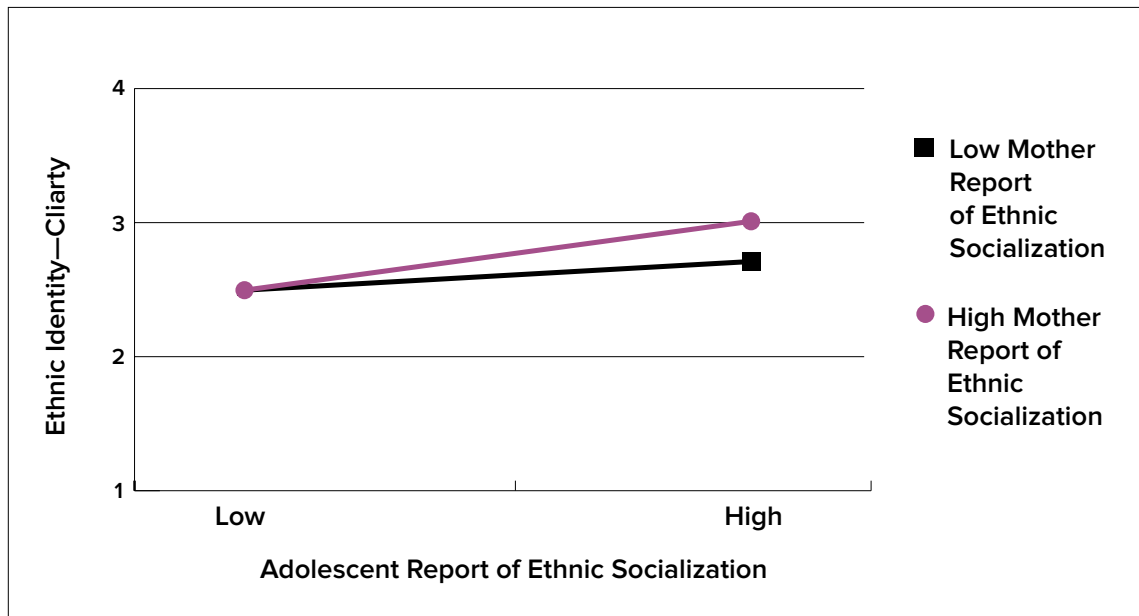
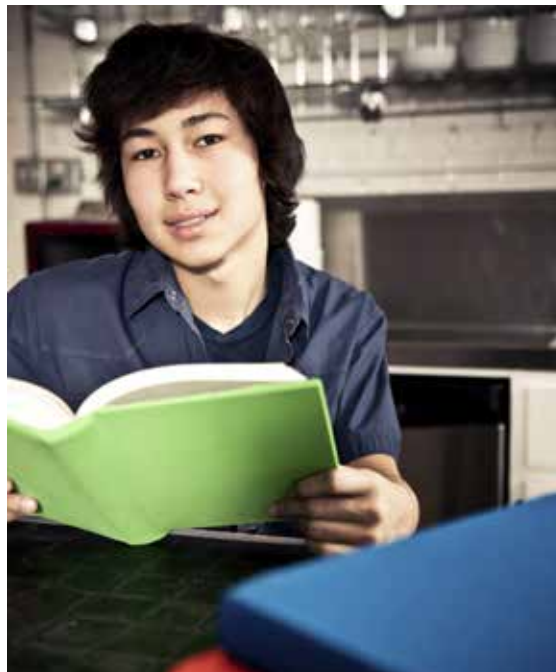


Figure 2. Moderating effect between mother and adolescent reports of ethnic socialization on adolescent ethnic identity-clarity.

conversations about race and ethnicity. In other words, it appears that parents over-estimate the extent to which they actually engage in ethnic and racial socialization activities and conversations. Qualitative analysis of parent-adolescent conversations reveals that many Korean adoptees want to talk about ethnicity and race in everyday conversation and engage in such activities more frequently than adoptive parents. Adoptive parents struggle more with trying to understand how to exactly promote such conversations and engage in such activities.

