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Comparison of Temperamental Rating Bilingually in Ukraine using Child Behavioral
Questionnaire (CBQ): Short Form

A thesis
presented to
the faculty of the Department of Psychology
East Tennessee State University

In partial fulfillment
of the requirements for the degree
Master of Science Psychology

by
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December 2013

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Keywords: Temperament, Assessment, Bilingual, CBQ

ABSTRACT

Comparison of Temperamental Rating Bilingually in Ukraine using Child Behavioral

Questionnaire (CBQ): Short Form

by

Nelly Ostrovsky

The 2 goals of the present investigation were to 1) examine the reliability of the Children's Behavior Questionnaire: Short Form (CBQ) in a sample of 4-7 year-old children from the Ukraine and 2) compare those children's temperament profiles to a) one another when the form was administered in 2 different languages and b) their American counterparts from the CBQ standardization sample. Three waves of data were collected from the parents of 167 children residing in Kiev, Ukraine. Internal reliability analyses showed good internal consistency of the instrument. Comparative analyses conducted both within and between cultures showed similarities and differences across the 15 CBQ dimensions. The observed differences were in the predicted directions: Ukrainian children were rated higher than American children on dimensions reflecting negative affectivity. However, the language of the instrument was a mitigating factor. This finding supports the possibility that parental ethnotheories are embedded in specific languages.

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CHAPTER 1

INTRODUCTION

Temperament as conceptualized by Rothbart and Derryberry (1988) can be defined as consisting of constitutionally based individual differences in reactivity and self-regulation. “Constitutionally” refers to the relatively enduring biological makeup of the organism, influenced over time by heredity, maturation, and experience. “Reactivity” refers to affective arousal, motor activity, and attentional responsiveness. “Self-regulation” refers to overarching, volitional processes serving to modulate reactivity. Rothbart, Ahadi, and Evans (2000) suggest that temperamental development, despite deriving from primarily genetic or biological origins, is influenced by both genetically predetermined and environmental factors. Thus, while the biological foundations of temperament help ensure the relative stability of some characteristics of individual differences present at birth, environmental influences further shape the individual’s development from birth onward and contribute to changes in temperament over time (Putnam, Ellis, & Rothbart, 2001; Super et al., 2008).

Although it is not an especially simple proposition to design a study to separate the relative influences of genetics and environment in the development of children’s temperament, the prospect of doing so is appealing because it may help parents and educators distinguish between dimensions of temperamental difference in children that are less amenable to intervention from the ones that are not. One possible strategy for investigating the differences between the influences of genetics vs. environment is to consider temperament from a cross-cultural perspective. Studying temperament in a variety of cultures presents an especially unique opportunity to examine the influence of culture on the shaping of an individual’s personality (Ahadi, Rothbart, & Ye, 1993).

To date most research on temperament has been conducted in Western industrialized cultures. However, additional efforts to study how temperament manifests in non-Western cultures have been increasing over the past decade (Gartstein & Rothbart, 2002; McCrae et al., 2000; Super et al., 2008). Specifically, researchers have begun to examine temperament in countries previously not accessible to western scientists, including China (Chen et al., 1998) and the former Soviet Union (Gartstein et al., 2001). Yet, cross-cultural research on the development of children's temperament has not been widespread (Gartstein et al., 2003).

Existing cross-cultural temperament research has revealed similarities as well as variability in temperament among children from different cultures (Ahadi et al., 1993; Rothbart et al., 2000; Super et al., 2008). Super et al. (2008), working within the Thomas and Chess (1977) model of children's temperament and using McDevitt and Carey's Behavioral Style Questionnaire (1978), compared parental reports on child temperament (ages 3-7) in seven western cultures. They found cultural differences for three of the nine Thomas and Chess temperament dimensions: *Rhythmicity*, *Distractibility*, and *Threshold*. The strongest difference was found for *Rhythmicity*. Dutch and Australian parents rated their children to be more regular than did the parents of Spanish, Swedish, Italian, Polish, and American children. In another study Ahadi and colleagues (1993) reported relatively heightened *Negative Affectivity* in 6- to 7-year old Chinese children as compared to an American comparison sample.

Super et al. (2008) noted that observed cross-cultural differences in temperament may have several origins. For example, the differences could be due to children's genetic predispositions. In this way temperamental inhibition, a trait highly valued in many Asian cultures, may be a part of the genetic makeup of Asian people. However, Super and colleagues

suggest that parental ethnotheories may also play a significant role in shaping the expression of children's temperament.

Harkness and Super (2012) define parental ethnotheories as “cultural models that parents hold regarding children, families, and themselves as parents” (p. 3). These models contain an implicit set of ideals about parenting practices and are shared and shaped by the larger cultural group or society. Ethnotheories contribute to parents' understanding of effective parenting, their perceptions of their children's personalities, and their own self-perceptions. To the extent that ethnotheories shape parenting practices, and to the extent that parenting practices shape the expression of children's temperament, parental ethnotheories may shape the expression of children's temperament. Importantly, parental ethnotheories may also color parental perceptions of children's temperamental dispositions.

Harkness and Super (2012) provide an example of the impact of ethnotheories on cross-cultural parenting practices in their description of the differences between American and Dutch approaches to establishing infant sleep schedules. They note that whereas Dutch parents emphasize the importance of strict adherence to a regular schedule for their infants, American parents are more inclined to cater to the wake and sleep pattern of their infants. From an ethnotheoretical perspective Dutch parents believe in the importance of a rigid schedule and its healthy promotion of a child's growth, mood, comfort, security, and adjustment. Conversely, American parents emphasize sensitive and attentive interaction with the infant and believe that this approach is more important for development of a child's individuality. Consistent with the hypothesis that parental ethnotheories may impact children's temperament, Super and colleagues (2008) found that Dutch parents rated their children as significantly more regular than did parents in six other Western cultures including the US. The parental rating was supported by

observable statistically significant differences in general state of arousal between 6-month-old Dutch and American babies. Dutch babies were observed to be in the state of “quiet alert” contrasting with the state of “active alert” shown by American children (Harkness & Super, 2012). The authors of the study suggested that differences observed in babies are rooted in parenting practices that are related to cultural norms and expectations. Of course, the possibility of genetic differences could not be fully ruled out.

To be sure, there is considerable merit in the possibility that parental ethnotheories may contribute to cross-cultural differences in parenting practices. Likewise, it stands to reason that parental perception of children’s behaviors may also be influenced by their ethnotheories. To this end, parental descriptions of children’s temperament may differ cross-culturally not only because of real cross-cultural differences in children’s temperament but because of the differential influences parental ethnotheories have cross-culturally. This dual influence of parental ethnotheories is consistent with Gartstein et al.’s (2001) suggestion that Russian parents’ relatively high ratings of infant negative affectivity could be due to the social and political instabilities that have permeated all spheres of life in Russia over the past 2 decades. These instabilities may impact the context against which Russian parents rate their children, in addition to impacting children’s expression of negative affectivity directly.

One way to explore the impact of parental ethnotheories on children’s temperament may be to investigate children’s temperament within cultures containing a variety of cultural, social, and political values. As described in more detail below, research in cultures containing elements of *both* interdependency (i.e., traditionally Eastern values) and independency (i.e., traditionally Western values), especially bilingual cultures, may provide a better means for discerning the influence of parental ethnotheories on children’s temperament (Gartstein et al., 2001). Examples

of cultures manifesting both value systems can be found in Eastern Europe, especially in Russia and Ukraine. Both Russia and Ukraine have undergone considerable geopolitical changes in recent history, and parents in both countries can be expected to manifest ethnotheories representing both Eastern and Western geopolitical value systems.

