

SSANOVA as a Method of Examining Nasality in Korean *Aegyo*

Drew Crosby¹

¹University of South Carolina (USA)
dmcrosby@email.sc.edu

Aegyo, the Korean baby-talk register, is highly performative and has several purported sociophonetic dimensions: rising-falling intonation (LHL%), nasality, and obstruent fortition [6, 8]. Previous anthropological, discursive, and linguistic investigations [5, 7, 10] identify it as a gendered practice associated with “modern and trendy young women in Korean mainstream culture” [9, p. 42], often used for requesting favors, maintaining social harmony, and as a form of politeness to those higher in the social hierarchy [7, 8, 10]. Of its sociophonetic correlates, it has a particularly strong association with nasality. Nasality in *aegyo* has been described as occurring intonation-phrase (IP)-finally in open-syllables [8]. In fact, nasality can be indicated in Korean orthographically by the addition of the Korean symbol for [ŋ], as in (1).

(1) Standard Script	<i>Aegyo</i> -style Script
자기야 잘 자.	자기야 잘 장~~~ *^^* (emoticon: smile with blushing)
/teakija teal tca /	/teakija teal tean /
‘Honey good night’	

[10, p.13]

Our previous investigation of nasality in *aegyo* (measured over the entire IP-final vowel) showed it to be associated with the age of speakers such that speakers born after 1979 show an increase in nasality when performing *aegyo* whereas those born before 1979 do not. However, contrary to the purported gendered nature of *aegyo*, we failed to find a gender effect [1].

The present study therefore seeks to further examine the gendered nature of nasality in *aegyo* by employing smoothing splines analyses of variance (SSANOVA) to model changes in nasalance (a ratio of intensity of noise from the nasal tract to total intensity from both the oral and nasal tract) across IP final-vowels in performances of *aegyo*. SSANOVA is a method of calculating a best-fit model for curves in a data set using Gaussian process regression [4]. In linguistics it has been used to model tongue shapes [2] and vowel formant trajectories (e.g., [3]). SSANOVA plots are generated with 95% Bayesian confidence intervals and curves that do not overlap are statistically different at that point [3].

The data for the current study consists of interviews with thirteen romantic couples from the central dialect regions of South Korea (Seoul Capital Area, *Chungcheongdo*, *Gangwondo*) born between 1980 and 1999. Couples were asked to perform three dialogues and three communicative tasks in non-*aegyo* and *aegyo* modes, and to read aloud ten *aegyo*-ful text messages (i.e., orthographic *aegyo*) to their partner. Nasalance measures were calculated at 11 equally spaced time points across the IP-final vowel via intensity measures obtained from earbuds placed under the nostril and in the corner of the mouth [11]. The nasalance measures were then submitted to an SSANOVA model with nasalance as the dependent variable and *aegyo* condition as the independent variable. This modeling is visualized in Figure 1. The plot shows that orthographic *aegyo* (in blue) is far more nasalized than either of the other *aegyo* conditions. Notably, the *aegyo* curve (in green) is higher than the non-*aegyo* curve (in red) and they only overlap at the very beginning of the vowel, supporting our previous results that showed an association between *aegyo* and nasalization. Figure 2 shows separate SSANOVA models for nasalance by gender. The SSANOVA curve for women shows clear separation between the non-*aegyo* and *aegyo* curves throughout the IP-final vowel, whereas the men’s curve has significant overlap between the two curves implying that there is no difference in nasalance between men’s *aegyo* and non-*aegyo* speech. These results corroborate prior assertions that nasality is a feature of *aegyo* and suggest that (at least nasality in) *aegyo* is a gendered practice. This paper also offers a new means of modeling nasality, especially in cases where measures of single points or means can obscure important time-associated details.

