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Children's Psychological Adjustment in Dual- and Single-ethnic Families: Coregulation, Values, and Emotion Regulation in a Seven-year Follow-up Study

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Abstract

The study examines how dual-ethnic and single-ethnic families differ in terms of children's psychological adjustment and its correlates. Among 48 Finnish-Russian and Finnish families, mothers and fathers reported on children's emotional and conduct problems at ages 4 years and 7 years, and children's emotion regulation, emotionality, and their own values at 7 years. Mother-infant and father-infant coregulation was assessed at 7 months. The results show that children had more emotional problems among Finnish-Russian families than among Finnish families at 4 years but not at 7 years. Russian mothers reported more hierarchical and authoritarian values than did Finnish mothers, but the values did not moderate between ethnic context and children's adjustment. Equally many Finnish and Finnish-Russian families had balanced early coregulation, which was linked with fewer attention-related problems at age 4. In both ethnic contexts, children's emotion regulation was concurrently associated with better psychological adjustment, and high emotionality was associated with more problems. Parental values were not associated with children's adjustment.

Keywords dual- and single-ethnic families, psychological adjustment, parent-infant-coregulation, emotion regulation, child-rearing values, cultural values

Children's Psychological Adjustment in Dual- and Single-ethnic Families: Coregulation, Values, and Emotion Regulation in a Seven-year Follow-up Study

Although an increasing number of children live in families with dual-ethnic heritage (Lanzieri, 2012), research is scarce on their psychological adjustment and underlying factors. Multiple child-, parent-, and family-related issues influence children's wellbeing, and ethnic heritage may be especially salient for early parent-infant interaction, the expressing and regulating of emotions, and parenting goals and values (Bornstein, 2013; Feldman, Masalha, & Alony, 2006; Keller & Otto, 2009; Super & Harkness, 2002). There is little research on how these factors differ between single- and dual-ethnic families and on whether they influence children's psychological adjustment differently. Longitudinal studies are lacking, although it is important to understand whether the impacts of early interactions, emotions, and parenting values result in differences as children grow older. The present prospective study compares children's psychological adjustment at ages 4 and 7 years in dual-ethnic Finnish-Russian and single-ethnic Finnish families living in Finland. It further examines whether families differ in the coregulation of dyadic interactions in infancy, children's emotion regulation and emotionality, and parental values when children are 7 years old and whether these factors differently associate with children's psychological adjustment in dual- and single-ethnic families.

Ethnic Family Context and Children's Psychological Adjustment

Parents' differing ethnic and cultural backgrounds may result in opportunities as well as problems for children in terms of psychological adjustment. Benefits include enriching experiences with two cultures and languages (Bialystok, 2007; Crippen & Brew, 2013), and potential risks relate to parental communication problems, lack of social support, and differing cultural and child-rearing values (Cools, 2006; Remennick, 2009). The few available studies show that children growing up in dual-ethnic families are not generally at greater risk for psychological adjustment problems than are children in single-ethnic families. A British study

confirmed that children's emotional and conduct problems did not differ between dual- and single-ethnic families when family structure, maternal education, and depression were controlled for (Platt, 2012).

Some cross-cultural comparative studies suggest that Russian children living in Russia show more adjustment problems than do children in other countries (Goodman, Slobodskaya, & Knyazev, 2005; Kumpulainen et al., 1999; Rescorla et al., 2007). Compared to Finnish parents, Russian parents, on average, reported more emotional and conduct problems for their school-aged children (Rescorla et al., 2007). Russians who migrate to Finland for work, study, or relationships do not differ in their socioeconomic background from the Finns, and they are generally highly educated compared to other immigrant groups (Key figures on immigration 2015; 2016). Thus, it is interesting to examine whether children of Finnish-Russian families experience different levels of emotional and conduct problems from children of Finnish families. Both types of families live in Finland, which is a Nordic society with a comprehensive welfare system that gives all citizens relatively equal opportunities for social security and education.

Early Coregulation and Children's Psychological Adjustment

Early parent-child interactions play a key role in how ethnic and cultural meanings are embedded in family life. Dyadic interactions differ in the degree of infants' exploring environment vs. attention to social relations, eye contact vs. physical contacts, and explicit vs. implicit guidance of self-regulation between independent (individualistic) and interdependent (collectivistic) cultures (Bornstein, 2013; Keller et al., 2004; Kirmayer, 2001; Vigil & Hwa-Froelich, 2004). Some research suggests that specific culturally encouraged parent-infant interactions are associated with children's optimal psychological adjustment in different ethnic groups (Feldman, Masalha, & Alony, 2006; Keller et al., 2004; Vigil & Hwa-Froelich, 2004). In most cultural contexts, however, parents' sensitive visual, vocal, and affective coordination

with the infant's signals seem to predict better psychological adjustment (Feldman & Masalha, 2007).

In early dyadic and triadic interactions, children practice self-regulation, form emotional relations, and explore the environment with the support of a more experienced partner (Feldman, Greenbaum, & Yirmiya, 1999; Whipple, Bernier, & Mageau, 2011). The term coregulation reflects a dynamic communication process during which the parent and infant regulate each other's mental states and behavior by continuously coordinating their attention, actions, and intentions (Fogel, Garvey, Hsu, & West-Stroming, 2006). Patterns of coregulation vary in the degree of dyadic engagement, ranging from mutual coactive engagement to considerable disengagement, and in the degree of symmetry of interaction, ranging from mutually coordinated and enjoyed communication to one partner focusing attention elsewhere. Beebe and McCrorie (2010) proposed that midrange coregulation in parent-infant dyads is optimal for child development, because then partners are sufficiently engaged and synchronized, neither vigilantly monitoring each other nor withdrawn from interaction. This guarantees appropriate levels of mutual communication and infant attention, affect, and emotional arousal. Prolonged mismatches between parent and infant behavior and failure to re-establish mutual engagement and symmetry are agreed to form a risk for children's later psychological adjustment (Tronick & Beeghly, 2011). For instance, among Israeli mother-infant dyads, a high level of mother-infant coregulation of affect in the first year predicted low levels of emotional and conduct problems at toddler and preschool ages (Feldman, 2007).

However, little is known about how coregulatory experiences with both mother and father jointly contribute to children's adjustment. Research shows that, on average, mothers and fathers create similar levels of coregulation with the infant, but each parent also provides the infant with unique opportunities to practice specific modes of affective sharing and arousal regulation (Aksan, Kochanska, & Ortmann, 2006; Feldman, 2003; Kochanska, Aksan, Prisco, & Adams,

2008). We were unable to find research on infants' coregulation with mothers and fathers in dual-ethnic families. According to family system theories, family-level influences involving interactions with both parents are important for child development. In a balanced interaction, infants spend similar amounts of time and share similarly crucial coregulation experiences with both parents, while an unbalanced pattern is biased towards interaction with either the mother or the father (Elliston, McHale, Talbot, Parmley, & Kuersten-Hogan, 2008; Omitted for anonymity).

Balanced coregulation is associated with optimal child wellbeing and psychological development, but research is scarce on whether this balanced pattern is beneficial in different ethnic groups or when parents are from different ethnic backgrounds, as in the current study. According to Feinberg (2003), parents' beliefs, formed in the context of the larger culture, influence the nature and importance of coparenting in each family. For example, differences across ethnic groups in the division of child-related labor (McLoyd, 1993) may be reflected in the balance of the parent-infant coregulation and in how important it is for children's psychological adjustment.

A North American follow-up study of single-ethnic families found that early parental unbalance predicted children's anxiety problems at preschool age (McHale & Rasmussen, 1998). In a cross-cultural comparison study, Feldman and Eidelman (2004) confirmed that higher levels of coregulation (of gaze) in mother-infant and father-infant dyads were related with lower levels of conduct problems at two years of age in Israeli as well as Palestinian families. Findings based on the current data showed that in both Finnish-Russian and Finnish families, infants whose dyadic interactions with mother and father were balanced had more extensive vocabularies in toddlerhood and showed more efficient attention regulation at school entry than did children with unbalanced coregulation with their parents (Omitted for anonymity). As both language and self-regulation are important antecedents of psychological

adjustment (Calkins & Perry, 2016; Carpenter & Drabick, 2011), one may expect that balanced coregulation also predicts optimal psychological adjustment in dual- as well as single-ethnic families.