Additionally, we found that pride in being Korean is higher when parents engage in more ethnic socialization. Talking more about racism and discrimination, by contrast, was actually related to less Korean pride. Although it makes sense that ethnic socialization is related to ethnic identity, we are now examining why it may be that racial socialization is negatively related to this aspect of ethnic identity development. Finally, we found that adolescents have greater clarity in understanding what it means to be Korean when mothers and adolescent children concur on the frequency of ethnic socialization (see Figure



2). This latter finding affirms the idea that it is important for parents and adolescents to see “eye to eye” when it comes to ethnic socialization.

Discussing Race & Ethnicity: Family Agreement Is Worth It!



By Kayla Anderson, Richard Lee,
Martha Rueter, Oh Myo Kim

Adoption agencies and researchers often talk about how important it is for parents to plan and engage in activities related to their adopted child's birth heritage or race. These activities help international adoptees, many of whom are ethnic and racial minorities in the United States, have pride in their heritage and promotes their ethnic identity. Engaging in these activities also reduces the amount of emotional and behavioral problems among adopted children. However, we do not really know how family conversations about the families' multicultural and/or mixed race status relates to child development. This study examines real-time conversations about racial and ethnic differences within international, transracial adoptive families, and examines how different approaches to discussing racial and ethnic differences within the family are related to adopted children's delinquent and other behavior problems.

Data from this study comes from the Sibling

Interaction & Behavior Study (SIBS). We asked 111 families with Korean internationally, transracially adopted youth to discuss their families' approach to discussing racial and ethnic differences within the family (between White parents, White children biologically related to the parents [if applicable], and Korean adopted children). Families discussed the following questions: (a) how do our ethnic and racial backgrounds affect us as a family? (b) provide an example of when your ethnicity or race has been an issue for you, and (c) how well do we talk about ethnicity or race in our family? We coded these discussions into three categories: *whether families agreed racial and ethnic differences were important and promoted the importance of their differences (acknowledging racial and ethnic differences)*, *whether families rejected the idea that their racial and ethnic differences were important and did not address these differences within their family (rejecting racial and ethnic differences)*, and *whether the family couldn't agree on whether racial and ethnic differences were important (disagreeing on ethnic and racial differences)*.

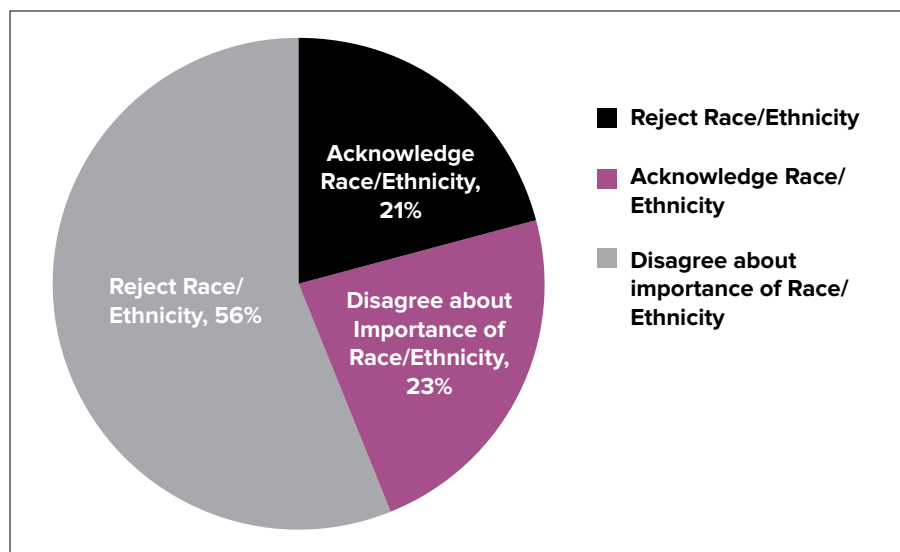


Figure 3. How do adoptive families discuss racial and ethnic differences?

