

## **I. Annotation: PRAAT**

Each target was hand-segmented by a careful examination of the waveform and the spectrogram, following the standard phonetic protocols for each segment. Four tiers were created- 'word', 'phone' and 'feature' and 'voicing' which were used according to the relevant phonetic category and acoustic feature, as described below.

## 1.1 Word-initial lateral /l/: F2-F1 Difference

For /l/, the onset/offset of the lateral was marked by the beginning/ending of a visually steady F2. The entire duration of the steady state of the lateral was coded as ‘l’ in the ‘phone’ tier (Figure 1). For each token, the script was designed to capture the value of formants F1 and F2 at three time points: (1) 25 percent into the lateral, (2) 50 percent into the lateral, and (3) 75 percent into the lateral. Using these values at three time points, mean F1 and F2 values for that token were calculated. Finally, F2-F1 difference for that token was calculated in two steps. First, mean F2-F1 difference was determined at three points (25 percent, 50 percent, 75 percent into the lateral) using the mean F1 and F2 formant values determined above at the three time points. Second, using these three mean F2-F1 difference values at the three time points, a final mean F2-F1 Difference value was calculated, which forms the dependent variable for this phone category of /l/. Suspiciously high or low F1, F2, F2-F1 difference values (as suggested by previous literature) were manually checked and hand-corrected.

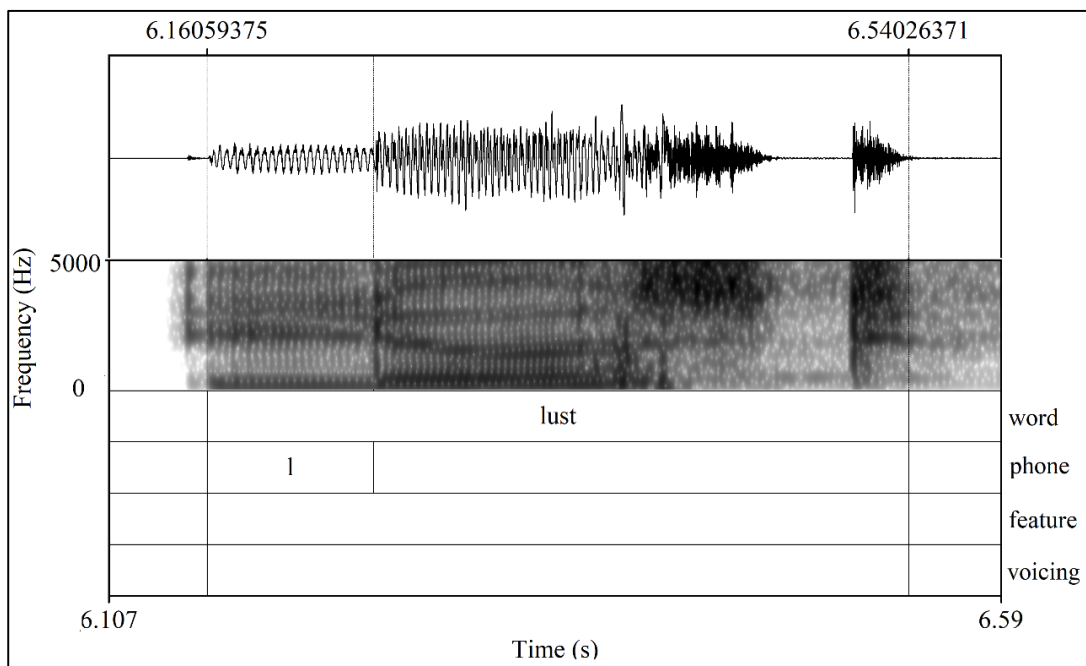


Figure S1: Annotation of word-initial /l/ in the word ‘lust’ as spoken by a female speaker from the ‘Indian’ control group

## 1.2 Word-initial voiceless stop /t/: VOT

The boundary for the onset of the closure of the voiceless stop was placed at the offset of the visibly steady F2 of the preceding vowel (Turk et al., 2006). The entire steady duration of the vowel following the stop, identified by the onset/offset of the visually steady F2 of the vowel, was labelled as ‘vow’ in the ‘phone’ tier. The phone was labelled as ‘t’ in the ‘phone’ tier. The entire duration of the vowel following the stop was coded as ‘vow’ in the ‘phone’ tier.

