Aspect attrition in Russian-German bilingual speakers

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Rationale

- **L1 attrition** – a specific case of bilingualism, which refers to non-pathological erosion or restructure of a previously acquired L1 in bilingual people (Köpke & Schmid, 2004)
- Can be affected by linguistic and extralinguistic factors

- **L2 transfer** – the influence of L2 on L1 (Andersen, 1983; Köpke, 2004; Pavlenko, 2000) – is particularly evident when languages differ in a given grammatical property (e.g., morphology simplification, syntactic constructions and word order changes)
- **Age of bilingualism onset** – affects various language domains (i.e., phonology, lexicon, grammar; Bylund, 2009; Birdsong, 2014); no serious deviations from monolingual performance in late bilinguals – in contrast to those who experienced an onset of bilingualism prior to adolescence (Schmid, 2013)
- **Amount of L1 input** - infrequent use of L1 causes more attrition (De Bot et al., 1991; Köpke, 1999), but no or reverse effects have been also found

The goal of the study was to provide new evidence on the attrition of verb aspect and to compare it with the attrition of tense in L1 (Russian) under the influence of L2 (German) grammatical properties.

Russian and German have comparable tense systems, but only Russian consistently expresses verb aspect through derivational morphology. Thus, the L2 transfer effect for aspect, but not for tense, was expected in Russian-German bilinguals (L1=Russian attritors).

The modulation of this L2 transfer effect by the age of bilingualism onset and the amount of exposure to L1 was also tested.

Materials

- 42 aspectual pairs of Russian verbs representing a single actional class (strong telic verbs denoting activity of the agent that causes a change in the state of the patient and having endpoints)
- Verb groups were matched on argument structure (all transitive), lemma frequency, morphological complexity

- Sentences included a temporal setting phrase, either referring to the past or future; an aspectual setting phrase, either imperfective or perfective; an animate subject; a verb; an inanimate object; and an extra word or phrase finalizing a sentence and irrelevant for the analysis. Sentences were preliminary rated, divided among three lists and complemented with fillers
- Sentences were presented auditorily in the error detection task (programmed in E-prime)

Condition	Set 1. Imperfective verbs (n=21)	Set 2. Perfective verbs (n=21)
Correct	Na proshloj nedele tselyje vyhodnyje malyar krasil zabor svoej tjoschi. Last week, for the whole weekend, the decorator was painting the fence of his mother-in-law.	Vchera za paru sekund devushka pochistila tufli prijatelja. Yesterday, in a couple of seconds, the girl cleaned the shoes of a friend.
Aspect violation	*Na proshloj nedele za neskolko chasov malyar krasil zabor svoej tjoschi. *Last week, in several hours, the decorator was painting the fence of his mother-in-law.	*Vchera tselyh desjat' minut devushka pochistila tufli prijatelja. *Yesterday, for the whole ten minutes, the girl cleaned the shoes of a friend.
Tense violation	*V grjaduschem mesjatse tselyje vyhodnyje malyar krasil zabor svoej tjoschi. *In the coming month, for the whole weekend, the decorator was painting the fence of his mother-in-law.	*Zavtra vecherom za paru sekund devushka pochistila tufli prijatelja. *Tomorrow evening, in a couple of seconds, the girl cleaned the shoes of a friend.

Participants

30 Russian monolingual and 30 Russian-German bilingual speakers matched on age (*M*=30 and 28 years, ranges 22-44 and 22-36 years), gender (14 females in both groups) and on educational level (mean years of education 16 in both groups, ranges 11-19 and 12-17)

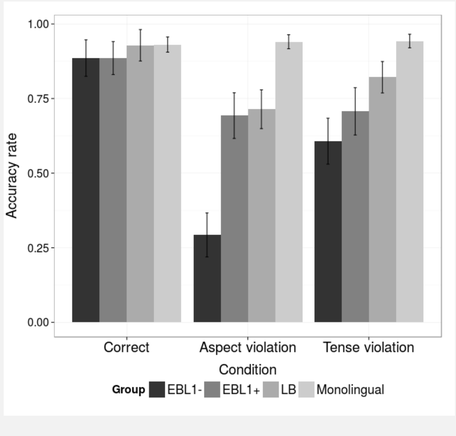
EBL- – earlier bilinguals with no or limited L1 exposure after immigration
EBL+ – earlier bilinguals with substantial L1 exposure after immigration
LB – later bilinguals with substantial L1 exposure

- All acquired Russian in a monolingual environment before immigration
- All reported German or both German and Russian to be their current dominant languages (according to Keijzer (2007))

Characteristics	EBL1-	EBL1+	LB
Mean age at time of testing (min-max)	27 (22-35)	26 (22-32)	31 (25-36)
Mean age of first exposure to German (min-max)	9 (6-11)	8 (6-10)	13 (12-15)
Mean number of years of exposure to German (min-max)	18 (13-26)	19 (15-24)	18 (12-23)

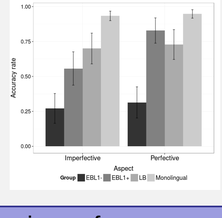
Results and Discussion

Statistical analysis in R: generalized linear mixed effects model with a logit link function



- No difference among groups in the correct condition
- No difference between the performance of LB and the monolinguals
- EBL1+ and EBL1- performed significantly worse than the monolinguals
- EBL1+ and EBL1- differed from one another, with the latter producing fewer accurate responses
- In the aspect violation condition EBL1- performed worse than the monolinguals

- EBL1+ performed more poorly in the imperfective condition than in the perfective condition



Under the L2 transfer account alone, all participants should have shown the difference in performance on tense and aspect, with lower scores on processing aspect violations than tense violations. Performance of the EBL1- speakers in the aspect and tense violation conditions supported the L2 transfer hypothesis. However, in the other two bilingual groups, EBL1+ and LB, scores on aspect and tense violations did not differ. This suggests a strong modulation of the L2 transfer effect by the amount of L1 input.

The preserved sensitivity to aspectual oppositions in the EBL1+ and LB participants was found irrespective of the age of bilingualism onset. That is, the age of bilingualism onset turned to be irrelevant for a potential dissociation of aspect-tense processing in L1 attritors. However, this factor was related to overall degree of verbal morphology attrition: irrespective of the amount of L1 exposure, L1 categories of tense and aspect are vulnerable in bilinguals with earlier age of immigration.

Both the amount of L1 exposure and the age of bilingualism onset contributed to the advantage of the prototypical aspect-tense match processing, found in the EBL+ group.

Poster presented at the 29th Annual CUNY Conference on Human Sentence Processing, Gainesville, USA, March 3-5, 2016

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