Children's Emotions and Psychological Adjustment

Effective emotion regulation and emotionality are believed to be important mechanisms through which early parent-infant interaction relates to children's psychological adjustment (Deater-Deckard & Petrill, 2004; Eisenberg et al., 2001; Eisenberg, Spinrad, & Eggum, 2010). There is ample evidence that effective emotion regulation, such as adequate levels of control and constructive processing, contributes to children's concurrent and long-term adjustment, indicated by low levels of emotional and conduct disorders (Calkins & Perry, 2016). Cultural values define what kind of emotion regulation and emotionality are considered effective, and parents incorporate these into their child-rearing values and socialize children's emotional responses to match with these cultural values (Mesquita, De Leersnyder, & Albert, 2014). Research, again, is scarce on whether and how children's emotion regulation and emotionality differ in dual- and single-ethnic families, and this is where the present research contributes.

We lack empirical evidence on Russian and Finnish parents' socialization preferences concerning children's emotion regulation or emotionality. Russian collectivistic cultural heritage values the maintenance of in-group harmony and cohesion, and it is normative to suppress disruptive emotional expressions and to encourage high control or denial of negative emotions (Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998; Nesteruk & Marks, 2011). Concerning child-rearing practices, Russian parents have been found to use psychological control by inducing shame and guilt to enhance children's high self-control, conforming to group norms, and avoiding conflict (Olsen et al., 2002). Some research has suggested that moral emotions of shame and guilt can be associated with optimal psychological adjustment in collectivist cultures (Sheikh, 2014), whereas parenting through inducing shame

and guilt is generally associated with conduct and emotional problems in individualist cultures (Barber, 2014). The present study analyzes both basic emotions of sadness, fear, anger, and exuberance as well as moral emotions of shame and guilt among children in Finnish-Russian and Finnish families.

Ethnic Family Context and Parental Values

Researchers suggest that family interaction patterns that match the socialization values and child-rearing practices of the majority culture promote adaptation to the host society (Caldwell-Harris & Aycicegi, 2006; Feldman et al., 2006; Triandis, 2000). Russian socialization values are considered to be collectivistic and hierarchical, emphasizing the importance of self-discipline, family cohesion, and deference to authority (Matsumoto et al, 1998; Nesteruk & Marks, 2011), whereas macro cultural socialization in Finland emphasizes individualistic and egalitarian values (Hofstede, Hofstede, & Minkov, 2010).

There is evidence that Russian immigrants cherish more traditional child-rearing practices, such as authoritarian responses, than native Finns do (Jasinskaja-Lahti & Liebkind, 2000). Concerning dual-ethnic families, research suggests that concordance between parents' values reflects a beneficial acculturation strategy for children, which may contribute to their good psychological adjustment (Crippen & Brew, 2013), although empirical evidence is lacking. Evidence shows that differential acculturation between mothers and fathers in immigrant families influences child-rearing expectations and coparenting relationship quality (Chance, Costigan, & Leadbeater, 2013). Generally, discrepant maternal and paternal parenting practices are considered to be detrimental to children's wellbeing and adjustment (Solantaus-Simula, Punamäki, & Beardslee, 2002). Also, vertical orientations and practices, in general, are more difficult to internalize than horizontal ones and thus associated with poorer child well-being (Chirkov, Ryan, Kim, & Kaplan, 2003).

We may thus expect that Russian mothers in Finnish-Russian families show more hierarchical (vertical) cultural values and authoritarian child-rearing values compared to Finnish parents (in both dual- and single-ethnic families). Furthermore, as hierarchical cultural and authoritarian child-rearing values do not correspond with the values of the major Finnish society, these values would be associated with children's psychological adjustment problems and would accentuate differences between Finnish-Russian and Finnish families.

The Present Study

Both mothers and fathers in dual-ethnic (Finnish-Russian) and single-ethnic (Finnish) families living in Finland participated in the study on their children's psychological adjustment, parent-infant coregulation, children's emotionality and emotion regulation, and their own cultural and child-rearing values. The assessment points of this longitudinal study were in infancy (T1), at preschool (T2), and at school age (T3).

First, we examined whether children growing up in dual-ethnic and single-ethnic families differed in levels of emotional and conduct problems at 4 (T2) and 7 (T3) years of age. In line with cross-cultural comparisons (Rescorla et al., 2007; 2011; Sourander, 2001), we hypothesized that children in Finnish-Russian families would show more emotional and conduct problems than would children in Finnish families, as reported by both parents.

Second, we examined whether Finnish-Russian and Finnish families differ in the level of balance vs. unbalance between mother-infant and father-infant coregulation observed at 7 months (T1), and whether this coregulation differently predicts children's emotional and conduct problems in single- and dual-ethnic families at T2 and T3. Based on general evidence about the beneficial impacts of balanced parental coregulation (Elliston et al., 2008; Feldman, 2007), we hypothesized that balanced, compared to unbalanced, parent-infant coregulation predicts lower levels of children's emotional and conduct problems, reported by both parents, in both family contexts at 4 and 7 years of age.

Third, we examined how children growing up in Finnish-Russian and Finnish families differ in their emotionality and emotion regulation. We hypothesized that children in Finnish-Russian families show higher levels of emotion regulation, involving self-control and suppression, and moral emotionality, involving feelings of guilt and shame, than do children in Finnish families. These hypotheses are based on findings that Russian mothers tend to encourage control of negative emotions (Matsumoto et al., 1998; Nesteruk & Marks, 2011) and that they use the moral emotions in their parenting practices (Olsen et al., 2002). We further hypothesized that children's high moral emotionality involving feelings of guilt and shame would be associated with low levels of emotional and conduct problems in Finnish-Russian families, but with high levels in Finnish families, due to the different traditions of emotional socialization (Olsen et al., 2002).

Fourth, we examined how parents in Finnish-Russian and Finnish families differ in their cultural and child-rearing values and whether these values moderate the hypothesized difference between Finnish-Russian and Finnish families in children's emotional and conduct problems. We hypothesized that mothers in Finnish-Russian families would show more vertical (hierarchical) cultural values and authoritarian child-rearing values than would Finnish mothers, due to Russian collectivist and hierarchical socialization values (Matsumoto et al., 1998; Nesteruk & Marks, 2011). We further hypothesized that high levels of vertical and authoritarian values are associated with higher levels of children's emotional and conduct problems, because such values do not match with the majority cultural socialization values; that is, they are incongruent with the prevailing equalitarian and liberal values in Finland (Hofstede et al., 2010). Thus, high levels of such values may accentuate the differences between dual- and single-ethnic families in children's adjustment.

Method

Participants

The study reports using data collected as part of Turku Longitudinal Study III (Omitted for anonymity). The sample consists of 48 Finnish-Russian (n = 24) and Finnish (n = 24) families recruited through the Population Register Centre from the files of the total population in Finland. Couples who met the following sampling criteria were contacted: (a) the mother gave birth between October 2000 and April 2001; (b) the mother was a native speaker of Finnish, the majority language, or a native speaker of Russian, a minority language in Finland; and (c) the child's father was a native speaker of Finnish.

All infants were full-term singletons without major birth complications. All mothers were on maternity leave from birth through 7 months, and the employment status of fathers was similar across family groups. The Russian mothers had emigrated from the former Soviet Union to Finland prior to the study, ranging from 7 months to 14.5 years before the study (M = 4.63, SD = 4.44), and two-thirds (65.2%, n = 15) had lived in Finland less than four years. They represented different ethnic groups, which was typical in the former Soviet Union: 16 were Russian with some Ukrainian background, 4 were Russian with some Estonian or Lithuanian background, and 4 were Russian with other backgrounds such as Tatar, Cossack, or Gypsy. The Finnish parents had lived in Finland throughout their lives and typically had only Finnish backgrounds (for more details, see Omitted for anonymity).

Procedure

The data were collected at three age levels: when the children turned 7 months, 4 years, and 7 years, respectively. In infancy (T1), mother–infant and father–infant dyads were videotaped for five minutes in a semi-structured play interaction that took place in a laboratory playroom setting. When the children were 4 years old (T2), the families were invited for a follow-up study in a laboratory, and parents filled out a questionnaire on their children's

emotional and conduct problems. When the children were 7 years old (T3), the families were mailed a questionnaire that included scales on the child's emotional and conduct problems, emotion regulation and emotionality, and parents' own cultural and child-rearing values.

