

The Dynamics of the Bilingual Mental Lexicon: The Effects of Partial Conceptual Equivalence on the Acquisition of Russian as an L2

Previous Research

It has been shown that cross-linguistic variation between languages (e.g., in the encoding of emotions and color) affects categorical perception in bilinguals. However, only a few cross-linguistic differences and their effects on conceptual storage and representation in the bilingual mental lexicon have been addressed. Moreover, even fewer studies have examined the acquisition of L2 concepts that partially overlap with one or more categories, despite the strong belief that partial conceptual (non-) equivalency creates acquisition issues for L2 learners (Pavlenko, 2008; Pavlenko & Driagina, 2007). The present research proposal is motivated by the striking difference in how the Russian and English languages employ age-related terms used to refer to females¹. When it comes to categorizing females of different ages, English differentiates between *girls* and *women* and Russian differentiates between *devočki* ‘≈little girls’, *devuški* ‘≈young girls’, and *ženščiny* ‘≈women’.² Such discrepancy in the lexicon referring to females between these languages might be responsible for differences in the conceptual representation of females between speakers of Russian and English. For example, Russian monolinguals might perceive a category of *devuški* ‘≈young girls’ as a separate concept, while English monolinguals might only differentiate between ‘girls’ and ‘women’ since the language does not have a specific term for ‘young girls.’ In addition to possible cognitive differences, Russian L2 learners might face a challenge in acquiring this new concept with its phonological, lexical, semantic, and pragmatic elements. It has been shown that successful acquisition of partial conceptual

¹ This paper presents the reearch proposal that was the basis for a Master’s Thesis. The full thesis may be found online in the University of Georgia Thesis and Dissertation Archives: <http://www.libs.uga.edu/etd/>

² Those are approximate translations; none of the female Russian terms have exact equivalents in English.

equivalents may depend on such sociocultural factors as acculturation level (Andrews, 1994; Athanasopoulos, 2009; Pavlenko, 2002). The present research project will investigate if a certain acculturation level in addition to language proficiency and length of L2 study might be positive factors in acquisition of the *devuška* concept by American learners of Russian.

Conceptual Equivalence and Non-equivalence

Due to cross-linguistic differences between languages, each language might have a unique inventory of lexicalized concepts. For example, an English lexicalized concept *frustration* does not have lexical and conceptual representation in Russian (Pavlenko, 2008, p. 95). When one language has a concept and another one does not, this is termed as *conceptual non-equivalence*. There are other possible types of relationships in conceptual storage between languages: *conceptual equivalence*, when respective words of L1 and L2 share one concept, and *partial conceptual (non-) equivalence*, when there is a partial conceptual overlap between two words (Pavlenko, 2008, p. 95). Conceptual storage in a monolingual mind might be different from the one of a bilingual mind. Therefore, conceptual non-equivalence and partial conceptual (non-) equivalence have become promising sources for researches who want to examine conceptual organization in bilinguals and monolinguals. So far, the researchers have explored how partial conceptual (non-) equivalency affect conceptual representation in bilinguals based on *color terms*, *emotion terms*, and *concrete lexicon*.

Partial Conceptual (Non-) equivalence: Evidence from Color Terms

A plentitude of studies has investigated color perception in bilinguals due to its status as the traditional test case for the Sapir-Whorf linguistic relativity hypothesis (Athanasopoulos, 2011, p. 241). For example, Navajo does not encode the color purple and various languages like Russian and Greek distinguish between lighter and darker shades of blue (Ervin, 1961; Andrews,