Historic Overview of Ukraine

A brief historical overview is helpful in providing an understanding of the geographical, political, and cultural factors of this region that may have contributed to the two-value systems and hence impacted parental ethnotheories. Russia and Ukraine were part of the USSR from 1917 to 1991 and share close ties, including related languages and similar customs, norms, and values (Belaniuk, 2003). Both cultures are part of the Eastern Slavic group. Geographically, Ukraine, like Russia, is located at the crossroads between cultural influences from the East, with an emphasis on collectivistic and interdependent values, and the West, with individualistic and independent ideals (Gartstein, 2002). Unlike Russia, however, many of the western regions of Ukraine, namely those that border Poland, have historically been more heavily influenced by Western cultural values than the rest of the country (Bilaniuk, 2003). Moreover, many cultural differences between Russia and Ukraine (including those reflecting language, customs, and political views) were heavily suppressed from the mid-19th through the end of the 20th centuries. This suppression began with a tsarist Russian regime that officially banned the use of the Ukrainian language and continued under the Soviets, who used more subtle political tactics to emphasize the uniformity of all cultures and nations under the umbrella of internationalism (Bilaniuk, 2003).

Because of their geographical location and historical and political ties, it is reasonable to expect that Ukraine and Russia share many similarities, which include cultural norms and values.

Yet, since the break-up of the USSR, there is also reason to expect a greater impact of western industrialized influences on Ukraine relative to Russia. Politically and culturally Ukraine has also been influenced by an internal struggle for national identity and by alliances with the West in its conflicts with Russia. In terms of their effect on children's temperament, these varying cultural and political influences can be expected to impact strongly on Ukrainian parental ethnotheories.

During Soviet times parental ethnotheories included an emphasis on the values of a totalitarian society including "conformity, loyalty, group-mindedness, and acceptance of authority" (Gartstein, 2001, p.7). Even though after the end of the Cold War there was more emphasis on individualistic Western influences, the traditional collectivistic approaches and practices remained in place (Gartstein, 2001). A similar to Russia amalgamation of cultural norms and practices could be expected in Ukraine. As transitional, political, and economic events have unfolded over the past 2 decades in all former Soviet Union countries, an atmosphere of uncertainty has resulted, which has contributed to an elevated level of anxiety in the family unit (Gartstein, 2001). Thus, in Ukraine one can expect a mixture of childrearing practices reflecting the stable, traditional, interdependent society emphasizing overcontrol and conformity with those reflecting the new modernized social standards emphasizing undercontrol and autonomy. The gradual shift of the former to the latter is likely to have impacted parent-child interactions. In their socialization practices modern Ukrainian parents might embrace values that are less consistent with traditional interdependent social practices by emphasizing independent child oriented approaches (Gartstein et al., 2001).

Rational for Investigation of Temperament in Ukrainian Culture

In sum, there is ample reason to investigate children's temperament in Eastern European cultures, especially Ukraine, where research on children's temperament has been somewhat scarce. Such a cross-cultural comparison could provide a starting point for researchers interested in teasing apart cultural impacts on temperament from those deriving from other sources. Unfortunately, to date our cross-cultural understanding of Eastern European temperament development has been limited to data collected from Russian infants. For example, using the Infant Behavioral Questionnaire-Revised, Russian language (IBQ-R; Gartstein & Rothbart, 2002), a parent-report measure of temperament, Gartstein and colleagues (2001) found statistically significant differences on six dimensions of temperament between Russian and American infants. In general Russian mothers reported that babies expressed greater levels of negative affect than did American mothers. In accounting for this finding, Gartstein and colleagues underscored the role of cultural customs for Russian parents who had a long-standing history of expectancies of negative affectivity. In parent-report research such as Gartstein et al.'s (2001) it is not possible to distinguish children's actual temperamental profiles from those viewed from the perspective of their parents' ethnotheories.

Further investigation into temperament differences, specifically within other Eastern European cultures that share a history and ideological values with Russia, may provide a better understanding of the role of ethnotheories as they relate to both the measurement and development of temperament in children. Of special utility would be to examine the development of temperament within a culture that combines a variety of influences and, perhaps most importantly, where the population is bilingual.

The contributions of language to parental ethnotheories, even within a single region or culture, may be foundational in helping clarify the role of parental ethnotheories in parents' ratings of children's temperament. This is because the way individuals process and organize information is influenced not only by norms and values endorsed by a specific culture but also by the language in which the information is processed (Javier, 2010). I suggest that parental ethnotheories are not immune to these cultural and linguistic influences. Although existing research on Russian children's temperament was conducted in an environment where the majority of the population was monolingual, an exploration of settings in which the population is bilingual, especially where the two languages carry differential cultural values, might be especially valuable in separating out the impact of the culture on parental ratings of children's temperament. To further explore the earlier observed variability in temperament between cultures, the study focused on the temperament characteristics of Ukrainian children.

To the best of my knowledge, very little research on child temperament has been conducted in Ukraine. As already noted, the political, economic, and cultural changes that have occurred over the past 2 decades in Ukraine have likely influenced parenting practices. As Gartstein and colleagues discovered in their investigation in Russia (2001), it is reasonable to expect a reduction in collectivistic tendencies in all former Soviet Bloc countries, with a strong emphasis on overcontrol giving way to more lax parenting approaches as Western influences are increasingly becoming predominant. But unlike in Russia, Ukrainian culture may provide a unique opportunity to explore parental ethnotheory as it relates to children's temperament, not simply because Ukrainian culture intermingles interdependent and independent values but primarily because these values are reflected, respectively, in its two dominant languages: Russian

and Ukrainian, as outline below. As been suggested by Javier (2010) bilingual individuals perceive and organize the information dissimilarly for different languages.

In addition to political and social changes affecting both Russia and Ukraine in the past 2 decades, Ukraine has been struggling for cultural identity, manifesting itself in many spheres, including the usage of Ukrainian language. Language, as noted by Javier (2010), is often connected to national pride and to political and economic success. From the early 19th century, Ukrainian culture – including its native language– was suppressed and prosecuted; Russification of Ukraine was a strategy employed by the Russian Empire. Tied to the politics of central government, during the 70 years of the Soviet era, Ukrainian culture and language experienced interchangeable, waves of encouragement, tolerance, and suppression. Overall though, Ukrainian language was marginalized and fluency in it was not helpful in securing professional, political, or economic advancement. Knowledge of Russian language, in contrast, was compulsory and provided the foundation for success (Bilaniuk, 2010). Such a political atmosphere contributed to an emphasis on Russian language in all Ukrainian social interactions, including those between the parent and the child. Despite the unfriendly political climate towards the Ukrainian language, by the late 1980s a majority of the population in Ukraine remained bilingual.

At present, with a growth in national identity underway, the status of the Ukrainian language and its usage has increased. Command of the Ukrainian language has become a necessity for advancement since it became an official language of the country in 1991 (U.S. English Foundation Research, n.d.). For the generation postdating the collapse of the Soviet Union, the Ukrainian language has become strongly associated with national pride and identity. Nevertheless, the population remains bilingual due to past and present political, economic, and

cultural ties with Russia. To the extent that the Russian and Ukrainian languages have a mitigating effect on the perception and formulation of social schemas (Javier, 2010), it is reasonable to expect that ethnotheories related to child rearing practices will be influenced by language of expression as well. As Ukrainian language has gained in popularity and become identified with national pride, social schemas processed in this language might carry more of the value system represented in traditional Western, independent cultures than those of the collectivistic and domineering Russian language.

Goals and Hypothesis

The primary goal of the present investigation was to test the hypothesis that Ukrainian parents' ratings of children's temperament differ depending on the language in which they completed the temperament evaluation. To test this hypothesis, the Children's Behavior Questionnaire (CBQ; Rothbart & Derryberry, 1981, 1988) was employed. Most of Rothbart's parent-report instruments have been translated into a number of languages and validated in a variety of cultures. The Children's Behavior Questionnaire (CBQ) alone, for example, has been translated into 16 languages (see <http://www.bowdoin.edu/~sputnam/rothbart-temperament-questionnaires/instrument-descriptions/childrens-behavior-questionnaire.html>). Translated versions of the CBQ have been employed in western countries such as France, Germany, and Spain, as well as in countries with traditional eastern cultural beliefs systems, such as China, Japan, and Taiwan. Surprisingly, prior to this investigation the CBQ had not been tested in any of the former Soviet bloc republics, including Russia or Ukraine; therefore, little is known about its psychometric characteristics in these settings.