At T2, 19 mothers and only four fathers filled out the questionnaire from among the Finnish families, and 23 mothers and 17 fathers from among the Finnish-Russian families did the same. The smaller number of fathers from the Finnish families was because it was mainly the mothers who visited the site of the study, as the families were living close by, whereas the Finnish-Russian couples mainly participated together, as they were enrolled from diverse municipalities across Finland. At T3, 24 mothers and 15 fathers filled out the questionnaire from among the Finnish families, and 20 mothers and 22 fathers from the Finnish-Russian families did the same.

Measures

Parent-infant coregulation at 7 months (T1). We applied a Finnish version (Silvén et al., 2005) of the Relational Coding System developed by Fogel et al. (2003) to analyze the infants' dyadic play interactions with each parent. Parents were instructed to play with the infant and toys as they would normally do at home, and the data involved 96 dyadic recordings: 24 maternal and 24 paternal for each family group. The quality of coregulation was directly observed through moment-to-moment changes in the flow of play interaction made up of discrete actions, such as how the partners moved, where they focused attention, and how they gestured and displayed emotions in relation to each other. The focus of micro-analytic coding is on the degree of coregulation and mutual engagement of the interacting parent and infant and the introduction of novel actions into the interaction; therefore, the structure and patterns, rather than the content, emotional valence, or intent of interaction are measured. The quality of coregulation was scored into eight mutually exclusive and exhaustive patterns (symmetrical, asymmetrical biased to parent, asymmetrical biased to infant, unilateral biased to parent,

unilateral biased to infant, disruptive by parent, disruptive by infant, and unengaged). A total of 300 seconds was coded for each dyad, and the duration of each pattern (in seconds) was summed across the play session. Inter-observer agreement of the coregulation patterns was high; intraclass correlations varied from .84 to .91.

Three of the eight patterns of coregulation comprised over 85% of the play time among the maternal and the paternal dyads at 7 months. In brief, coregulation was coded as *symmetrical* or *asymmetrical* when both parent and infant shared the same focus of attention on each other or on an object. During symmetrical moments, the partners' actions are mutually coordinated and elaborated (e.g., both parent and infant excitedly participate in peek-a-boo), whereas during asymmetrical moments, the parent is actively elaborating joint activities while the infant is attentive but more passive (e.g., parent shows toys while infant watches quietly). Coregulation is coded *unilateral* when only the parent attends to and tries to engage the infant, who does not respond to the parent's interactive behaviors (e.g., infant is focused on handling a toy while the parent comments or may try to show another toy).

A previous study, based on cluster analysis of the three most common patterns for both parents, identified four triadic groups with different coregulation profiles (Omitted for anonymity). In two groups, the time spent in *symmetrical*, *asymmetrical*, and *unilateral* coregulation was clearly more similar between the mother-infant and father-infant dyad; these groups were thus named *Balanced*. In comparison, two other groups in which the mother and father spent different lengths of time in these coregulation patterns with the infant were thus named *Unbalanced*. As an example, in a balanced profile, the infants actively participated in joint play activities a similar proportion of time with the mother (29%) and the father (37%). In an unbalanced profile, the mother–infant dyads spent only half the time compared to the father–infant dyads in independent exploration (36% vs. 70%).

Emotional and conduct problems at 4 years (T2). Five scales were applied from the Child Behavior Checklist for ages 1½–5 years (CBCL; Achenbach & Rescorla, 2000). Both parents estimated on a three-point ordinal scale how often (not true, sometimes, or often) the child showed specific problems. Summary scores were calculated for Anxiety (10 items), Affective (10 items), Attention Deficit/Hyperactivity (6 items), Oppositional Defiant (6 items), and Pervasive Developmental problems (13 items). Higher scores indicated more behavioral and emotional problems. The internal consistency of the scales was moderate for mothers and fathers (αs = .59–.79). Summary scores combining both parents' reports of their children's symptoms were used in the analyses.

Emotional and conduct problems at 7 years (T3). Four scales of The Parent Rating Scales for Children of the Behavior Assessment System for Children (BASC; Reynolds & Kamphaus, 1992) were used in the present study. Both mother and father estimated on a four-point ordinal scale how often their child displays specific problems (*never*, *sometimes*, *often*, *almost always*). Summary scores were calculated for Anxiety (11 items), Depression (12 items), Aggression (13 items), and Somatization (13 items). Higher scores indicated more problems. The internal consistency for these scales was moderate for mothers and fathers (αs = .59–.87). Summary scores combining both parents' reports of their children's symptoms were used in the analyses.

Emotion regulation and emotionality at 7 years (T3). The Emotion Questionnaire (EQ; Rydell, Berlin, & Bohlin, 2003) consists of vignettes describing children's intrinsic and extrinsic emotion regulation and emotionality for basic emotions of sadness, anger, fear, and positive emotions (cheerfulness or exuberance). Based on Lindblom et al. (2017), we added age-appropriate scales for moral emotions of shame and guilt. Alternative ways of regulation were provided to each emotion, for example, abilities to regulate emotion with the assistance of others (e.g., "When angry, it is easy for others, for instance a parent, to calm him/her down")

and by themselves (e.g., "When angry, my child has difficulties calming down on his/her own"). Concerning emotionality, parents estimated how commonly and intensively the child expresses the emotion (e.g., "My child often becomes angry and falls in a bad mood"; "When angry my child reacts strongly and intensively"). For each vignette, mothers and fathers were asked separately to rate on a 5-point Likert scale how well each statement described their child.

Summary scores were calculated across the six emotions to represent emotion regulation and emotionality. Higher scores indicated higher levels of emotionality and better regulatory skills of calming down or quieting down. The internal consistency for the scales were moderate for mothers and fathers (αs = .64–.89). Mother-reported sadness emotionality showed unacceptable reliability (α = .49) but was kept for constructing further sum scores to combine information. To condense information and explore the dimensionality of emotion regulation and emotionality, principal axis factor analysis was computed with six emotionality variables and six emotion regulation variables separately for maternal (*n* = 45) and paternal (*n* = 37) ratings. The results revealed three factors, *Emotion Regulation* (high loadings on regulation of all emotions), *Moral Emotionality* (high loadings on guilt and shame emotionality), and *Basic Emotionality* (high loadings on emotionality in basic emotions, especially fear). In the present study, the mother's and the father's factor scores were combined for each factor to analyze the research questions.

Parental cultural values (T3). To examine parents' cultural value orientations, we used the 32-item Individualism and Collectivism Scale, INDCOL (Singelis, Triandis, Bhawuk, & Gelfand, 1995), which measures the horizontal and vertical dimensions of the individualism and collectivism constructs. Both parents estimated on a 9-point scale how much they agree with the statements (*not at all; completely).* As our hypothesis concerns only hierarchical (vertical) values, we constructed a summary variable of verticalism for mothers (α = .75) and fathers (α = .81) by summing the items of vertical individualism (e.g., "Competition is the law

of nature") and vertical collectivism (e.g., "Children should be taught to place duty before pleasure"). The mother's and the father's summary variables were combined to analyze the research questions. A higher score indicated stronger adherence to vertical values, which emphasize hierarchy and competition in social relationships.

Parental child-rearing values (T3). The parental authority scale of 10 items was used from the family values questionnaire developed by Jasinskaja-Lahti and Liebkind (2000). Both parents estimated how well the statements corresponded with their own child-rearing values on a 5-point scale (from *not at all* to *completely*). Parental summary variables were constructed with higher scores, indicating stronger adherence to hierarchical family structures and clear gender roles and obedience to elders. Only the maternal scale was used ($\alpha = .66$) due to poor internal consistency of the paternal scale.

Statistical Analysis

Student's t-tests were used to compare linear background variables, and $\chi 2$ statistics were used to compare dichotomic variables between Finnish-Russian and Finnish families. Pair-wise t-tests were used to check whether mothers and fathers differed in their reports within single- and dual-ethnic families. Pearson's product correlations were applied to check the associations between the length of the Russian mother's residency in Finland and their responses. The study is based on a small sample size of two naturally occurring groups, and we added *post hoc* power calculations on significant results, as advised by Rosner (2011). Holm-Bonferroni sequential procedure was used to correct true significance levels against false positive discoveries in multiple tests (Holm, 1979). The missing values were few and randomly distributed and were replaced by group (family) means.

