Differences of kindergarten children's linguistic picture of the world: focus on Hungary, Russia, and Laos

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ABSTRACT

Three-to-five-year-old Laotian kindergarten children, native speakers of the Lao language were investigated in order to map the peculiarities of their picture of the world through their word associations. Results were contrasted to a previous comparative study of Hungarian and Russian kindergarteners of the same age aiming at revealing linguistic and cultural differences and similarities in this age group in the three aforementioned countries. Theories and methods of the Moscow School of Psycholinguistics were utilized for the cross-cultural comparison based on a Vygotskian cultural-historical approach, on Leontiev’s speech activity theory, on the concept of verbal consciousness (linguistic picture of the world) and on the association experiment. A pedagogical perspective was incorporated through the application of the Conception of Childhood theory and the shoulder-to-shoulder method. Linguistic data gained during the association experiment was analysed by Sketch Engine, an online corpus linguistics research tool. The outcome of the investigation is a unique set of associations that on the one hand proves the overlapping of Lao children's picture of the world with Russian and Hungarian kindergarteners, on the other hand, sheds light on distinctive, culture- and language-specific characteristics of Laotian kindergarten children's verbal consciousness.

1. Introduction

Since its inception in 1966, the Moscow School of Psycholinguistics founded by Alexey Leontiev (Leontiev, 1978, 1993; Ufimtseva, 2014b) has been developing theories and research methods to investigate various aspects of intercultural communication. Based on fundamental psycholinguistic approaches, various theories including the theory of linguistic consciousness and the lacuna theory have been developed aiming at creating the investigational paradigm to study a variety of factors that may promote intercultural understanding (Ufimtseva, 2014a; Sorokin, 1993; Ufimtseva, 2014b; Markovina and Lenart, 2016; Lenart, 2018; Leonard et al., 2019). The present study is an attempt to combine the most effective international approaches to be applied to the investigation of culture-specific images of the world of various language speakers. This research aimed at investigating and cross-culturally comparing Russian, Hungarian, and Lao children's images of the world. Scarce research has been conducted prior to this one in the field of Psycholinguistics in Laos, and this paper is probably a ground-breaking work in investigating the linguistic picture of the world (verbal or linguistic consciousness; Tarasov, 1996) of native Lao-speakers. The main research method was the association experiment (Ufimtseva, 2014a; Lenart, 2017), a fundamental methodological tool of the Moscow School of Psycholinguistics (Leontiev, 1978, 1993; Sorokin, 1993; Ufimtseva, 2014b; Leonard et al., 2019) that relies on word associations to pre-selected stimulus-words. In association experiments respondents freely associate to either written or orally pronounced word-stimuli with the first words that come to their minds when hearing or reading the stimulus words in question.

Association reactions obtained and grouped into association fields are regarded as representations of content of mental images externalised by words of the language. Mental images constitute the culture-specific image of the world. Alexei Leontiev's proposed the term “language consciousness” to psycholinguistically designate the linguistic picture of the world which seems to be equivalent to the psychological term “image of the world” used by the Russian psychology (Ufimtseva, 2014b). Thus, psycholinguistically obtained and interpreted linguistic picture of the world is referred to as “language consciousness”.

Results were compared to the outcome of a previous study implemented with Russian and Hungarian respondents of the same age group, with the same stimulus words (Endrody et al., 2019; Lenart et al., 2019).

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Respondents were 4-5-year-old kindergarten children who were asked to freely associate to the following ten stimulus words: friend, child, family, water, black, toy/game, devil, home/house, foreigner, and angel. The gained associations were digitalised and analysed with Sketch Engine, an online corpus linguistic research tool (Benko, 2014).

The study was completed with a multi-disciplinary approach incorporating a pedagogical perspective in the basically psycholinguistic research by relying on the concept of childhood as a social construction (James and Prout, 1997), and by the application of the shoulder-to-shoulder method (Griffin et al., 2014).

2. Materials and methods

The underlying method of the current research is the association experiment (Ufimtseva, 2014a), a foundational methodological tool of the Moscow School of Psycholinguistics. From the psycholinguistic perspective, word associations are viewed as cognitive structures that serve to conceptualize experience accumulated through human activities in the ethnic culture (Leonard et al., 2019). In the course of the association experiment, respondent were given word-stimuli and requested to say out the first things that come to their mind when they hear the lexemes in questions.

Respondents were 100 kindergarten children from the 4-5-year-old age group, all of them native speakers of the Lao language. Responses were recorded in a written-form questionnaire by the nurses of the kindergarten. All Laotian interviews were conducted in a kindergarten in Nongteng, a smaller but rather high-end district in Vientiane, the capital of Laos, 16 km from the city centre. Sample size was selected in accordance with the previous study (Endrody et al., 2019; Lenart et al., 2019) whereas similarly, 100-100 association tests were completed.

Participants of the survey were selected based on their year of birth: children born in 2015 and 2016 were accepted to take part. In total, 108 potential participants were identified, the research was conducted with those 100 children whose parents first gave informed consent to the survey (see Annexes 1, 2). With regard to general ethical considerations as well as the young age of participants, questionnaires were checked and approved by the Ethical Committee of Leontiev Center for Cross-Cultural Research (Institute of Linguistics, Russian Academy of Science).

Interviews were conducted utilizing the shoulder-to-shoulder method (Griffin et al., 2014), a pedagogical approach that allows children to freely converse, play, and move around during the interview thus creates a friendly atmosphere where the child feels comfortable and can easy open up and talk.

51 percent of participants were 4 years old (year of birth: 2015), while 47 percent 5 years old (year of birth: 2014) children, in two cases year of birth was not registered (Diagram 1). In terms of sexes it can be stated that respondents were composed of 55 percent of girls and 39 percent of boys, while in 6 cases sex was not registered by the interviewers (Diagram 2).

The results were collected into a corpus and uploaded to and analysed by Sketch Engine (Kilgarriff et al., 2014), an online corpus linguistic research tool. It needs to be noted that Sketch Engine tags linguistic units of different type: the usual unit of analysis is a lexe. However, in the written Lao language words are not separated by space from each other, consequently, Sketch Engine often displayed longer units of language than individual lexemes (typically combinations of several words that could either be considered as independent lexemes or needed to be split up into smaller units by the researchers).