Consequently, a secondary goal of the present investigation was to begin validation of the CBQ in Ukraine by assessing reliability of the instrument. However, because the primary goal of

this investigation is to compare temperament ratings bilingually within a single region and culture, investigation of the secondary goal took place in both the Russian and Ukrainian languages. Accordingly, it is expected that results from the present investigation will add to the empirical literature exploring the CBQ's applicability to other languages.

A third goal of the present investigation was to compare the temperament ratings of Ukrainian children to those found in the standardization sample of American children (as reported in Putnam et al., 1998). With regard to this third goal, there were expected differences between the American standardized sample and the Ukrainian samples. The anticipated differences were generally in the direction of negative affect for all of the Ukrainian samples as compared to the American standardized sample, particularly when assessed with the Russian language CBQ. It was expected that these differences may be attenuated by the language of measurement. Specifically, it was expected that Ukrainian children measured using the Russian version of the CBQ would show significantly more negative affectivity relative to American children than will Ukrainian children measured using the Ukrainian version of the CBQ. This hypothesis stems from the expectation that the Russian language would carry greater negative emotionality for a Ukrainian population that is used to associating political and cultural suppression with that language.

In sum, the following three hypotheses are the focus of the present study.

Hypothesis 1: As found in past research conducted in Western/Eastern Europe and Asia, it is expected that the CBQ would have similar internal consistency in Russian and Ukrainian languages despite the translation and its employment with a sample of Ukrainian parents and children. The instrument is expected to demonstrate close in range to American standardization sample internal consistency for all 15 scales.

Hypothesis 2: It is expected that there will be differences in Ukrainian parents' ratings of children's temperament depending on the language of the instrument. The expected differences are in the direction of higher negative affectivity for the Russian version of the instrument. Successful testing of this hypothesis will depend on the successful internal consistency of the CBQ in the two languages, which is the core of Hypothesis 1.

Hypothesis 3: It is expected that the temperament of Ukrainian children measured with the CBQ will differ from that of American children less when using the Ukrainian translation than when using the Russian translation. In general, however, both Russian and Ukrainian samples are expected to differ from the American standardization sample in the direction of higher negative affectivity among Ukrainian children generally.

These three hypotheses were tested using CBQ temperament data collected across three visits to Kiev, Ukraine. These three data collection visits are described herein as Wave 1, Wave 2, and Wave 3, which will be employed in Study 1, Study 2, Study 3 and combined waves in Study 4 respectively. In preparation for Wave 1, the CBQ: Short Form was translated into Russian, and arrangements with the director of one of the preschools in Kiev were made prior to the trip. Parents of preschool children were invited by the director of the preschool to complete the Russian translation of the CBQ. The data were collected during the time when parents were picking up their children, in the late afternoon from 5:00 to 6:00 pm. The participants were introduced to the study and, after signing a Russian-translated consent form, completed the CBQ: Short Form at the school. Wave 1 data were used in testing Hypotheses 1 and 3.

In preparation for Wave 2, the CBQ: Short Form was translated into Ukrainian. Similar to Wave 1, Wave 2 data were collected during an afternoon pickup time at one of the preschools of the city. For this wave a different group of parents from a different preschool were asked to

participate. Parents were introduced to the study and after signing the consent form completed the CBQ. Wave 2 data were also used for testing Hypotheses 1 and 3.

Wave 3 data collection consisted of administering both translated versions of the instrument. Unlike in Waves 1 and 2, in Wave 3 a randomly selected group of parents were asked to complete the CBQ instrument in both Russian and Ukrainian. The order of administration was randomized. This wave of the data, though described last, is actually most central for testing Hypothesis 2, the primary goal of this investigation.

Measure

The Child Behavioral Questionnaire: Short Form (CBQ: Short Form; Putnam & Rothbart, 2006). A caregiver report instrument for measuring temperament in children age 3 to 7 years old was used for these studies. The CBQ: Short Form is based on the definition of temperament proposed by Rothbart and Derryberry (1981) and was derived from the standard form of CBQ. The development of the standard form of the CBQ was based on the rational, theory driven approach in which central constructs of temperament such as emotional reactivity, arousability, and self-regulation were decomposed into subscales followed by generation of items reflecting the scales (Rothbart et al., 2001). The CBQ dimensions - totaling 15, each comprised of 12 to 14 questions. For the scales and samples of the questions comprising the scales, see Table 1.

Table 1.

Summary Descriptions of the 15 CBQ Scales

#	Dimension	Description	Sample Question
1	Activity Level	Level of gross motor activity including rate and extent of locomotion.	# 85: <i>Is full of energy, even in the evening</i>
2	Anger/Frustration	Amount of negative affect related to interruption of ongoing tasks or goal blocking	# 14: <i>Has temper tantrum when s/he doesn't get what s/he wants</i>

Table 1. (continued)

3	Approach	Amount of excitement and positive anticipation for expected pleasurable activities	# 46: <i>Becomes very excited while planning for trips</i>
4	Attentional Focusing	Tendency to maintain attentional focus upon task-related channels	# 71: <i>When drawing or coloring in a book, shows strong concentration</i>
5	Discomfort	Amount of negative affect related to sensory qualities of stimulation, including intensity, rate or complexity of light, movement, sound, and texture	# 9: <i>Becomes quite uncomfortable when cold and/or wet</i>
6	Falling Reactivity & Soothability	Rate of recovery from peak distress, excitement, or general arousal	# 66: <i>Is easy to soothe when s/he is upset</i>
7	Fear	Amount of negative affect, including unease, worry or nervousness related to anticipated pain or distress and/or potentially threatening situations	# 23: <i>Is afraid of loud noises</i>
8	High Intensity Pleasure	Amount of pleasure or enjoyment related to situations involving high stimulus intensity, rate, complexity, novelty, and incongruity	# 78 (coded in reverse): <i>Dislikes rough and rowdy games</i>
9	Impulsivity	Speed of response initiation	# 28: <i>Often rushes into new situations</i>
10	Inhibitory Control	The capacity to plan and to suppress inappropriate approach responses under instructions or in novel or uncertain situations	# 67: <i>Is good at following instructions</i>
11	Low Intensity Pleasure	Amount of pleasure or enjoyment related to situations involving low stimulus intensity, rate, complexity, novelty, and incongruity	# 26: <i>Enjoys taking warm baths</i>
12	Perceptual Sensitivity	Amount of detection of slight, low intensity stimuli from the external environment	# 24: <i>Seems to listen to even quiet noises</i>
13	Sadness	Amount of negative affect and lowered mood and energy related to exposure to suffering, disappointment, and object loss	# 8: <i>Cries sadly when a favorite toy gets lost or broken</i>
14	Shyness	Slow or inhibited approach in situations involving novelty or uncertainty	# 52: <i>Acts shy around new people</i>
15	Smiling & Laughter	Amount of positive affect in response to changes in stimulus intensity, rate, complexity, and incongruity	# 77: <i>Smiles a lot at people s/he likes</i>

The scales' scores are created by averaging the applicable item scores. Adequate internal consistencies of the CBQ dimensions have been reported, with coefficient α s ranging from .64 to

.94 (Ahadi et al., 1993; Rothbart et al., 2001), and a mean internal consistency of .77 across all 15 scales. Three overarching superdimensions or factors were derived from the 15 scales: Negative Affectivity, Extraversion/Surgency, and Effortful Control (Rothbart et al., 2001). These are derived by factor analysis procedure based on the matrix of intercorrelations among the CBQ scales (Rothbart et al., 2001).

Although the standard form of the CBQ consists of 195 items collapsible into 15 dimensions, the CBQ: Short Form consists of 94 items that correspond to the same 15 scales (Putnam & Rothbart, 2006). However, the short form contains 1 eight-item, 2 seven-item, and 12 six-item dimensions (Putnam & Rothbart, 2006). Putnam and Rothbart (2006) reported that internal consistencies of the CBQ: Short Form scales were over .70 for 11 out of 15 scales, with only one scale, Sadness, reporting below .65.

For each item, in both the original and the short form of the CBQ, response choices ranged from 1- (extremely untrue of your child) to 7- (extremely true of your child). For items describing the behavior in which the caregivers have not seen in a child, parents could choose *Not Applicable*. Both the original and short form versions of the CBQ have been extensively tested and found to be reliable instruments in assessing children's temperament (Putnam et al., 2004).