To answer the research question regarding differences in children's psychological adjustment between single- and dual-ethnic families, two one-way MANCOVAs were separately computed on children's emotional and conduct problems at 4 years of age (T2:

anxiety, affective, ADHD, oppositional/defiant, and pervasive developmental problems) and at 7 years of age (T3: anxiety, depression, aggression, and somatization). The Finnish-Russian and Finnish family membership was the independent variable in both MANCOVAs, and the univariate analyses further specified the loci of differences. Similarly, one-way MANCOVAs with univariate ANCOVAs were conducted to examine how the Finnish-Russian and Finnish families differed in children's emotion regulation and emotionality and parents' cultural and child-rearing values. The $\chi 2$ cross-tables were used to analyze the association between living in single- and dual-ethnic families and balanced vs. unbalanced coregulation. Child and father ages were used as covariates in the analyses concerning children's psychological adjustment, emotion regulation, and emotionality because the Finnish and Finnish-Russian families differed in these respects.

To analyze the roles of emotion regulation, emotionality, and cultural and child-rearing values in moderating between the dual- and single-ethnic family context and children's psychological adjustment, two main and interaction effect MANCOVAs with univariate ANCOVAs were conducted. Emotional and conduct problems at 7 years of age, reported by both parents, were the dependent variables in both models. The tested moderators were linear variables that were entered as covariates in the MANCOVA analyses and conceptualized as continuous predictor variables (Grace-Martin, 2018). The SPSS-23 version General Linear Model with adjusted means was used.

Results

Descriptive Statistics

Table 1 shows that children were older in the Finnish than in the Finnish-Russian families, and fathers were older in the Finnish-Russian than in the Finnish families. The families did not otherwise differ in child gender, birth order, or parental education. In Finland, children enter primary school at the age of 7, and in the entire sample, 35 children had started

school and 13 were still in preschool at T3, with no difference between Finnish and Finnish-Russian families. Pair-wise comparisons of mother and father within dual- and single-ethnic families showed that, in the Finnish-Russian families, mothers reported higher levels of children's anxiety symptoms at 4 years (t = -2.27, p < .04, n = 19) and somatization symptoms at 7 years (t = -2.57, p < .02, n = 19) than fathers did. All pair-wise comparisons were nonsignificant in the Finnish families. Only one significant correlation was found between the length of residency of Russian mothers in Finland and dependent study variables. Mothers having lived a long time in Finland reported more somatic symptoms of their 7-year-olds (r = .63, p < .004; n = 19).

Children's Psychological Adjustment in Dual- and Single-Ethnic Families

The results of the MANCOVAs show that single- and dual-ethnic families differed significantly in the level of children's psychological adjustment at 4 years of age ($F_{\text{Wilk's Lambda}}$ (5,36) = 2.51, p = *.05*, partial η^2 = .26). In accordance with the hypothesis, the univariate analyses in Table 2 confirm that children in Finnish-Russian families showed more affective problems than do those in Finnish families (F (1,43) = 5.28 = *.03*, partial η^2 = .18; *post hoc* power 61.0%). Yet, contrary to the hypothesis, the Finnish-Russian and Finnish families did not differ significantly in their children's psychological adjustment at 7 years ($F_{\text{Wilk's Lambda}}$ (4,41) = 0.42, p = .79, partial η^2 = .04).

Early Dyadic Interaction in Dual- and Single-Ethnic Families

The Finnish-Russian and Finnish families did not differ significantly in the degree of balance vs. unbalance in parent-infant coregulation (χ^2 = 0.75, p = *.39*). The share of balanced dyadic interactions was 58.3% (n = 14) in the Finnish and 45.8% (n = 11) in the Finnish-Russian families. The results showed that unbalance between mother and father in early coregulation predicted children's emotional and conduct problems at 4 years ($F_{\text{Wilk's Lambda}}$ (4,34) = 2.87, p = *.05*, partial η^2 = .20), and ANCOVA results specified that children with

balanced coregulation showed a lower (M = 1.79, SD = .73) level of ADHD symptoms than did children with unbalanced coregulation (M = 2.38, SD = .48). However, balanced vs. unbalanced coregulation did not predict children's emotional and conduct problems at 7 years ($F_{\text{Wilk's Lambda}}$ (4,39) = 1.04, p = *.40*, partial η^2 = .10).

As hypothesized, the association between balanced coregulation and children's psychological adjustment was similar in single- and dual-ethnic families, indicated by nonsignificant interaction effects between ethnic family context and balanced vs. unbalanced coregulation on children's psychological adjustment at 4 years ($F_{\text{Wilk's Lambda}}$ (4,34) = 0.24, p = .86, partial η^2 = .02) as well at 7 years of age ($F_{\text{Wilk's Lambda}}$ (4,39) = 0.62, p = .65, partial η^2 = .06).

Emotion Regulation and Emotionality in Dual- and Single-Ethnic Families

Table 3 presents the mean levels of children's emotion regulation, moral emotionality, and basic emotionality in Finnish and Finnish-Russian families, as reported by both parents. Contrary to the hypotheses, the children in the Finnish-Russian families did not show more intensive emotion regulation or a higher level of moral emotionality, indicated by nonsignificant ANCOVA values.

Table 4 summarizes the ANCOVA F-values of main effects and the interaction effects of single- and dual-ethnic family with emotion regulation, moral emotionality, and basic emotionality on children's psychological adjustment at 7 years. The results did not confirm the hypothesis that a high level of emotion regulation would be associated with low levels of emotional and conduct problems among children in Finnish-Russian families (nonsignificant MANCOVA interaction effect, $F_{\text{Wilk's Lambda}}$ (4,39) = 0.80, p = *.79*, partial η^2 = .02). Also, the hypothesis that a high level of moral emotionality would be associated with a low level of children's psychological adjustment problems in the Finnish-Russian families was not sustained. The interaction effect was nonsignificant ($F_{\text{Wilk's Lambda}}$ (4,39) = 1.40, p = *.49*, partial

η^2 = .03), and thus the significant ANCOVA interaction effect between moral emotionality and aggressive symptoms were not interpreted. Instead, a significant interaction effect was found between family ethnic context and basic emotionality ($F_{\text{Wilk's Lambda}}$ (4,39) = 3.79, $p = .01$, partial η^2 = .28). A high level of basic emotionality was significantly associated with a high level of anxiety symptoms only in the Finnish but not in the Finnish-Russian families.

The results showed significant MANCOVA main effects of emotion regulation ($F_{\text{Wilk's Lambda}}$ (4,39) = 3.94, $p = .01$, partial η^2 = .29), moral emotionality ($F_{\text{Wilk's Lambda}}$ (4,39) = 6.90, $p = .0001$, partial η^2 = .41), and basic emotionality ($F_{\text{Wilk's Lambda}}$ (4,39) = 3.01, $p = .03$, partial η^2 = .24) on children's psychological adjustment at 7 years of age. The results indicate that in both Finnish and Finnish-Russian families, children who showed a high level of emotion regulation had significantly lower levels of depressive, anxiety, and aggressive symptoms. Further, children who showed a high level of moral emotionality had higher levels of depressive and anxiety symptoms, and children who showed a high level of basic emotionality had higher levels of depressive, somatization, and aggressive symptoms.

Cultural and Child-Rearing Values in Dual- and Single-Ethnic Families

The lower part of Table 3 presents mean differences in cultural and child-rearing values between the single- and dual-ethnic families. As hypothesized, the mothers in Finnish-Russian families reported more vertical cultural values and more authoritarian rearing values than did mothers in Finnish families.

However, the results did not confirm the hypothesis that high levels of vertical cultural values and authoritarian child-rearing values would accentuate the difference between Finnish-Russian and Finnish families. The interaction effects were nonsignificant between family ethnic context and vertical cultural values ($F_{\text{Wilk's Lambda}}$ (4,39) = 2.27, $p = .10$, partial η^2 = .12). and authoritarian child-rearing values ($F_{\text{Wilk's Lambda}}$ (4,39) = 0.63, $p = .82$, partial η^2 = .08) on children's emotional and conduct problems at 7 years of age. Also, the main effect of vertical

cultural ($F_{\text{Wilk's Lambda}}$ (4,39) = 2.13, $p = .09$, partial $\eta^2 = .12$) and authoritarian child-rearing values ($F_{\text{Wilk's Lambda}}$ (4,39) = 1.11, $p = .36$, partial $\eta^2 = .11$) were nonsignificant, indicating that in neither family ethnic context parental values were associated with children's psychological adjustment.

