

The influence of morphologically conditioned accent patterns in L1 on the acquisition of English suffixed word stress

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This study investigates the influence of bound morpheme (BM)-conditioned accentual patterns in learners' L1 on the acquisition of stress patterns in English suffixed words. English suffixes are divided into stress-neutral (e.g., *-less*, *-ness*) and stress-shifting (e.g., *-ic*, *-al*). The former do not move the stress of the stems (e.g., *párent* vs. *párentless*), whereas the latter typically shift stress to later syllables (e.g., *párent* vs. *paréntal*). We show that English suffix-induced stress patterns are acquired differently among the learners of English from different L1 backgrounds: Seoul Korean (SK) learners, whose L1 lacks lexical accent; Gyeongsang Korean (GK) learners, whose L1 is a lexical pitch accent language predominantly with accent-neutral BMs (Table 1a); and Tokyo/Keihan Japanese (J) learners, whose L1 is a lexical pitch accent language with both accent-changing and -neutral BMs (Table 1b).

Our hypothesis is that the learnability of English suffix-induced stress patterns is affected by the BM accentual patterns in L1. When BM accentual/stress patterns match between L1 and L2, the acquisition of L2 patterns is facilitated. When the two systems differ, however, acquisition of L2 patterns becomes more difficult, and learners tend to transfer L1 patterns to L2. If L1 does not have an accentual system, there are no specific inhibitory influences from L1 when learning L2 patterns. Based on this hypothesis, GK learners are expected to experience the greatest difficulty in acquiring English stress-shifting patterns as accent-neutral BMs are predominant in their L1. By contrast, J learners are predicted to acquire both stress-neutral and -shifting patterns in English relatively easily, since their L1 includes both accent-changing and -neutral BMs. For SK learners, no systematic L1 factors are expected to either facilitate or inhibit the acquisition of English suffix-induced stress patterns. Therefore, GK are predicted to encounter the greatest difficulty in learning English suffix-induced stress-shifting patterns.

The participants in our experiment were university students, and only data from those with overseas residence of six weeks or less were included in the analysis, leaving us with 18 SK, 14 GK, and 22 J speakers. Their English proficiency ranged from intermediate (CEFR B1) to higher (B2 and C1). The experimental materials consisted of existing English lexical items: (a) base forms, (b) words with stress-neutral suffixes, and (c) words with stress-shifting suffixes (Table 2). In Tasks 1 and 2, the spelling and audio stimulus for each word were presented simultaneously to participants, and they answered whether they understood each word's meaning and how frequently they used it. In Task 3, each word's spelling was visually presented without audio, and they identified the syllable they considered most strongly stressed.

Tasks 1 and 2 revealed that J showed the least knowledge of word meanings and the lowest word usage frequency (Figs 1-2). Crucially, however, Task 3 revealed that J most accurately identified the stress locations in stress-shifted words (Fig 3). For base words and stress-retained words, little difference was observed among the three groups (Fig 3). Accuracy data were analyzed using a binomial generalized linear mixed model. L1GROUP, STRESSSHIFT, USAGEFREQUENCY, and the interaction L1GROUP*STRESSSHIFT were included as fixed effects. Participants were treated as a random effect. The analysis revealed significant main effects of STRESSSHIFT ($p < .001$) and USAGEFREQ ($p < .05$) at $\alpha = .05$. While there were no main effects of L1GROUP, a significant interaction of L1GROUP*STRESSSHIFT ($p < .001$) was found. Post hoc comparisons revealed that for stress-shifted words, J achieved significantly higher accuracy than GK, and SK showed no significant differences from either group. No significant group differences were observed for the base and stress-retained words.

These results support our predictions and suggest that BM accentual patterns in L1 play an important role in shaping the learnability of English suffix-induced stress patterns.

Table 1. Accent patterns of base forms vs. forms with suffix-like bound morphemes in Gyeongsang (Pusan) Korean and Japanese. Accented syllables/moras are underlined and in boldface. Words without underlines and boldfaced letters are unaccented.