Translation

For the purpose of these studies, translation of the CBQ: Short Form instrument into the Russian and Ukrainian languages was undertaken by the author. To address the issue of accuracy of the translation (Rothbart et al., 2001) the instrument was then back-translated. The back-translation was performed by a neutral community partner fluent in both Russian/Ukrainian and English. The items deemed to inaccurately represent the original items were reconciled by both

translators. An example of a reconciled translation involved the usage of English verb “to like.” This word can be translated into Russian equally as ‘like’ (nравитсја) or as ‘love’ (любит). In the reconciliation process the agreement between translators was made to more accurately represent the original meaning of the word as it is used in the instrument. Therefore for the final copy of the translated instrument, for those sentences where word “like” was used in the original version, the Russian word “nравитсја” was chosen, whereas the word “любит” was used for those sentences where the word “love” was employed in the original English version. Similar procedures were employed in translation of Ukrainian version of the instrument. This type of fine-tuning of the instruments was conducted to preserve the original wording of the instrument as much as possible.

CHAPTER 2

STUDIES

Study 1

The testing of reliability of the CBQ: Short Form – Russian Version in a Ukrainian sample was the goal of Study 1. Specific results were relevant to Hypothesis 1. To achieve this specific goal, data from Wave 1 were used. As noted, to the best of my knowledge, the CBQ: Short Form had not previously been translated into Russian and had not previously been tested in Ukraine. Nevertheless, based on previously conducted research, I expected the translated instrument to hold up well in terms of its psychometric properties.

Method

Participants: Wave 1 participants were comprised of 62 parents of preschool children residing in Kiev, Ukraine, who agreed to participate in the cross-cultural study and represented a convenience sample of caregivers. Children who ranged in age from 4 to 6 years old ($M = 5.38$, $SD = .85$) were rated by their parent in the Wave 1 data collection. Most of the respondents were mothers and all were fluent in Russian. No additional demographic data on caregivers were collected.

Materials: The Children's Behavior Questionnaire: Short Form (Putnam & Rothbart, 2006), Russian Version, was used for this study to measure children's temperament.

Procedure: The data from Wave 1 were used for this study. The data for this wave were collected in Kiev, Ukraine in 2004 by the author at one of the city's preschools. Prior arrangements with the director of the preschool were made and permission to do the research was obtained. The parents of preschool children were contacted during an afternoon pick-up time. Parents were asked to participate in the study and after signing the consent form completed

the questionnaire. The completion of the instrument took place at the preschool while children continued to play with their classmates. For most parents the completion of an instrument took about 25 minutes. As with the English version, the CBQ: Short Form – Russian Version consisted of 94 questions.

Analyses: To test the reliability of the CBQ: Short Form - Russian Version, an internal consistency analysis was performed using the SPSS program. Cronbach's alphas were calculated to assess internal consistency of all 15 dimensions. The results were compared to the American standardization sample. Additionally means of the dimensions of this sample were compared to the American standardization sample means using *t*-test analyses.

Study 2

The goal of Study 2 was to test the reliability of the CBQ: Short Form – Ukrainian Version. Data from Wave 2 were used for this study. The results of this study also test Hypothesis 1.

Method

The process of collecting the data for Wave 2 was similar to that for Wave 1, with only one notable difference – the language of the instrument. The Ukrainian language version of the CBQ: Short Form was used for this study. The data were collected by an affiliate of the author during the second trip to Kiev Ukraine in 2005.

Participants: The Wave 2 participants consisted of 61 parents of preschool children residing in Kiev, Ukraine who agreed to take part in the study. Their children ranged in age from 4 to 6 years ($M = 4.96$, $SD = .69$). No additional demographic data on children or their families were collected.

Materials: The CBQ: Short Form – Ukrainian Version was used for this study.

Procedure: The process of gathering data for Wave 2 entailed similar procedures as in Wave 1. Specifically, parents of preschool children were contacted during the pick-up time and asked to participate in the research. After signing the consent form parents completed the CBQ: Short Form – Ukrainian Version. All of the parents completed the instrument at the preschool, while the children continue to be engaged with their classmates. The location of the preschool for this Wave was different from the one used in Wave 1. Although the preschool used for Wave 1 was located in an affluent part of town, the Wave 2 was located in a working class neighborhood. Because no socioeconomic status data were collected, it is not possible to say whether the two samples differed in the category of disposable income, however. As in Wave 1, prior arrangements and permission to do the research was obtained from the director of the preschool.

Analyses: Internal reliability and other analyses for this study were similar to those performed for Study 1. The internal consistencies of the scales of CBQ: Short Form – Ukrainian Version was examined and comparison to α s from American standardization sample was performed. As well, the means of the dimensions of the instrument in the Ukrainian language were compared to the means of American standardization sample.

Study 3

The goal of Study 3 was to test Hypothesis 2, which was to determine whether temperament ratings of children would differ as a function of the language of assessment. Data from all three waves of data collection were used in evaluating Hypothesis 2. To get a large sample comparison, data from the Russian language translations of the CBQ from Waves 1 and 3 were combined, as were the data from the Ukrainian language translations of the CBQ from Waves 2 and 3. But although combining data in this way allowed for a direct comparison of Ukrainian children's temperament when rated in the Russian language vis-à-vis the Ukrainian

language, language of testing is also confounded with areas of the city in which the samples were drawn. So it would not be possible to attribute any differences to the language tested in per se because the differences could also be artifacts of the samples. Hence, in Study 3 an additional small sample comparison was also conducted using Wave 3 data only, and only for children whose parents completed the CBQ Short Form in both translations.

Method

Details of Wave 1 and 2 data collection are described above. Wave 3 data were collected similarly. Collection took place during the third trip of an affiliate of the author to Kiev, Ukraine (in 2007). Collaborative arrangements in Kiev were made and the data were collected from the same preschool as in Wave 2. Parents completed the questionnaire at the preschool and took about 25 minutes.

Participants: The total numbers of participants for Wave 3 included 72 parents of 5- to 6-year-old children ($M = 5.86$, $SD = .79$). For purposes of statistical analyses, the sample was conceptualized as comprising three groups. Group 1 consisted of those 22 parents who completed the instrument in the Russian language only. Group 2 included those 22 parents who completed the instrument in the Ukrainian language only. Group 3 consisted of those 28 parents who completed the questionnaire in both the Russian and Ukrainian languages. For parents in Group 3, order of administration was counterbalanced.

Procedure: The procedure for collecting data in Wave 3 was similar to the two previous waves. Parents of preschool children were contacted during the pick-up time and asked to participate in the study. After signing the consent form, 44 parents completed the instrument in one of the two languages, while an additional 28 parents completed the instrument in both languages about the same child. All the instruments were completed at preschool during the

afternoon pickup time. For those parents who completed the instrument in both languages the time for completion was about 45 minutes.

Analyses: The large sample (combined Russian language from Waves 1 and 3 and Ukrainian language versions from Waves 2 and 3) was analyzed using between subject *t*-test comparisons of all 15 scales. For the small sample (N=28) comparison, (instruments completed in both languages by one parent) dependent *t*-test comparisons were used

Study 4

The goal of Study 4 was to test Hypothesis 3, which was to assess whether the temperament profiles of Ukrainian children differed from those of their American counterparts (as derived from the American standardization sample reported in Putnam et al., 1998). To accomplish this goal the Ukrainian temperament data were aggregated across all three waves. Separate comparisons between the combined Russian language sample and the combined Ukrainian language sample were made with the American standardization sample. Based on the available research (Gartstein, 2001), significant differences were expected for both the Russian- and Ukrainian-language samples as compared with the American standardization sample, especially among those temperamental attributes that are associated with negative emotionality. Specifically, it was expected that for both the Russian and Ukrainian language samples the temperamental characteristics associated with negative emotionality (Anger/Frustration, Discomfort, Fear, Impulsivity, and Sadness) would have higher mean scores as compared to the American standardization sample. This difference was expected to be smaller for children who were rated using the Ukrainian language version of the CBQ.