Discussion

This study presents a seven-year follow-up of children growing up in dual-ethnic (Finnish-Russian) and single-ethnic (Finnish) families, both living in Finland. The findings revealed that children in families with dual-ethnic heritage showed more parent-reported emotional problems at 4 years than did those in single-ethnic families. However, when the children were 7 years old, the family ethnic heritage did not play a role in their psychological adjustment. In both ethnic contexts, the share of balanced vs. unbalanced interactions between mother-infant and father-infant dyads was similar, and children both expressed and regulated their emotions in similar ways. Further, balanced coregulation and effective emotion regulation were equally important to children's psychological adjustment in both ethnic contexts, Russian mothers reported higher levels of vertical cultural values and authoritarian child-rearing values than did Finnish mothers. However, the cultural or child-rearing values were not associated with children's emotional or conduct problems either in general or with differences in single- and dual-family ethnic contexts. Hence, our hypotheses based on the idea that different, culturally salient antecedents contribute to children's psychological adjustment were generally not substantiated.

As hypothesized, Finnish-Russian children had more emotional problems at 4 years of age, especially affective symptoms such as worries and clinging to adults, as reported by their parents. This result concurs with both cultural comparisons and immigrant studies, suggesting elevated levels of adjustment problems among Russian children living in Russia (Kumpulainen et al., 1999) and among those born in another country (Slonim-Nevo, Sharaga, Mirsky,

Petrovsky, & Borodenko, 2006). Reasons for children's higher adjustment problems in dual-ethnic families have been attributed to cultural discrepancies and the migrated parent's own adjustment problems. In our sample, mothers and fathers in Finnish-Russian families did not differ in their cultural values, but we did not study parents' own mental health as a potential factor affecting children's psychological adjustment. In the dual-ethnic families, however, Russian mothers perceived their children as having more anxiety symptoms at age 4 and somatization symptoms at age 7 than did their Finnish spouses. These differing perceptions between spouses may hint at discrepancies, as no parental differences were found in perceptions of children's psychological adjustment problems among the single-ethnic Finnish families. In addition, the higher mental health vulnerability of immigrant children can be explained by acculturation difficulties and related stressful life events in their families (Remennick, 2009). Our study analyzed whether dual-ethnic heritage plays a role in child wellbeing and development, and general immigration research may only partly apply here. The Russian mothers had lived on average four years in Finland, and mothers with a longer stay reported a higher level of their 7-year-old children's somatization symptoms. This single association is contrary to the expectation of the negative impacts of acculturation or stress that are common at the beginning of immigration.

It is noteworthy that Finnish-Russian children did not display poorer psychological adjustment any longer at school entry. There are no other longitudinal studies on single- and dual-ethnic families and their children. In Finland, children enter school at age 7, and it is thus important that children with different ethnic heritages show similar mental health levels. Research has suggested that dual-ethnicity provides children with resources and additional opportunities such as bilingual learning and experiences of cultural diversity (Crippen & Brew, 2013), but according to our findings, these enrichments did not improve children's psychological wellbeing beyond that of the children in single-ethnic Finnish families.

Our findings supported earlier evidence that the balance of parents' engagement patterns with the infant benefits children's later psychological adjustment at preschool age (McHale & Rasmussen, 1998). It has also been found among school-aged children that parental unbalance correlates concurrently with mother-reported internalizing, although only for girls (McConnell & Kerig, 2002). In our study, infants who had balanced coregulation during dyadic play with mother and father showed a lower level of ADHD problems at age 4. In order to understand why unbalanced coregulation formed a risk exactly to attention problems, a study based on the same sample found that the balanced coregulation was associated with children's better language acquisition at 4 years and with cognitive self-regulation at 7 years (Omitted for anonymity). We may thus cautiously suggest that balanced coregulation within the family in mid-infancy is especially important for children's attention and regulation skills, which in turn are agreed to be a pivotal antecedent of good psychological adjustment and development (Calking & Perry, 2016). The association between early coregulation unbalance and child ADHD symptoms was similar in Finnish-Russian and Finnish families, which may reflect the view that the quality of early parent-infant relationship is generally salient.

Developmentally salient timing and usage of play and toys in interactional settings may partly explain the universal importance of balanced coregulation in predicting especially low attentional problems. Parent–child relationships that afford equilibrium between mutual engagement and autonomous exploration can effectively enhance children's optimal development (Beebe & McCrorie, 2010; Belsky, Rovine, & Taylor, 1984; Jaffe, Beebe, Feldstein, Crown, & Jasnow, 2001). In families where coregulation was balanced, both mother and father allowed the infant to explore toys while remaining available, and only at times were the dyads engaged in joint play. It is plausible that, around mid-infancy, such prominence of noncoactive coregulation patterns is beneficial for rehearsing coordination of attention. The coregulation patterns within a family are likely to reflect, for example, the infant's qualities and

skills, the parents' abilities to support them, and also how parents work together to manage family interactions.

It is still largely unknown how stable the patterns of early coregulation within a family are. There is evidence that parents' balance of involvement with the infant in triadic interaction is stable over the first year (Fivaz-Depeursinge, Frascarolo, & Corboz-Warnery, 1996). Developmental continuity from early coregulated parent-infant interactions to children's later optimal psychosocial adaptation appears to travel through multiple mechanisms. It proceeds in small steps, for example through the child's verbal IQ and behavior adaptation, through mediating variables, such as the child's self-regulated compliance, and directly from parent-infant coregulation to capacity for empathy in adolescence (Feldman, 2007). Feldman (2015) has found that children's emotion regulation and reciprocal parenting are individually stable across development and that they developmentally predict one another. These individual-context mutual influences mediate the associations between children's neonatal regulatory capacities and regulation-related outcomes such as behavior problems ten years later, which are, however, also directly linked (Feldman, 2015). It is plausible that children's efficient self-regulatory abilities and early positive coregulatory experiences within the family set the stage for a virtuous cycle where each family member enjoys and benefits from joint interactions. As a result, there are more and more of such positive interactions which in turn consolidate each individual's skills related to building positive connections to others.

As with earlier literature, we found that children's effective emotion regulation skills were positively related with their psychological adjustment (Calkins & Perry, 2016), as indicated by low levels of depressive, anxiety, and aggressive symptoms reported by both parents when the children were 7. However, the results did not support the hypothesis that effective emotion regulation would be especially important for good psychological adjustment in Finnish-Russian families, because the mother's culture emphasizes tight control of especially negative emotional

expression (Matsumoto et al., 1998). One reason for the similar results in both ethnic family contexts may be that we did not differentiate between different emotions such as anger, sadness, or fear. It has been suggested that, rather than suppressing all emotions, Russians down-regulate disruptive emotions such as anger (Mesquita et al., 2014). Instead, engaging emotions such as fear and sadness may serve the cultural goals of conforming to group norms. Future research on emotion regulation, emotionality, and expression in ethnically diverse families should allow for more nuanced analyses between family members and various emotions.

The findings on the moral emotions of shame and guilt supported the view that they have negative impacts on children's wellbeing, as has been earlier documented in western countries (De Leersnyder, Boiger, & Mesquita, 2013). In both Finnish and Finnish-Russian families, children's high moral emotionality was associated with high levels of depressive and anxiety symptoms, which is in line with studies showing that shame forms a risk for internalization of symptoms (Sheikh, 2014).

However, the results did not support our hypothesis that children's intensive expressions of guilt and shame in Finnish-Russian families would have a positive impact on their psychological adjustment because, within the collective cultural norms on their maternal side, the inviting of moral emotions is approved rearing practice. This hypothesis is based on the idea that parents socialize their children through emotional experiences that are central to their own cultural relationship ideals (Röttger-Rössler, Scheidecker, Jung, & Holodynski, 2013) and promote well-being through congruence with these cultural norms of emotional expression (Kitayama, Mesquita, & Karasawa, 2006). It is important to note that we did not examine the actual use of psychological control as a parenting style, and it is reasonable that excessive use of psychologically controlling parenting, such as shaming, universally relates to children's problem behavior (Hart, Nelson, Robinson, Olsen, & McNeilly-Choque, 1998; Olsen et al., 2002).

Intensive negative emotionality of fear, sadness, and anger was associated with higher levels of depressive, somatization, and aggressive symptoms among children living in both Finnish-Russian and Finnish families. However, intensive emotionality was associated with higher level anxiety symptoms only in the single-ethnic Finnish families. Russian mothers may encourage their children's emotion expressivity and thus prevent anxiety problems, which concurs with the general observation that children who freely express their emotions are less anxious (Hastings, Klimes-Dougan, Kendziora, Brand, & Zahn-Waxler, 2014; see also Grossman & Kross, 2010). Finnish culture is considered highly individualistic, and strong emotions are not expressed outside familiar circles (Hofstede et al., 2010), which may explain the result.