Results were compared to a previous research executed in Hungary and Russia (Lenart et al., 2019) along the same methodology, with the same stimulus words, with the same amount (100-100) of respondents.

The kindergartens were affiliated with the Research Institute of Hygiene and Protection of Children’s and Teenagers’ Health under the Ministry of Health of the Russian Federation. The study complies with all regulations having taken into account the fact that participants were minors, informed consent was obtained from the 4-5-year-old respondents parents.

3. Results

Tables 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 display the frequency lists of the reactions to the ten stimulus words respectively, split into three word classes: nouns, adjectives and verbs. Further word classes (pronouns, conjunction words, modal verbs, etc.) were excluded from the discussion. Results shown in each table were compiled from reactions to only that specific stimulus word marked in the title of the table. In Table 1 for instance, the reaction word játek (game) appeared 14 times as an association of the Hungarian stimulus word barát (friend) – the same reaction word, játe (game) was associated 7 times to the Hungarian stimulus word gyerek (child) as shown in Table 2. The first two columns of each table present Hungarian and Russian associations, data from previous research (Endrody et al., 2019; Lenart et al., 2019), meanwhile the third column contains the Lao-language associations, outcome of the research presented in this article.

3.1. Friend (barát, ですが, ⽀ Agricultura)  

The most frequent Lao noun association to the stimulus word ⽅農 (friend) is วัดفاعل (classmate) with 18 occurrences. The literal meaning of วัดفاعل (classmate) is “friends in the same room” that can be translated as classmate. The association from friend to classmate or ‘friend in the same room’ is transparent as the first lexeme of the two expressions is the same (⽅农: friend).

All top Lao noun associations of friend are connected to persons including family members and classmates – unlike the Hungarian and the
| 1. | barát (friend) | dívye (friend) | შვე (friend) |
|----|---------------|---------------|---------------|
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| játsszik (game/toy) 14; anyuka (mother) 13; övi (nursery) 10; advar (court) 6 | kedves (kind/dear) 44; jó (good) 33; aranyos (cute) 5 | játsszik (play) 130; szter (like/love) 42; épit (help) 7; ad (give) 6 | малюк (boy) 14; дечка (girl) 12; человек/малышка (man/car) 10; подружка (female friend) 6 | хороший (good) 35; добрый (kind) 16; красотка (nice) 7 | араться (play) 85; любить/друзья (love/be friends) 42; помочь (help) 30; гулять (walk) 16 | любовь (love) 18; семья (parents) 6; брат (brother) 5; сестра (sister) 2 | любовь (love) 46; любить (play) 26; борьба (not fight) 15; делиться (share) 12 |

**Table 2. Most frequent word associations (nouns, adjectives, verbs) of the stimulus word child.**

| 2. | gyerek (child) | pélének (child) | ში (child) |
|----|---------------|---------------|--------------|
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| киба (small baby) 10; baba (baby) 9; játik (toy/game) 7; övda/anyuka/filis/lámy (nursery/mother/boy/girl) 6 | kicsi (small) 54; nagy (big) 22; jó (good) 20; hirvás (kind) 13; játsszik (play) 28; valasztott (reply) 13; szter (like/love) 11 | мальчик (kiddy) 46; человек (man) 18; мама (mom) 17; мальчик (boy) 8 | маленький (little) 44; хороший (good) 10; добрый (kind) 6; большой (big) 6 | растить/покарать (grow up/cry) 6; любить/покарать (love/be born) 5 | брат (younger sibling) 22; семья (baby) 7; (nursery) 5 | любить (suck) 5; влюбить (cry) 10; борьба (not fight) 8; держать (hold) 6 | любить (suck) 76; небольшой (tiny) 21; маленький (naughty) 5; небольшой/безумный (know-nothing/does not know how to think) 3 |
### Table 3. Most frequent word associations (nouns, adjectives, verbs) of the stimulus word family.

| NOUN | ADJ | VERB |
|------|-----|------|
| anya/anyaka (mother) 140; apa/apaka (father) 121; gyerek (child) 35; mama (mom/grandma) 23 | kedves (kind) 27; jó (good) 23; nagy (big) 17; gaz (real) 10 | 
| семья (family) | сыром (good) 26; jászít (play) 12; mond (say) 11; megy (go) 10 | 
| család (family) | любит (love) 26; жить (live) 13; ходить (go) 7; дружить (be friends) 5 | 
| οικία (family) | любит (love) 26; живут (live) 13; идут (go) 7; дружат (be friends) 5 | 

### Table 4. Most frequent word associations (nouns, adjectives, verbs) of the stimulus word water.

| NOUN | ADJ | VERB |
|------|-----|------|
| Дунай/теньгер (Danube/sea) 7; kez/Balaton/hal (hand/Balaton/fish) 5 | folyókony (liquid) 21; kék (blue) 17; meleg/fém (hot/metal) 10; hideg (cold) 9 | 
| вода (water) | море (sea) 26; река (river) 11; рука (hand) 8; жилище/крыша (liquid/roof) 6 | 
| вода (water) | пить (drink) 68; пить (wash) 17; пить (bath) 12; вода (water) 9 | 
| вода (water) | пьется (drinking water) 50; пьется (drinking water) 48; пьет (kind-hearted) 1 | 
| вода (water) | пьет (drink) 99; смоывает (shower) 56; моет (wash) 29; моет (wash clothes) 24 |
Russian results that also consist of objects and places from the child’s direct environment such as játék (game/toy), младшая (person/car), ovi (nursery), and udvar (court).