For this phone category, the dependent variable was Voice Onset Time (VOT), for which two measurements were extracted separately: (1) the duration of the burst of the stop (from the segment labelled as ‘burst’ in the ‘feature’ tier; shown in Figure 3.10), and (2) duration of the aspiration of the burst (from the segment labelled as ‘asp’ in the ‘feature’ tier; shown in Figure 3. Finally, these two values were added to represent combined duration of the burst and aspiration which formed the dependent variable of Voice Onset Time (VOT) for this phone category. Please refer to Figure 3 for an example.

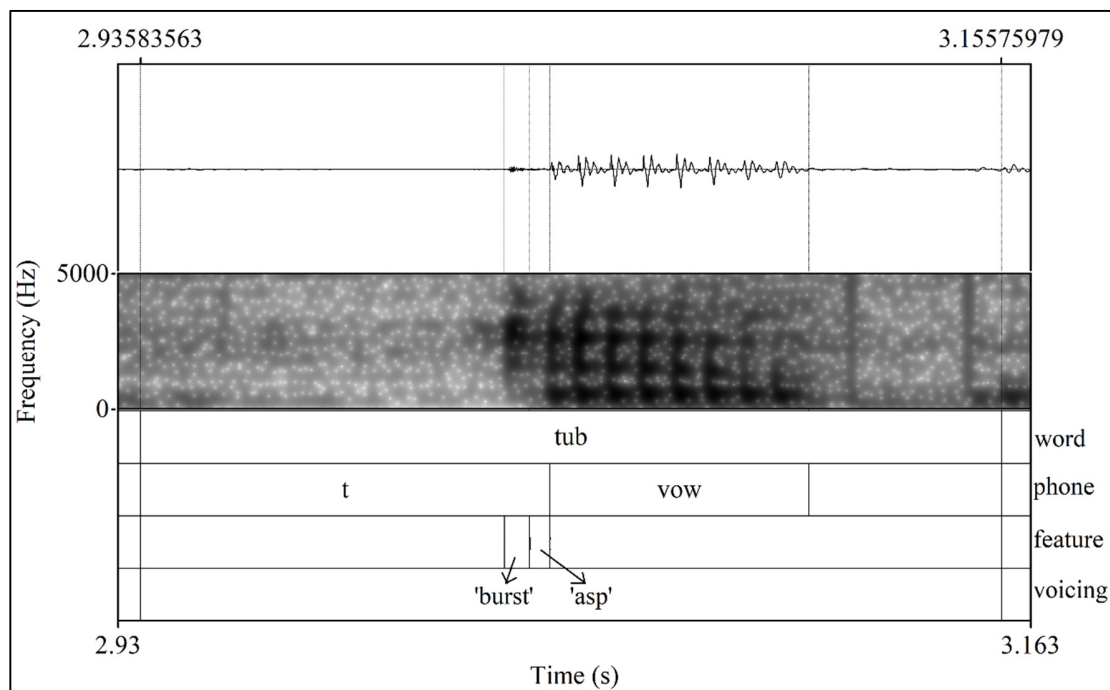


Figure S2: Annotation of word-initial /t/ in the word ‘tub’ as spoken by a male speaker from the control group ‘Indian’

### **1.3 Word-initial voiced stops /b d g/: Relative Burst Intensity (RBI)**

As suggested by Turk et al. (2012), the boundary for the onset of the closure of the voiced stop was placed at the offset of the visibly steady F2 of the preceding vowel. The entire steady duration of the vowel following the stop, identified by the onset/offset of the visually steady F2 of the vowel, was labelled as ‘vow’ in the ‘phone’ tier. Then the respective phone was labelled as ‘b’ or ‘g’ or ‘d’ in the ‘phone’ tier. After this, the segment from the onset of the release of the stop closure to the onset of voicing in the following vowel was labelled as ‘burst’ in the ‘feature’ tier. Figure 2 depicts an example of the annotation for voiced stops.