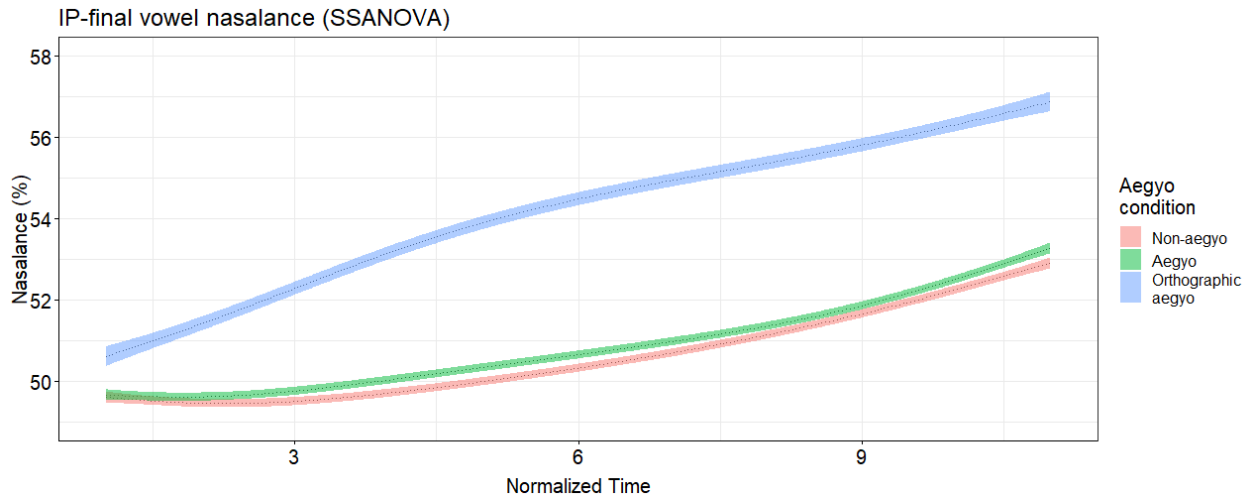


Fig 1. SSANOVA plot of IP-final nasalance by *aegyo* condition

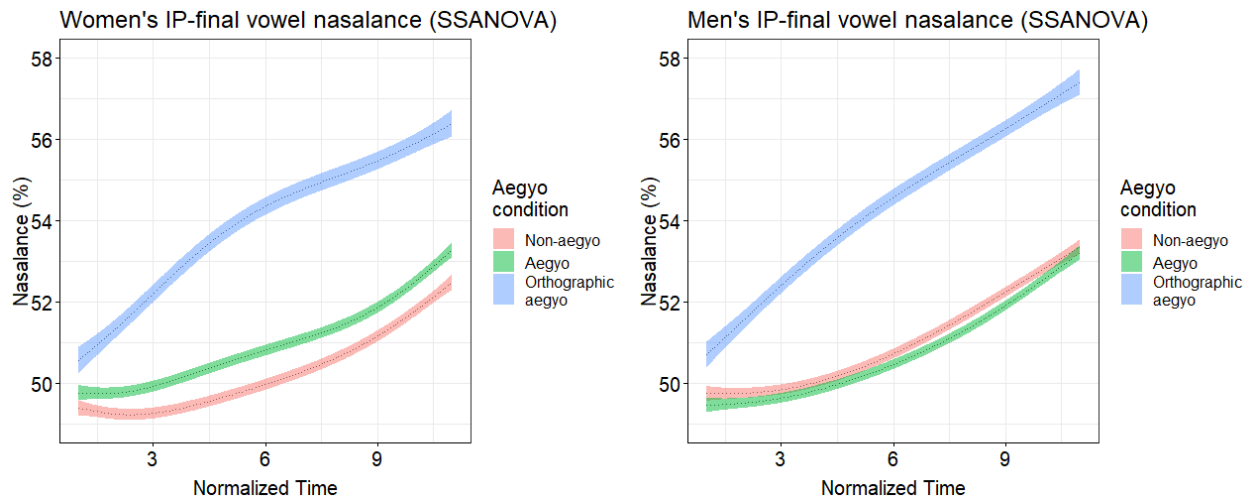


Fig 2. SSANOVA plots of IP-final nasalance gender and *aegyo* condition

References

- [1] Crosby, D. & Dalola, A. (2022, October 13-15). Cute nasalization: the effect of age on nasalance in Korean *aegyo* [Conference presentation]. NWAV 50, Stanford University, United States.
- [2] Davidson, L. (2006). Comparing tongue shapes from ultrasound imaging using smoothing spline analysis of variance. *The Journal of the Acoustical Society of America*, 120(1), 407-415.
- [3] Freeman, V. (2021). Vague eggs and tags: Prevelar merger in Seattle. *Language Variation and change*, 33(1). 57-80.
- [4] Gu, C. (2002). Smoothing spline ANOVA models. Springer Series in Statistics. New York: Springer
- [5] Han, A. J. (2016). The aesthetics of cuteness in Korean pop music. University of Sussex: PhD diss.
- [6] Jang, H. (2021). How cute do I sound to you?: Gender and age effects in the use and evaluation of Korean baby-talk register, *Aegyo*. *Language Sciences*, 83.
- [7] Manietta, J. B. (2016). Transnational masculinities: The distributive performativity of gender in Korean boy bands. Boulder: University of Colorado: MA thesis.
- [8] Moon, K. (2013). Authenticating the fake: Linguistic resources of *aegyo* and its media assessments. Stanford University: MA thesis.
- [9] Moon, K. (2017). Phrase Final Position as a Site of Social Meaning: phonetic variation among young Seoul women. Stanford University: PhD diss.
- [10] Puzar, A. & Hong, Y. (2018). Korean Cuties: Understanding Performed Winsomeness (*Aegyo*) in South Korea. *The Asia Pacific Journal of Anthropology*, 19(4), 333-349.
- [11] Stewart, J. & Kohlberger, M. (2017). Earbuds: A Method for Analyzing Nasality in the Field. *Language Documentation & Conservation*, 11, 49-80.