Figure 3 shows us how many families rejected, acknowledged, and disagreed about the importance of their racial and ethnic differences. Notably, more than half of the families rejected the importance of racial and ethnic differences within the family. Nearly one-quarter disagreed on this issue and the remaining 21% acknowledged the importance of race and ethnicity within the family. Unlike survey studies that rely on self-reports, these findings

are from actual family conversations about race and thus provide a different perspective on how ethnic and racial socialization occur within families.

We next examined how these three ways families discussed their racial and ethnic differences were related to the adopted children's delinquent and other problem behavior. Even after accounting for family conflict about any topic, families that disagreed about

whether racial and ethnic differences were important to their family had higher levels of delinquent behavior relative to the other groups. Although families acknowledging the importance of racial and ethnic differences had adoptees with the least delinquent behavior, this was not quite statistically different than families rejecting the importance of differences.

This study suggests that more than whether families acknowledge or reject the importance of their racial and ethnic differences, families should discuss these differences until they reach an agreement about how race and ethnicity affects their family. Coming to a consensus through open conversation is important. While adoptive families often say that they'll wait until the child broaches the topic of race and culture, it's probably best to discuss these issues early and often to help your family reach an agreement about whether their racial and ethnic differences are important or not. Doing so very well may improve your adoptees' adjustment.

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Adopted Korean American Identity Profiles

*By Adam J. Beaupre, B.S., Reed Reichwald, Ph.D.,
Xiang Zhou, M.S., Elizabeth Raleigh, Ph.D.,
Richard M. Lee, Ph.D.*

"When you are in a group of Korean adoptees, you definitely feel like—that, to a certain degree... that's your race... That's your people."

Transracially adopted youth must negotiate what it means to be adopted and what it means to grow up as an ethnic minority in society. What is not well known is how these experiences contribute to youths' overall identity development. Do adopted youth view themselves primarily by their adoptive status, their ethnicity, or a mixture of both? Moreover, how do these different identity profiles relate to overall adjustment? These questions of identity formation are very important for youth, as well as adoptive parents who seek to provide the best environment for their children to develop healthy, positive identities.

We sought to answer these questions in a survey study of 189 adopted Korean American (KAD) adolescents who were part of the Korean Adoption Survey that was completed in 2007. All adolescents in this study were growing up in families with White parents. Adolescents were asked questions about how they thought of themselves in terms of their adoptive status and their ethnicity. We were specifically interested in the extent to which they had a commitment to these two identities. Using a person-centered approach, we identified groups of adolescents who shared similar responses to questions about their adoptive identity and ethnic/racial identity.

As illustrated in Figure 4, we found six unique identity profiles. Not surprisingly, adolescents with the KAD-strongly committed identity profile reported significantly more parental ethnic socialization messages, as well as adolescent-engaged ethnic socialization activities, than adolescents with the KAD-committed, Adoptee,



KAD-marginally committed and KAD-uncommitted identity profiles. Examples of ethnic socialization activities reported by parents and adolescents included learning about Korean culture, celebrating Korean holidays, developing friendships with other Koreans, and attending Korean community events.

In terms of the extent to which these identity profiles were related to overall adjustment, we found minimal differences between profiles. The one exception was adolescents with a KAD-uncommitted profile. This small group of individuals reported less favorable adjustment outcomes. Compared to the other profile groups, they reported lower well-being, less school interest, and less positive relationships with their mothers.