RBI is the intensity of the stop burst in decibels, calculated relative to the intensity of the following vowel (Jongman et al., 1985; Stoel-Gammon et al., 1994; Sundara, 2005). This was done in order to control for the variation based on different recording conditions and equipment. Two measurements were extracted: (1) the raw intensity of the stop burst (from the segment labelled as ‘burst’ in the ‘feature’ tier, as shown in Figure 2), and (2) the raw intensity of the vowel following the stop (from the segment labelled as ‘vow’ in the ‘phone’ tier in Figure 2). Finally, RBI was calculated by subtracting the intensity of the burst from the intensity of the following vowel (Sundara, 2005; Sundara et al., 2006). A smaller RBI value represents a louder burst.

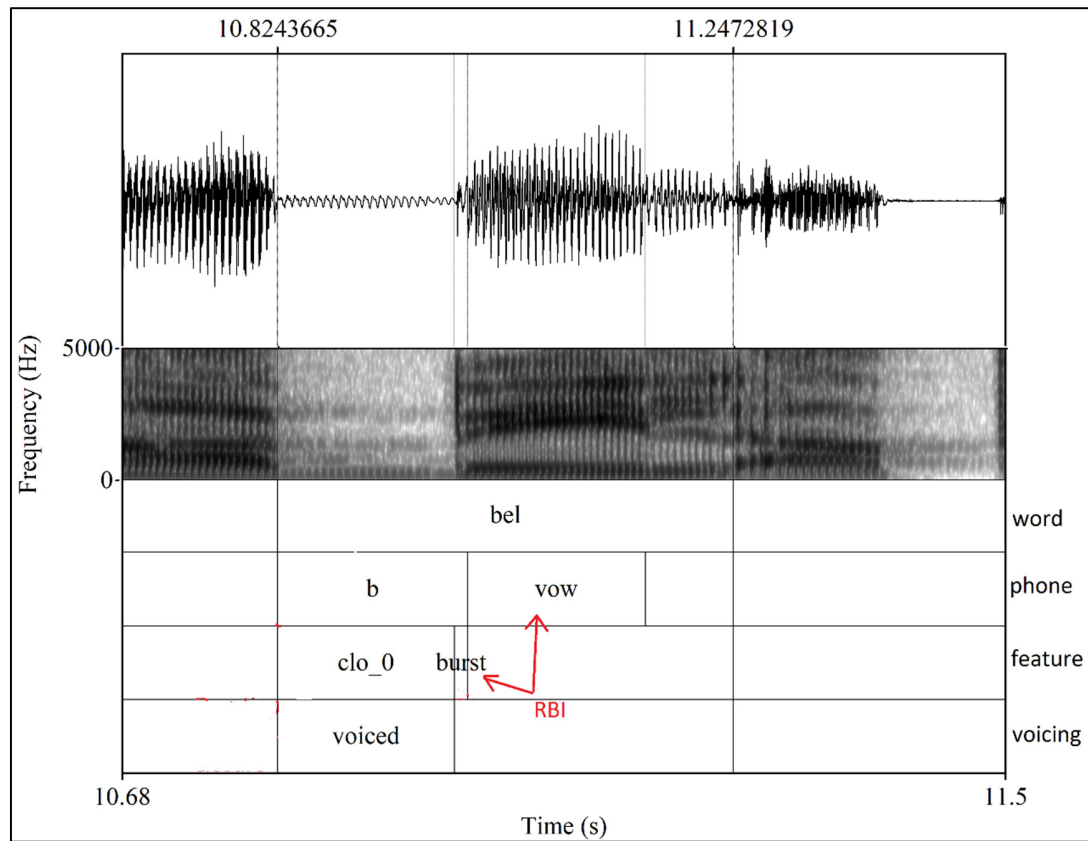


Figure S3: Annotation of word-initial /b/ in the Hindi word ‘bel’ (meaning ‘vine’) as spoken by a male speaker from the control group ‘Indian’

