

Infant temperament and the impact of immigration: Russia, United States of America, and Israel.

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Research on temperament and development of personality has thus far emphasized mostly biological basis of individual differences in temperament characteristics. However, other non-biological factors, such as cultural differences and an impact of major life events, such as immigration, may also play an important role. The psychobiological approach proposed by Rothbart and Derryberry (1981), has conceptualized temperament as constitutionally based individual differences in reactivity and self-regulation, influenced by heredity, maturation, and experience. Thus, major life experiences, such as immigration and acculturation, may reflect in temperament characteristics.

Cultural groups often differ in their values and patterns of child rearing, that tend to be relatively stable (Kohnstamm, 1989). Parents within cultural groups are generally motivated to reproduce temperament characteristics in their offspring that are consistent with their values, and those of the cultural group. Thus, individual children are socialized into phenotypical presentations that are desirable, appropriate, or at least tolerable within cultural norms (Kohnstamm, 1989). Although most families can be described as showing a general tendency to avoid the development of extremes in reactivity and regulation, variability in parenting can be attributed to the impact of cultural differences. When members of one cultural group immigrate to a country of a different culture, a process of acculturation takes place. In this process, most immigrants change their behaviors and values to better adapt to the new culture. Thus some of the values of the culture of origin are abandoned and replaced with the values of the host culture (Berry, 1989; Berry, Kim, Power, & Bujaki, 1989). Gibson (2001) theorizes that acculturation process is impacted by the specific characteristics of the host country. To the extent that the values and patterns of child rearing may change to resemble those of the host culture, it is reasonable to expect that temperamental characteristics of the immigrants' children will reflect the degree of acculturation to the specific host culture.

Although cross-cultural temperament research has not been widespread, especially during the infancy period, it has yielded a number of important findings. A factor-analytic research has shown similarities as well as differences in the structure of temperament across cultures (Goldberg, 1983; Rothbart, Ahadi, Hershey, & Fisher, in press). In addition, a number of mean differences in the levels of temperament attributes across cultures have been reported (Hsu, Soong, Stigler, Hong, & Liang, 1981).

To date, studies addressing the impact of immigration and acculturation on infant temperament have not been conducted. Assimilation into a new culture may influence values related to parenting and desired child characteristics (Cardona, Nicholson, and Fox, 2000). In addition, for most people immigration represents a stressor (Sorenson & Shen, 1996; Berry,

1998) that may be associated with a significant impact on familial/parental adjustment, and parenting practices. The resulting modifications in parenting practices may lead to changes in the development of child temperament. Thus, the present study was designed to evaluate cross-cultural differences between samples of infants born to Russian families that have immigrated to the U.S. and Israel, as well as Russian families residing in Russia, addressing the impact of acculturation. Because the culture of origin for both immigrant groups is identical, differences between these groups will reflect differences between the host cultures and their impact on infant temperament.

Method

Participants

A community sample of ninety Russian primary caregivers of infants between three and twelve months of age were recruited for the study, and subsequently completed the IBQ-R. Participants were recruited while visiting healthy child clinic in Novosibirsk, Russia. A group of Russian immigrants in the U.S., residing primarily in the San Francisco Bay area, California (N = 32), was recruited. A sample of Russian immigrants in Israel was also recruited, and resided primarily in Tel Aviv (N=40). Both groups of immigrants completed the IBQ-R and an acculturation measure. A group of participants (N=32) was selected from both Russian-Israeli and Russian samples to resemble the Russian-Israeli sample in terms of the distribution of gender, as well as the mean level and variability of infant age. The three samples were very similar in terms of infant's gender distribution (Israeli: 11 female, 21 male; Russian: 11 female, 21 male; U.S.: 14 female, 18 male), and age (Israeli: M=26.81 weeks, SD=10.71; Russian: M=26.81 weeks, SD=10.54; U.S.: M=23.09 weeks, SD=8.80). These samples were also very similar in terms of the caregivers' education (Israeli: M=13.83 years, SD=2.96; Russian: M=13.31 years, SD=1.87; U.S.: M=14.28 years, SD=2.64), and marital status (Israeli: 90.6%-married, 3.1%-second marriage, 7%- live together; Russian: 9.4%-not married, 62.5%-married, 3.1%-divorced, 6.3%-second marriage, 18.8%-live together; U.S.: 6.3%-not married, 75%-married, 6.3%-divorced, 12.5%-second marriage). However these samples differed in terms of the caregivers' age (Israeli: M=30.32 years, SD=5.04; Russian: M=26.71 years, SD=6.24; $t(1, 60)=2.507, p<.05$; U.S.: M=31.47 years, SD=4.63; $t(1, 61)=-3.45, p<.01$).