1994; Athanasopoulos, 2009). Some early studies by Ervin (1961), Caskey-Sirmons & Hickerson (1977), and Lenneberg & Roberts (1956) demonstrated that cross-linguistic differences in color encoding can affect color perception in monolinguals and can cause shifts of bilinguals' color perception toward the L2 (Athanasopoulos, 2011, p. 241). For example, Ervin (1961), who worked with Navajo and English monolinguals and bilinguals, showed that English- as well as Navajo-dominant bilinguals demonstrated a semantic shift toward the L2 in their color perception. Despite such coherence among multiple early studies, the domain of color has also been used as an example of universality (Athanasopoulos, 2011, p. 241). For example, Kay & McDaniel (1978) and Berlin & Kay (1969) relied on human physiology, universal principles (e.g., all languages have the colors *white* and *black*), some empirical data, and on the *fuzziness* of each color category, in their argument that color perception is universal rather than language-specific. According to Athanasopoulos (2011, p. 241), the controversy around the domain of color is partially caused by researchers' failure to account for participants' knowledge of foreign languages and relying solely on monolingual data. For example, in Berlin & Kay (1969) participants of diverse linguistic backgrounds demonstrated an English monolingual pattern in color naming. Instead of viewing such results as a shift in color naming, the researchers used it as an evidence of universality (Athanasopoulos, 2011, p. 241). Also, investigating monolinguals as well as bilinguals would allow researchers to control for the length of language exposure and acculturation, which can yield valuable findings as to whether color perception is innate or learned through language (Athanasopoulos, 2011, p. 242).

To explore the issue of color perception, Athanasopoulos (2009) employed a task concerned with categorical perception and conceptual representation, examining whether cross-linguistic differences in color would cause the establishment of new categories or the restructuring

of existing ones. During a similarity judgment task, the participants were shown two shades of blue and asked to rate their similarity on a scale from 1 to 10. The results showed that Greek-English bilinguals who resided in the USA were failing to distinguish between their native categories of *ble* and *ghalazio*, and shifted in their color perception toward monolingual speakers of their L2, English. In fact, the longer the length of stay was, the greater effect of L2 influence was observed. The findings of Athanasopoulos (2009) have multiple valuable points. First of all, they offered empirical data bolstering L2 effects on color perception in late bilinguals. Secondly, they showed that exposure to a new culture, as well as an increased level of language proficiency, could cause semantic and conceptual changes in color perception. Lastly, they demonstrated that bilinguals might have color perception that differs from speakers of their L1 and their L2, which makes the bilingual mind not a simple combination of two monolinguals in one, but more like a unique hybrid of the two.

Similarly to Athanasopoulos (2009), Andrews (1994) and Uchikawa & Boynton (1987) also arrived at the conclusion that bilingual color perception can be affected by L2 exposure. For example, Andrews (1994) worked with Russian-English bilinguals to investigate color perception in bilinguals since the Russian language also distinguishes between *goluboj* ‘light blue’ and *sinij* ‘blue’. The researcher came to the conclusion that length of stay in young émigrés effected color perception, as his advanced Russian-English bilinguals who resided in America failed to distinguish between their native categories of *goluboj* ‘light blue’ and *sinij* ‘blue’ because of the influence of the English *blue*.

Overall, all studies in the color domain, despite the controversial nature of the issue, have given us valuable information and directions for future research. The majority of studies revealed that L2 does have an effect on color perception, as semantic shifts as well as conceptual restructuring

were observed. Of course, length of stay, acculturation, language-proficiency level, and language dominance were important factors that could have influenced bilingual cognition and therefore they have to be controlled for. So far, there is evidence from empirical data with Navajo, Japanese, Hindi, Cantonese, Mandarin Chinese, Greek, Korean, and Russian bilinguals pointing to L2 effects on color perception, but more research is needed to “arrive at a more nuanced picture of representation of color categories in the bilingual mind” (Athanasopoulos, 2011, p. 258).

Partial Conceptual (Non-) equivalence: Evidence from the Emotion Lexicon

The topic of the conceptual organization of the emotion lexicon has also received attention from various researchers due to significant differences between languages in the ways they encode emotions. For instance, a Russian emotion verb *pereživat* ‘to suffer things through’ does not have a complete lexicalized equivalent in English (Pavlenko, 2002, p. 56). The above example demonstrates that a given language can encode certain emotions, while another language might not. It has been shown that such cross-linguistic differences may lead to differences in conceptual perception and storage of emotions by speakers of different languages (Pavlenko, 2002). In addition to differences in cognition, the absence of conceptual equivalents between L1 and L2 creates a cognitively challenging situation for L2 learners. Depending on how successful L2 learners are at internalizing and restructuring new concepts and at differentiating between L1 and L2 emotion concepts, there can be three types of bilingual emotion lexicons: *L1-influenced emotion lexicon*, *L2-influenced emotion lexicon*, and *Transcultural emotion lexicon* (Pavlenko, 2005, pp. 107-108). In the case of the *L1-influenced emotion lexicon* in bilinguals, L2 words are linked to L1 concepts. L1 transfers and L1-based emotion categorization are frequent in the *L1-influenced emotion lexicon*.

