

## REVISITING TAGALOG WORD ORDER PREFERENCES

This paper investigates the grammatical constraints that influence word order preferences in Tagalog voice alternations (agent [AV], patient [PV], benefactive [BV], and instrumental voice [IV]; 1-4) within single-sentence contexts. Tagalog employs a voice system where verb morphology selects an element as syntactically prominent (the *pivot*), marked with *ang*. While Tagalog allows word order flexibility, there is controversy regarding word order preferences and canonicity. Previous work has reported a preference for an agent-first (e.g., Schachter 2015) or a pivot-last word order (e.g., Himmelmann 2005) in Tagalog, or that both tendencies apply (e.g., Kroeger 1993). This study hypothesizes that two grammatical, graded constraints shape native Tagalog speakers' productions: (1) agents are likely to occupy the first post-verbal argument position because of their saliency (agent-first hypothesis); (2) pivots take the second argument position, as the pivot's immediate mention facilitates easier reference to voice morphology (pivot-second hypothesis). Such a word order entails higher accessibility to elements relevant to syntactic computations (Hawkins 2004; Lewis, Vasishth, & Van Dyke 2006; Jaeger & Tily 2011).

These hypotheses were tested experimentally through a sentence continuation task with 30 native Tagalog adults (age 22-55; mean 29.8). Participants were shown a visual scene containing four prototypical arguments (agent, patient, benefactive, and instrument). They were asked to complete a sentence fragment containing a verb in one of the four voice alternations, using the four depicted elements, and to then rate the naturalness of the sentence. The original item set, also used for a norming study, involved 52 verbs, crossed with four voice alternations in a Latin-square design and counterbalanced with two visual scene arrangements, creating eight lists. After excluding items with inconsistent labelling of the arguments or low plausibility ratings, a final set of 37 verbs was analyzed.

Results: In PV, BV, and IV there was a predominant mention of agents and pivots in the first and second positions, respectively. However, in the agent voice, the number of agents and patients in each position were comparable in number (Figure 1). Responses were binomially coded for mention of the agent (vs. other) in the first argument position and the pivot/other in the second position. Maximal mixed-effects logistic regression models with Voice as a fixed effect, AV as the reference level, and participants and items as random effects revealed significant differences between AV and the other voices (Table 1). In the first position, agents were not significantly more frequent than other arguments in the AV condition ( $p=.61$ ), but agent-first productions significantly increased for non-AV conditions. In the second position, pivots were significantly dispreferred in AV ( $p<.01$ ), and their likelihood increased for each other voice. A subset analysis of just agent and patient responses (Table 2) showed the AV had neither a significant agent-first nor pivot-second preference, and the PV differed significantly from the AV. These findings are consistent with the agent-first and pivot-second hypotheses, resolved in the agent voice to exhibit two similarly preferred patterns. They also concur with an account where Tagalog word order preferences satisfy easier access to elements relevant to syntactic computations.

### Agent Voice (AV)<sup>1</sup>

(1) Nag-durog **ang** nanay ng karots para\_sa bata gamit\_ang kutsara.  
 AV.PRF-mash **PIV** **mother** NPIV carrots BEN child INS spoon  
 'The mother mashed carrots for the child with the spoon.'

### Patient Voice (PV)

(2) D<in>urog ng nanay **ang** karots para\_sa bata gamit\_ang kutsara.  
 <PV.PRF>mash NPIV mother **PIV** **carrots** BEN child INS spoon  
 'The mother mashed the carrots for the child with the spoon.'

### Benefactive Voice (BV)

(3) Ip<in>ag-durog ng nanay **ang** bata ng karots gamit\_ang kutsara.  
 BV<PRF>-mash NPIV mother **PIV** **child** NPIV carrots INS spoon  
 'The mother mashed carrots for the child with the spoon.'

### Instrumental Voice (IV)

(4) Ip<in>an-durog ng nanay **ang** kutsara ng karots para\_sa bata.  
 IV<PRF>-mash NPIV mother **PIV** **spoon** NPIV carrots BEN child  
 'The mother mashed carrots for the child with the spoon.'

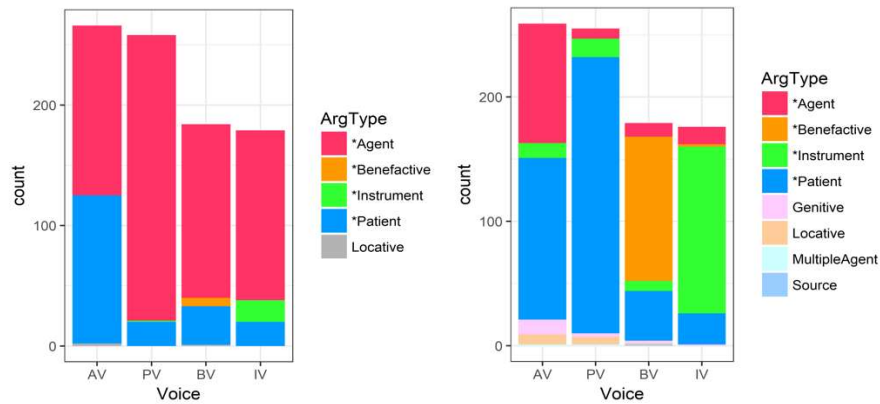


FIGURE 1. Frequency of arguments by Voice in the first (left panel) and second position (right).

TABLE 1. Results of the mixed effects logistic regression models.

	<i>b</i>	<i>SE</i>	<i>z</i>	<i>p</i>
Agent-first hypothesis <sup>2</sup>				
AV	0.14	0.27	0.51	0.61
AV vs PV	2.92	0.55	5.28	< .001
AV vs BV	1.37	0.37	3.74	< .001
AV vs IV	1.87	0.48	3.92	< .001
Pivot-second hypothesis <sup>3</sup>				
AV	-0.66	0.25	-2.70	< .01
AV vs PV	2.93	0.43	6.76	< .001
AV vs BV	1.39	0.45	3.07	< .01
AV vs IV	2.04	0.45	4.55	< .001

TABLE 2. Results of the subset analysis on agent voice, using mixed effects logistic regression.

	<i>b</i>	<i>SE</i>	<i>z</i>	<i>p</i>
Agent-first hypothesis <sup>4</sup>				
AV	0.33	0.28	1.16	0.24
AV vs PV	27.14	5.90	4.60	< .001
Pivot-second hypothesis <sup>5</sup>				
AV	-0.33	0.28	-1.16	0.24
AV vs PV	27.77	5.88	4.72	< .001

<sup>1</sup>GLOSS: AV = agent voice, BEN = benefactive, BV = benefactive voice, INS = instrument, IV = instrumental voice, NPIV = nonpivot, PIV = pivot, PV = patient voice

<sup>2</sup>glmer(testagentfirst ~ Voice + (1+Voice|Participant) + (1+Voice|ItemNum), data, family="binomial")

<sup>3</sup>glmer(testpivotsec ~ Voice + (1+Voice|Participant) + (1+Voice|ItemNum), data, family="binomial")

<sup>4</sup>glmer(testagentfirst ~ Voice + (1+Voice|Participant) + (1+Voice|ItemNum), data, family="binomial")

<sup>5</sup>glmer(testpivotsec ~ Voice + (1|Participant) + (0+Voice|Participant) + (1+Voice|ItemNum), data, family="binomial")