Investigating prominence alignment processing advantages in Korean nominals

Background. Agentivity of an NP plays a strong predictive role in online processing: sentences are processed faster when the first encountered argument is an agent [1]. Animacy enhances this phenomenon: when encountering animate NPs, participants are more likely to commit to an agent interpretation early, and experience a processing penalty at a predicate that requires reanalysis of the animate entity as non-agentive [2-4]. These findings indicate prominence scales (e.g. Animate>Inanimate, Agent>Non-agent) [5-6] such that the strong predictors, Animate and Agent, are higher in prominence and more preferred, constraining expectations [7] of upcoming material on the basis of 1) having agentivity, 2) being animate, and 3) being the first argument encountered [8]. Increased level of constraint leads to downstream faciliatory processing effects. Previous research has focused on these findings in the clausal domain, but NPs are also capable of donating events and having event participants. In this study, we investigate the processing of (mis)aligned thematic arguments in Korean nominal constructions, to address the following research questions: what is the nature of prominence alignment processing advantages within nominal constructions, and how does the animacy of the first NP argument facilitate or suppress reading times of a nominal predicate in online comprehension?

Methods. We created 32 sentences with event nominal constructions in topic positions. All event nominals were created with the shape of some initial, genitive marked argument followed by a manner adjective, followed by a nominal predicate. In a 2x2 design (1), we manipulated the compatibility of the argument as a possible Theme/Patient, by crossing the animacy of the initial argument (ANIMATE, INANIMATE), and the predicate type's ability to (dis)allow NP complements (CP, NP) (2). In a moving window self-paced reading study (N = 40), participants read each sentence and were then asked to "accept" or "reject" given its semantic plausibility. Each participant also completed a plausibility rating study, in which they rated the items from the SPR task on a scale of 1-7. Participants saw each item in each study, but not in the same condition across studies.

Results. Current ongoing data analysis has so far revealed the following trends of interest: in both ANIMATE conditions, regardless of predicate type, there seems to be a large cost of integration of the animate argument with the predicate, indicated by the exponential slowdown in RTs in the spillover region (Figure 1). Local animacy advantages at word 8, for example, are observed for animate vs. inanimate arguments within the NP predicate condition, pending significance testing. Of additional interest, though the CP-ANIM condition has the largest slowdown at predicate integration (word 7 in Figure 1), the rating study results suggest that this same condition is consistently rated higher than all other conditions (Figure 2). Further data analysis will complete significance testing for all observed trends through linear and ordinal regressions, and further dissect by-participant and by-item data. If it is indeed the case that animate conditions result in greater slowdown, regardless of predicate type NP/CP, this is surprising given prior research on animacy as a facilitator of faster processing, since in both ANIMATE conditions, the animate argument is aligned with agentivity and linear precedence.

Discussion. Preliminary data examination suggests that, in contrast to patterns found in work on full clauses, within the nominal domain, alignment of animacy, agentivity, and linear precedence do not straightforwardly contribute to any processing advantage. It suggests, in contrast, that these alignment preferences do not extend straightforwardly to the nominal domain at all, or perhaps even that agent-only nominal constructions are somehow marked structures, though this conclusion is in some tension with the results of the norming study. One alternative conclusion might point to some sort of reanalysis cost due to an omitted internal argument in the NP-ANIM and CP-ANIM constructions.

(1) Experiment design: Animacy x Predicate Type

$$\left\{\frac{ANIMATE \quad NP}{INANIMATE \quad NP}\right\} \times \left\{\frac{\text{"CP" } Predicate\ (subcategorizes\ for\ only\ a\ non{-}NP\ argument}{\text{"NP" } Predicate\ (subcategorizes\ for\ only\ an\ NP\ argument}\right\}$$

(2) {***acessi/cungke*}*-uy*** *coyongha-n* {***hyepco/unphyey*}*-nun …***
{old.man$_{ANIMATE}$/evidence$_{INANIMATE}$}-GEN quiet {compliance$_{CP}$/concealment$_{NP}$}-TOP …
"{the old man/the evidence}'s quiet {compliance/concealment} …
{아저씨/증거}의 조용한 {협조/은폐}는 …
… *motwu-lul uysimha-key ha-yss-sumnita*
… everyone-ACC suspicious-ADV do-PST-DECL
… made everyone suspicious."
… 모두를 의심하게 했습니다