One example of an *L1-influenced emotion lexicon* in bilinguals was demonstrated by Pavlenko & Driagina (2007). The researchers compared the uses of emotion vocabulary in narratives elicited from monolingual speakers of Russian and English and advanced American learners of Russian with the same stimulus. The results revealed that not only did L2 learners rely on an adjectival pattern native to them in situations where Russian prefers verbs, like *ona byla grustnaja* ‘she was sad’ instead of *ona zagrustila* literally ‘she started manufacturing sadness’, but also L2 learners demonstrated multiple L1 conceptual transfers in their Russian emotion narratives. For instance, they mapped the Russian term *serdit’sja* ‘to be angry at someone’ onto *angry*, which is a broader concept in English; the term *angry* can be split between two verbs in Russian, *serdit’sja* ‘to be angry at someone’ and *zlit’sja* ‘to experience anger’, which may have abstract causes (p. 227). The learners simply connected an L2 word with a partial equivalent in their native language, thus demonstrating an L1 conceptual transfer.

The study by Pavlenko & Driagina (2007) offered valuable input for understanding the structure of the bilingual mental lexicon. It showed that a high language-proficiency level in late bilinguals did not guarantee successful acquisition of language-specific concepts. It also showed that partial conceptual (non-) equivalency as well as conceptual non-equivalency might have been factors that prevented acquisition. Unfortunately, the study did not include bilinguals who had been exposed to the authentic L2-speaking culture. Incorporating acculturated bilinguals in the analysis might have offered an explanation as to whether acculturation might facilitate acquisition of the examined L2 concepts.

The second type of emotion lexicon that can be observed in bilinguals is the *L2-influenced emotion lexicon* where L2 concepts influence L1 concepts, leading to L2 transfer in L1, L1 concept attrition, and L1 concept restructuring. “This type of lexicon is common for speakers who

have experienced prolonged L2 socialization and live and work in the L2 environment and thus constantly interact with L2 speakers” (Pavlenko, 2005, p. 107). An *L2-influenced emotion lexicon* in conceptual organization in bilinguals was observed in Grabois (1999). The researcher examined the semantic structure of concepts like *love, fear, happiness, and death* in Spanish and English monolinguals, Spanish L2 learners, and acculturated Spanish bilinguals. The data showed that monolingual groups had different associations connected to the examined concepts; e.g., English monolinguals exhibited indirect and symbolic associations with the concept *love*, while Spanish monolinguals showed an inclination for sensory associations. As for the advanced and acculturated Spanish L2 bilinguals, they approximated the Spanish L1 in their associations when performing a task in English; e.g., the native concept of *love* changed its structure. Thus, Grabois’s findings suggested that his subjects experienced conceptual restructuring in emotion terms due to the exposure to L2 culture.

The third type of possible conceptual organization of the emotion lexicon is the *transcultural emotion lexicon* where “representations of emotion words correspond more or less to those of monolingual native speakers of the respective languages or are easily modified depending on the context and interlocutors” (Pavlenko, 2005, p. 108). This type of lexicon can be observed in bicultural bilinguals who interact with L1 and L2 speakers on a regular basis (p. 108).

Panayiotou (2004) demonstrated an example of a *transcultural emotion lexicon* in advanced and acculturated English and Greek bilinguals. The participants read a story in either English or Greek and shared their emotional reaction in the language of the stimulus. In a month, the same story in a different language was presented to them. The L1 and L2 responses were compared in a qualitative analysis. The findings revealed that bilinguals produced culturally and linguistically appropriate emotion narratives in both L1 and L2 with no transfers between the

languages. The participants demonstrated flexibility in their emotion mental lexicon use; also, their bilingual emotion selves were contextualized. Panayiotou's analysis offered an insightful view into the bilingual mind, suggesting that bilinguals had co-existing L1 and L2 emotion lexicons and were able to employ them in culture- and language-specific ways. Unfortunately, the study did not indicate the acculturation levels for the bilinguals. The researcher admitted that "the criteria [...] were less stringent: if a person was able to talk to me about experiencing emotions in two languages, they were included in the study" (p. 126). For future research it seems to be beneficial to differentiate between various lengths of stay in an L1- and L2-speaking country to verify acculturation levels and biculturalism of the bilinguals.