Overall, these findings suggest that there may not be one "right way" for adopted Korean American

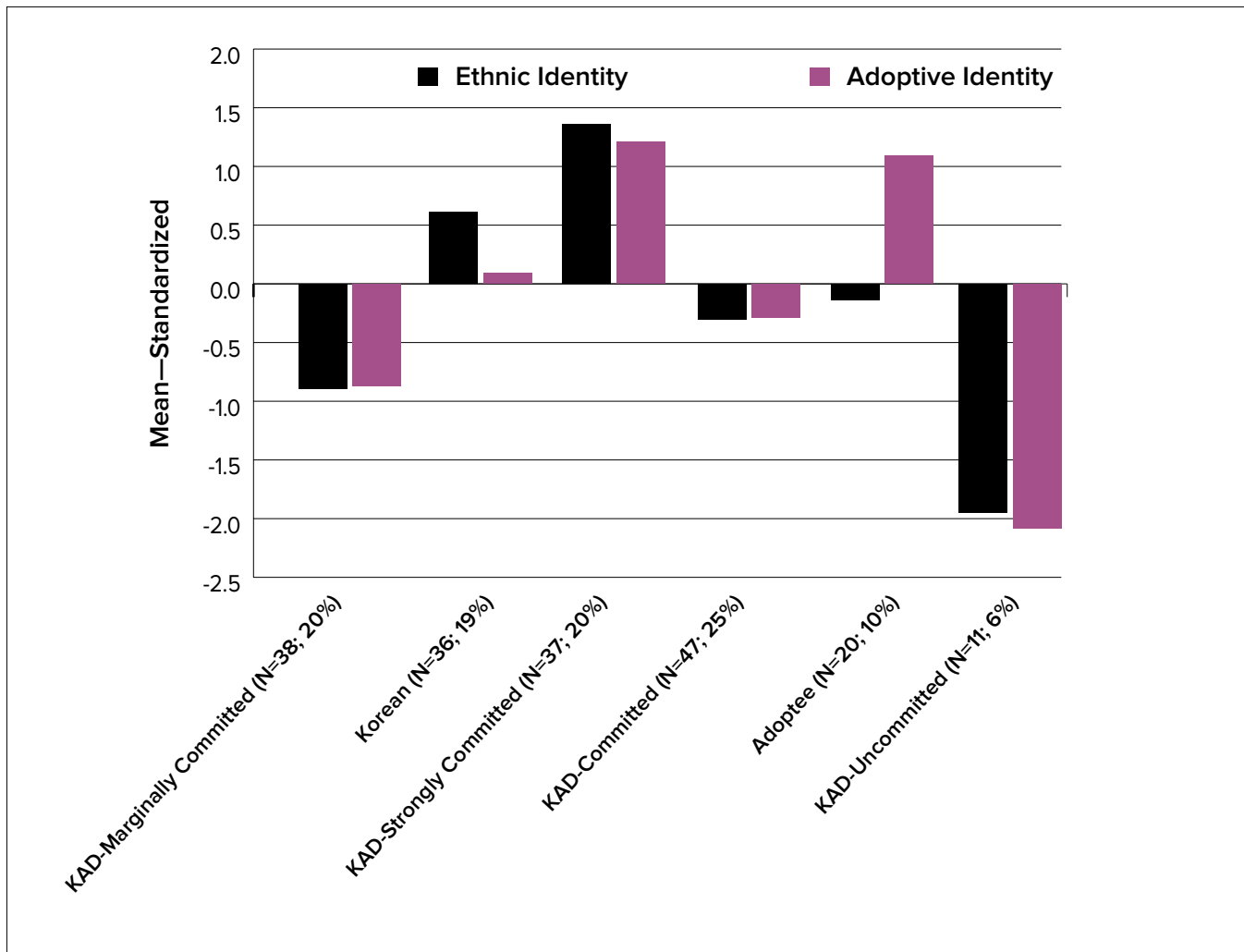


Figure 4

adolescents to develop adoptive and ethnic identities. What is clear is that adopted Korean Americans, in general, have positive and healthy adoptive and ethnic identities, although the strength of these identities may vary to some degree. Ethnic socialization experiences also contribute to greater identity commitment. We aim to replicate this study with survey data on another sample of adopted Korean American adolescents recently collected in 2014 to see if ethnic socialization practices in early and middle childhood play as important a role in identity development as engaging in these socialization experiences during adolescence.