Measures

The Infant Behavior Questionnaire-Revised (IBQ-R; Gartstein & Rothbart, 2001). The IBQ-R represents a rationally derived, fine-grained assessment tool, based on the definition of temperament proposed by Rothbart & Derryberry (1981), work with the Child Behavior Questionnaire (Rothbart, Ahadi, & Hershey, 1994), comparative studies, as well as other developmental research that had identified significant dimensions and associated behavioral tendencies. The IBQ-R is comprised of 14 scales: Activity Level, Smiling and Laughter, Fear (social and non-social), Distress to Limitations, Duration of Orienting, Soothability, Vocal Reactivity, High and Low Intensity Pleasure, Falling Reactivity, Affiliation/ Cuddliness, Perceptual Sensitivity, Sadness, and Approach (See Table 1 for definitions).

Demographic Questionnaire. This instrument was designed to evaluate basic background characteristics of the respondent. Information was obtained regarding the participants' education, income, occupation, age and marital status.

The Soviet-Jewish Acculturation Measure (SAM; Lyubansky & Shpungin; 1998). The SAM is designed to assess the level of individual's involvement in both the host (American/Israeli) culture and the culture of origin (Soviet Jewish). The SAM was derived based on the theoretical framework proposed by Berry et al. (Berry, Kim, Power, & Bujaki, 1989), which postulated that immigrants entering a host culture will adaptively change their original values and behaviors as a result of a conflict between the desire to maintain the values of original culture and the desire to belong to the host culture. The two scales of the SAM (Involvement in the Soviet-Jewish culture (ISJ) and involvement in the US culture (IUS)) were developed based on literature review and consultation with members of Soviet-Jewish community. The items were chosen to reflect both attitudes and behaviors that are descriptive of each culture. The two culture-involvement scales show strong internal consistency, with Cronbach's alphas of .84 and .82 for the ISJ and IUS scales, respectively. Criterion and divergent validity of this measure were also demonstrated, on the bases of patterns of correlations with variables such as proficiency in English, time in the U.S., and measures of physical health.

Procedure

Translation. All of the materials, including the questionnaires and consent forms, were translated into Russian. The IBQ-R, the SAM, the Demographic Questionnaire, and the consent form were translated from English to Russian by the second author (M.A.G.), and back translated by the fourth author (H.R.S.). Subsequently, the original and the back-translated copies of the IBQ-R and other materials were compared, and the Russian translation was revised on the basis of the observed discrepancies. In addition, the education, occupation and income items of the Demographic Questionnaire for the Russian sample were modified to be consistent with the socio-economical situation in Russia (Kharchenko, 2000).

Data Collection-Israel. Parents of infants between three and twelve month of age, who participated in Russian-Jewish activities in Tel Aviv area, were asked to participate in the study until 40 questionnaires were obtained. The study was described to each parent, and they were told that their participation would involve completing the IBQ-R, SAM, and a demographic form, taking about an hour.

Data Collection-Russia. Parents of infants between three and twelve month of age, who visited the healthy child clinics in Novosibirsk for their regular examination, were asked to participate in the study until 90 questionnaires were obtained. The study was described to each parent, and they were told that their participation would involve completing the IBQ-R and a demographic form, taking about an hour.

Data Collection-U.S. Parents of infants between three and twelve month of age, whose births were reported in the newspaper, were contacted by phone and asked to participate in the study until 32 questionnaires were obtained. Each respondent was mailed a consent form with the questionnaire materials, which s/he signed and returned with the other information.