Overall, studies on the bilingual emotion lexicon seem to be in agreement on the importance of continuous exposure to L2 culture for successful acquisition of L2 emotion concepts. They have shown that extensive *exposure to L2 culture* may lead to the attrition of L1 concepts, successful acquisition of L2 concepts, and conceptual restructuring. In cases of low language proficiency and absence of socialization into L2 culture, an *L1 - influenced emotion lexicon* where L2 words are linked to L1 concepts has been observed (Pavlenko, 2005, p. 107). Despite this agreement about L2 socialization as a factor for successful emotion vocabulary acquisition, only Grabois (1999) examined the acquisition of *the same* emotion concepts in L2 learners and acculturated L2 users. Pavlenko (2002) demonstrated that exposure to an L2-speaking culture caused L2 transfer in emotion narratives by Russian-English bilinguals; however, participants who had stayed in the States for three years were not separated from participants with eight years of stay in the data analysis. It seems to be necessary to differentiate between various levels of acculturation in future research to assess the importance of the L2 socialization factor in emotion vocabulary acquisition.

Partial Conceptual (Non-) equivalence: Evidence from the Concrete Lexicon

While multiple studies with monolinguals demonstrated complexity and variation in naming patterns of objects between languages, only a few studies have explored the mental representations of objects in bilinguals (Pavlenko & Malt, 2010, p. 21). The studies by Graham & Belnup (1986) and Malt & Sloman (2003) examined whether L2 learners successfully internalized new object categories of the L2, Ameel et al. (2005) analyzed whether L1 object categories influenced categorical perception in the L2, and Pavlenko & Malt (2010) examined possible effects of the L2 on L1 categorical perception in the domain of concrete objects.

Graham & Belnup (1986) examined naming patterns of furniture objects by intermediate and advanced Spanish-English bilinguals. The study revealed that both intermediate and advanced learners of English who had resided in the United States for less than a year seemed to rely on their native categories of *silla* and *banco* and failed to distinguish between English L2 categories of *stools*, *chairs*, and *benches*. The findings suggested that exposure to the L2 and high L2 proficiency had little effect on successful L2 acquisition of the object lexicon. Moreover, the study demonstrated that even advanced acculturated English learners did not internalize new object categories.

To examine the effects of the length of stay and level of proficiency further, Malt & Sloman (2003) analyzed naming patterns by English L2 speakers of three levels of proficiency and various lengths of stay in the United States. The participants were asked to label pictures of household containers used for preparing and serving food. After bilingual data were compared to the monolingual data, it became clear that participants with low English proficiency and short periods of stay in the United States significantly deviated from the monolingual naming pattern. However, even advanced English learners with a mean of 13.5 years in the L2 speaking country

did not demonstrate a native-like pattern in their naming task. Although the study demonstrated a positive effect of L2 proficiency and length of stay on acquisition of L2 object naming, it also showed that even high proficiency and extended length of stay in the L2 speaking country did not guarantee successful acquisition and internalization of object categories. Unfortunately, the study by Malt & Sloman (2003) did not examine a potential correlation between acquisition failure and the influence of L1 object categories (Pavlenko & Malt, 2010, p.21).

To analyze L1 influence on the acquisition of L2 object categories, Ameel et al. (2005) conducted a study with Dutch monolinguals, French monolinguals, and Dutch-French bilinguals who performed naming, similarity judgment, and free similarity sorting tasks with pictures of storage containers and cups and dishes. The free sorting task demonstrated that the Dutch monolinguals as well as the French monolinguals placed all the containers into 3 categories. When performing naming and similarity judgment tasks, the Dutch-French bilinguals demonstrated L1 influence in their naming pattern. The study by Ameel et al. (2005) revealed that unsuccessful acquisition of L2 object categories was caused by L1 transfer and that extensive exposure to the L2 object lexicon did not foster internalization of new object categories.

