The role of animacy in Estonian reflexive possessive binding

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In languages with possessive reflexives (see page 3), these are subject to looser binding constraints than nonpossessive reflexives. Reflexive binding in possessives has been documented to be impacted by the animacy of both possessor (Tingsell 2011 on Swedish) and possessum (Timberlake 1981 on Russian). In Estonian, reflexive possessive binding constraints are more stringent than in Swedish or Russian, so that, in clauses with canonical transitive verbs, reflexive and nonreflexive possessives are in complementary distribution, with reflexives always bound by the subject (see (1)). Verbs with an oblique experiencer (Lesage & Bonami 2019) differ (2): here the reflexive possessive *oma* can refer either to the oblique (*Peetrile)* or the subject (*Maarja).* These verbs are thus a good testing ground to explore the possible effects of animacy.

To document the role of possessor and possessum animacy, we ran two different acceptability judgment experiments.

The first experiment manipulated type of possessive (reflexive vs. nonreflexive), animacy of the possessor (animate vs. inanimate) and word order (Stim-V-Exp-Obl vs. Exp-V-Stim-Obl). 20 experimental items and 52 fillers were created, with a verb of the relevant class and an adjunct in an oblique case containing a possessive (See table 1 for materials). 53 native speakers of Estonian rated the naturalness of sentences from 0 to 10. Using Bayesian ordinal regressions, we found a strong interaction between possessive type and word order ($\hat{\beta}$=0.96, 95% CrI=[0.50, 1.41], P($\hat{\beta}$>0=1). This confirms the results of Lesage & Bonami's (2019) corpus study, which showed that a preverbal antecedent favours the use of the reflexive possessive. More importantly, we found an interaction between animacy and possessive type ($\hat{\beta}$ = 0.91, 95% CrI=[0.39, 1.45], P($\hat{\beta}$>0=1): an animate antecedent also favours the reflexive possessive. See p. 2 for other effects.

The second experiment manipulated type of possessive (reflexive vs. nonreflexive) and animacy of the possessum (animate vs. inanimate). 20 experimental items and 53 fillers were created. Each sentence features a verb of the relevant class with a postverbal possessed nominative expressing the stimulus (see table 2). 27 participants took part in this experiment. They had to rate the naturalness of sentences from 0 to 10. Bayesian regressions documented an effect of possessive type (the nonreflexive is preferred, $\hat{\beta}$ = -2,62, 95% CrI=[-3.56, -1.70], P($\hat{\beta}$)> 0=0.00), but no clear effect of possessum animacy nor clear interaction between possessum animacy and possessive, at least with this small number of participants. The items were more acceptable than those of the first experiment, in all likelihood because of a simpler clause structure.

These two experiments show that animacy plays a role in the binding of reflexive possessives in Estonian too: only possessor animacy has an impact on the acceptability of possessives, reflexive possessive being preferred to refer to an animate referent. We hypothesize that this is an effect of the fact that an animate referent is more salient, and thus a better reflexive antecedent than an inanimate one, as suggests Bickel (2004) for nonpossessive reflexives. The absence of an effect of possessum animacy suggests that Timberlake's early Russian results should be revisited using contemporary methods (latin square design, all condition per item, etc.). These experiments are part of more a more general experimental exploration of the role of animacy on reflexive binding constraints (Sloggett, Dillon 2017) and in the interpretation of possessives (Storbeck, Kaiser, 2018).

Experiment 1

Possessor animacy	Word order	Possessive	Item
Animate	Stim-V-Exp-Obl	Reflexive	*Ott meeldib sulle oma lihtsuse pärast.*
		Nonreflexive	*Ott meeldib sulle tema lihtsuse pärast.*
	Exp-V-Stim-Obl	Reflexive	*Sulle meeldib Ott oma lihtsuse pärast.*
		Nonreflexive	*Sulle meeldib Ott tema lihtsuse pärast.*
			You like Ott because of his simplicity.
Inanimate	Stim-V-Exp-Obl	Reflexive	*Mäng meeldib sulle oma lihtsuse pärast.*
		Nonreflexive	*Mäng meeldib sulle selle lihtsuse pärast.*
	Exp-V-Stim-Obl	Reflexive	*Sulle meeldib mäng oma lihtsuse pärast.*
		Nonreflexive	*Sulle meeldib mäng selle lihtsuse pärast.*
			You like this game because of its simplicity.