It is worth mentioning that top Lao noun associations revealed the importance of family members, displayed by such lexical items as: ທ້າງ (parent), ລາວ (brother), and ຘ້າງ (sister). All of these linguistic items can be considered as independent lexemes in a sense that dictionaries mention those in separate articles (parents, brother, and sister). However, all three lexemes can be further fragmented into multiple parts that can also take the role of individual lexemes. Respectively, ທ້າງ (parents) can be split into two parts: ທ້າງ (father) and ທ້າງ (mother); ລາວ (brother) can be broken into two lexemes: ລາວ (elder brother), and ລາວ (younger brother); ຘ້າງ (sister) can be divided into ຘ້າງ (elder sister) and ຘ້າງ (younger sister).

While the Hungarian adjectives associated with the stimulus word friend are almost identical and prove that children see friends (and siblings) were collected as reaction words including lego and játék (toy/game), the repeated adjective refers to its higher intensity in a case of Lao respondents the association is more evident as literally means “friend”. Similarly to Lao the Hungarian results, nursery appears among the top four noun reaction words of child. The association is more transparent in the Lao language as nursery can be translated as “school for raising children” (ລ້າມືລ້າວ), or in its shorter form (ໄຂ່ານ້ອຍ) (raising children).

In all three investigated countries the most characteristic adjective associated with a child proved to be киц (small), and in the case of Lao respondents the association is more evident as (child) literally means “small child”. Similarly to (child), the second most frequent Lao association was ຄ້າຄ້າ (‘still small’, meaning “still very small”). A rich variety of synonyms of were collected as reaction words including ຂະຫນາດ (small),

### Table 6. Most frequent word associations (nouns, adjectives, verbs) of the stimulus word toy/game.

| NOUN | ADJ | VERB |
|------|-----|------|
| lego (toy/game) 15; баба (toy) 13; авто (car) 11; витамин (vitamin) 9 | добро (good) 6; баба (with dolls) 5 | játék (toy) |
| кукла (doll) 36; младшая (small child) 30; игра (game) 15; младший (small) 29 | любимый (favourite) 10; младший (small) 9 | играет (play) 70; играет (like/love) 14 |

### Table 7. Most frequent word associations (nouns, adjectives, verbs) of the stimulus word devil.

| NOUN | ADJ | VERB |
|------|-----|------|
| синий (blue) 3 | синий (blue) 6 | синий (black) 14; черный (black) 12; зеленый (green) 8; заливает (fash) 5 |
| пёс (dog) 39; пёс (dog) 22; (dog) 14 | пёс (dog) 39; пёс (dog) 22; (dog) 14 | пёс (dog) 39; пёс (dog) 22; (dog) 14 |

| VERB |
|------|
| залезать (climb) 12; запрыгнуть (jump) 28; бросить (throw) 10 |

### Table 5. Most frequent word associations (nouns, adjectives, verbs) of the stimulus word black.

| NOUN | ADJ | VERB |
|------|-----|------|
| синий (blue) 22; вранье (lie) 11; рука (clothes) 9; носки (tousers) 7 | светлый (dark) 28; фёрер (white) 12; кик (blue) 6 | фёрер (black) 5 |
| желтый (yellow) 44 | - | желтый (black) 2 |
| (T-shirt) 22; машина (car) 21; карандаш (pencil) 13 | - | (T-shirt) 22; машина (car) 21; карандаш (pencil) 13 |
| - | - | - |

- светел (can’t see) 12; светел (not mix with other colour) 4; светел (light off) 3
Table 8. Most frequent word associations (nouns, adjectives, verbs) of the stimulus word home.

| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
|------|-----|------|------|-----|------|------|-----|------|
| otthon (home) | дом (house/home) | บ้าน (home) |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| húsz (house) 41 | жиц (toy/game) 24 | аз (bed) 17 | azuba (room) 16 |
| good (good) 34 | big (big) 28 | happy (love) 19 | játék (play) 17 | anger (sleep) 9 |
| brick (brick) 33 | floor (floor) 32 | man (man) 26 | roof (roof) 16 | big (big) 33 | white (white) 22 | high (high) 19 | nice (nice) 11 |
| Жизнь 77 | построить 66 | и (did) 7 |
| 32 | 32; 38 |
| 17 |

Table 9. Most frequent word associations (nouns, adjectives, verbs) of the stimulus word foreigner.

| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
|------|-----|------|------|-----|------|------|-----|------|
| külföldi (foreigner) | таинственный (foreigner) | ылчйлжк (foreigner) |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| külföldi/ember | таинственный | ылчйлжк |
| abroad/man 15 | country 15 | (foreigner) 24 |
| barna/másik/magyar | страна | волос (hair) 18 |
| brown/other | (country) | (hair) |
| Hungarian | язык | (language) 12 |
| лет | город | (town) 8 |
| бритья | говорить | (language) |
| (different) 16 | жить | (live) 14 |
| бритья | приехать | (arrive) 5 |
| (different) 16 | (different) 16 | (different) 16 |
| бритья | (foreigner) | 24 |
| (hair) 18 | волос | (hair) 18 |
| (different) 16 | (different) 16 | (different) 16 |
| бритья | сад | (different) 16 |
| (different) 16 | (different) 16 | (different) 16 |
| бритья | (foreigner) | 24 |
| (hair) 18 | волос | (hair) 18 |
| (different) 16 | (different) 16 | (different) 16 |
| бритья | сад | (different) 16 |
| (different) 16 | (different) 16 | (different) 16 |
| бритья | (foreigner) | 24 |
| (hair) 18 | волос | (hair) 18 |
| (different) 16 | (different) 16 | (different) 16 |
| бритья | сад | (different) 16 |
| (different) 16 | (different) 16 | (different) 16 |
| бритья | (foreigner) | 24 |
| (hair) 18 | волос | (hair) 18 |
| (different) 16 | (different) 16 | (different) 16 |
| бритья | сад | (different) 16 |
| (different) 16 | (different) 16 | (different) 16 |
| бритья | (foreigner) | 24 |
| (hair) 18 | волос | (hair) 18 |
| (different) 16 | (different) 16 | (different) 16 |
| бритья | сад | (different) 16 |
| (different) 16 | (different) 16 | (different) 16 |
| бритья | (foreigner) | 24 |
| (hair) 18 | волос | (hair) 18 |
| (different) 16 | (different) 16 | (different) 16 |

