Language specific perceptions of lexically depicting signs

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Lexical depictions are common across signed languages (SLs) (Ebling et al. 2015) and aid retrieval and processing in reaction time (RT) and electrophysiological measures (McGarry et al. 2021; Thompson, Emmorey, and Kluender 2009). Studies use pictures with features that visually overlap or align with target signs' phonological parameters to prime representation of lexical depictions in participants, concluding that lexically depicting signs more effectively access sensory-motor representations for signers than non-signers. Given signers judge their own language's depictive motivations as more prominent than others (Occhino et al. 2017) we might expect this effect is limited only to lexical depictions in a signer's own language. Investigations of iconicity across signed languages, however, suggest there may be shared cross-linguistic perceptions of lexical depiction (Adam 2016; Meir et al. 2007).

We investigated the extent depictive motivations are shared between signers of Norwegian and Russian SLs using a picture—sign matching task. The stimuli were pairs of illustrations (primes) and sign videoclips (targets). The primes were digitized black-white line drawings. 96 pictures were presented for 48 different concepts: 24 with similar forms between the two languages and 24 dissimilar forms. Participants were shown a prime in either condition (A) an aligned image that profiles the "subset of perceptual stimuli judged the focus of attention" (Langacker 2008:66) or condition (B) a nonaligned image that profiles some other quality of the referent not depicted by the lexical sign. For similar forms, the same illustrations were used in both languages. For dissimilar forms the other language's aligned illustrations are shown (Figure 1). Illustrations were then followed by the target (the correct sign) or a foil (an incorrect sign).

Accuracy/RT were used to infer the processing effort of lexical access for targets; faster RTs indicate less effort. A mixed-effects model was estimated with the with picture and sign type conditions as interaction terms. There was a significant interaction between picture and sign type such that non-aligned pictures for dissimilar signs had slower reaction times than aligned pictures for similar signs [β(logRT) = 0.05, SE = 0.02, t(42.53) = 2.49, p = 0.017.] (Figure 2). This indicates that lexical access is facilitated by lexical depiction generally, but not especially for similar signs as suggested by rating studies (Sevcikova Sehyr and Villwock 2022). These finding suggests that language specific perceptions of iconicity are more salient for signers, not underlying properties influencing shared forms.