Results

Correlations between acculturation and temperament measures

Significant correlations were observed between involvement in Soviet-Jewish culture and the Duration of Orienting scale of the temperament. Involvement in the Israeli Culture significantly and negatively correlated with children's' Perceptual Sensitivity (Table 2).

Cultural differences in child temperament

Significant effects of culture were observed for Low Intensity Pleasure, Soothability, Falling Reactivity, Cuddliness, and Perceptual Sensitivity scales of the IBQ-R (Table 3). Follow-up procedures revealed significant differences between American and Israeli samples as well as between Russian and American samples in Low Intensity Pleasure, with lower level of pleasure demonstrated by the American sample as compared to both Israeli and Russian groups. Significant differences were apparent between the Israeli and American samples and between the Israeli and Russian samples in Soothability; Israeli group exhibited higher levels of soothability than Russian or American groups. Israeli infants also exhibited the highest rates of Falling Reactivity as compared to the American and Russian groups. American infants exhibited significantly lower rates of cuddliness than did Israeli or Russian infants. Finally, significant differences between Israeli and Russian samples were found in Perceptual Sensitivity, with higher level of sensitivity exhibited by the Israeli sample (Figure 1).

The effects of immigration on child temperament

Significant differences were anticipated between the infants born and raised in Russia and the two groups of immigrants (Israeli and American samples) due to the effects of immigration. Follow-up analysis revealed such differences in the areas of Low Intensity Pleasure and Perceptual Sensitivity. Russian infants showed significantly lower perceptual sensitivity ($t(1,94)=2.78, p<.01$), however, these infants exhibited higher rates of low intensity pleasure, than did infants of immigrants ($t(1,94)=-2.76, p<.01$) (Figure 2).

Discussion

The results of this study indicated that infants born to Russian immigrants in Israel and USA differed from the infants born to the Russian families that live in Russia in two dimensions of temperament. These infants were described as showing higher perceptual sensitivity and lower rates of low intensity pleasure. Since parents of infants in both groups were born in Russia, these differences can be attributed to the effects of immigration process and may reflect the heightened stress levels in parents.

The cross-cultural comparisons of infant temperament yielded several significant results. First Israeli infants exhibited highest levels of falling reactivity and soothability as compared to the Russian or American infants. These infants were also described as more perceptually sensitive than Russian infants. Second, American infants showed the lowest rates of cuddliness and low intensity pleasure as compared to the Russian or Israeli infants. Since parents in both Israeli and American groups were born and raised in Russia, these results may reflect the unique differences in parenting styles between Israeli and American cultures.

Contrary to the expectations, most of the above described temperament scales did not correlate significantly with the degree of parents' acculturation. Such correlations were found only for Duration of Orienting and Perceptual Sensitivity. Parents' involvement in Soviet – Jewish culture was associated with longer duration of orienting in offspring, while involvement in Israeli culture was related to lower levels of infant's perceptual sensitivity. These results reflect differences within the Russian-Israeli group rooted in the degree of acculturation.

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Table 1. Scale Definitions: Infant Behavior Questionnaire - Revised (IBQ-R)