Table 10. Most frequent word associations (nouns, adjectives, verbs) of the stimulus word cement house.

| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
|------|-----|------|------|-----|------|------|-----|------|
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
| cement house | cement house | cement house |
Table 10. Most frequent word associations (nouns, adjectives, verbs) of the stimulus word angel.

| NOUN | ADJ | VERB | NOUN | ADJ | VERB | NOUN | ADJ | VERB |
|------|-----|------|------|-----|------|------|-----|------|
| stany (wing); ruha (clothes) 45; jézusko (little Jesus) 12; fej/ajándék (head/gift) 8 | képes (man) 28; fehér (white) 28; zsip (nice) 12; jó (good) 10 | reptál (fly) 24; kis (see) 11; has (bring) 9; segít (help) 6 | bélés (white) 26; kutyás (live) 7; getölt (live) 7 | bécse (sky) 31; bronz (good) 7; dobolódon (kind/pink) 6 | szarvas (little wing) 10 | pénz (skiny) 31; hegy (high/kind) 3 | ágynemű (Heaven) 4 |

Table 11. Top-15 most frequent nouns and verbs, cumulated results.

| Hungarian (HU100) | freq. | Russian (RU100) | freq. | Lao (LAO 100) | freq. |
|-------------------|-------|-----------------|-------|---------------|-------|
| 1. anya (mother)   | 125   | ма́ма (mom)      | 158   | мами (parents)| 169   |
| 2. jászóri (play)  | 117   | папа (daddy)    | 136   | барабан (drinking water) | 134 |
| 3. apa (father)    | 109   | чо́л (man)      | 103   | чо́лвик (grandmother) | 104 |
| 4. gyerek (child)  | 73    | дожа (house/home) | 75    | бра́ш (water for shower) | 90  |
| 5. otthon (home)   | 54    | игра́т (play)   | 69    | водоканцелярия (sibling) | 74  |
| 6. jàrık (they)    | 53    | мла́д (kid)     | 54    | мальва (relatives) | 74  |
| 7. sivert (loves)  | 52    | друзья (friend) | 47    | бебе́ (love)       | 58   |
| 8. színny (wing)   | 34    | люби́ (I love)  | 47    | были́ (toy)       | 56   |
| 9. felnőtt (adult) | 32    | семья (family)  | 44    | семь (family)     | 52   |
| 10. víz (water)    | 30    | цвет (color)    | 44    | маменька́ (grandmother) | 50  |
| 11. ruha (clothes) | 29    | жизнь (lives)   | 43    | дуч (help)       | 48   |
| 12. lábak (lives)  | 26    | бабушка (grandmother) | 41   | бу́лвяря (sky) | 43   |
| 13. barát (friend) | 26    | папа (drink)    | 40    | было (stay together) | 42  |
| 14. ordog (devil)  | 25    | игра́н (toys)   | 39    | би (water)       | 38   |
| 15. bence (talk)   | 25    | ребенок (child) | 37    | детеныш (baby)  | 34   |

3.3. Family (casalád, семья, 家族)

Table 3 displays the top associations of family in the three investigated cultures. Noun associations comprise exclusively such words denoting members of the family including mother, father, parents, grandmother, siblings, and child. Hungarian and Russian results are almost identical in the noun category where it can be stated that mother proves to be the core element of Russian and Hungarian children’s linguistic picture of the world, followed by father and grandmother. Female family members in the Russian and Hungarian associations always precede male ones (i.e. mother precedes father and grandmother goes before grandfather). Lao results display a more balanced picture, as in the Lao language a combination of father (爸) and mother (妈) is generally used as an independent lexical item 媳婦 (literal meaning: father-wife) with the denotation ‘parents’. Similarly, the second most typical association 子親 (siblings) is composed of 子 (elder brother) and 媳 (younger brother or sister); the third most frequent result is 媳姊妹 (grandparents), a lexical unit that can be split into 媳 (grandfather) and 媳 (grandmother). In one case however it can be observed that female members are prioritised: 媳 (媳) is the fourth most frequent Lao noun association (literal meaning: “elder sister and younger sister”).

Meanwhile Russian and Hungarian kindergartners described a family with adjectives of positive meaning (good, kind, friendly, real), no adjectives were identified in the Lao results.

In the verb category, respondents in all three groups, typically associate family with the verb love (first place in Hungary and Russia, second place in Lao). A noteworthy fact is that the results love (влюбиться) and stay together (жить вместе) syntactically both comprise the reciprocal pronoun один (each other) that reflects a collectivistic character of the Lao culture embedded in language. Taking into account that the third most frequent Lao verb association is 帮助 (help) that is semantically (not syntactically) a reciprocal verb, it can be stated that Lao verb associations strongly confirm a more collectivistic feature of the linguistic picture of the word of Lao kindergartners when compared to Hungary and Russia.
3.4. Water (víz, вода, ບໍ່ານ)

Noun associations to the stimulus word water (víz, вода, ບໍ່ານ) displayed in Table 4 clearly reflect the dissimilar geographical surroundings of respondents in the reflective countries: Hungarian children associate to Hungarian proper names such as Duna (the Danube River), Balaton (Lake Balaton); Russians evoke more (sea) and песя (river); while Lao children mention ພີກົວ (lake).

On the one hand, the fact that geographical/geological aspects are mirrored in the responses of all three groups reflects a similar associative field of the three investigated cultures, on the other hand associations depict the particular characteristics of the children's native land. As Laos is a landlocked country and Laotians have very limited chance to travel abroad, it may be presumed that respondents do not often mention or evoke the sea, meanwhile Russians and Hungarians often associate to sea (in Russia this can be supposed to be connected to the geographical attribute of the country; for Hungarians – although the country does not have a sea – traveling abroad became accessible for the population in the last three decades).

Similarly, Lao kindergarteners’ frequent noun association is ພີກົວ (rain) that can easily be linked to the tropical weather of the country and the heavy presence of rain for six month each year, in the rainy season. Another culturally motivated item is ວາ+ ລາ (fish) – a lexeme that similarly to ພີກົວ (rain) does not appear in the Hungarian and Russian results. The underlying reason is supposedly the fact that the dominant protein source of Laotians is fish (in contrast with Hungary where fish is consumed in relatively small proportion).