To further examine the interaction between L1 and L2 mental lexicons in the domain of concrete objects, Pavlenko & Malt (2010) analyzed categorical boundaries of drinking containers in Russian and English. The findings revealed that all three groups demonstrated L2 influence in assessing boundaries of object categories. Even the late Russian-English bilinguals, who arrived to the States after puberty and rated themselves at low English proficiency, differed from native Russian speakers. The study by Pavlenko & Malt (2010) suggested possible L2 influence on L1 categorical perception of objects, which implied a more complex structure of the mental lexicon in the domain of concrete objects. It became evident that not only could the L1 influence L2 naming

patterns and categorical perception, but even limited exposure to the L2 could also result in the restructuring of native categories.

In sum, research on the mental lexicon in the domain of concrete objects in bilinguals was initiated with studies that examined how L2 learners acquired new object categories (Graham & Belnup, 1987; Malt & Sloman, 2003). It was shown by Graham & Belnup (1987) that advanced late bilinguals failed to acquire new linguistic categories despite a high level of L2 proficiency and exposure to L2 culture. The studies by Malt & Sloman (2003) as well as the study by Ameel et al. (2005) further demonstrated that whereas language proficiency and length of stay in an L2 speaking country facilitated acquisition of the object lexicon, those factors were not enough for successful internalization of new categories. The recent study by Pavlenko & Malt (2011) suggested a reverse effect of L2 on L1 object categories, showing that native categories could be affected by L2 exposure. While more research is needed to evaluate factors influencing categorical restructuring, shifting, or lack thereof, it is evident that the mental lexicon might either experience changes due to L2 exposure or maintain L1 categories in the domain of concrete words.

A Survey of Methods Employed in Conceptual Organization Research

Researchers have long been trying to get inside the bilingual mind and explore its conceptual organization. A number of psycholinguistic tasks like reaction-time tasks, word-rating tasks, and similarity judgment tasks are commonly employed in mental lexicon research. These tasks have been criticized due to their inability to reflect the conceptual organization of the mind (Pavlenko, 2009, p. 125). In reaction-time tasks, bilinguals have to translate, name a picture, or perform semantic categorization. In these tasks, a correlation is drawn between faster reaction time and connection between concepts of the L1 and L2 (De Groot, 1992). However, as

pointed out by Pavlenko (2009, p. 128), a faster reaction time is not always an indicator of shared meaning; i.e., language proficiency and language activation can also affect the reaction time. Word-rating and similarity judgment tasks deal with translation equivalents. They also fail to expose the conceptual organization of the bilingual mind due to their inability to capture implicit conceptual knowledge (Pavlenko, 2009, p. 129).

Psycholinguistic tasks are gradually being replaced by methodologies developed in the fields of linguistic anthropology, cognitive psychology, and applied linguistics (Pavlenko, 2009, p.130). These new methodologies include categorization, sorting, (untimed) naming, and narration elicitation (Pavlenko, 2009, p. 130). Categorization and sorting tasks and their relation to cognition have been investigated in psychology (Harnard, 1987). They were first adapted in studies of color perception in humans (Bornstein, 1981). Later, they were borrowed by cross-linguistic researchers to investigate color perception in bilinguals (Athanasopoulos, 2009), cross-linguistic differences in object categories (Malt et al., 1999), and emotion words (Stepanova & Coley, 2006). Usually participants have to categorize or sort pictures into as many categories as they like (Ameel et al., 2005). The task can be utilized for object categorization as well as for abstract words. Most importantly, categorization and sorting tasks allow researchers to avoid referring to linguistic labels, thus revealing the implicit conceptual knowledge of the participants. Another novel method - the *naming task* - has also been employed in bilingual mental lexicon research. Usually participants have to name objects (Malt et al., 1999) or abstract concepts like emotions (Stepanova Sachs & Coley, 2006). After the data are gathered from monolinguals and bilinguals, a contrastive analysis is performed to compare naming patterns between the groups (Athanasopoulos, 2009). This task is employed in research on the conceptual organization of the mental lexicon, since it reveals differences between monolingual and bilingual

conceptual storage (Pavlenko, 2009, p.131).

The *narrative elicitation task*, where participants are asked to retell a story they heard or read, is also employed in bilingual mental lexicon research. This task has high ecological validity and can give an insight into the bilingual mind. For example, in Pavlenko & Driagina (2007) the same video of a worried woman elicited different verbal responses; e.g., Russian monolinguals consistently used a verb *pereživat* 'to suffer deeply', while English-Russian bilinguals avoided using the term. The researchers came to the conclusion that the English language did not have a complete conceptual equivalent to the Russian lexicalized concept *pereživat* '.