A 7-Year Follow-Up Study on Korean Adoptees: A Brief Update



*By Richard M. Lee, Alison Hu
and Adam Beaupre*

In 2014, we re-contacted adoptive parents with Korean children who completed our survey on negotiating ethnic and racial issues within and outside of the family and its impact on development and well-being. Seven years later, 120 families with children who are now adolescents (ages 12–20 years old) from the original survey participated in a follow-up survey. Similar to the original study, this survey asked questions relating to race, ethnicity, culture, adjustment and well-being. Parents reported how they incorporate race and culture into their child's life. Parents also reported on their experiences with—and thoughts on—genetic testing for their child. Parents also talked about their child's general adjustment and the quality of their relationship with their child. Adopted adolescents responded to similar questions as the parents, but with a few additions. For instance, they answered questions relating to how they incorporate different parts of their experience as adopted Koreans into their identities (e.g., being Korean, being adopted). They also discussed how they think about their birth family and how they partake in ethnic and racial socialization

with their peers. In addition to questions about adjustment and parental relationships, adopted adolescents responded to questions about general life satisfaction, delinquent and risky behaviors, and psychological distress.

We have finally finished merging and organizing the two data sets from 2007 and 2014 and have just begun to analyze the data. We are mainly interested in how ethnic and racial socialization practices have changed over these seven years and to what extent do these ethnic and racial socialization experiences contribute to adolescent development. We also are interested in shifting attitudes and interest in genetic testing to uncover medical history and to find birth family. Many adoptive families are inquiring about the utility of genetic testing, including ancestry testing kits, in meeting the needs and curiosity of their children. We hope to shed some new insights on this emerging technology.

We do not have any results to report but want to thank all families who participated in this study. To our knowledge, it is one of the longest longitudinal follow-up studies on international adoptive families. This work is not possible without the continued support and participation of adoptive families.

Puberty Study

*By Megan Gunnar,
Bonny Donzella, Bao Moua*

Puberty brings on many changes to both the bodies and the minds of children. In many ways these changes are good, but they do open up new risks for children and families for example; through increases in behavioral and emotional ability. In the Puberty Study, we are trying to understand how the changes associated with puberty affect how children manage stress psychologically and physiologically. We think that puberty starts a process whereby the biology of the child measures how emotionally and physically challenging their world is and calibrates its stress systems to manage that level of stress. For children who started life in extremely harsh conditions, the pubertal calibration period may reset the body to a less stress reactive mode. We know that some children generally experience a lot of emotional stress during the pubertal period. For these children, puberty might ramp up the body's stress systems and intensify the emotional turmoil they experience during adolescence. This is the idea we are testing in this study.

To do so, we are seeing children several times over a two-year period. Each time we see them we assess where they are in pubertal development and how their stress systems work at home on regular school days. In addition, we challenge the children by having them give a short speech and do arithmetic in front of a few adults while being recorded. We also complete an extensive interview with the children to find out how they describe the stress and challenges in their lives at school



and at home. We are starting with young children (around 7 years) and ending with older children (14 years) so that once we are done we can string together information on 7- through 16-year olds.

We need to see a total of 400 children in this study, 200 adopted internationally from orphanages or other institutions and 200 raised from birth in their families here in Minnesota. So far, we have enrolled 200 families, so there is lots of opportunity for more families to get involved in this study. We'd love to have your help in spreading the word.

Internationally adopted youth who meet the following criteria are eligible for participation:

- Currently between 7 and 14 years old
- Adopted between 6 and 60 months of age

- Spent 60% or more of pre-adoption life in an orphanage, institution or hospital

Non-adopted youth who meet the following criteria are eligible for participation:

- Currently between 7 and 14 years old
- Reside within the Twin Cities metro area
- Willing to come to the University of Minnesota two times per year for three years

If you have friends with children who fit these criteria, please have them contact us at 612-624-9322 or email at pubertystudy.umn@gmail.com.