Analyses: Temperament differences between Ukrainian and American children were tested via independent *t*-tests, comparing dimensions by language of the instrument.

CHAPTER 3

RESULTS

Study 1

Means, standard deviations, and Cronbach's alphas of the CBQ: Short Form-Russian

Version are shown in Table 2.

Table 2.

*Means, Standard Deviations, Cronbach's Alphas, t-test Scores, and Probabilities of
CBQ: Short Form (Russian Language)*

<u>Scale</u>	<u>M</u>	<u>SD</u>	<u>α</u>	<u>M Amer.</u>	<u>t</u>	<u>p</u>
Activity Level	5.01	1.42	0.84*	4.86	0.81	0.42
Anger/Frustration	4.74	1.17	0.76*	4.22	3.74	0.01**
Approach/Positive Anticipation	5.26	0.92	0.52 (.64)	5.01	2.13	0.03**
Attentional Focus	4.39	1.10	0.68	5.14	-5.34	0.00**
Discomfort	3.96	1.30	0.74*	4.09	-0.84	0.41
Falling Reactivity	4.67	0.95	0.64 (.70)	4.91	-2.07	0.04
Fear	3.77	1.31	0.78*	4.03	-1.60	0.12
Hi-Intensity Pleasure	4.90	1.27	0.81*	4.94	-0.30	0.76
Impulsivity	4.65	1.06	0.70*	4.31	2.54	0.01**
Inhibitory Control	4.67	1.09	0.77*	4.89	-1.60	0.11
Low-Intensity Pleasure	5.81	0.80	0.65 (.79)	6.15	-3.28	0.00**
Perceptual Sensitivity	5.57	1.01	0.76*	5.58	-0.04	0.97
Sadness	4.42	0.79	0.38	4.26	1.69	0.09
Shyness	3.80	1.40	0.79*	3.68	0.71	0.47
Smiling/Laughter	5.60	1.06	0.80*	5.88	-2.03	0.04

*Indicates "High Internal Consistency." "High" defined as $\alpha \geq .70$; "Moderate" defined as $\alpha = .50 - .69$; "Low" defined as $\alpha \leq .49$.

** Statistically Significant Differences (p level <.05)

The instrument maintained good internal consistencies for most of the scales despite the translation. Specifically, 10 out of 15 subscales showed a high level of internal consistency,

when defined as a minimal α of .70 (Fields, 2005), and many α 's equaled or exceeded the α 's of the American standardization sample (Putnam & Rothbart, 2006). Five dimensions failed to demonstrate internal consistency of at least .70: Approach/Positive Anticipation, Attentional Focus, Falling Reactivity, Low Intensity Pleasure, and Sadness (see Table 2). Following the procedure described in Fields (2005), items from these five dimensions having poor inter-item correlations were dropped, which resulted in increased α 's for these scales. For example, by dropping Items 15 and 46 from the Approach/Positive Anticipation scale, α increased from .52 to .64. The same procedure improved the α 's in the Falling Reactivity (from .64 to .70) and Low-Intensity Pleasure (from .65 to .79) dimensions. For the scale Sadness, no amount of modification produced at least moderate internal consistency. However, this scale was also reported to have relatively low internal consistency in the American standardization sample (Putnam et al, 2006). In sum, 14 of the 15 scales on the Russian translation achieved at least moderate internal consistency.

To examine the cultural differences between the Ukrainian children whose parents completed the Russian language version of the CBQ: Short Form and the American standardization sample, independent sample *t*-tests were performed for each of the 15 dimensions using the modified version of the dimensions. Results of these comparisons can be seen in Table 2. The following seven subscales showed statistically significant differences between the Ukrainian (CBQ: Short Form – Russian Version) and American standardization samples: Anger/Frustration, Approach/Positive Anticipation, and Impulsivity showed higher means, while Attentional Focus, Falling Reactivity, Low-Intensity Pleasure, and Smiling/Laughter showed lower means.

Study 2

For Study 2, data from the Wave 2, CBQ: Short Form - Ukrainian Version were utilized.

Examination of Cronbach's α s for this sample indicated high internal consistencies (α 's => .70) for only 5 out of 15 subscales (Table 3).

Table 3.

Means, Standard Deviations, Cronbach's Alphas, t-test Scores, and Probabilities of CBQ: Short Form (Ukrainian Language)

<u>Scale</u>	<u>M</u>	<u>SD</u>	<u>α</u>	<u>M Amer.</u>	<u>t</u>	<u>p</u>
Activity Level	5.10	1.20	0.77*	4.86	1.59	0.16
Anger/Frustration	4.38	1.30	0.78*	4.22	0.92	0.36
Approach/Positive Anticipation	5.36	0.70	0.40 (.52)	5.01	3.87	0.00**
Attentional Focus	4.70	1.18	0.77*	5.14	-2.86	0.00**
Discomfort	4.26	1.37	0.61 (.80)*	4.09	-0.19	0.85
Falling Reactivity	4.50	0.88	0.45	4.91	-3.62	0.00**
Fear	3.34	1.40	0.57 (.65)	4.03	-4.59	0.00**
High-Intensity Pleasure	4.83	0.93	0.38 (.58)	4.94	-0.89	0.37
Impulsivity	4.87	0.89	0.55	4.31	4.97	0.00**
Inhibitory Control	4.82	1.07	0.66	4.89	-0.50	0.62
Low-Intensity Pleasure	5.79	0.87	0.72*	6.15	-3.19	0.00**
Perceptual Sensitivity	5.57	0.77	0.27 (.48)	5.58	-0.54	0.58
Sadness	4.26	1.07	0.59	4.26	0.02	0.98
Shyness	3.70	1.46	0.76*	3.68	0.09	0.92
Smiling/Laughter	5.81	0.88	0.56	5.88	-0.65	0.51

*Indicates "High Internal Consistency." "High" defined as α => .70; "Moderate" defined as α = .50 - .69; "Low" defined as α <= .49.

** Statistically Significant Differences (p level <.05)

The remainder of the scales showed only low (α 's <= .49) to moderate (α 's = .50 - .69) internal consistency, with α 's ranging from .27 (Perceptual Sensitivity scale) to .66 (Inhibitory Control scale). Following the same procedures as in Study 1, scales with low or moderate α 's

were adjusted by dropping items with low inter-item correlations. For instance, for the dimension Perceptual Sensitivity three items were dropped (Items 24, 47, & 83), which resulted in an increased α of .52. Similarly, removing poorly correlated items (Items 63 & 69) from the High Intensity Pleasure dimension improved that α from .38 to .58. This approach allowed meaningful increases in internal consistencies for five of the least internally consistent dimensions, although the improved α 's were still generally much lower than in the Russian language version. Most notably, internal consistency for the Discomfort dimension was increased from .61 to .80 by dropping just one item – Item 3. After following this procedure, 13 of the 15 subscales on the Ukrainian translated CBQ achieved at least moderate internal consistency. As with Study 1, all of the following inferential statistics were based on the modified scores.

Comparison of the Ukrainian children to the American standardization sample using the Ukrainian language version of the CBQ – Short Form showed significant differences on six dimensions (Table 3); specifically, Approach/Positive Anticipation, Attentional Focus, Falling Reactivity, Fear, Impulsivity, and Low-Intensity Pleasure. Overall the Ukrainian language sample had one less (six) statistically significant difference than Russian language sample (seven). For both Russian and Ukrainian languages the observed differences for five dimensions were the same (Approach/Positive Anticipation, Attentional Focus, Falling Reactivity, Impulsivity, Low-Intensity Pleasure). Where the two samples differed were the dimensions of Anger/Frustration, Fear, and Smiling/Laughter. For the Ukrainian sample the dimension Fear was significantly lower than the American standardization sample. Whereas for the Russian sample the dimensions Anger/Frustration higher, and Smiling/Laughter was lower than the American standardization sample.

Study 3

To test the effect of language on the temperament ratings of Ukrainian children (Hypothesis 2), samples were aggregated by combining all the Russian language questionnaires from Waves 1 and 3, and all the Ukrainian language questionnaires from Waves 2 and 3. The combined samples were then compared to one another using independent samples *t*-tests to compare the children rated on the Russian language instrument (N = 84) to those rated on the Ukrainian language instrument (N = 83). The results can be seen in Table 4 (Means, Standard Deviations, Cronbach's Alphas) and Table 5 (independent *t*-test).