Activity Level	Gross motor activity, including movement of arms and legs, squirming and locomotor activity. (“When put into the bath water, how often did the baby splash or kick?”)
Distress to Limitations	Fussing, crying or showing distress while a) in a confining place or position; b) in caretaking activities; c) unable to perform a desired action. (“When placed on his/her back, how often did the baby fuss or protest?”)
Fear	Startle or distress to sudden changes in stimulation, novel physical objects or social stimuli; inhibited approach to novelty. (“How often during the last week did the baby startle to a sudden or loud noise?”)
Duration of Orienting	Attention to and/or interaction with a single object for extended periods of time. (“How often during the last week did the baby stare at a mobile, crib bumper or picture for 5 minutes or longer?”)
Smile and Laughter	Smiling or laughter during general caretaking and play. (“How often during the last week did the baby smile or laugh when given a toy?”)
High Intensity Pleasure	Pleasure or enjoyment related to high stimulus intensity, rate, complexity, novelty, and incongruity. (“During a peek-a-boo game, how often did the baby smile?”)
Low Intensity Pleasure	Amount of pleasure or enjoyment related to low stimulus intensity, rate, complexity, novelty and incongruity. (“When playing quietly with one of his/her favorite toys, how often did the baby show pleasure?”)
Soothability	Reduction of fussing, crying, or distress when soothing techniques are used by the caregiver. (“When patting or gently rubbing some part of the baby’s body, how often did s/he soothe immediately?”)
Falling Reactivity	Rate of recovery from peak distress, excitement, or general arousal; ease of falling asleep. (“When frustrated with something, how often did the baby calm down within 5 minutes?”)
Cuddliness	Expression of enjoyment and molding of the body to being held by a caregiver. (When rocked or hugged, during the last week, how often did the baby seem to enjoy him/herself?)
Perceptual Sensitivity	Detection of slight, low intensity stimuli from the external environment. (“How often did the baby notice fabrics with scratchy texture (e.g., wool)?”)
Sadness	Lowered mood and activity related to personal suffering, physical state, object loss, or inability to perform a desired action; general low mood. (“Did the baby seem sad when the caregiver was gone for an unusually long period of time?”)
Approach	Rapid approach, excitement, and positive anticipation of pleasurable activities. (“When given a new toy, how often did the baby get very excited about getting it?”)
Vocal Reactivity	Amount of vocalization exhibited by the baby in daily activities. (When being dressed undressed during the last week, how often did the baby coo or vocalize?)

Table 2. Correlations between the SAM and the IBQ-R scales

	Involvement in the Soviet-Jewish Culture	Involvement in the US Culture
Activity	-.003	.310
Distress to Limitations	-.145	.242
Fear	-.077	-.041
Duration of Orienting	-.051	.317*
Smiling and Laughter	-.032	.133
High Intensity Pleasure	.085	.167
Low Intensity Pleasure	.153	.027
Soothability	.144	.133
Falling Reactivity	.064	.052
Cuddliness/Affiliation	-.236	.016
Perceptual Sensitivity	-.316*	.140
Sadness	-.179	.164
Approach	-.098	.105
Vocal Reactivity	.054	.263

*Correlation is significant at the 0.05 level (2-tailed)

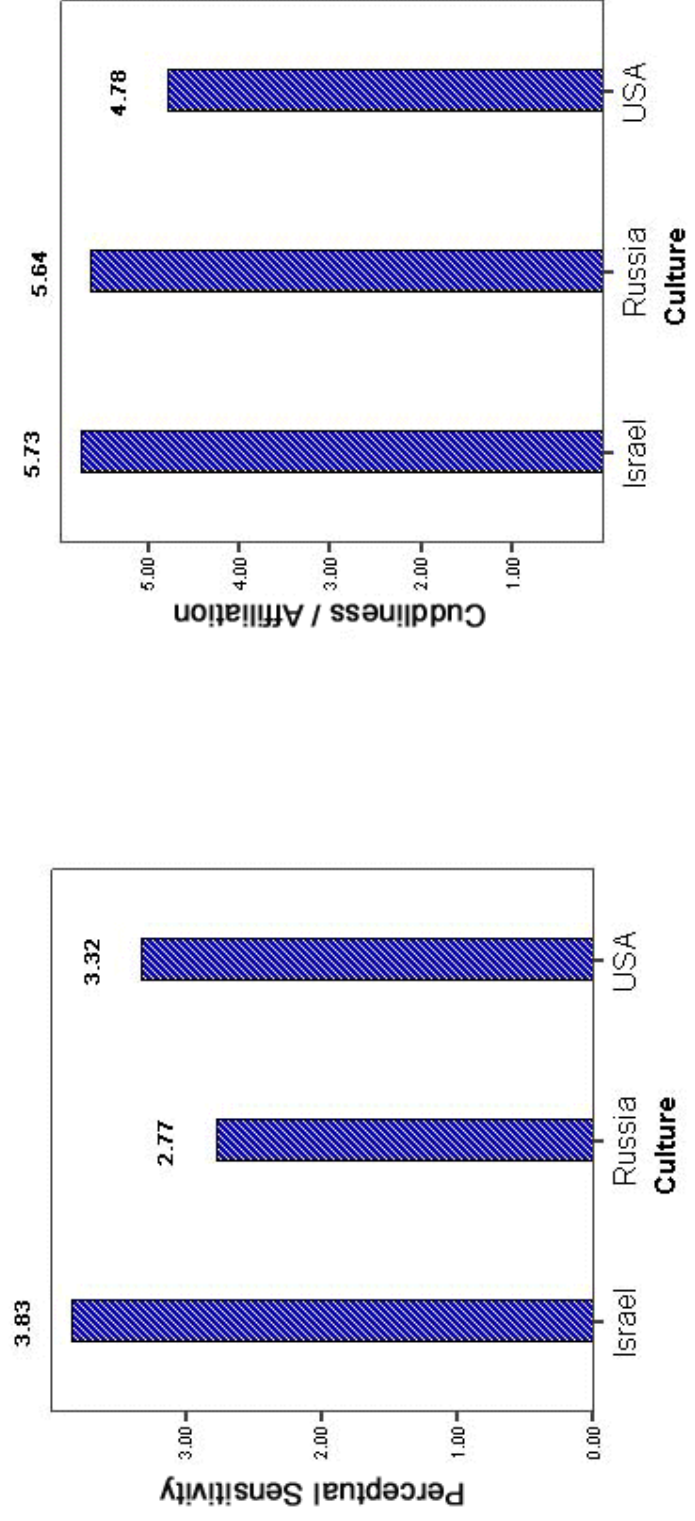
Table 3. Cross-Cultural Comparisons: Israel, U.S., and Russia:

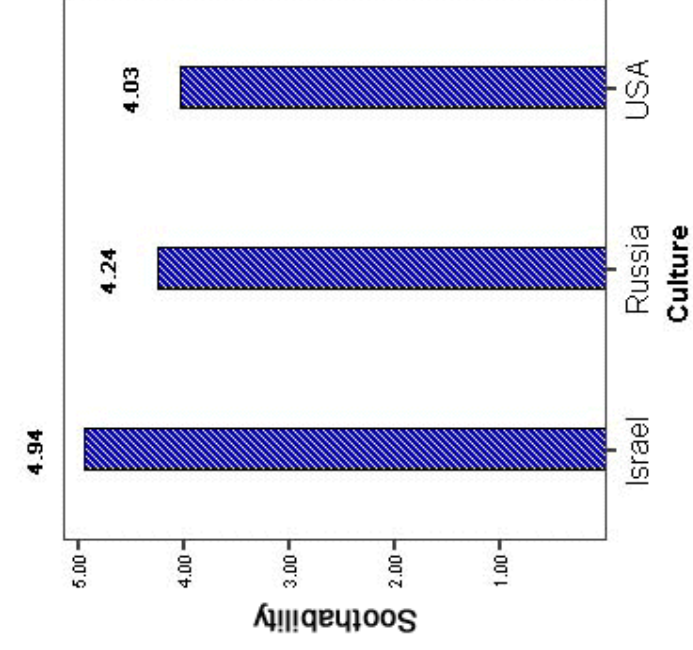
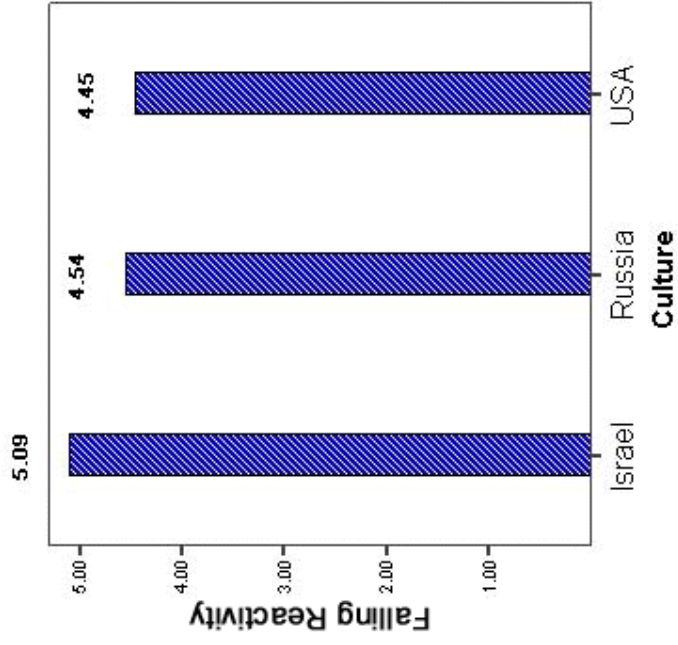
Temperament Variable	Israel	Russia	U.S.	F ^a
Activity Level				
Mean	4.40	3.85	3.94	3.100
(S.E.)	(.18)	(.17)	(.15)	
Distress to Limitations				
Mean	3.58	3.81	3.74	.545
(S.E.)	(.14)	(.18)	(.15)	
Fear				
Mean	2.72	2.65	2.76	.069
(S.E.)	(.16)	(.24)	(.26)	
Duration of Orienting				
Mean	3.79	4.13	3.96	.434
(S.E.)	(.18)	(.22)	(.35)	
Smiling and Laughter				
Mean	4.74	4.31	4.15	2.869
(S.E.)	(.19)	(.17)	(.18)	
High Intensity Pleasure				
Mean	5.51	5.41	4.80	2.639
(S.E.)	(.22)	(.22)	(.28)	
Low Intensity Pleasure				
Mean	4.60	4.96	4.00	6.418**
(S.E.)	(.20)	(.18)	(.18)	
Soothability				
Mean	4.94	4.24	4.03	6.471**
(S.E.)	(.12)	(.25)	.17)	
Falling Reactivity				
Mean	5.09	4.54	4.45	4.036*
(S.E.)	(.14)	(.23)	(.12)	
Cuddliness/Affiliation				
Mean	5.73	5.64	4.78	11.715**
(S.E.)	(.13)	(.15)	(.18)	
Perceptual Sensitivity				
Mean	3.83	2.78	3.32	5.090**
(S.E.)	(.24)	(.21)	(.25)	
Sadness				
Mean	3.81	3.61	3.35	1.719
(S.E.)	(.15)	(.19)	(.19)	
Approach				
Mean	4.53	4.23	4.42	.355
(S.E.)	(.26)	(.28)	(.23)	
Vocal Reactivity				
Mean	4.36	4.15	4.16	.352
(S.E.)	(.20)	(.20)	(.21)	