a. Gyeongsang (Pusan) Korean		b. Tokyo Japanese (Keihan Japanese in parentheses when different from Tokyo)		gloss
<u>eum</u> ak vs. <u>eum</u> ak-je	accent-neutral	<u>ong</u> aku vs. <u>ong</u> aku-sai (<u>ong</u> aku vs. <u>ong</u> aku-sai)	accent-changing	‘music’ vs. ‘music-festival’
<u>eum</u> ak vs. <u>eum</u> ak-hak		<u>ong</u> aku vs. <u>ong</u> aku-gaku (<u>ong</u> aku vs. <u>ong</u> aku-gaku)		‘music’ vs. ‘music-study’
boho vs. boho-ja nodon vs. nodon-ja <u>saeng</u> san vs. <u>saeng</u> san-ja		<u>hogo</u> vs. <u>hogo</u> -sha roodo vs. <u>roodo</u> -sha seisan vs. <u>seisan</u> -sha	accent-changing	‘protection’ vs. ‘protection-person’ ‘labor’ vs. ‘labor-person’ ‘production’ vs. ‘production-person’
		<u>morita</u> vs. <u>morita</u> -san <u>suzuki</u> vs. <u>suzuki</u> -san <u>kamakiri</u> vs. <u>kamakiri</u> -san (kamakiri vs. kamakiri-san)	acc-neut	‘Morita’ vs. ‘Morita-Mr./Ms.’ ‘Suzuki’ vs. ‘Suzuki-Mr./Ms.’ ‘praying mantis’ vs. ‘praying mantis-Mr./Ms.’

Table 2. The list of suffixed words used in the experiment. (Base forms are not shown.)

(b) Words with stress-neutral suffixes				(c) Words with stress-shifting suffixes			
-less/-ness	-ment	-ize	-ing	-al	-ic	-ion	-ity
Stress-Retained (under prescriptive norms)				Stress-Shifted (under prescriptive norms)			
accentless	astonishment	characterize	calculating	functional	accidental	atomic	calculation
commonness	embarrassment	generalize	constituting	marginal	fragmental	Germanic	constitution
earnestness	establishment	hospitalize	dominating		incidental	gymnastic	domination
nervousness	measurement	westernize	indicating		parental	magnetic	indication
numberless	punishment		terminating		sentimental	symbolic	termination
							activity
							festivity
							humanity
							minority
							mortality

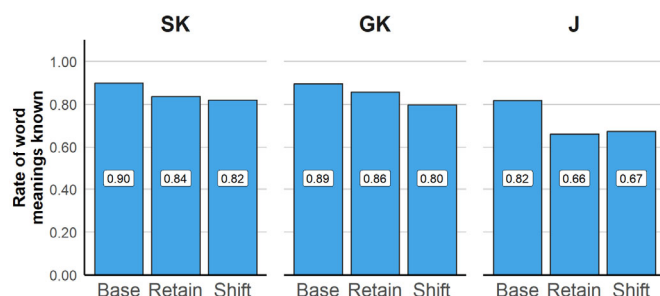


Fig. 1. The rates of word meanings known by participants. ‘Base’, ‘Retain’ and ‘Shift’ mean base forms, stress-retained forms, and stress-shifted forms respectively.

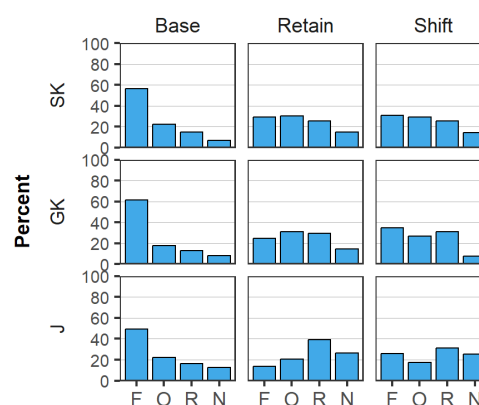


Fig. 2. The percentages of words used frequently (F), occasionally (O), rarely (R) and never (N).

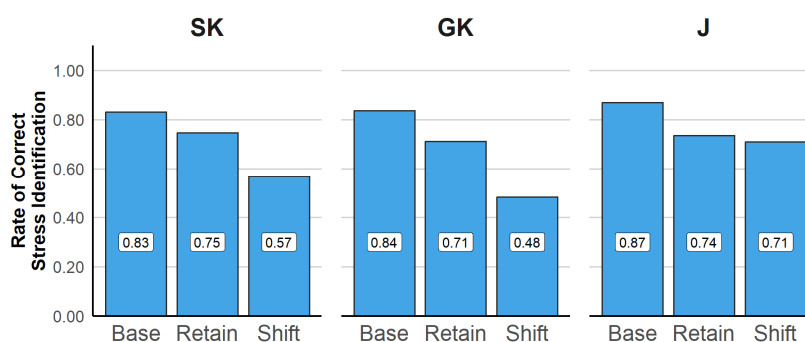


Fig. 3. The rates of correct stress identification