We studied the role of parents' cultural and child-rearing values as possible contributors to children's adjustment in single- and dual-ethnic families. As hypothesized, Russian mothers in dual-ethnic families reported more vertical cultural and authoritarian child-rearing values than do the Finnish mothers in single-ethnic families. This is in line with studies describing Russian culture as collective, traditional, and respecting rules, hierarchies, and elders (Nesteruk & Marks, 2011). Yet, contrary to the hypothesis, these parental values had neither a positive influence in the Russian-Finnish families nor a negative influence in the Finnish families on children's psychological adjustment.

The lack of association between authoritarian child-rearing values and child adjustment in our study contradicts evidence that high parental authority relates to negative child outcomes, such as depression, especially in individualistic and equal western cultural settings (Kakihara, Tilton-Weaver, Kerr, & Stattin, 2010). However, a meta-analysis by Pinquart and Kauser (2018) found that associations of authoritarian parenting with child internalizing symptoms are weaker in highly individualistic countries. The result that parents' cultural values were not associated with children's emotional or conduct problems contradicts the assumption

that the matching of familial values with the cultural values of the majority is beneficial. Finnish macro culture emphasizes egalitarianism and horizontal values rather than status, power, and hierarchy, and therefore authoritarian values could be assumed to influence parenting and subsequently child wellbeing negatively.

Limitations and Conclusion

The main limitations of the study were small sample size and reliance on only parents' reports of children's emotion regulation and emotionality and emotional and conduct problems. The results should therefore be considered as pilot study that requires a proper, larger sample for verification. Although parents provide valid information on their children's behavior, for example attentional skills (Rueda, Posner, & Rothbart, 2005), parental ratings may not concur with children's own experiences of wellbeing and emotion. Also, informants that play other roles in the child's life may not agree on the child's problem behaviors. This issue is further complicated when there are culture-specific ways of expressing mental health problems (Aroian & Norris, 1999), interpreting research questions, and using estimation scales (Tyson, 2004; van de Vijver & Leung, 1997).

Further, although comparing naturally occurring groups of single- and dual-ethnic families provides a strong setting, the homogeneity of the groups cannot be guaranteed. Our findings hint that the Russian mothers perceived more problematic emotional symptoms in their children than did their Finnish spouses, and, over time living in Finnish society, their perception of their children's problems partly increased. The couples in dual-ethnic families, however, shared similar values and practices, as evidenced by nonsignificant within-family paired comparisons. However, we did not investigate proxies of acculturation (language proficiency, number of native friends) in this study, which deserves criticism.

Families with single- and dual-ethnic heritage provide us with interesting insights about antecedent factors that contribute to children's psychological adjustment. Although there are

differences in emotion socialization in Finnish and Russian cultures, these differences did not expose children to increased risk for problems in emotion regulation or adjustment at 7 years of age. While evidence from our small sample is only suggestive, this study is one of the very few that has investigated multiple correlates of child adjustment in intercultural families, and it hopefully provides inspiration for future investigations.

References

Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA preschool forms & profiles.* Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

Aksan, N., Kochanska, G., & Ortmann, M. R. (2006). Mutually responsive orientation between parents and their young children: Toward methodological advances in the science of relationships. *Developmental Psychology, 42*, 833–848. doi.org/10.1037/0012-1649.42.5.833

Aroian K. J., & Norris A. E. (1999). Somatization and depression among former Soviet immigrants. *Journal of Cultural Diversity, 6,* 93–101. PMID:10786541.

Beebe, B., & McCrorie, E. (2010). The optimum midrange: Infant research, literature, and romantic attachment. *Attachment: New Directions in Psychotherapy & Relational Psychoanalysis, 4*, 39–58.

Belsky, J., Rovine, M., & Taylor, D. G. (1984). The Pennsylvania infant and family development project: III. The origins of individual differences in infant-mother attachment: Maternal and infant contributions. *Child Development, 55*, 718–728.

Bialystok, E. (2007). Cognitive effects of bilingualism: How linguistic experience leads to cognitive change. *International Journal of Bilingual Education & Bilingualism, 10,* 210–223. doi.org/10.2307/1130124

Bornstein, M. H. (2013). Parenting and child mental health: A cross-cultural perspective. *World Psychiatry, 12,* 258–265. doi.org/10.1002/wps.20071

Caldwell-Harris, C. L., & Aycicegi, A. (2006). When personality and culture clash: The psychological distress of allocentrics in an individualist culture and idiocentrics in a collectivist culture. *Transcultural Psychiatry, 43,* 331–361. doi.org/10.1177/1363461506066982

Calkins, S. D., & Perry, N. B. (2016). The development of emotion regulation: Implications for child adjustment. In D. Cicchetti (Ed.), Developmental psychopathology, Vol. 3: Maladaptation and psychopathology (3rd ed., pp. 187–243). Hoboken, NJ: John Wiley & Sons.

Carpenter, J., & Drabick, D. (2011). Co-occurrence of linguistic and behavioural difficulties in early childhood: A developmental psychopathology perspective. *Early Child Development & Care, 181,* 1021–1045. doi.org/10.1080/03004430.2010.509795

Chirkov, V., Ryan, R. M., Kim, Y., & Kaplan, U. (2003). Differentiating autonomy from individualism and independence: A self-determination theory perspective on internalization of cultural orientations and well-being. *Journal of Personality & Social Psychology, 84,* 97–110 doi.org/10.1037/0022-3514.84.1.97

Cools, C. (2006). Relational communication in intercultural couples. *Language & Intercultural Communication, 6,* 262–274. doi.org/10.2167/laic253.0

Crippen, C., & Brew, L. (2013). Strategies of cultural adaption in intercultural parenting. *The Family Journal, 21,* 263–271. doi.org/10.1177/1066480713476664

Deater-Deckard, K., & Petrill, S. A. (2004). Parent-child dyadic mutuality and child behavior problems: An investigation of gene-environment processes. *Journal of Child Psychology & Psychiatry, 45,* 1171–1179. doi.org/10.1111/j.1469-7610.2004.00309.x

De Leersnyder J., Boiger, M., & Mesquita, B. (2013). Cultural regulation of emotion: Individual, relational, and structural sources. *Frontiers in Psychology, 4,* 1–11. doi.org/10.3389/fpsyg.2013.00055

Eisenberg, N., Cumberland, A., Spinrad, T. L., Fabes, R. A., Shepard, S. A., Reiser, M., ... Guthrie, I. K. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development, 72,* 1112–1134.

Eisenberg, N., Spinrad, T. L., & Eggum, N. D. (2010). Emotion-related self-regulation and its relation to children's maladjustment. *Annual Review of Clinical Psychology, 6,* 495–525 doi/10.1146/annurev.clinpsy.121208.131208

Elliston, D., McHale, J., Talbot, J., Parmley, M., & Kuersten-Hogan, R. (2008). Withdrawal from coparenting interactions during early infancy. *Family Process, 47,* 481–498. doi.org/10.1111/j.1545-5300.2008.00267.x

Feinberg, M. E. (2003). The internal structure and ecological context of coparenting: A framework for research and intervention. *Parenting Science & Practice, 3,* 95–131. doi: 10.1207/S15327922PAR0302_01

Feldman, R. (2003). Infant–mother and infant–father synchrony: The coregulation of positive arousal. *Infant Mental Health Journal, 24,* 1–23.

Feldman, R. (2007). Mother-infant synchrony and the development of moral orientation in childhood and adolescence: Direct and indirect mechanisms of developmental continuity. *American Journal of Ortopsychiatry, 77,* 582–597. doi.org/10.1037/0002-9432.77.4.582

Feldman, R. (2015). Mutual influences between child emotion regulation and parent–child reciprocity support development across the first 10 years of life: Implications for developmental psychopathology. *Development & Psychopathology, 27,* 1007–1023. https://doi.org/10.1017/S0954579415000656

Feldman, R., & Eidelman, A. I. (2004). Parent–infant synchrony and the social-emotional development of triplets. *Developmental Psychology, 40,* 1133–1147.

Feldman, R., Greenbaum, C. W., & Yirmiya, N. (1999). Mother–infant affect synchrony as an antecedent to the emergence of self-control. *Developmental Psychology, 35,* 223–231.