Finally, various *rating tasks* have been employed by researchers. For example, in Stepanova Sachs & Coley (2006) participants rated the appropriateness of ten emotion words in reference to five scripts. The task demonstrated cross-linguistic differences in Russian and English and served as a basis for comparing monolingual and bilingual patterns. Rating tasks can also be employed for establishing categorical boundaries. For instance, Pavlenko & Malt (2010) used a Likert-scale from 1 ("not confident at all") to 7 ("very confident") to rate names of various pictures of *cups*, *mugs*, and *glasses* in English and *kružka*, *stakan*, and *čaška* in Russian. The experiment demonstrated cross-linguistic differences in naming patterns of drinking containers in the examined languages. In addition, clear boundaries for each category were established. The Likert-rating scale revealed valuable information about what appears to be a typical representative in each drinking-container category in English and Russian. Also, shifts in categorical perception were assessed for the bilingual groups.

Overall, it appears that researchers have access to multiple valid research methods. Still, cross-linguistic differences and their effect on bilingual cognition are under-researched. Moreover, categorical boundaries for various concepts have not been established. This paper is

concerned with the partial conceptual (non-) equivalency of the terms used to refer to females in English and Russian languages. A Likert-rating scale and naming tasks will be employed to access age boundaries for each female term; a free categorization task will be utilized to evaluate the correlation between cross-linguistic differences and the perception of females of different ages. Before the experiment and methodology are introduced in more detail, linguistic differences in how Russian and English languages refer to females of different ages are discussed.

Linguistic Background: Terms Used to Refer to Females in Russian and English

The English and Russian languages differ in how they label females of various ages. More precisely, English employs two terms, *girl* and *woman*, while Russian has three terms, *devočka*, *devuška*, and *ženščina*. In English, a *girl* can be defined as a female from birth to full growth or maturation. English speakers would agree that six-year-old, twelve-year-old, and even thirty-year-old females can be easily referred to as *girls*. For example, Tyra Banks says to a thirty-year-old model Lisa, “You are a young girl,” during the show *America’s Next Top Model*, series seventeen (2011). Another term used to refer to females in English is *woman*; it is used to refer to an adult female, unless a modifier “young” is used. *Girl* and *woman* can be used more or less interchangeably for females of a certain age.

As for Russian, the language distinguishes between three distinct concepts: *devočka*, *devuška*, and *ženščina*. A female can be categorized as *devočka* from birth up to the time she shows signs of maturation. *Devočka* in Russian can be translated into English as ‘*~little girl*’ and *devuška* can be translated as ‘*~young girl*’ into English. *Devuška* is a female who has reached a certain degree of maturation but has not become a woman yet. Lastly, the term *ženščina* is reserved for adult females. The terms *devočka* and *devuška* cannot be used interchangeably in Russian, which is supported by the following list of collocations from the Russian National Corpus (RNC). The RNC

has 253 occurrences of the phrase *malen'kaja devočka* 'little girl' that refer to females' age and immaturity. However, the collocation *malen'kaja devuška* appears to be marked in terms of its semantics and use: there are only 17 occurrences of the phrase *malen'kaja devuška* 'little *devuška*' in the RNC, and all of them highlight the small physical size or height of the female rather than young age or immaturity. For example, "Vdrug prošlěpala toščaja malen'kaja devuška" 'All of a sudden a skinny little *devuška* shuffled past'. Here the word *malen'kaja* is close in the meaning to the English word *small* and refers to the size of *devuška*, not her age or maturation. It is logical that *devuška* cannot mean immature, because by definition *devuška* is somebody who has reached some level of maturation. Thus, a collocation like *malen'kaja devočka* 'little girl' is allowed in Russian when referring to a female's age and immaturity, but a collocation like *malen'kaja devuška* 'little *devuška*' can only be used to refer to the size or height of a female, not her age or maturation.

