

Pause-Induced Speech Re-initiation in Later Adulthood: Evidence from Korean Interjections in Spontaneous Interaction

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Interjections such as uh, um, and oh occur at discourse boundaries and frequently co-occur with pauses, marking moments of transition in talk. In aging research, interjections are often grouped with fillers and pauses as markers of disfluency and interpreted as signs of cognitive decline, emphasizing breakdowns in production rather than the interactional work speakers accomplish (Burke & Shafto 2004; Spieler & Griffin 2006; Horton et al. 2010). From an interactional perspective, however, interjections function as re-entry markers, providing a precise temporal anchor for the moment at which a speaker resumes talk. Because pauses following interjections vary in duration, speech re-entry is not a uniform event but a graded reset process.

This leads to the central question of the present study: does aging affect how speakers dynamically re-enter talk after pauses of different lengths following interjections in interaction? We address this question by examining age-related patterns in pause deployment and pause-induced speech re-initiation dynamics in later adulthood.

Using a large-scale corpus of spontaneous Korean speech (NIA 2-18; Ok & Kim, 2024), we analyzed 55,864 interjection tokens produced by 3,898 speakers (under 60: 595; 60s: 1,534; 70s: 1,435; over 80: 334) in natural question–answer interactions. The dataset contained 17,111 interjections preceded by pauses, including 11,322 short pauses (0.4–1.0 s) and 5,789 long pauses (≥ 1.0 s). Regionally salient interjection types were identified using lift statistics, restricted to the top ten items per region and to forms with a minimum frequency of 50 tokens, to ensure regional and interactional representativeness.

Audio was segmented to extract the first post-pausal phonological word, corresponding to the point at which the speaker re-enters the speech stream. Acoustic measures—including fundamental frequency (F0), intensity, jitter, shimmer, and harmonics-to-noise ratio (HNR)—were extracted from voiced segments using the eGeMAPSv02 feature set, and logged measures were analyzed using linear mixed-effects models with random intercepts for speakers and interjections.

Across acoustic dimensions, the presence of a preceding pause was associated with robust and directionally consistent post-pausal shifts, including higher F0, reduced intensity, increased phonatory variability, and higher HNR (Fig. 1). All pause-related acoustic effects reached $p < .001$. These effects scaled systematically with pause duration, with long pauses producing larger shifts than short ones ($p < .001$), supporting a graded account of pause-related speech re-initiation dynamics.

Age was associated with reliable baseline differences in voice quality, including lower overall intensity and HNR in older speakers. Crucially, interactions between age group and pause-induced acoustic patterns were weak or absent across most measures (Fig. 2), indicating that the structure of post-pausal acoustic re-initiation remains largely stable across later adulthood, with only limited attenuation in the oldest group. In contrast, age exerted a strong and consistent effect on pause deployment strategies: older speakers were more likely to insert pauses ($\chi^2 = 13.67$, $df = 3$, $p = .003$), and the oldest group showed a preference for short over long pauses ($\chi^2 = 14.87$, $p = .002$).

Together, these findings indicate that later aging is characterized by changes in discourse-level timing strategies, while acoustic coordination patterns at speech re-initiation remain remarkably stable. By distinguishing between pause deployment and post-pausal acoustic patterning, this study contributes to a lifespan perspective on speech that highlights stability in speech re-initiation dynamics alongside age-related flexibility in interactional timing.