Feldman, R., & Masalha, S. (2007). The role of culture in moderating the links between early ecological risk and young children's adaptation. *Development & Psychopathology, 19,* 1–21. doi.org/10.1017/S0954579407070010

Feldman, R., Masalha, S., & Alony, D. (2006). Microregulatory patterns of family interactions: Cultural pathways to toddlers' self-regulation. *Journal of Family Psychology, 20,* 614–623. doi.org/10.1037/0893-3200.20.4.614

Fogel, A., de Koyer, I., Secrist, C., Sipherd, A., Hafen, T., & Fricke, M. (2003). *The Revised Relational Coding System.* Unpublished manual, Department of Psychology, University of Utah, Salt Lake City.

Fogel, A., Garvey, A., Hsu, H., & West-Stroming, D. (2006). *Change processes in relationships: A relational—historical research approach.* Cambridge, UK: Cambridge University Press.

Goodman, R., Slobodskaya, H., & Knyazev, G. (2005). Russian child mental health: A cross sectional study of prevalence and risk factors. *European Child & Adolescent Psychiatry, 14*, 28–33. doi.org/10.1007/s00787-005-0420-8

Grace-Martin, K. (2018). Using adjusted means to interpret moderators in analysis of covariance. https://www.theanalysisfactor.com/using-adjusted-means-to-interpret moderators- in-analysis-of-covariance/ Retrieved 30.08.2018.

Grossmann, I., & Kross, E. (2010). The impact of culture on adaptive versus maladaptive self-reflection. *Psychological Science, 21,* 1150–1157. doi.org/10.1177/0956797610376655

Hart, C. H., Nelson, D. A., Robinson, C. C., Olsen, S. F., & McNeilly-Choque, M. K. (1998).

Overt and relational aggression in Russia nursery-school-age children: Parenting style and marital linkages. *Developmental Psychology, 34,* 687–697.

Hastings, P. D., Klimes-Dougan, B., Kendziora, K. T., Brand, A., & Zahn-Waxler, C. (2014). Regulating sadness and fear from outside and within: Mothers' emotion socialization and adolescents' parasympathetic regulation predict the development of internalizing difficulties. *Developmental Psychopathology, 26,* 1369–1384. doi.org/10.1017/S0954579414001084

Hofstede G., Hofstede G. J., & Minkov M. (2010). *Cultures and organizations: Software of the mind. Intercultural cooperation and its importance for survival* (3rd ed.). New York: McGraw Hill.

Holm, S. (1979). A simple sequential rejective method procedure. *Scandinavian Journal of Statistics, 6,* 65–70.

Jaffe, J., Beebe, B., Feldstein, S., Crown, C. L., & Jasnow, M. D. (2001). Rhythms of dialogue in infancy. In W. F. Overton (Ed.), *Monographs of the Society for Research in Child Development* Vol. 66 (pp. vi–131). Boston, MA: Blackwell Publishers.

Jasinskaja-Lahti, I., & Liebkind, K. (2000). Predictors of the actual degree of acculturation of Russian-speaking immigrant adolescents in Finland. *International Journal of Intercultural Relations, 24,* 503–518. doi.org/10.1016/S0147-1767(00)00010-9

Kakihara, F., Tilton-Weaver, L., Kerr, M., & Stattin, H. (2010). The relationship of parental control to youth adjustment: Do youths' feelings about their parents play a role? *Journal of Youth & Adolescence, 39,* 1442–1456. doi.org/10.1007/s10964-009-9479-8

Keller, H., Lohaus, A., Kuensemueller, P., Abels, M., Yovsi, R. D., Voelker, S., ... Mohite, P. (2004). The bio-culture of parenting: Evidence from five cultural communities. *Parenting: Science & Practice, 4,* 25–50. doi.org/10.1207/s15327922par0401_2

Keller, H., & Otto, H. (2009). The cultural socialization of emotion regulation during infancy. *Journal of Cross-Cultural Psychology, 40,* 996–1011. doi.org/10.1177/0022022109348576

Key figures on immigration 2015. (2016). European Migration Network. Retrieved from http://www.emn.fi/files/1361/EMN_maahanmuuton_tunnusl_2015_EN_tumma.pdf

Kitayama, S. Mesquita, B., & Karasawa, M. (2006). Cultural affordances and emotional experience: Socially engaging and disengaging emotions in Japan and the United States. *Journal of Personality & Social Psychology, 91,* 890–903. doi.org/10.1037/0022-3514.91.5.890

Kochanska, G., Aksan, N., Prisco, T. R., & Adams, E. E. (2008). Mother-child and father-child mutually responsive orientation in the first two years and children's outcomes at preschool age: Mechanisms of influence. *Child Development, 79,* 30–44. doi: 10.1111/j.1467-8624.2007.01109.x

Kumpulainen, K., Räsänen, E., Burkin, M., Ananko, E., Zerspinskaja, S., Henttonen, I., ... Timonina, T. (1999). Comparison of psychiatric symptoms among 8- to 9-year-old children in Finland and Russia. *Nordic Journal of Psychiatry, 53*, 417–426.

Lanzieri, G. (2012). Mixed marriages in Europe, 1990-2010". In D.-S. Kim (Ed.), *Cross-border marriage: Global trends and diversity* (pp. 81–121). Korea Institute for Health and Social Affairs (KIHASA), Seoul. doi.org/10.1177/0743558400154002

Lindblom, J., Vänskä, M., Flykt, M., Tolvanen, A., Tiitinen, A., Tulppala, M., & Punamäki, R. L. (2017). From early family systems to internalizing symptoms: The role of emotion regulation and peer relations. *Journal of Family Psychology, 31*(3), 316. doi: DOI: http://doi.org/10.1037/fam0000260 doi.org/10.1037/fam0000260

Matsumoto, D., Takeuchi, S., Andayani, S., Kouznetsova, N., & Krupp, D. (1998). The contribution of individualism-collectivism to cross-national differences in display rules. *Asian Journal of Social Psychology, 1,* 147–165. doi.org/10.1111/1467-839X.00010

McConnell, M. C., & Kerig, P. K. (2002). Assessing coparenting in families of school-age children: Validation of the Coparenting and Family Rating System. *Canadian Journal of Behavioural Science, 34,* 44–58. doi: 10.1037/h0087154

McHale J. P., & Rasmussen, J. L. (1998). Coparental and family group-level dynamics during infancy: Early family precursors of child and family functioning during preschool. *Development & Psychopathology, 10,* 39–59. doi.org/10.1017/S0954579498001527

Mesquita, B., De Leersnyder, J., & Albert, D. (2014). The cultural regulation of emotions. In J. J. Gross (Ed.), *The handbook of emotion regulation* (2nd ed., pp. 284–301). New York, NY: Guilford Press.

Nesteruk, O., & Marks, L. D. (2011). Parenting in immigration: Experiences of mothers and fathers from Eastern Europe raising children in the United States. *Journal of Comparative Family Studies, 42,* 809–825.

Olsen, S. F., Yang, C., Hart, C. H., Robinson, C. C., Wu, P., Nelson, D. A., ... Wo, J. (2002). Mothers' psychological control and preschool children's behavioral outcomes in China, Russia, and the United States. In B. K. Barber (Ed.), *Intrusive Parenting: How psychological control affects children and adolescents* (pp. 235–262). Washington, DC: American Psychological Association.

Pinquart, M., & Kauser, R. (2018). Do the associations of parenting styles with behavior problems and academic achievement vary by culture? Results from a meta-analysis. *Cultural Diversity and Ethnic Minority Psychology, 24*, 75-100. doi.org/ 10.1037/cdp0000149

Platt, L. (2012). How do children of mixed partnerships fare in the UK? Understanding the implications for children of parental ethnic homogamy and heterogamy. *ANNALS of the American Academy of Political & Social Science, 643,* 239–266.

Remennick, L. (2009). Exploring intercultural relationships: A study of Russian immigrants married to native Israelis. *Journal of Comparative Family Studies, 40,* 719–738.

Rescorla, L., Achenbach, T. M., Ivanova, M. Y., Dumenci L., Almqvist, F., Bilenberg, N., ... Verhulst, F. (2007). Behavioral and emotional problems reported by parents of children ages 6 to 16 in 31 societies. *Journal of Emotional & Behavioral Disorders, 15,* 130–142. doi.org/10.1177/10634266070150030101

Rescorla, L., Achenbach, T. M, Ivanova, M. Y., Harder, V. S., Otten, L., Bilenberg, N., . . . Dias, P. (2011). International comparisons of behavioral and emotional problems in preschool children: Parents' reports from 24 societies. *Journal of Clinical Child & Adolescent Psychology, 40,* 456-467. doi.org/10.1080/15374416.2011.563472

Reynolds, C. R., & Kamphaus, R. W. (1992). *BASC: Behavior assessment system for children: Manual.* American Guidance Service, Incorporated. doi.org/10.1002/9780470479216.corpsy0114

Rosner, B. (2011). *Fundamentals of Biostatistics*. 7th ed. Boston, MA: Brooks/Cole.