Fetal Alcohol Screening

In many of our studies we screen children for facial features consistent with exposure to alcohol before birth. We are doing this as part of our Puberty Study. Some parents in the study indicated a desire to be informed if their child's features signified that further testing might be warranted. If you were one of these parents and we **HAVE NOT CALLED YOU** about a screening that occurred more than three months ago, this means that the facial features of your child did not match those of children exposed to alcohol before birth. It does not mean that your child wasn't exposed, but rather that if there was exposure it wasn't enough to change the facial features or didn't occur at the time the face was forming. If you have concerns about prenatal alcohol exposure for your child, please talk with your pediatrician.

Public Speaking Study

By Jena Doom

When we are children, simply being near our parents creates a strong sense of security. Parents are a safe haven. Being near parents at times of stress is a child's primary means of coping. As we get older, we still gain solace from contact with our families, but there are more and more challenges that we simply have to face on our own. In sum, by the time we reach early adulthood we have to be ready to leave home and make our way in the world.

Nature knows this and as we transition from child to adult, researchers think the biology that underlies our ability to cope with the world shifts from being organized around gaining proximity and contact with our parents to managing the world by standing more on our own two feet, at least in terms of regulating internal stress systems. This is a theory we have been trying to test for several years.



A few years ago in our Social Support Study, we studied 164 children ages 9–10 years old and 15–16 years old. Each child gave a speech in front of some judges and had their speech videotaped. Half of them prepared for the speech with the support of their parents and half

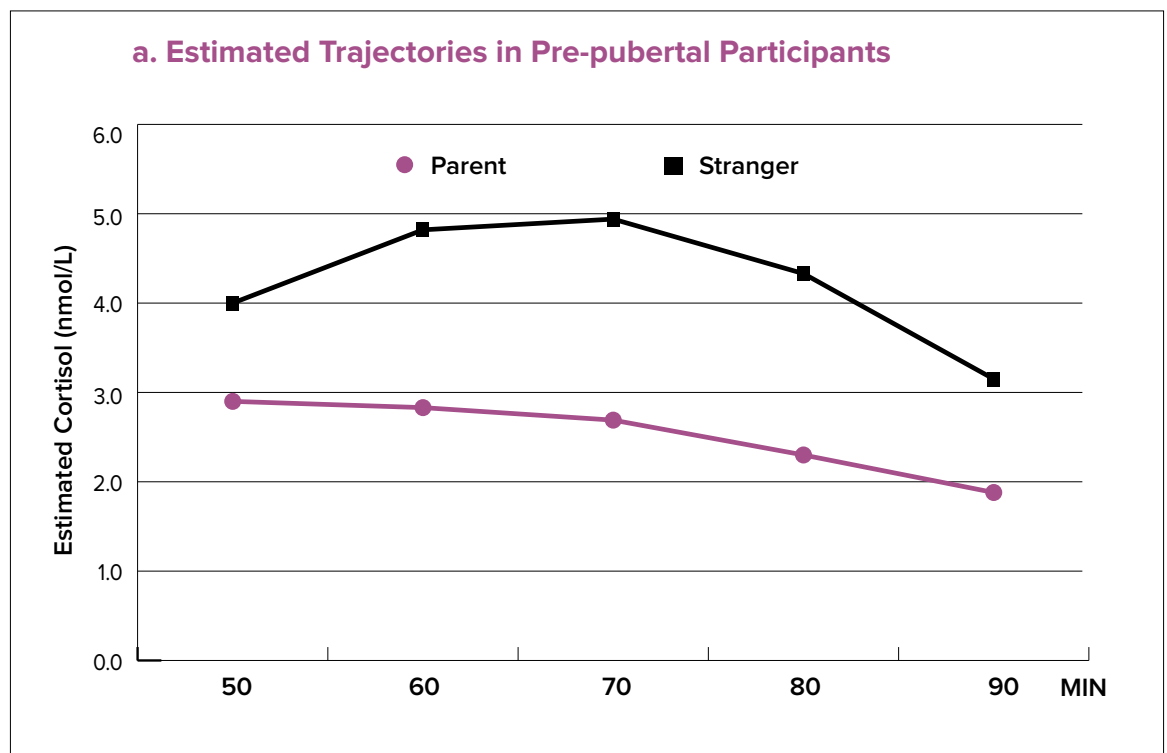


Figure 5–6. Stress hormone response in adolescents who are a) pre-pubertal and b) pubertal.

