

Shifts in L1 Grammatical Sensitivity to Aspect Tested through Judgements and Pupil Dilation: Ukrainian Children Immersed in Polish vs Czech

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Across Slavic languages, verbal aspect (perfective vs imperfective) is typically used to distinguish between ongoing and completed events. However, there is variation regarding the use of aspect in habitual contexts (e.g., with adverbials like *every day*). West Slavic languages (e.g. Czech) allow both perfective and imperfective aspect in such contexts, while Polish, Ukrainian, and Russian only allow imperfective aspect [1].

We present findings from an acceptability judgment task combined with pupillometry [2,3]. Ukrainian refugee children aged 7-14 residing in Poland and the Czech Republic (n=42 and n=43, respectively) participated and did the task in Ukrainian, while monolingual Polish and Czech age-matched controls (n=15 and n=18, respectively) did the task in Polish and Czech. The children looked at pictures of characters on a screen while listening to sentences containing either a habitual or an episodic adverbial (e.g., *every day* vs *yesterday*) combined with descriptions of telic events involving either an imperfective or perfective verb (e.g., *grandma baked Imp/Pf a sweet cake*). After each sentence, the participants indicated if they thought the sentence sounded good or bad. Offline judgements and pupil dilations during sentence processing were recorded. We predicted that sensitivity to ungrammaticality of perfective aspect in habitual contexts may be weakened in the Ukrainian-Czech group vs the Ukrainian-Polish group under the influence of the societal language. This would be reflected in a) higher acceptance of habitual+perfective sentences in the offline judgements; and b) less pupil dilation triggered by such sentences. The results of monolingual Polish and Czech children corroborated the predicted effects: only Czech children accepted sentences with habitual adverbs with the perfective aspect, while Polish children rejected such sentences. In Ukrainian, we found a significant three-way interaction between Aspect, Context and Group in the offline judgements driven by higher acceptance of ungrammatical structures (habitual + perfective) by Ukrainian children immersed in Czech vs Polish (see Fig.1). Age significantly interacted with group and aspect, with a stronger effect of Age in the critical condition (habitual + perfective) for the group in Poland vs Czechia (see Fig.2). Pupil dilation measures are presented in Fig.3, and statistical analysis suggests sensitivity to ungrammatical habitual+perfective combinations in both groups.

Overall, our results suggest that the first language may undergo grammatical adaptations under the influence of the new language acquired under immersion. We discuss our results in the context of multilingual acquisition and attrition theories [4,5].

References

- [1] Dickey, S. (2000) Parameters of Slavic Aspect: A Cognitive Approach. Stanford.
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- [3] Schmidtke, J. (2018). Pupillometry in linguistic research: An introduction and review for second language researchers. *Studies in Second Language Acquisition*, 40(3), 529–549.
- [4] Schmid, M. S., Köpke, B., & de Bot, K. (2012). Language attrition as a complex, non-linear development. *International Journal of Bilingualism*, 17(6), 675-682.
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Figures and Tables

Figure 1: Sentence Acceptance by Condition (episodic imperf, episodic perf, habitual imperf, habitual perf) and Group.

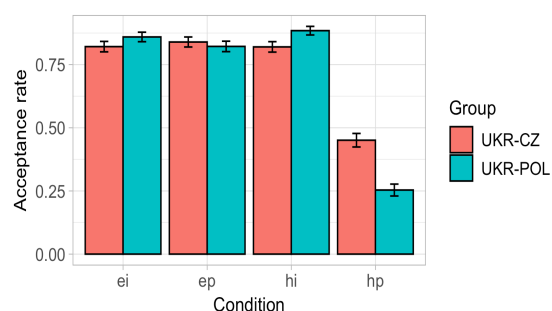


Figure 2: Probability of Acceptance in Habitual context by Group, Aspect and Age picture task).

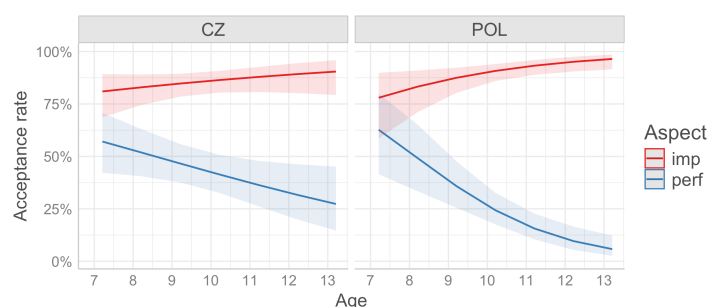
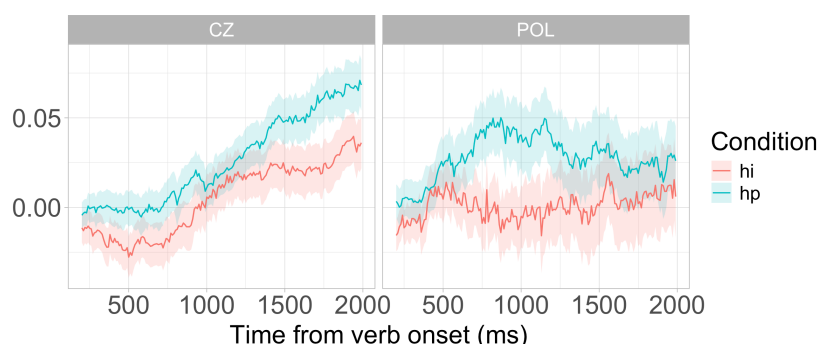


Figure 3: Pupil dilation in Habitual context by Aspect and Group (Ukr-Cz vs Ukr-Pol)



Optional Supplemental Information

Experimental conditions, Ukrainian: episodic/habitual adverbials paired with imperfective/perfective verbs

(ei) EPISODIC IMPERFECTIVE

Uvečeri	babuśa	pekla	solodkyj	pyrih
In.the.evening	grandma	baked.IPFV.PST.F.SG	sweet	cake

'In the evening, grandma baked a sweet cake'.

(ep) EPISODIC PERFECTIVE

Uvečeri	babuśa	spekla	solodkyj	pyrih
In.the.evening	grandma	baked.PFV.PST.F.SG	sweet	cake

'In the evening, grandma baked a sweet cake'

(hi) HABITUAL IMPERFECTIVE

Shchovečora	babuśa	pekla	solodkyj	pyrih
Every.evening	grandma	baked.IPFV.PST.F.SG	sweet	cake

'Every evening, grandma baked a sweet cake'

(hp) HABITUAL PERFECTIVE (UNGRAMMATICAL)

*Shchovečora	babuśa	spekla	solodkyj	pyrih
Every.evening	grandma	baked.PFV.PST.F.SG	sweet	cake

'Every evening, grandma baked a sweet cake'