Age of Acquisition Effects on Reference Tracking in Turkish Sign Language

(Intended for on stage presentation)

Introduction. We investigated how native and late adult deaf signers of Turkish Sign Language (TİD) track reference in discourse within a story-telling paradigm. In signed narrative production, both observer and character perspectives (i.e., scales) are commonly used. Low accessibility explicit markers (e.g., full nominals) are used to introduce and reintroduce referents whereas high accessibility implicit markers such as pronouns, classifiers (CL), and zero anaphora markers are selected to maintain referents using the observer perspective (1–3). The character perspective is employed via constructed action (CA) where the signer takes on the role of a highly accessible referent, and performs their actions. These two perspectives can be mixed for the simultaneous articulation of multiple referents (e.g., CA accompanying other devices), resulting in a morphologically complex construction (4). Given the previous research that suggests over-redundancy in reference tracking (5,6) and poorer morphosyntactic competence (7) for late signers, we would expect that late signers use fewer instances of null marking and complex mixing of perspectives in their discourse compared to the native group.
Method. We tested 15 native signers, and 16 late signers whose exposure to TİD started between ages 3 and 17 (M_{AOA} = 7.7 years, SD = 3.30). Participants were shown 10 short wordless video clips from a cartoon, and asked to retell them. Following the classification of (8), we coded the discourse status, selected grammatical tools for a single reference, and the presence of mixing of perspectives for each sentence (see Table 1 for the observed instances), identifying 4523 reference markings in total. We used ELAN (9) and R for annotation and data analysis.
Results. We fit a linear regression model using the brms package (10) in R to referent response with discourse status and acquisition as predictors. The results in Figure 1 indicate that referent tracking with nominals was used more in introduction and reintroduction settings than maintenance. Referent tracking with zero anaphora was used more in maintenance and reintroduction than introduction. The effect of pronominal use across groups is inconclusive since the posterior probability distribution is wide, most probably because of inadequate data points. Native acquisition increased the use of null marking, with no significant effect in nominals although native signers produced fewer nouns in number compared to late learners, supporting (5,6). We fit another regression model for the mixing of perspectives (both character and observer) with acquisition as the sole predictor. The results in Figure 2 show that native acquisition increased the simultaneous tracking of multiple referents.
Discussion. The observed distribution of forms was overall consistent with the suggested models of reference control within the topicality and saliency paradigm for both spoken (11,12) and signed languages (13). The Interface Hypothesis (14) claims that the syntax-discourse interface is vulnerable and especially challenging to acquire. Following this assumption, we argue that language deprivation might negatively affect late signers' pragmatic competence (e.g., sensitivity to economy of form) and their use of complex morphosyntactic structures in reference tracking, which are known to be age-sensitive (15). In conclusion, the present study provides support for over-redundancy among late adult signers who employ less null marking and perspective mixing in their narratives compared to native signers. Since the interaction between discourse and morphosyntax is understudied in sign languages, we invite more research to examine how the syntax-discourse interface is affected by age of acquisition in TİD in relation to reference tracking in narratives.

Table 1. *Attested Grammatical Tools for Reference in TİD*

Discourse Status:			Introduction, Maintenance, Reintroduction
Grammatical Tools for Reference	**Single Reference**	Nominals:	Bare Noun, Noun + IX, FS-Noun, Noun + CL
		Pronominal:	IX
		Ø Anaphora	CA, Agreement Verb, Plain Verb
		Classifier:	WCL, BPCL, ExtCL
	Multiple Reference	Mixed Perspectives:	Combination of CA and other grammatical tools for single reference

Note. IX = index point, FS = fingerspelled, CA = constructed action, CL = classifier, WCL = whole entity classifier, BPCL = body part classifier, ExtCL = extension classifier.

Figure 1. *Regression model results for reference tracking tools with Discourse and Acquisition as predictors*

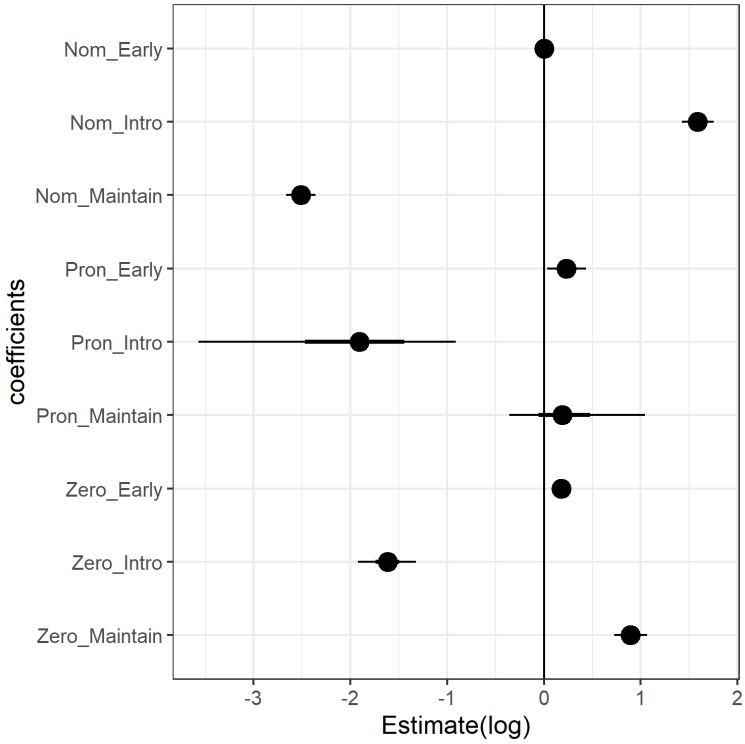
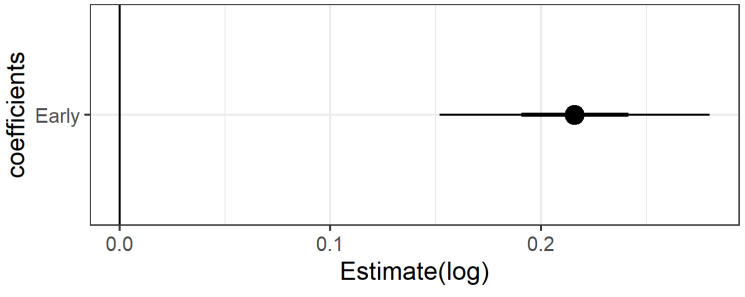


Figure 2. *Regression model results for perspective mixing with Acquisition as the sole predictor.*



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