Table 1: 1st experiment materials

Dependent variable
rate (0 to 10)

Independent variables
Possessor animacy (animate=1, inanimate=0)
Word order (Stim-V-Exp-Obl=1, Exp-V-Stim-Obl=0)
Possessive (reflexive=1, non reflexive=0)

Figure 1 : Rate of sentences of experiment 1

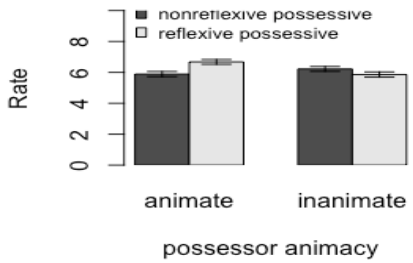
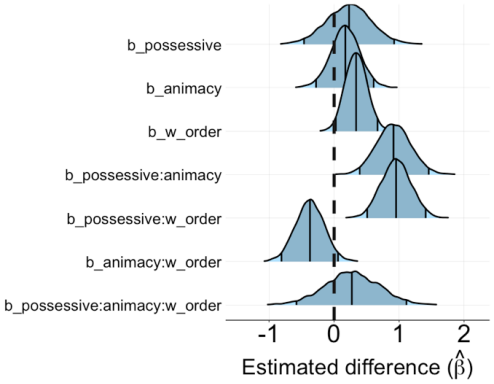


Fig. 2: Posterior distributions for ratings (95% CrI)



Experiment 2

Possessum animacy	Possessive	Item
Animate	Reflexive	*Mulle meeldib oma mees.*
	Nonreflexive	*Mulle meeldib minu mees.*
		I like my husband.
Inanimate	Reflexive	*Mulle meeldib oma kool.*
	Nonreflexive	*Mulle meeldib minu kool.*
		I like my school.

Table 2: 2nd experiment materials

Dependent variable
rate (0 to 10)

Independent variables
Possessum animacy (animate=1, inanimate=0)
Possessive (reflexive=1, non reflexive=0)

Figure 3: Rate of sentences of experiment 2

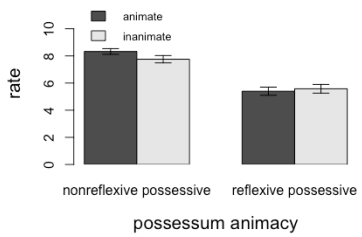
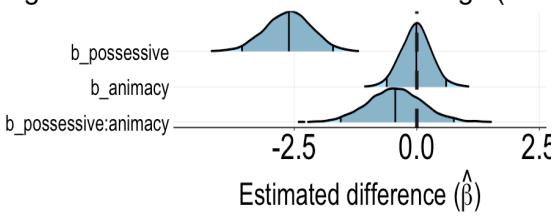


Fig. 4: Posterior distributions for ratings (95% CrI)



Additional information about Estonian

Reflexive possessives

We call reflexive possessive a possessive form that must be locally bound, typically by the subject. In Estonian, the distribution of reflexive and nonreflexive possessives is strictly complementary with canonical transitive verbs: a reflexive must refer to a local subject and the nonreflexive possessive refers to a local nonsubject or can be free, as shown in (1). Verbs with noncanonical argument structure are subject to less stringent constraints. For example, psych verbs with an oblique experiencer allow for reflexive possessives to be bound by either the nominative subject or the oblique argument (2).

(1)	*Peeter$_i$*	*vii-s*	*Jaani$_j$*	*oma$_{i/*j/*k}$*	*/tema*$_{i/j/k}$*	*vanema-te*	*juurde.*
	Peeter.NOM	lead-PST	Jaan.GEN	POSS.REFL	3SG.GEN	parent-PL.GEN	at

Peeter$_i$ led Jaan$_j$ to his parent's place.

(2)	*Peetri-le$_i$*	*meeldi-s*	*Maarja$_j$*	*oma$_{i/j}$*	*/tema$_{i/*j}$*	*üllatuse-ks.*
	Peeter-ALL	please-PST	Maarja.NOM	POSS.REFL	3SG.GEN	surprise-for

Peeter liked Marjaa, to his/her amazement.

In the last construction, while both possessive forms can corefer with the allative argument, there are less acceptable when corefering with a nonsubject argumentthan with a subject.

Word order and information structure

Estonian word order is restricted by information-structural factors (Tael 1988, Lindström 2005, Kaiser & Vihman 2006): the topic tends to precede the comment. In general, animacy correlates considerably with topicality (Rosenbach 2008). This is probably what causes the strong effect of word order ($\hat{\beta}$ = 0.34, 95% CrI=[0.02, 0.66], P($\hat{\beta}$)>0=0.98) and the lesser interaction between animacy and word order ($\hat{\beta}$ = -0.37, 95% CrI=[-0.81, 0.06], P($\hat{\beta}$)>0=0.04) in our first experiment. We assume that speakers prefer preverbal subject. As the adjunct is related to the subject, it is more plausible that it is in topic position.

For the interaction between animacy and word order, an inanimate subject is less felicitous in preverbal position than an animate subject, as animate referents are more typical topics.

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