The strongest Lao noun associations of the stimulus word water with remarkably high frequency proved to be ຝາກເມືອງ and ຝາກເມືອງ both lexemes can be translated into drinking water. The literal translation of both is “water-drink”, with the minor difference that although the verb ຝາກເມືອງ and ຝາກເມືອງ both denote the activity of drinking, ຝາກເມືອງ is a more colloquial form. Moreover, the verb ຝາກເມືອງ (drink) may also means eating, depending on the context.

In all three cultures investigated, drink (iszik, num, ຝາກເມືອງ) is the most frequent verb association from the stimulus word water. Another typical activity associated with water is connected to cleaning the body with water: the lexemes applied have dissimilar connotative (or partly denotative) meaning as fürdik in the Hungarian prevalently refers to taking a bath (to may also denote however taking a shower); купаться in the Russian also more often refers to taking a bath, while the Lao verb ຝາກເມືອງ means to take a shower – as bathtubs are generally not part of a Laotian household.

A salient presence thus importance of the notion of water can be grasped when analysing the Lao data. This is reflected partly in the outstanding quantity of reactions to the stimulus word water, furthermore in the strong presence of water in the overall data (�າຍຄິນ (drinking water) is the second most frequent expression of the whole linguistic data gained in this survey), as well as in the multiple synonyms applied by Lao speakers the activity of washing: ຝາກເມືອງ (wash, e.g. hand, car); ຝາກເມືອງ (wash, e.g. clothes); ຝາກເມືອງ (wash: e.g. take a shower). Furthermore, results revealed the peculiar, culture-specific adjective ຝາກເມືອງ with a word-for-word meaning “water-heart” that can be translated as kind-hearted.

3.5. Black (fekete, черный, ພະຫຼາດ)

The only one adjective of the ten stimulus words was black (fekete, черный, and ພະຫຼາດ respectively). All of the nine further stimuli were selected from the word class of nouns. Associations to this stimulus (Table 5) resulted in a relatively low amount of mentions, including zero adjectives in the Russian group. Hungarian and Lao kindergarteners typically associate black with dark (sötét in Hungarian and ພະຫຼາດ in Lao), furthermore associate to other colour names (fehér [white] and kék [blue] in Hungary; ປູນ [pink], ສາລອງ [purple], ສາລອງ [white], and ສາລອງ [red] in Laos).

Hungarian children proved to like black as the only verb associated with black colour was szeret (like). While Russian respondents did not mention any verbs, while Lao kindergarteners revealed สมัคร (see), ปรับ (mix), and ปิด (turn off) in the following contexts: สมัคร สีดำ (can’t see anything); ปรับ สีดำ (is not mixed with any other colour); and ปิด แสง (turn the light off).

The most typical noun association in Hungary and Russia – and presumably in Laos as well – proved to be colour (szín, цвет, and カラー respectively). The Lao reaction word ປູນ (colour) is not displayed in Table 5 because the Sketch Engine software tagged ປູນ (black colour) as one lexical item. In Hungarian further noun reactions are generally connected to clothes including csipő (shoe), ruha (clothes), and nadrág (trousers). Russian children seemed to be more focused on toys surrounding them with such reaction words as: краска (paint) and машина (car). Lao kindergarteners associate to ປູນ (pencil), ມີກິນ (T-shirt), ບັນດັງ (blackboard) and ຄົນຫ້ອງ (night).

3.6. Toy (játék, игрушка, ຈາກເມືອງ)

Kindergarteners in all three investigated cultures associated the verb play (játék, игрушка, ຈາກເມືອງ) with the stimulus word toy/game (Table 6). A morphological resemblance and similar sounding of the noun and the verb can be observed and can partly explain the strong connection in all cases. The second most frequent verb association is also nearly identical from the semantical perspective: the Hungarian szeret (like), the Russian любит (like, love), and the Lao ພູບງ (enjoy, all refer to the joyful, gay activity of playing. Lao children’s results highlighted the importance of sharing (Firebase) their toys – a similar result to that of the stimulus word friend (друзья) whereas sharing also appeared exclusively among the Laotian results (nota bene: Hungarian children associated to ad [give] – a verb consisting of a similar sememe of unconditionally offering something to the other – in a noteworthy number too).

A remarkable difference between the first two groups (Hungary, Russia) and Lao responses can be spotted in the noun reaction words. While Hungarian and Russian children typically mentioned toys of physically tangible objects including баба/кукла (doll), авто/машина/ машина (car), and vonat (train), Lao kindergarteners often referred to ຈາກເມືອງ (mobile phone), and ດາວກະດາ (car) – tools of modern technology. Lego (lego, ຈາກເມືອງ) was strongly present in the Hungarian and Lao results and could also be grasped in the Russian reaction words – although this does not appear in Table 6. Unlike many European languages, where the brand name lego became a common name, in Lao language the expression ຈາກເມືອງ stands for lego with the literal meaning of (game of connecting vehicles/items together).

It must be noted that identifying the appropriate equivalents in the analysed three languages was challenging in several cases including the stimulus word toy/game. In the Hungarian language, játék denotes both game as an abstract activity and toy, a tangible object that children play with, however in the Russian and Lao languages the two concepts are signified by different words (игрушка and игра; игра and игрушка respectively) (phenomenon of the Lacuna Paradox, see: Lenart, 2018). In compliance with the respondent group’s age and phase of linguistic development, toy as a more concrete and more easily comprehensible word was chosen for Russian and Lao equivalents (игрушка and игрушка). As Lao children in some cases did not properly reply to ຈາກເມືອງ (toy), in several cases the moderators mentioned ຈາກເມືອງ (game) as well in order to clarify the content of the stimulus words.