The terms *devuška* and *ženščina* can be used interchangeably, albeit with certain sociopragmatic differences. We find the following sentence in the RNC "Trubku snimaet ženščina/devuška let tak-edak tridcati" 'A woman/*devuška* around thirty years of age answers the phone'. Here we can see that a thirty-year-old female can be called *devuška* or *ženščina*. Despite this possible interchangeability of the terms, Russian native speakers realize the complexity of this relationship. For example, Russian females typically do not like to be called *ženščina* because of a connotation of *being old*. This nuance in meaning might be clear for native Russian speakers, but can create acquisition issues for American learners, since English does not have an exact equivalent for *devuška*. In fact, all five female terms do not have conceptual equivalents between the two languages.³

³ The Russian language also distinguishes between three male-specific labels: *mal'čik* 'boy', *molodoj čelovek* 'young man', and *mužčina* 'man'. Since the second term is not of high frequency and is mostly used as a form of address, the male Russian terms were not investigated in this paper.

Research Objectives

The research project will be carried out with the following three research goals in mind:

1. Investigate any possible effects of cross-linguistic variability in female terms on the cognition of Russian and English monolinguals as well as the L2 effect on Russian L2 learners' cognition.
2. Establish age boundaries for each female term, the assessment of which can be applicable for L2 instruction.
3. Examine the acquisition of the partial conceptual (non-) equivalent *devuška* by American learners of Russian.

Participants and Procedure

Three groups of participants will be recruited: Russian monolinguals (RMs), English Monolinguals (EMs), and Russian Learners (RLs); 25 participants in each group. For the purpose of this study, a participant will be considered a monolingual if s/he does not have foreign language knowledge above intermediate level. A self-assessment test will be used to classify all the participants. English monolinguals and English-Russian bilinguals will be recruited among undergraduate and graduate students at University of Georgia, Athens, Georgia. Both groups will have participants of mixed ages, but most of them will be in their twenties. The Russian monolingual group will also have participants of the same ages as the English monolinguals and will be recruited from a Western Siberian town, Salekard. All the participants will have some college education at the time of the experiment.

The experiment will be administered through the website www.surveymonkey.com so the participants can take the survey at their own convenience. Each version, Russian and English, will

be piloted by native speakers to verify the clarity of instructions. Each survey will start with a language background questionnaire followed by the survey questions. The questionnaire will be followed by a categorization task, a Likert-scale task, and a labeling task in the order listed here. Completion time for the survey should not exceed 30 minutes.

First, the participants will be presented with 24 pictures of females of various ages and will be asked to sort them into as many categories as they like.⁴ They will also be asked to explain how they form their groups. (Figure 1). The goal of the categorization task is to reveal any possible conceptual differences in how English and Russian speakers categorize females of various ages. Because English has fewer female-specific terms than Russian, it was anticipated that RMs would differentiate among at least three categories of females of different ages, while EMs would distinguish among fewer categories. If EMs failed to highlight a category of *young girl*, which can be interpreted as an equivalent to the concept of *devuška* in Russian, it would suggest that the absence of the term in the language affects categorical perception.

⁴ The participants will be asked to sort the pictures in as many categories as they like based on the factor of age.