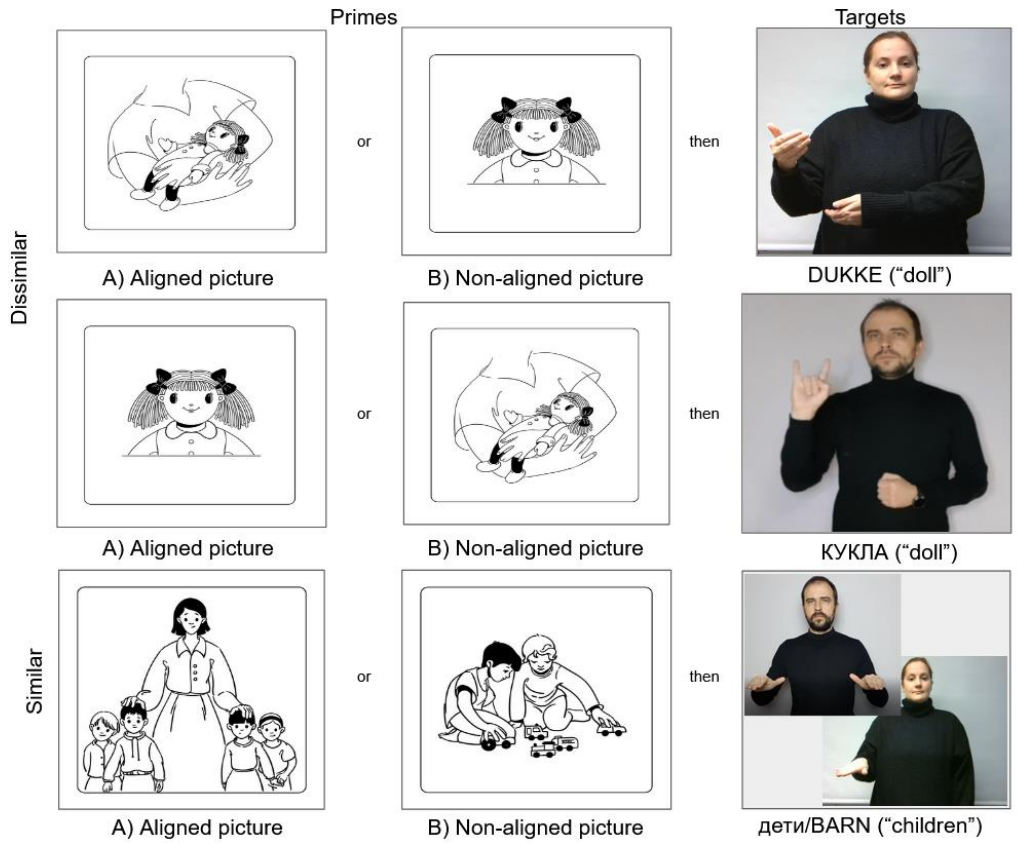

Figure 1. Aligned/Non-aligned picture stimuli for Similar/Dissimilar signs.

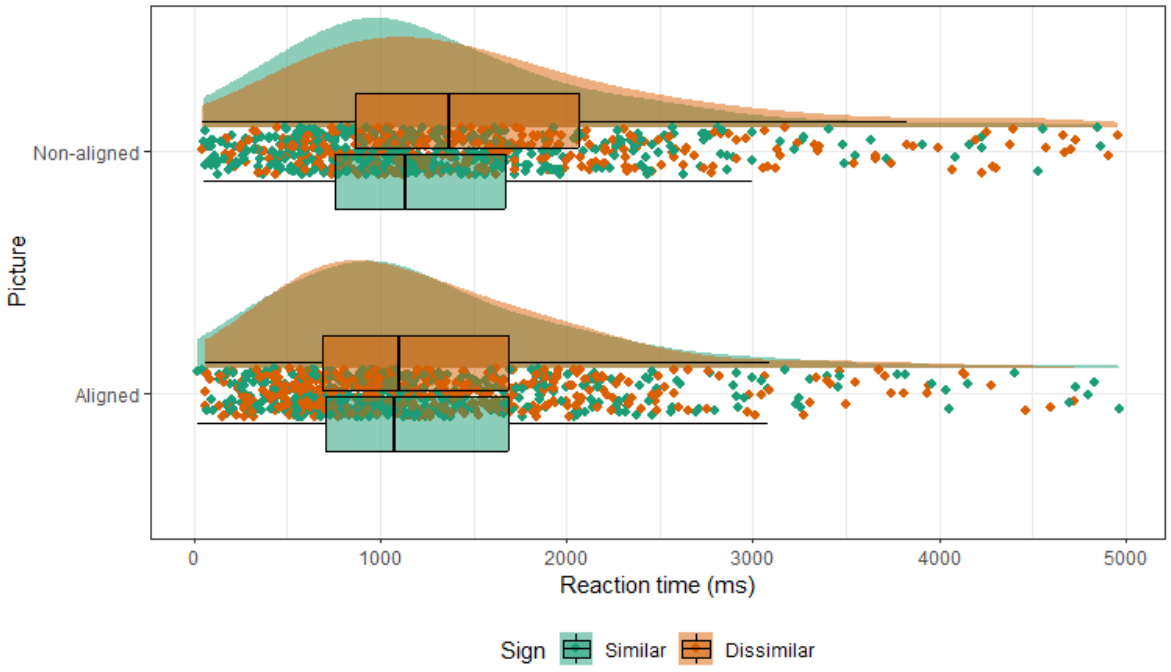

Figure 2. Raincloud plot of untransformed observations showing the effect of prime type on target RTs.

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