

Duration of Epenthetic [t] in Polysyllabic American English Words

(adapted from Yoo, I. W., & Blankenship, B., 2003, in *Journal of the IPA*, 33/2)

On a warm, sunny day in May, a dime and a nickel were walking along on a bridge over the Charles. When they got to the middle of the bridge, they decided to stop and enjoy the sun for a while. After about ten minutes, the nickel suddenly jumped off the bridge and killed himself. The dime watched him drown and walked on home.

Q: Why did only the nickel jump off the bridge and kill himself?

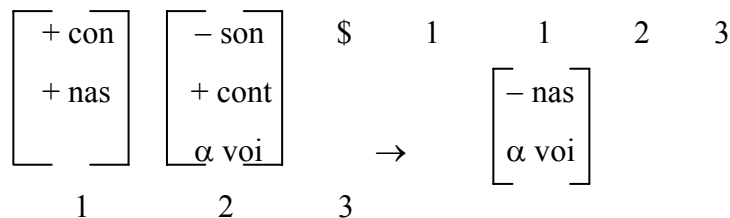
A: Because the dime has more [sEnts].

The examples below illustrate how epenthesis neutralizes the phonemic distinction between word pairs:

- | | | |
|-----|----------|------------------------|
| (a) | [prInts] | <i>prince / prints</i> |
| (b) | [dEnts] | <i>dense / dents</i> |
| (c) | [tEnts] | <i>tense / tents</i> |
| (d) | [sEnts] | <i>sense / cents</i> |

The Stop Epenthesis Rule

Dinnsen (1980) formulated a basic rule to account for not only the epenthetic [t] but also other epenthetic stops in any nasal-fricative cluster environment, as in [lENkT] *length*, [mÄntT] *month*, and [lImpf] *lymph*. Fourakis and Port (1986) modified the rule by adding a syllable boundary:

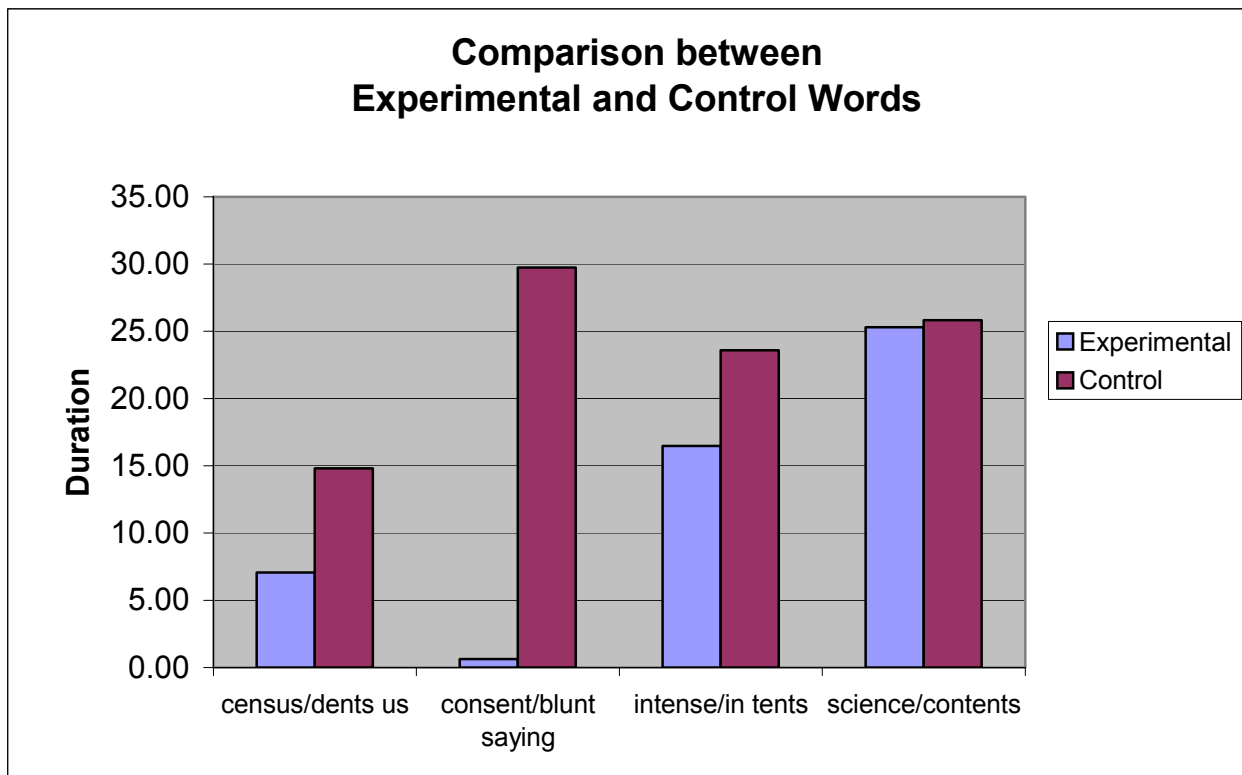


In the Fourakis and Port account, syllable boundaries play an important role in determining whether an epenthetic stop occurs in surface forms; that is, epenthesis applies only when the nasal and the fricative are in the same syllable.

Table 1. Experimental Words

	Word-Medial	Word-Final
After a Stressed Vowel	'cen.sus / 'sen.si.ble 'sen.so.ry / 'den.si.ty	in.'tense / in.'cense de.'fense / of.'fense
After a Stressless Vowel	con.'sent / con.'ceal con.'sole / con.'sist	'sci.ence / 'pres.ence in.'sur.ance / 'pre.science

Figure 2. Stop Closure Durations - Experimental vs. Control Words



Analysis of stop closure durations in experimental sentences read by seven American English speakers reveal that position, not stress, is the most important factor in [t] epenthesis: final position (e.g., *science* and *intense*) favors epenthesis. Stress is found to have an effect on stop closure durations in the way it interacted with word-position—i.e., for the final /ns/ cluster, stress immediately before it disfavors epenthesis (e.g., *intense*). Furthermore, the underlying /t/ is shown to be not significantly longer than the epenthetic [t].

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