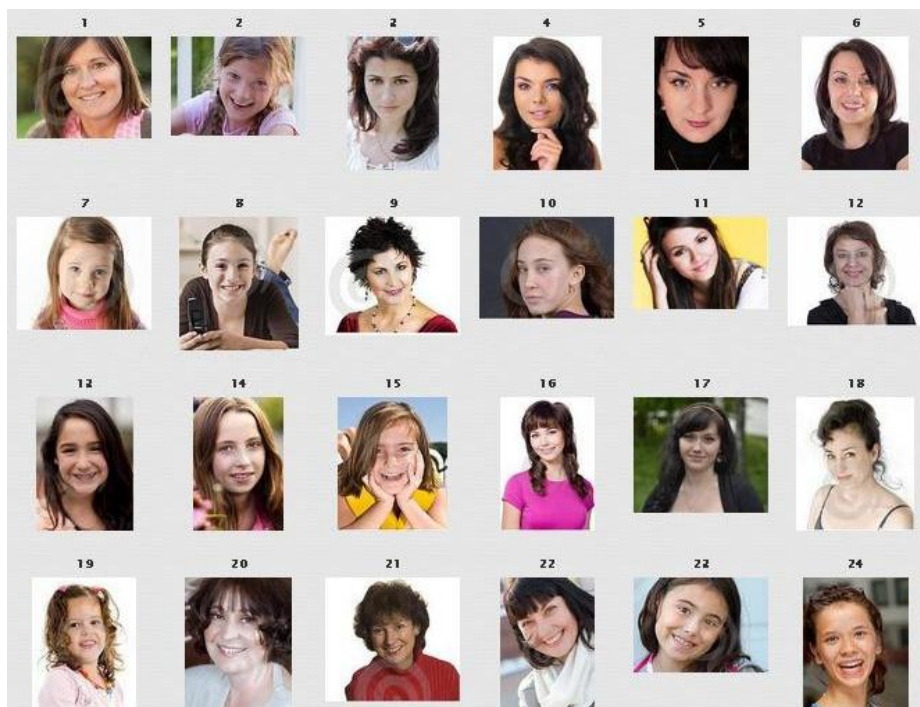


Figure 1. A sample of pictures of females of various ages that will be presented to all the participants during the categorization task.

However, if EMs and RMs systematically form similar age groups in their sorting, it would indicate a common underlying conceptual representation for females of various ages, regardless of the cross-linguistic differences between the languages. If any conceptual differences are established in the RM and EM responses, Russian learners are expected to highlight a category of *devuška* in their sorting due to exposure to Russian. Of course, length of L2 study, acculturation level, and L2 proficiency might all be factors in the participants' ability to perceive the *devuška* concept as a distinct category in their sorting.

After the categorization task, the participants will be presented with the same 24 pictures of females one at a time and will be asked to judge the acceptance of the linguistic label on a Likert-scale from 1 (labeled "I do not agree at all") to 5 (labeled "I agree completely"). The Likert-scale task is employed in order to explore boundaries for the concepts *girl* and *woman* in English

and the concepts *devočka*, *devuška*, and *ženščina* in Russian.

The RMs will evaluate three statements: *Eto devočka* ‘This is a little girl’, *Eto devuška* ‘This is a devuška’, and *Eto ženščina* ‘This is a woman’ on the same scale from 1 (labeled “*Ja polnost’u soglasna/soglasen* ‘I agree completely’) to 5 (labeled “*Ja sovsem ne soglasna/soglasen*” ‘I do not agree at all). The RLs will perform the Likert-scale task in Russian; therefore any deviations from the monolingual pattern can be investigated.

After the completion of the Likert-scale task, the participants will be asked to label each picture and estimate the age for each female. The goal of the labeling is to explore the most common labels for females of a certain age and the inventory of possible labels for females in both languages. Since all the participants label the same pictures, any possible overlaps between the terms can be investigated. Not only can the monolingual labeling data reveal the distribution of the terms in both languages, but the data can serve as the basis for analyzing RL naming patterns. For instance, if those pictures that are labeled with the broader term *women* by the EMs were consistently labeled with the direct Russian translation *ženščina* by the RLs, it would indicate an L1 transfer in naming. However, if the RLs perform similarly to the RMs, it would suggest successful acquisition of the partial conceptual equivalent. Lastly, the labeling and the age assessment are crucial for connecting the Likert-scale data with the estimated ages for determining age boundaries.

Conclusion

This proposal has shown that English and Russian speakers differ in how they refer to females of different ages. Russian speakers differentiate between three terms, while English speakers only differentiate between two. As a consequence, all five female terms do not have conceptual equivalents between the two languages. Since partial conceptual equivalents have negative

consequence for L2 acquisition (Pavlenko, 2008; Pavlenko & Driagina, 2007), clear categorical boundaries for each female term should be determined. Thus, one of the purposes of this anticipated research will be establishing categorical boundaries for the concept *devuška*, which can be employed in L2 instruction.

Lastly, the study will address the issue of how the cross-linguistic difference in female terms might affect cognitive processing. The monolingual English group is expected to choose fewer categories in the free-sorting task. The Russian monolingual group is expected to highlight more categories due to the three distinct female terms in the language. The question whether exposure to L2 has any effect on cognitive processing in bilinguals will be addressed. In addition, the bilingual groups will perform the tasks in their L1 and L2, this way any possible language influence on performance can be examined. The anticipated findings will be of value to the study of bilingualism as well as for L2 instruction.

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