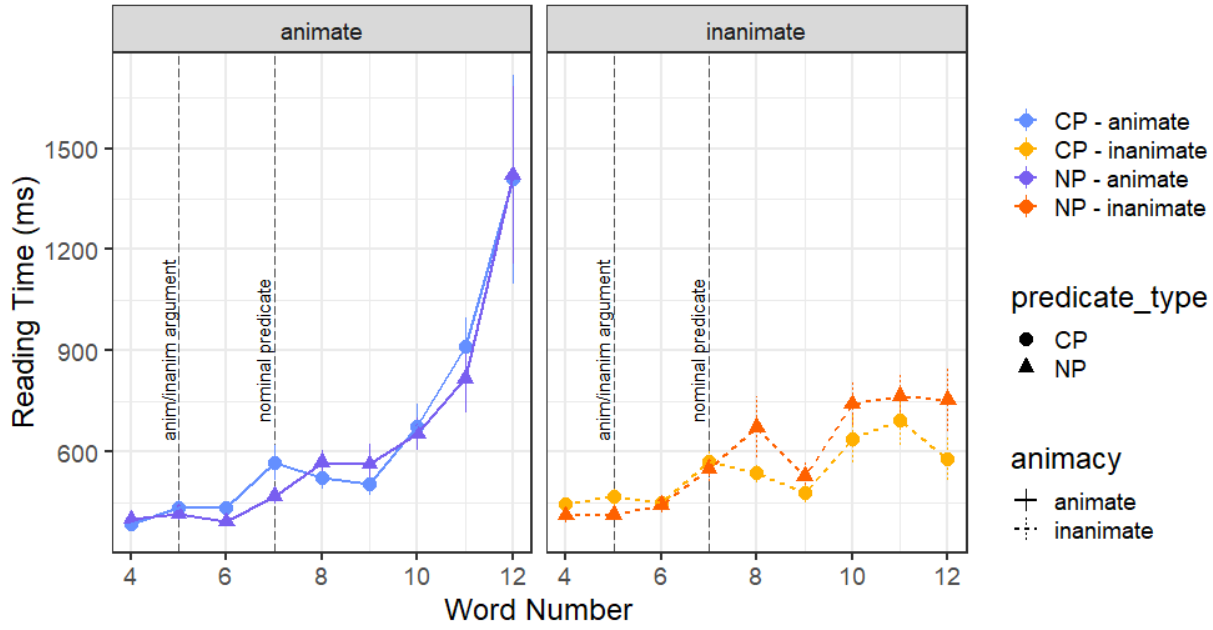

Figure 1. (above). Time course of average reading time (by word) for all SPR trials that were successfully accepted/rejected given semantic plausibility (n = 9431).

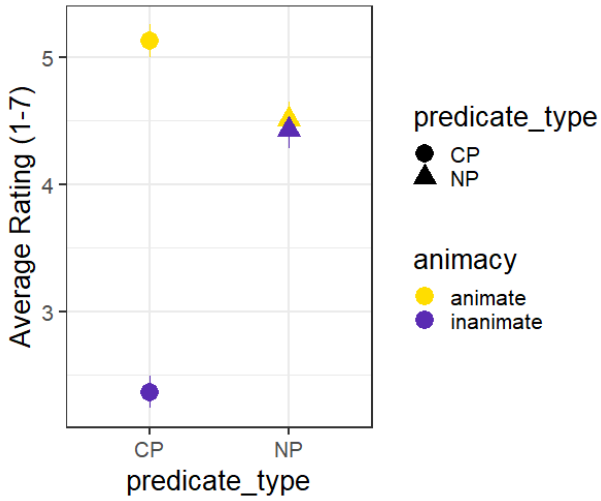

Figure 2. (left). Mean plausibility ratings by condition, on a scale of 1-7 (1 = least plausible, 7 = most plausible).

References

[1] Ferreira et al., 2002. *Cog. psych.*; [2] Branigan et al. 2008. *Lingua*; [3] Clifton et al., 2003. *JML*; [4] Kuperberg et al., 2007. *Brain & Lang.*; [5] Wagers et al., 2018. *Cognition*; [6] Wilson & Dillon, 2022. (preprint); [7] Levy, 2008. *Cognition*; [8] Bornkessel-Schlesewsky & Schlesewsky, 2009. *Lang. and Ling. Compass*