Hungarian and Russian adjectives connected to toy/game mainly represent positive feelings connected to the activity of playing including jó (good), милая (favourite), милость (real), and мягкая (soft). By contrast, Lao children evoke the adjective ຈາກເມືອງ (orderly, something that is put in order) that refers to their obligation to put toys in order after playing.
3.7. Devil (ordog, вепрь, ພະນານາງ)

Associations to the stimulus word devil (ordog, вепрь, ພະນານາງ) included most typically colour terms in the adjective category (Table 7). Black appeared in all three respondent groups as the first or second most frequent adjective to describe a devil (number one in Russia, number two in Hungary and Laos); red also proved to be a core characteristics of devil in Hungary (most frequently evoked adjective) and in Laos (fourth on the frequency list, always co-occurring with eye (อง), in the form of พระนาง (red-eyed)).

Further evoked adjectives partly refer to strongly negative characteristics such as bad (rossz, нерадивый; mean or evil (gonosz, злой); and scary or terrible (скукотишево). Interestingly, Laotian children describe devil in an outstandingly high proportion (34 occurrences) with the adjective long. The concordance lists confirm that long predominantly stands in front of nouns forming syntagms as พระนางทาง (long hair, 19 occurrences, out of those 1 occurrence of พระนางทาง (long toe nail)); พระนาง (long teeth, 6 occurrences); พระนาง (long hair, 4 occurrences); พระนาง and พระนาง (long arms and long tongue, 1 occurrence each).

Based on the noun reaction words to the stimulus word devil it can be observed that Russian kindergarteners generally imagine a devil as a similar creature to a human being, a person (человек). Hungarians associate to an animal (szarv, [horn]), while Laotians compare a devil to a ghost or spirit (ผี). Verb reactions to devil refer to speaking (valasztal [reply]), and mond [say]) in the Hungarian; and hearing (csinuljuk) in the Russian respondent group, meanwhile in Laos the devil is seen as a creature that catches children and eats them (จับจัดนำเสนอ).

3.8. Home (otthon, дом, ອານແຕ່ງກິນ)

In the course of the selection of the Hungarian, Russian and Lao equivalents of the concept of home (Table 8), dissimilarities were observed in the three languages (Lacuna Paradox, see: Lenart, 2018). In the Hungarian language otthon (home) is both semantically and in its linguistic form and sound different from дом (house). The Russian, word дом means house and home in parallel, and the two word forms resemble morphologically and in their in sounding as well. The Lao word บ້ານ can mean home or village too and the two meanings are in strong interference with each other, meanwhile บ້ານ is most typically verbalized as บ້ານ. Consequently, house (บ้าน, บ້ານ) appeared as the most frequent association in the Hungarian and the Lao group while it was not present in noteworthy number in the Russian results.

In connection with the stimulus word otthon (home) Hungarian children associated mainly to items and objects surrounding them in their homes such as játék (toy/game), ágy (bed), and szoba (room), meanwhile Russians evoked constituents of a house including the reaction words кухня (kitchen), дом (man) and крыша (roof). Laotian reactions suggest more affective ties to their homes (บ้าน) symbolised by noun the reactions words บ้าน (house), บ้านเรือน (my village), บ้าน (parents), บ้าน (kitchen), บ้าน (kitchen), บ้าน (bedroom), and บ้าน (kitchen). Prevalence of eating as a core characteristic of a home is reflected on the one hand in the linguistic fact that there are three Laotian equivalents of the English noun kitchen, on the other hand in the presence of all three lexemes among the top reactions (the literal translations of the three mentioned lexemes are: cooking room (บ้านครัว), house to prepare food (บ้านครัว), and room to prepare food (บ้านครัว)).

While a generally positive picture of the word emerges from the Hungarian and Russian results of the association experiment, characterised by such adjectives as jó (good), and красива (nice), the Laotian top reactions are lack of positive (or negative) connotation. Notwithstanding the fact that the Lao stimulus word was บ้าน (home) Lao respondents mainly mention features of a house (บ้าน) including ไม้ (wooden), ปู (cement) referring the material the house was built of. Both Hungarian and Russian kindergarteners see their homes (or houses) as of a considerable size verbalized by nagy (big), большоватый (big), and ປະເທດກາງ (high).

The verb reaction live ( lakik, Жити, ການເຂົ້າ) reveals congruence in the three investigated languages by taking the first place in the frequency list in verb associations. Sleeping (спит) and eating (Елъ) proved to be the most relevant activities connected to home in Laos – the former also appeared among the Hungarian top four associations.

3.9. Foreigner (különböző, สัมพันธ์, 間違い人)

As opposed to the Hungarian and the Russian results (Table 9), Lao children evoked a considerably higher number of adjectives when describing a foreigner (สัมพันธ์). Ninety-five occurrences were counted in the top four adjectives mentioned by the Laotian respondents, referring either to the size (สูง [tall]), นิ้ว [big] or to the colour (สี [red], สีขาว [white]) of a foreigner. Size turned to be a central point of reference: understandably, as Lao people are in average noticeably smaller in height and weight when compared to a typical foreigner, especially when contrasted to Europeans and Americans.

Colour terms were associated, mainly in connection with skin colour (สี [white] with 20 occurrences and สีดำ [black] with 8 mentions – this latter is not appearing in Table 9 as it is only the fifth most frequent adjective associated). Red (ส้ม) colour turned out to be the second most common characteristic of a foreigner, appearing in such syntagms as: สีแดง (red eye), สีแดง (red hair), and สีแดง (red face).

Hungarian results include the colour terms brown (barna) and black (fekete), moreover describe a foreigner as a kind (kedves) person. Both Russian and Hungarian respondents see a foreigner as different from them, expressed by the word forms other (маск, Осторожен). Hungarians also associate from foreigner to the adjective Hungarian as an antonym of the adjective foreigner (különböző) can mean foreigner and foreign in the Hungarian language.

Among noun associations of foreigner, Hungarian and Lao respondents often mention parts of the body including hair (хвост, стрижен), nose (нос), and mouth (уста) (white), eyes (очки) and beard (сединой), while Russian reactions words do not contain these lexemes in remarkable frequency. Hungarian and Russian noun reaction words are more abstract in a sense that besides the physical description of a foreigner, respondents associate to country (ораз, страна), language (нечёт, языком), abroad (крупный), and town (город). The strongest association in the Laotian respondent group is พระนาง, a loan word from the Thai language, a synonym of foreigner that means French according to the origin (etymology) of the word (probably due to the fact that the first missionaries arrived to Thailand from France).