Table 4.

Means, Standard Deviations, Cronbach's Alphas, CBQ: Short Form (Russian and Ukrainian Languages, Wave 3 data)

<u>Scale</u>	<u>M Rus.</u>	<u>SD Rus.</u>	<u>α Rus.</u>	<u>M Ukr.</u>	<u>SD Ukr.</u>	<u>α Ukr.</u>
Activity Level	4.46	1.32	0.80*	4.45	1.39	0.84*
Anger/Frustration	4.10	1.35	0.82*	4.00	1.29	0.76*
Approach/Positive Anticipation	4.83	0.85	0.63	4.90	0.87	0.56
Attentional Focus	4.53	1.23	0.77*	4.60	1.28	0.79*
Discomfort	3.85	1.30	0.77*	4.10	1.36	0.80*
Falling Reactivity	4.50	0.94	0.53	4.39	0.90	0.43
Fear	3.38	1.19	0.68	3.36	1.33	0.74*
Hi-Intensity Pleasure	4.66	1.20	0.80*	4.75	1.16	0.71*
Impulsivity	4.43	1.36	0.83*	4.27	1.25	0.71*
Inhibitory Control	4.96	1.18	0.75*	4.96	1.27	0.79*
Low-Intensity Pleasure	5.02	1.29	0.87*	5.07	1.23	0.82*
Perceptual Sensitivity	5.12	1.60	0.80*	5.21	1.17	0.80*
Sadness	4.19	1.02	0.73*	4.10	0.98	0.64
Shyness	3.71	1.57	0.89*	3.87	1.63	0.89*
Smiling/Laughter	5.05	1.14	0.74*	5.11	1.25	0.79*

*Indicates "High Internal Consistency." "High" defined as $\alpha \Rightarrow .70$; "Moderate" defined as $\alpha = .50 - .69$; "Low" defined as $\alpha \leq .49$.

Table 5.

Means, Standard Deviations, t-tests, and Probabilities of CBQ: Short Form Between Subjects

(Russian Language N=84 and Ukrainian Language N=83)

<u>Scale</u>	<u>M Rus.</u>	<u>SD Rus.</u>	<u>M Ukr.</u>	<u>SD Ukr.</u>	<u>t</u>	<u>p</u>
Activity Level	4.71	1.25	5.02	1.20	-2.27	0.03*
Anger/Frustration	4.71	1.10	4.39	1.17	2.69	0.01*
Approach/Positive Anticipation	5.23	0.86	5.34	0.68	-1.21	0.23
Attentional Focus	4.44	1.11	4.68	1.20	-1.89	0.06
Discomfort	3.97	1.22	4.32	1.29	-2.67	0.01*
Falling Reactivity	4.65	0.91	4.47	0.86	1.84	0.07
Fear	3.67	1.25	3.32	1.21	2.60	0.01*
High-Intensity Pleasure	4.90	1.20	4.91	0.91	-0.04	0.96
Impulsivity	4.71	1.05	4.79	0.88	-0.62	0.53
Inhibitory Control	4.75	1.09	4.85	1.13	-0.82	0.40
Low-Intensity Pleasure	5.78	0.83	5.80	0.81	-0.14	0.88
Perceptual Sensitivity	5.52	0.98	5.59	0.77	-0.57	0.57
Sadness	4.43	0.81	4.27	1.02	1.90	0.06
Shyness	3.71	1.38	3.72	1.47	-0.009	0.99
Smiling/Laughter	5.60	0.98	5.81	0.88	-1.89	0.06

* Statistically Significant Differences

Statistically significant differences were observed for 4 out of 15 dimensions.

Specifically, for Activity Level and Discomfort, ratings on the CBQ: Short Form - Ukrainian version were significantly higher than those on the Russian language version. In contrast, for the dimensions of Anger/Frustration and Fear, the direction of differences were reversed, the Russian language instrument produced significantly higher ratings than the Ukrainian language instrument. However, it may be worth noting that internal consistencies for the dimensions Discomfort and Fear from the Ukrainian language version were lower than those from the Russian language version – .57 and .56 versus .74 and .78, respectively – suggesting that those

temperament dimensions in the Ukrainian language instrument did not cohere as well as in the Russian language instrument.

As noted above, any test of language differences using data from all three waves runs the risk of confounding language of translation with the SES of the convenience samples. Hence, a second analysis was conducted using only Wave 3 data in which the same parents completed the CBQ – Short Form in both the Russian *and* Ukrainian versions. Using only these data, paired-comparison *t*-tests showed statistically significant result for only one dimension - Fear (Russian language $M = 3.33$, $SD = 1.31$, Ukrainian language $M = 3.43$, $SD = 1.24$, $t(27) = -2.16$, $p < .04$, two tailed). Although the dimension of Fear was also found to differ significantly in the between-subject analysis above, the direction of difference in the within-groups analysis was in the opposite direction. In the latter analysis Ukrainian parents rated their children as more fearful in the Ukrainian language than in the Russian language. Of course, given the experiment-wise error rate of these 15 paired-comparison rates, and the low alpha-value of this single significant difference ($p < .04$), this single difference may have occurred by chance.

Study 4

The focus of Study 4 was the testing of Hypothesis 3; specifically, whether the temperaments of Ukrainian children differed from those of their American counterparts, and also whether any differences between American children and Ukrainian children were due to the language of the instrument used to rate the Ukrainian children. While this hypothesis was already partially addressed in the sections above (cf. the sections on “Study 1” and “Study 2”), in Study 4 I looked at the differences using the larger combined sample, which provided greater statistical power. To that end, samples were combined within a language; Russian and Ukrainian. Specifically, data from Wave 1, CBQ: Short Form – Russian Version and portions of data from

Wave 3 (Russian Version) were combined. The same aggregation was performed for the Ukrainian language samples; that is to say, data from Wave 2 and portions of data from Wave 3 were pooled. This approach increased each language-specific sample size by about 30%, which in turn increased statistical power for the cross-cultural comparisons. To test for differences between Ukrainian and American children, independent sample *t*-tests were conducted in parallel for each version of the instrument used to measure the temperament of Ukrainian children. The *t*-test results are shown in Table 6 (Russian translation) and Table 7 (Ukrainian translation).

Table 6.

Means, SD, t-test Scores, and Probabilities Between Russian Language Aggregated Sample (Wave 1 and Wave 3, N=84) and American Standardization Sample

<u>Scale</u>	<u>M Rus.</u>	<u>SD Rus.</u>	<u>M Amer.</u>	<u><i>t</i></u>	<u><i>p</i></u>
Activity Level	4.71	1.25	4.86	-1.09	0.27
Anger/Frustration	4.71	1.10	4.22	4.11	0.00*
Approach/Positive Anticipation	5.23	0.86	5.01	2.31	0.02*
Attentional Focus	4.44	1.11	5.14	-5.67	0.00*
Discomfort	3.97	1.22	4.09	-0.96	0.34
Falling Reactivity	4.65	0.91	4.91	-2.55	0.01*
Fear	3.67	1.25	4.03	-2.58	0.01*
High-Intensity Pleasure	4.90	1.20	4.94	-0.27	0.79
Impulsivity	4.71	1.05	4.31	3.53	0.00*
Inhibitory Control	4.75	1.09	4.89	-1.16	0.24
Low-Intensity Pleasure	5.78	0.83	6.15	-3.99	0.00*
Perceptual Sensitivity	5.52	0.98	5.58	-0.47	0.63
Sadness	4.43	0.81	4.26	2.00	0.05
Shyness	3.71	1.38	3.68	0.25	0.79
Smiling/Laughter	5.60	0.98	5.88	-2.54	0.01*

* Statistically Significant Differences

Table 7.