prepared with the support of one of the experimenters. The parent was not present during the speech for either group. Throughout the task, saliva samples were collected to measure the cortisol stress response. For the 9–10 year-olds, preparing with the parent completely blocked any rise in stress hormone from giving the speech, even though the children said they were stressed and acted nervous. For the 15–16 year-olds, however, preparing with the parent did not block the hormonal stress response, even though these teenagers said it had helped to have the parent there.

In the Public Speaking Study we just completed, we sought to determine whether puberty was the switch that shifted the biology of coping. To answer this question, we recruited children who were between 11 to 14 years of age. Using a developmental screening criteria, we recruited equal numbers of children who were 11–12 year-olds who were early or late in

pubertal development and 13–14 year-olds who were early or late in pubertal development. Although age and pubertal stage are highly correlated, we were able to separate the effects of puberty and age in this way. We did the same speech task used in our earlier Social Support Study where half of the children prepared for the speech with their parent and half with the experimenter.

The answer to our question was that once a child is beyond the mid-point in pubertal development, having the parent nearby no longer buffers the child's stress hormone system in the same way it did before puberty, as seen in Figure 5. This does not mean that children don't gain benefit and support from their parents anymore; adolescents still need and benefit from their parents, especially when they are stressed. What it does mean is that once the child is well into puberty the stress systems are functioning more like they will in adulthood.

Can Peers Step In?

Once the parent's presence isn't enough to regulate the child's biological stress system after puberty, can peers help? Adolescents begin to increasingly turn to peers when they need solace, so does this mean that as parents lose their potency as stress buffers peers take over that role? This is a question we are asking in a current study. We are recruiting children ages 9–10 and adolescents ages 15–16 to do the same speech task as in these previous studies, but they will either prepare for their speech with their primary caregiver or with their closest same-sex friend. We want to see if peers can buffer stress before puberty the same way that parents can, and we also want to test whether peers take over as stress buffers when parents are no longer as effective. If you have questions about this study, contact Jena at 605-491-3365 or email her at doomx008@umn.edu.