The verb category – similarly to nouns – revealed discrepancy between the European (Hungarian and Muscovite-Russian respectively) results and the Laotian outcome of the association experiment. While in Hungary and in Russia the most representative actions of a foreigner as found in the research consist of actions connected to speaking (беседуем, говорим [speak]) and living (лакик, Жити), the Lao results – besides mentioning speaking (сказываться) – give a more colourful description of foreigners. Lao children associate to the following actions: ต้อง (take an airplane), จับจัด (hold each other’s hands), จับจัด (take photos), จับจัด (kiss), and ต้อง (ride a bicycle).

3.10. Angel (angyal, ангел, พระเจ้า)

Congruent word associations of the stimulus word angel (angyal, ангел, พระเจ้า) (see: Table 10) in all three analysed countries were noticeable from the following typical reaction words: fly (repül, летит, ໂດຍ) and wing (szárny, крыло, крылья, พระเจ้า). Partly similar, partly discrepant colour terms were evoked in the three cultures: Hungarians mentioned фігір (white), Russians associated to white (белая), pink (розовая), and black (черная), Laotians uttered yellow (พระเจ้า – a colour that often appears in Laos near sacred places, shrines, and statues of Buddha.)
Besides common associations such as fly and wing, numerous further lexemes referred to the perception of kindergarten children, imagining an angel living above the Earth including sky (весь, небо), Heaven (вселенная) and high (высок). Jesuska (little Jesus) in the Hungarian and Heaven (вселенная) in the Lao results may display the religious aspect of the conception of the notion of an angel.

Hungarian and Russian results suggest a generally positive perception of angel expressed by such reaction words as kedves (kind), szép (nice), jó (good), segít (help), хорощий (good), and добрый (kind). Lao associations show a more complex picture, incorporating the following obtained linguistic data: ວາລະວີ (looking for bad people), ວາລະພາດ (looking for naughty people), ເອກະລິການຜູ້ຊອດ (sitting and looking for people who steal mom's chicken), and ດັ່ງການ ແຊ້ທີ່ (an angel is a dead person).

Dissimilarly to Hungarian and Russian kindergarteners, Lao children’s reactions are often connected to money verbalized in such expressions as ການແຕ່ງ (has money), ຊາວຄາມ (winning the lottery), and ນ້ອຍຂົ້າ (a colour term that can be translated as yellow or golden).

3.11. Cumulated results

Table 11 displays the first 15 most frequent noun and verb associations of the complete data set obtained in the course of the association experiment. Undoubtedly, the central element of the linguistic picture of the world of kindergarteners is family and members of the family. The Hungarian results show evidence that children mainly associate to members of the nuclear family (only mother [anya] and father [apa] appear in the top results); meanwhile in Russia apart from parents, grandmother (nápolyuska) is present on the list of the top-15 strongest associations; and Lao results confirm the prevalence of the concept of the nuclear family by mentioning siblings (брат [elder brother], сестра [elder sister], братик [younger brother or sister]), grandparents, as well as further relatives, family relations (инородец) and (капсологаток). Interesting to note and underlines the importance of family in the Lao verbal consciousness, that in the Lao language family can be expressed in different ways: besides родственник (family), брать, сестра, братьи and сестры also appeared in this study that has the literal translation “father, mother, kids, grandchildren stay together”.

Reference to water or drinking was identified one time in the Hungarian (víz (water) and another one time (nincs (drinks)) in the Russian top associations. Lao results however confirm a more substantial role of water in the lexicon used by kindergarten children – and presumably in the Lao culture in general. As Table 11 displays, water is present in the list in three different forms: вода (drinking water, 2nd most frequent reaction), вода (water for shower, 4th most frequent association), and вода (clean water for multiple purposes). Besides the apparently significant role of water in all three data sets, it must be noted that presumably the ten stimulus words applied in the research are over-represented in the results.

The cumulated results re-confirmed strong community-orientation mirrored in the Laotian linguistic picture of the world and expressed by all four Lao verbs in Table 11 including แล้ว (live together) กลัว (love) ตื่น (help), and не (stay together). All of the four expressions contain the reciprocal pronoun У (each other).

4. Discussion and conclusions

Valuable linguistic data was gained in the course of the association experiment conducted with Lao kindergarten children that was contrasted to previously obtained results from a Hungarian-Russian study. Reactions to the ten selected stimulus words resulted in the below main observations.

Lao associations suggest that family is a core element of Lao children’s linguistic picture of the world with seemingly stronger weight than in the Hungarian and Russian groups. Family members are more frequently referred to and a wider array of the extended family appears in the Lao data including grandparents and grandchildren. Hungarian results imply the presence of a nuclear family, while the Russian results proved to be in between the Hungarian data referring to a nuclear and the Lao data displaying traits of an extended family model. From the syntactic perspective, Lao expressions are often compound groups of words that can take the role of a lexeme one by one as well as altogether (similarly to compound words in the Hungarian language) including (parents, literally: “father-mother”), дед (grandparent), literally: “grandfather-grandmother”), or (siblings, literally: “elder brother, elder sister, and younger sibling”.

It should be noted that the lexemes including дед (elder brother), сестра (elder sister), братик (younger brother or younger sister) are over-represented when compared to the Hungarian and Russian results, partly due to the fact that these kinship terms are used in Lao language in the role of personal pronouns: interlocutors generally address each other with these terms. Furthermore, the male grammatical gender is more frequent in these occurrences that can be an implication of the fact that in the Lao language the male forms can also be applied in a wider sense: дед (elder brother-younger brother) for example, can be used for addressing Lao citizens in the meaning of “fellow countrymen” or “compatriot”.