Rueda, M. R., Posner, M. I., & Rothbart, M. K. (2005). The development of executive attention: Contributions to the emergence of self-regulation. *Developmental Neuropsychology, 28,* 573–594. 10.1207/s15326942dn2802_2

Rydell, A. M., Berlin, L., & Bohlin, G. (2003). Emotionality, emotion regulation, and adaptation among 5- to 8-year-old children. *Emotion, 3,* 30–47.

Röttger-Rössler, B., Scheidecker, G., Jung, S., & Holodynski, M. (2013). Socializing emotions in childhood: A cross-cultural comparison between the Bara in Madagascar

and the Minangkabau in Indonesia. *Mind, Culture, & Activity, 20,* 260–287.

Sheikh, S. (2014). Cultural variations in shame's responses: A dynamic perspective. *Personality & Social Psychology Review, 18,* 387–403. doi.org/10.1177/1088868314540810

Singelis, T. M., Triandis, H. C., Bhawuk, D., & Gelfand, M. J. (1995). Horizontal and vertical dimensions of individualism and collectivism: A theoretical and measurement refinement. *Cross-Cultural Research, 29,* 240–275. doi.org/10.1177/106939719502900302

Slonim-Nevo, V., Sharaga, Y., Mirsky, J., Petrovsky, V., & Borodenko, M. (2006). Ethnicity versus migration: Two hypotheses about the psychosocial adjustment of immigrant adolescents. *International Journal of Social Psychiatry, 52,* 41–53. doi.org/10.1177/0020764006061247

Solantaus-Simula, T., Punamäki, R.L., & Beardslee, W. R. (2002). Children's responses to low parental mood. II: Associations with family perceptions of parenting styles and child distress. *Journal of the American Academy of Child & Adolescent Psychiatry, 41*(3), 287-295. doi.org/10.1097/00004583-200203000-00008

Sourander, A. (2001). Emotional and behavioural problems in a sample of Finnish three-year-olds. *European Child & Adolescent Psychiatry, 10*, 98–104. doi.org/10.1007/s007870170032

Super, C. M, & Harkness, S. (2002). Culture structures the environment for development. *Human development, 45*, 270–274. doi.org/10.1159/000064988

Triandis, H. C. (2000). Cultural syndromes and subjective well-being. In E. F. Diener & E. M. Suh (Eds.), *Subjective well-being across cultures* (pp. 87–112). Cambridge, MA: MIT Press.

Tronick, E., & Beeghly, M. (2011). Infants' meaning-making and the development of mental health problems. *American Psychologist, 66,* 107–119. doi: 10.1037/a0021631

Tyson, E. H. (2004). Ethnic differences using behavior rating scales to assess the mental health of children: A conceptual and psychometric critique. *Child Psychiatry & Human Development, 34,* 167–201. doi.org/10.1023/B:CHUD.0000014996.26276.a5

van de Vijver, F. J. R., & Leung, K. (1997). *Methods and data analysis for cross cultural research.* Thousand Oaks, CA: Sage Publications.

Whipple, N., Bernier A., & Mageau, G. A. (2011). Broadening the study of infant security of attachment: Maternal autonomy-support in the context of infant exploration. *Social Development, 20,* 17–32. 10.1111/j.1467-9507.2010.00574.x

Table 1

Percentage Distributions of Percentages (χ2) and Means (t-tests) of Background Variables in Finnish and Finnish-Russian Families

	Finnish families		Finnish-Russian families		
	%	*n*	%	*n*	χ2-value
Child Gender					0.75
Girl	41.7	10	54.2	13	
Boy	58.3	14	45.8	11	
Birth order					1.61
First born	62.1	15	79.2	19	
Earlier siblings	37.9	9	20.8	5	
School entry					0.95
Child at school	66.7	16	79.2	19	
Child at preschool	33.3	8	20.8	5	
Age at T1	M	SD	M	SD	t-value
Child (months at T1)	7.2	0.41	7.1	0.40	2.05*
Mother (years)	29.62	5.27	30.92	5.00	
Father (years)	33.00	6.25	38.13	7.84	2.50*
Parental education at T1					
Mother (years)	14.73	3.64	14.04	3.32	0.77
Father (years)	14.06	3.32	14.21	5.52	0.11

Note: *$p < .05$

Table 2

Mean and Standard Deviations of Children's Psychological Adjustment at 4 and 7 Years of Age in Finnish and Finnish-Russian Families [a]

	Finnish families		Finnish-Russian families			
	M	SD	M	SD	ANCOVA F-values [c]	η^2
At 4 years of age						
Affective symptoms	1.06	.76	1.57	.60	5.28*	.12
Anxiety symptoms	1.51	.91	1.83	.73	1.43	.04
Pervasive developmental	1.54	.82	1.66	.77	.05	.00
ADHD [a]	1.92	.87	2.25	.35	2.13	.05
Oppositional defiance	1.88	.70	1.77	.56	.02	.00
At 7 years of age						
Depressive symptoms	17.92	3.52	18.88	2.95	1.36	.03
Anxiety symptoms	18.73	3.79	18.92	3.26	.13	.00
Somatization symptoms	17.15	2.21	17.31	2.39	.02	.00
Aggression	21.25	4.74	21.60	4.46	.28	.01

Note: *$p < .05$

[a] Combined mothers' and fathers' ratings (n = 44 at 4 years; n = 48 at 7 years); [b] ADHD = Attention Deficit/Hyperactivity

[c] The analyses were covaried for father and child ages.

Table 3

Means (M) and Standard Deviations (SD) of Parents Cultural and Child-Rearing Values and Children's Emotion Regulation and Emotionality in Finnish and Finnish-Russian Families

		Finnish families		Finnish-Russian families			
		M	*SD*	*M*	*SD*	ANCOVA F-values (1,43)	η^2
Children's emotions							
Emotion regulation	Mother	.09	.96	-.11	1.00	.46	.01
	Father	.34	.89	-.23	1.00	2.01	.06
Moral emotionality	Mother	.17	.83	-.20	.90	1.31	.03
	Father	.05	.82	-.03	1.06	.04	.00
Basic emotionality	Mother	-.00	.95	.00	.78	.16	.00
	Father	.20	1.05	-.14	.92	.01	.00
Cultural & child-rearing values							
Verticalism	Mother	8.63	1.89	9.85	1.85	6.91**	.15
	Father	9.06	2.37	9.63	1.90	.03	.00
Authoritarian rearing values	Mother	31.12	5.00	34.25	6.05	5.89*	.13
	Father[a]						

Notes. *$p < .05$, ** $p < .01$; [a] Fathers' child-rearing values are not used in analyses due to low reliability

Table 4

Summary of ANCOVA F-values of Main and Interaction Effects between Dual- and Single-Ethnic Families [a] and Emotion Regulation and Emotionality on Children's Psychological Adjustment at 7 Years of Age [c]

	Dual-/single-ethnic [a]	Emotion regulation	Ethnic * Regulation	Ethnicity	Moral emotionality	Ethnicity * Moral	Ethnicity	Basic emotionality	Ethnicity * Basic
Psychological adjustment [b]	*F-values*	*F-values*	*F-values*	*F-values*	*F-values*	*F-values*	*F-values*	*F-values*	*F-values*
Depressive symptoms	0.34	6.75**	1.94	3.33	10.78***	2.81	2.16	11.35***	0.07
Anxiety symptoms	0.03	5.47*	1.21	1.23	18.59***	1.73	0.07	2.21	9.80**
Somatization symptoms	0.03	0.41	0.13	0.03	0.01	0.03	0.06	3.62*	0.03
Aggression	0.05	12.64***	0.31	0.51	0.13	4.73*	0.54	4.93*	0.99

*Notes: *p* < .05, ** p <.01; *** p <.001, **** p < .0001

[a] Finnish and Finnish-Russian Families

[b] Combined mothers' and father's ratings for psychological adjustment and emotion regulation and emotionality at 7 years of age (n = 48)

[c] The analyses were covariated for father and child ages.