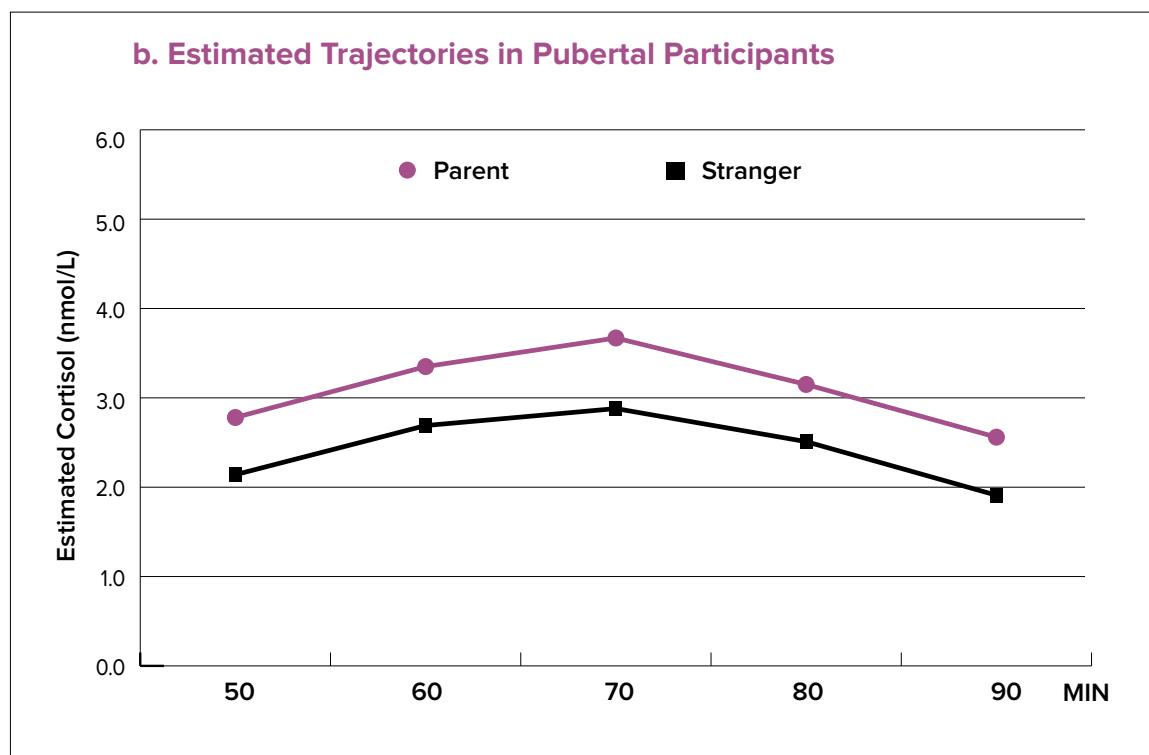


Figure 6

RESEARCH OPPORTUNITY—PUBERTY STUDY

Families with children and adolescents ages 7–14 years are invited to participate in a longitudinal study on stress and puberty.

Puberty is a time of great change and we believe it might be an opportunity to reshape or “recalibrate” the body’s stress response systems.

We are particularly interested in how different life experiences might work together to affect these changes.

You and your child will visit the U of MN campus twice a year for three years and participate in different tasks. Eligible participants will receive between \$30-\$90 in compensation per year and free parking.

For more information please call 612-624-9322 or email pubertystudy.umn@gmail.com.



Are You a Parent Who also Identifies as a Korean Adoptee?

You are invited to participate in an interview study to share your experiences being a parent who also identifies as a Korean adoptee or an adopted Korean American. Contact us to learn more about the study if you meet these criteria:

- You were adopted internationally from South Korea as a child and were raised transracially in a White family
- You are a parent of a child or children between 3 to 10 years old

You will be compensated with a \$20 gift card for the one-hour interview. Time and location is flexible. Parking will be compensated on the University of Minnesota campus. Please contact us by koradopt@umn.edu if you are interested in the study. This study is directed by Richard M. Lee, Ph.D., Professor of Psychology, University of Minnesota.

New Staff

Meet our new staff members Colleen Doyle, Melissa Stoll, and Tori Simenec! They all joined the Gunnar Lab staff in August of 2014.



Colleen is a graduate student pursuing her Ph.D. in the Developmental Psychopathology & Clinical Science program. She currently works on the Puberty Study.



Tori graduated with her BS in psychology with minors in both statistics and child psychology. She helps with the Puberty Study.



Melissa is a registered nurse on the Puberty Study.



Minnesota International Adoption Project Registry

Be informed about ongoing international adoption research opportunities by enrolling on the MnIAP Registry. Families do not have to live in Minnesota, nor do they have to have adopted in Minnesota in order to join. Any family with a child up to the age of 18 is welcome. To learn more, please contact us at 612-626-8949, email us at IAP@umn.edu or visit us online at www.cehd.umn.edu/icd/research/iap

MnIAP Parent Board

We want to thank our past and present board members for their insights and dedicated contributions to our research work.

2015 Board Members

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Stay In Touch

We would like to maintain current information for all of our registry families so that we can keep you apprised of new studies and results. If you've recently moved or have a new email address, please update your registry info by emailing IAP@umn.edu, calling 612-626-8949, or completing the enrollment form online at: www.cehd.umn.edu/icd/research/IAP

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