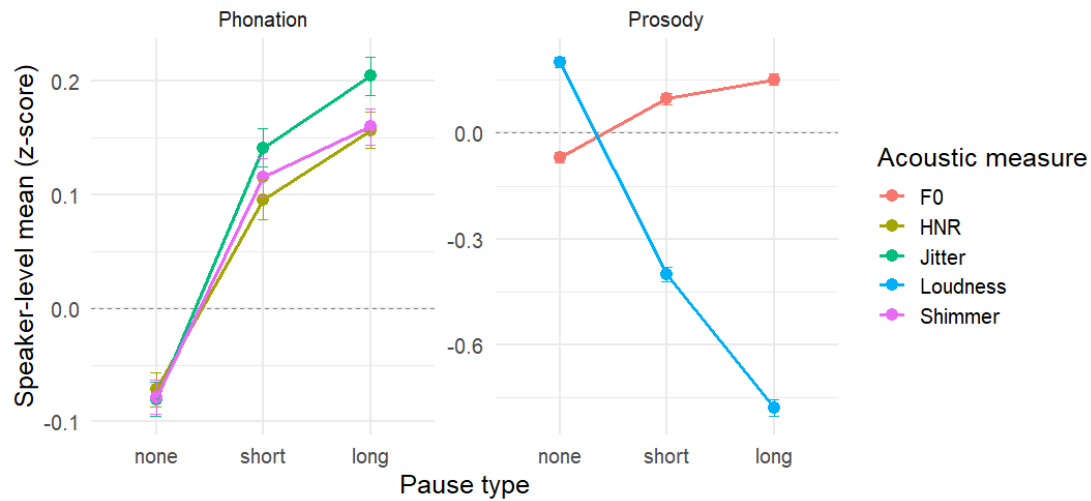


Fig. 1. Prosodic and phonatory measures following pauses

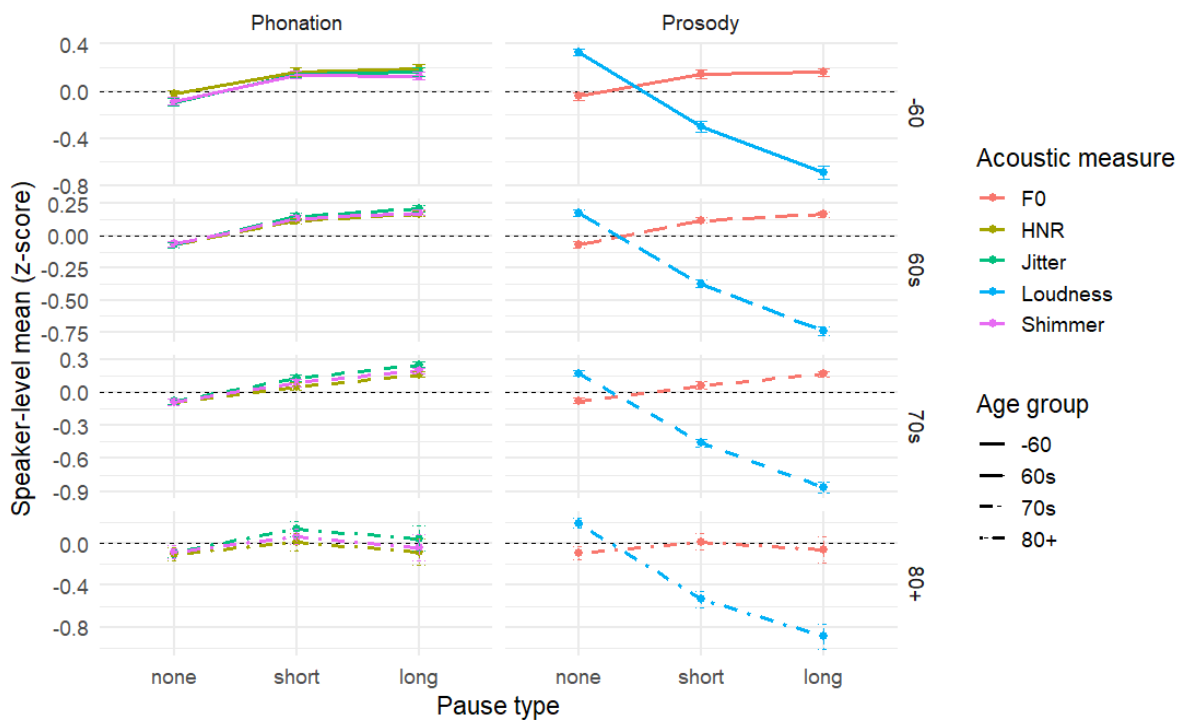


Fig. 2. Prosodic and phonatory measures following pauses by age group

References

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