The research confirmed previous observations of Hungarian and Russian kindergarteners (Lenart et al., 2019) stating that children regard themselves as a smaller version of adults. The most frequent adjectives as associations to the stimulus word child (gyerek, ребенок, дет) in all three investigated countries was small (kicsi/malý/dет) – in the Lao language the association is more evident as the lexeme child (дет) can be translated as “small kid”. A variety of synonyms of мал (small) were collected including мал (small), дет, малъ (of young age), малъ (small younger sibling), and малъ (person still young).

Among the linguistic data collected on the activities of a child, сравнение appeared with the meaning saddle. The verb literally means “drinks milk”, proving the fact that in Laos, milk and dairy products are not generally consumed by the adult population, thus the expression “drinks milk” seems to be an appropriate distinctive description of the mentioned activity. Here it is important to note that the Lao equivalent of milk is молоко, with a word-for-word meaning: “breast-water”.

Another similarity between Hungarian and Russian children, the observation that children regard and consider themselves and children generally as good and kind creatures, proved not to be valid in the Lao respondent group. From the stimulus word child Lao kindergarteners mainly associated to such adjectives as хороший (naughty), хороший (doesn't know anything) and хороший (does not know how to think). Lao respondents also uttered generally negatively about children with such reactions as: хороший (cry), and хороший (pooh in the pants).

Water plays a central role in Lao kindergarteners’ linguistics picture of the word, partly due to the fact that water was one of the ten stimulus words of the research – consequently it is over-represented in the results –, and partly presumably due to the more vital importance of availability of water in Laos for drinking, washing, fishing and other purposes. Relevant cultural background information in Laos that partly explains the central role of water in Lao-speakers’ linguistic picture of the word is firstly the fact that tap water is of very poor quality, not appropriate for human consumption, secondly, Laos is a tropical country with excessive amount of precipitation, of huge rivers such as the Mekong river and a considerable dependency on water for irrigation and fishing purposes. The mentioned phenomenon could be grasped by numerous lexical items connected to water in the top 15 list of the cumulated results, including the words: вода (drinking water), вода (water for shower), and вода (clean water for multiple purposes).

Further considerable differences were identified between the previously researched Hungarian and Russian children and Lao kindergartners. From the stimulus word toy (játék, игрушка, игрушка), Hungarian and Russian children usually associated to objects including барабан (doll), авт/автомобиль/автомобиль (car), and воз (train), meanwhile Lao kindergarteners typically mentioned кукла (mobile phone) and
Devi as a stimulus word shed light on curios cultural discrepancies between the first two countries and Laos. Laotian children most frequently described devil with the adjective long, in the form of such syntagms as เบื้องต้น (long tail), หนวดเหนือ (long nose), เด็กสาว (long teeth), เด็กสาว (long hair), หนวดเหนือ and หนวด (long arms and long tongue). Noun reaction words to devil displayed another Laotian cultural specificity: while Russian kindergarteners described devil as a similar creature to a human being, a person/man (человек), Hungarians associated to an animal (szarv, [horn]), while Laotians evoked a ghost or a spirit (สีป่า) – an integral element of Lao religious (Buddhist) and spiritual thought present in everyday conversations and in the family circle too. Verb reactions to devil refer to speaking (válaszol [reply]), and mond (say)] in the Hungarian; and hearing ( słyszymy) in the Russian respondent group, meanwhile in Laos the devil is seen as a creature that catches children and eats them ( ກ້າຍເປັນຍາວ).

Similarly to devil, considerable differences were observed when comparing the reactions to the stimulus word foreigner (külföldi, иностранный, 外国人): a typical foreigner is described by Lao respondents as a big (หน้า), tall (สูง), white (ขาว) person with red eyes (สีตา), red hair (สีผม), and red face (สีหน้า). A logical linguistic imprint of the dissimilar body type of Laotians and foreigners is the frequent appearance of หนู (nose) and หนวด (beard) in the reaction words, as Lao people typically have a smaller and flatter nose and scarcer facial hair when compared to certain foreigner groups. A colourful – and culturally strongly motivated – description of foreigners was grasped in the course of the research displayed in such reaction words as:  เล่น (take an airplane), หูฟัง (hold each other's hands: a highly atypical behaviour in Laos), นิ่มนวล (take photos), หัว (kiss, a behavioural taboo in Laos), and ขี่จักรยาน (ride a bicycle).

Angel is characterised by the Hungarian and Russian respondents with positive traits including kedves (kind), szép (nice), jó (good), segít (help), храбрый (good), and добрый (kind), while Laotians display a less favourable image resulting in the following reaction words: บื้องต้น (looking for bad people), คู่รักน้อย (looking for naughty people), คู่หู (sitting and looking for people who steal mom's chicken), and คู่หู (an angel is a dead person).

The picture of a country with strong communitarian characteristics is showing up from the collection of the reaction words, expressed by frequent occurrence of words with reciprocal semantic traits including รัก (love, literally “love each other”), ดู (share, literally “share with each other”), รักกัน (love together), ช่วยกัน (help, literally “help each other”), and อยู่ (stay together). These lexical items are more widely used by speakers of the Lao language, when contrasted with the Hungarian and the Russian languages. All in all, the association experiment proved to be an effective methodological tool to investigate and compare the linguistic picture of the world of 4-5-year-old kindergarteners in Hungary, Russia and Laos. Substantial similarities and noteworthy differences were identified in the research that opened the doors of examining further age-groups in order to trace the verbal development of children from a cross-cultural perspective.

The conclusions based on the comparison of the association test results additionally obtained in the Hungarian and Russian age groups of 10–12 year-olds and 18-20 year-olds demonstrate that by the age of 12 the formation of the culture-specific linguistic image of the world is almost completed (data unpublished). Besides, such comparison shows changes in the linguistic picture of the world that occur in the process of its formation while a child develops as a social construct (James and Prout, 1997), or in other words, goes through steps of socialization (Vygotsky, 1962, 1978). The similar research based on the Lao language and culture would allow important intra- and intercultural data to be obtained.

Declarations

Author contribution statement

I. Lenart: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

I. Y. Markovina: Performed the experiments; Contributed reagents, materials, analysis tools or data.

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Data included in article supplementary material/referenced in article.

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The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

Additional information

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