Means, SD, t-test Scores, and Probabilities Between Ukrainian Language Aggregated Sample (Wave2 and Wave 3, N=83) and American Standardization Sample

<u>Scale</u>	<u>M Ukr.</u>	<u>SD Ukr.</u>	<u>M Amer.</u>	<u>t</u>	<u>p</u>
Activity Level	5.02	1.20	4.86	1.27	0.20
Anger/Frustration	4.39	1.17	4.22	1.35	0.17
Approach/Positive Anticipation	5.34	0.68	5.01	4.42	0.00*
Attentional Focus	4.68	1.20	5.14	-3.45	0.00*
Discomfort	4.32	1.29	4.09	1.63	0.11
Falling Reactivity	4.47	0.86	4.91	-4.56	0.00*
Fear	3.32	1.21	4.03	-5.30	0.00*
High-Intensity Pleasure	4.91	0.91	4.94	-0.29	0.77
Impulsivity	4.79	0.88	4.31	5.01	0.00*
Inhibitory Control	4.85	1.13	4.89	-0.31	0.76
Low-Intensity Pleasure	5.80	0.81	6.15	-3.83	0.00*
Perceptual Sensitivity	5.59	0.77	5.58	0.13	0.90
Sadness	4.27	1.02	4.26	0.17	0.86
Shyness	3.72	1.47	3.68	0.25	0.80
Smiling/Laughter	5.81	0.88	5.88	-0.71	0.48

* Statistically Significant Differences

Statistically significant differences from the American standardization sample were observed for both languages of translation. However, while there were eight dimensions that differed significantly using the Russian language CBQ: Short Form, there were only six dimensions that differed significantly using the Ukrainian language CBQ: Short Form. Nevertheless, the directions of difference were similar for each version of the instrument. In both Russian and Ukrainian, for example, mean ratings of Approach/Positive Anticipation and Impulsivity were higher for Ukrainian children than for American children. For the dimensions

Attentional Focus, Falling Reactivity, Fear, and Low Intensity Pleasure, ratings of Ukrainian children on both instruments were lower than those of American children. On the other hand, significant cross-cultural differences in ratings of Anger/Frustration (higher means) and Smiling and Laughter (lower means) were only found when using the Russian language translation of the CBQ: Short Form.

CHAPTER 4

DISCUSSION

This first cross-cultural study of children's temperament in Ukraine using the Child Behavior Questionnaire: Short Form has provided support for the internal consistency of the instrument when translated from English into either the Russian or Ukrainian languages, at least when administered to a Ukrainian sample. In both translations, most of the CBQ dimensions demonstrated at least moderate internal consistency (see Tables 2 & 3). Similar results were found by Ahadi et al. (1993) and Kusanagi (1993) in their investigations of the CBQ in two Asian cultures. The coefficient alphas in a Chinese sample ranged from .43 to .85 (Ahadi et al., 1993) and in a Japanese sample from .54 to .93 (Kusanagi, 1993). In sum, because the majority of the dimensions of the CBQ: Short Form as tested in Ukraine showed acceptable internal consistency, the instrument at least appears useful for investigation of temperament in this country. However, it may be worthwhile to consider some of the differences in internal consistency more closely, as well as some of their possible explanations.

As noted above, the CBQ: Short Form – Russian version initially demonstrated high internal consistency for 11 out of 15 dimensions, with an additional three improving after omitting poorly correlated items. Putnam and Rothbart (2006) reported 11 dimensions reaching alphas above .70 for the American standardization sample for the CBQ: Short Form. Overall results of the Russian language version of CBQ: Short Form supported Hypothesis 1, indicating good internal consistency for most all dimensions of the instrument and merit its usage for assessment of children's temperament in Ukrainian culture.

The results for the CBQ: Short Form – Ukrainian version generally revealed fewer dimensions with “High” internal consistency, relative to the Russian version. In particular, only

five dimensions from the Ukrainian translation initially produced α s at or above .70. Efforts to omit poorly correlated items in the Ukrainian language CBQ improved internal consistency of eight dimensions. Yet, two of the dimensions remained in the low α range and no amount of reworking improved these dimensions. It is not immediately clear why there would be such language-based differences in internal consistencies. The poorer reliability of the scales in the Ukrainian language might reflect the quality of the translation, or may reflect a property of the specific sample employed.

As noted by Putnam and Rothbart (2006), the socioeconomic and educational levels of parents may influence how they perceive and interpret specific items on the questionnaire. Because the Ukrainian language data were collected in a less affluent part of Kiev than were the Russian language data, socioeconomic and educational differences between the samples may have come into play. For instance, the lowest scored dimension for this sample was Perceptual Sensitivity, with an initial alpha of .27. Some questions comprising this dimension were related to the child's ability to notice new items, new articles of clothing, and changes in appearances. For the family with limited resources, purchasing of new items and changes in appearances may have been an uncommon occurrence. To the extent that parents' scores on these items were restricted, inter-item correlations would have been similarly restricted, contributing to low overall internal consistency for that dimension. Restricted response ranges on other items in this sample may have contributed to lower internal consistency generally.

With respect to the Russian version of the instrument, it is interesting to consider the dimension with the lowest overall alpha – Sadness. No amount of reworking produced meaningful improvement for this scale. At least two possible explanations for such low internal consistency come to mind. The peculiarity of the sample could be a reason for such low

coefficient α scores. Because the Ukrainian version of the instrument showed a higher α (.59) for this dimension, the Wave 1 sample of Ukrainian children may have simply been unusual in some way. Future examination of children from that same preschool may help verify that possibility. Second, the items comprising the scale may not accurately represent the concept of Sadness in Ukrainian culture, at least when administered to parents in the Russian language. But this possibility is tempered by the finding that Sadness also produced relatively low internal consistency in the American sample (Putnam & Rothbart, 2006) in both the long (.69) and short (.61) versions of the CBQ. Hence, items comprising the Sadness dimension may need further refinement globally.

Further examination of the results of the CBQ: Short Form – Ukrainian language version indicated, as noted above, an overall moderate reliability for most dimensions. Some moderately reliable dimensions were improved by dropping poorly correlated items. For example, internal consistency for the dimension of Discomfort was improved from .61 to .80 after removing poorly correlated Item 3 (“Is not very bothered by pain”). After dropping poorly correlated items, several dimensions improved. However, even with employment of this technique not all scales achieved satisfactory (i.e., at least “moderate”) internal consistency. Specifically, only 8 of the 15 dimensions ultimately achieved an α of at least .60.

As noted above, possible reasons for poor inter-item correlations in the Ukrainian language of the Wave 2 sample could range from sample peculiarity, to poor translation, to inadequate perceptual understanding of the item on the part of the parents who completed this version of the CBQ: Short Form. The peculiarity of this specific sample remains a viable explanation for lower alphas in the sample, especially in light of α analysis for the Wave 3 sample of the CBQ: Short Form - Ukrainian language version. Analyses from the Wave 3

Ukrainian language sample showed higher internal consistency for all 15 dimensions of the instrument (see Table 4). Overall, the CBQ: Short Form Ukrainian language version can be seen as partially supporting Hypothesis 1, in that most of the temperament dimensions were shown to exhibit adequate internal consistency as seen in Wave 2 and Wave 3 samples. Generally, Ukrainian version of the instrument as well as Russian can be used to measure temperament in Ukrainian children.

Language-Mediated Differences

Hypothesis 2, which proposed that the language of administration, and thus parental ethnotheories, could serve to mediate the assessment of temperament, was also partially supported. The between-subjects comparison revealed that Ukrainian children were rated significantly differently on four temperament dimensions as a function of whether they were rated in the Russian or Ukrainian language. Statistically significant differences occurred for the dimensions of Activity Level, Anger/Frustration, Discomfort, and Fear. Note that all four of these dimensions were found to have at least moderate internal consistency in both the Russian and the Ukrainian translations. One interpretation of this finding is that when Ukrainian parents rate their children's temperament in the Ukrainian language, they rate them as more active, less angry, more sensitive to discomfort, and less fearful than when rating them in the Russian language. It could very well be, then, that when parents rate their children's temperament in different languages, they rate them differently, because of the language of the instrument, and hence, differentially tapped ethnotheories. But this interpretation is limited by the fact that different groups of children were rated using the two languages, which were confounded with the location of samples polled.