^a - F value for the contrast (df=2, 93).

^c - **p<.01; *p<.05, all two-tailed test.

Figure 1 : Follow-up comparisons of temperament





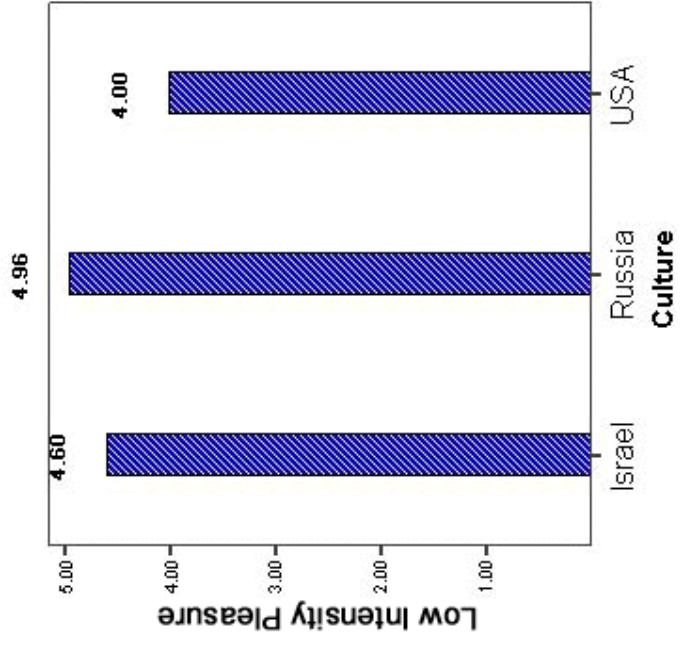


Figure 2. The effects of immigration on infant temperament