The within-subject test of Hypothesis 2 revealed that children were rated differently on only one temperament dimension, Fear. Thus, with one exception, when a single group of parents rated *the same* children in two languages, they did not generally rate their children's temperaments differently. But the one difference that was found in the within-subjects analysis, was in the opposite direction of the finding in the between-subjects analysis. Specifically, parents in the within-subjects analysis, rated children higher on Fear in the Ukrainian language; whereas in the between-subjects analysis, they rated them higher on Fear in the Russian language.

It is possible that the size of the sample (28 participants) in the within-subjects analysis was too small to generate sufficient statistical power to detect language-based differences. Indeed the post hoc statistical power of the within-subjects test ($1 - \beta = \sim .24$) was not high, and was somewhat lower than the post hoc statistical power of the between-subjects test ($1 - \beta = \sim .43$; using G*Power, Faul, Erdfelder, Buchner, & Lang, 2009). In sum, perhaps it is fair to say that although evidence from the present investigation does not provide strong evidence in support of a mediational role of language in parents' temperament ratings, neither does it fully rule them out.

As discussed in the introduction section, language-mediated differences could be rooted in the varied perceptions related to parental ethnotheories linked to each language. Recall that for many Ukrainians the Russian language remains a language of domineering power and has negative undertones. The Ukrainian language, on the other hand, is associated with emerging national identity and pride (Zhurzhenko, 2004). These perceptions in turn could contribute to the way parents evaluate their children on the questions related to temperament assessment. This may explain why, at least in the between-subjects comparison, Ukrainian children in the Russian

translation of the CBQ were rated more negatively than Ukrainian children in the Ukrainian translation of the CBQ.

Cross-Cultural Differences

There were several notable cross-cultural differences in the temperament ratings of Ukrainian children relative to those of American children. Differences in temperament ratings were found for the dimensions of Anger/Frustration, Approach/Positive Anticipation, Attentional Focus, Falling Reactivity, Fear, Impulsivity, Low-Intensity Pleasure, and Smiling/Laughter. These differences may be taken to suggest variability in the structure of temperament between Ukrainian and American children. Again, these differences may be the result of culturally specific ethnotheories held by Ukrainian vis-à-vis American parents, reflecting differential views, perceptions, and expectations that parents in the two cultures have about their children's behavior.

Overall, the general direction of these differences were toward greater negative affectivity among Ukrainian children, relative to American children, which is consistent with the infant findings reported by Gartstein in a sample of Russian families (Gartstein, 2004; Gartstein et al., 2010) and supports the prediction of Hypothesis 3. Even though the factor analyses for the Ukrainian samples were not performed, the dimensions comprising the factor Negative Affectivity - Sadness, Fear, Anger/Frustration, Discomfort, and Falling Reactivity had shown significant deviation from the American standardization sample, thus suggesting an overall greater negative affect for Ukrainian children as reported by their parents.

As suggested by Gartstein (2004), the observed general negative affectivity reported by Ukrainian parents could be related to parental perception. In the past decade Ukrainian parents, like Russian parents, experienced many political and economic uncertainties in their lives

(Uspenskay & Borodin, 2004; Zhurzhenko, 2004), and could result in an overall negative outlook on life and on their children's behavior in particular. Historically, the failure to embrace a positive mental outlook is relatively common for the Eastern European cultures (Gartstein, 2004) and could be reflected in their citizens' corresponding parenting ethnotheories. As reported by Harkness and Super (2010), parental expectations influence parental perceptions of child behavior. If parents expect to focus mainly on the negative aspects of behavior and overlook the positive ones, the rating of their children's behavior would be affected by such expectations. Negative perception as part of parental ethnotheories, then, could be an underlying factor in the overall observed higher negative affectivity for the Ukrainian children.

Focusing on specific observed differences, it is worth noting that Ukrainian parents rated their children higher on the dimensions Approach/Positive Anticipation and Impulsivity in both the Russian and the Ukrainian languages, as compared to their American counterparts. These findings suggest that, overall, Ukrainian parents view their children as more intense and impulsive compared with their counterparts in the American standardization sample. The internal consistencies for these dimensions for both versions of the instrument were moderate to high. This finding might suggest that despite recent changes in Ukrainian culture, the traditional collectivistic values, with its emphasis on conformity remain strong (Robila, 2004; Zhurzhenko, 2004), and the behavior of children reflecting an expression of individuality might still be viewed negatively by the parents.

The other four statistically different dimensions were: Attentional Focusing, Falling Reactivity, Fear, and Low Intensity Pleasure. All of these dimensions had significantly lower means than the American standardization sample. It is worth noting that the dimension of Falling Reactivity had low to moderate internal consistency in both translated versions of the CBQ,

suggesting that perhaps questions comprising this dimension might not be measuring the construct consistently in Ukrainian culture. If so, interpretation of the comparative scores on this dimension might be premature and indicative of the need for further development. The three other dimensions showed moderate to high internal consistency for both language versions of the instrument and warrant further examination.

The comparative scores on the dimension of Attentional Focus suggest that Ukrainian parents view their children as less capable of concentrating on a specific task, which may stem from the potentially higher expectations of Ukrainian parents for their children to perform well on tasks requiring attention. On the other hand, environmental differences, such as differences between American and Ukrainian family accommodations, could be a contributing factor. For a majority of middle class American families, living spaces are significantly larger than in the typical Ukrainian family (<http://blogs.voanews.com/student-union/2012/01/11/a-fresh-perspective-on-my-two-homes-us-and-ukraine/>). Thus, Ukrainian children, who often share their room and playing spaces with parents, siblings, and grandparents (Zhuzhenko, 2004), might be confronted with considerably more distractions while performing a task. Another possibility is that either Ukrainian parents tend to minimize the individual academic ability of their children, or that American parents tend to overstate their children's ability. As noted by Harkness and Super (2010), American mothers compared with parents in four other Western cultures tend to highlight their children's alertness and intelligence, rating it as above average. Of course, the possibility that Ukrainian children are genetically different on attention dimension could not be ruled out.

Differential ratings on the dimension of Fear suggest that Ukrainian parents view their children as significantly less fearful than their American counterparts. Such an assessment may

be related to culturally specific expectations and/or to the type of questions comprising the dimension. Perhaps, Ukrainian parents, consistent with their ethnotheory, emphasize more assertive and less fearful behavior. Alternatively, the questions comprising the dimension such as “Is afraid or burglars or the “boogie man” might not have the same cultural relevance as they do for American children and/or parents.

Finally, for the dimension of Low Intensity Pleasure, Ukrainian parent rated their children lower than their American counterparts, suggesting that Ukrainian parents view their children as less likely to enjoy low intensity activities, such as cuddling, reading a book, and looking at the pictures. The explanation for these differences may be linked to the environmental factors associated with Ukrainian children’s typically small and shared living spaces, which generally do not facilitate quiet activities. One-on-one child-parent interactions or “play dates,” which are relatively common practice for American middle class parents (Harkness & Super, 2004), might be less likely to occur in Ukrainian family. As noted by Zhurzhenko (2004), the lack of time and the economic struggles of Ukrainian parents serve as two major obstacles to Ukrainian parents’ abilities to provide appropriate support and education to children.

Cross-Cultural Similarities

Finally, it is important to note that there were a number of similarities in temperament ratings between Ukrainian and American children. The present investigation failed to reveal differences on the dimensions of Activity Level, Discomfort, High Intensity Pleasure, Inhibitory Control, Perceptual Sensitivity, Sadness, and Shyness across the two cultures. As noted above, these similarities could be attributed to low statistical power for detecting differences. But if real, these nondifferences may also indicate an ongoing Westernization of Ukrainian people. In the past decade and a half, Ukraine has experienced political and cultural changes that are

consistent with embracing many of the western cultural values (Tartakovsky, 2009; Zhurzhenko, 2004), which may reflect shifting parental ethnotheories. Such values could include individualism, now embraced by many Ukrainian parents who may be fostering these values in their children (Zhurzhenko, 2004). It is likely that as their culture becomes more Westernized, Ukrainian parents are becoming less interested in exposing their children to collectivistic values with its emphasis on conformity

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