## II. English Word-list Stimuli

Say late again	Say date again	Say gate again
Say lame again	Say dame again	Say game again
Say lace again	Say days again	Say gape again
Say lake again	Say dane again	Say gaze again
Say lazy again	Say duck again	Say gum again
Say luck again	Say dumb again	Say gun again
Say love again	Say dug again	Say gut again
Say lust again	Say dub again	Say gulf again
Say lucky again	Say dull again	Say gust again
Say luggage again	Say does again	Say gull again
Say tail again	Say bait again	
Say tame again	Say bail again	
Say taste again	Say bake again	
Say tape again	Say bane again	
Say tug again	Say buck again	
Say tuck again	Say bun again	
Say tummy again	Say bug again	
Say tub again	Say bud again	
Say tough again	Say bus again	
Say ton again	Say buzz again	

Figure S4: English word-list stimuli

### III. Hindi Word-list Stimuli

/kəha: lekʰən a:pne/	कहा लेखन आपने	/t/	/kəha: teɖʰa: a:pne/	कहा टेढ़ा आपने
/kəha: lep a:pne/	कहा लेप आपने		/kəha: teka: a:pne/	कहा टेका आपने
/kəha: leɽna: a:pne/	कहा लेटना आपने		/kəha: tekna: a:pne/	कहा टेकना आपने
/kəha: lekʰ a:pne/	कहा लेख आपने		/kəha: tesu: a:pne/	कहा टेसू आपने
/kəha: lepna: a:pne/	कहा लेपना आपने		/kəha: ɽə a:pne/	कहा टर आपने
/kəha: ləj a:pne/	कहा लय आपने		/kəha: ɽəsə a:pne/	कहा टसर आपने
/kəha: ləgʱu a:pne/	कहा लघु आपने		/kəha: ɽəpka: a:pne/	कहा टपका आपने
/kəha: ləɽa: a:pne/	कहा लता आपने		/kəha: ɽəka: a:pne/	कहा टका आपने
/kəha: ləhə a:pne/	कहा लहर आपने		/kəha: ɽəhəl a:pne/	कहा टहल आपने
/kəha: ləga: a:pne/	कहा लगा आपने		/kəha: ɽəkna: a:pne/	कहा टकना आपने
/b d g/				
/kəha: bel a:pne/	कहा बेल आपने		/kəha: ɖəra: a:pne/	कहा डेरा आपने
/kəha: beɽ a:pne/	कहा बेच आपने		/kəha: ɖeɖʰ a:pne/	कहा डेढ़ आपने
/kəha: beɽa: a:pne/	कहा बेटा आपने		/kəha: ɖeɽki a:pne/	कहा डेचकी आपने
/kəha: ber a:pne/	कहा बेर आपने		/kəha: ɖəl a:pne/	कहा डेल आपने
/kəha: bəl a:pne/	कहा बल आपने		/kəha: ɖəs a:pne/	कहा डस आपने
/kəha: bəɽa: a:pne/	कहा बता आपने		/kəha: ɖəfli: a:pne/	कहा डफली आपने
/kəha: bəɖʰa: a:pne/	कहा बढ़ा आपने		/kəha: ɖəɽna: a:pne/	कहा डटा आपने
/kəha: bəh a:pne/	कहा बह आपने		/kəha: ɖəmru: a:pne/	कहा डमरू आपने
/kəha: bəɖʒa: a:pne/	कहा बजा आपने		/kəha: ɖər a:pne/	कहा डर आपने
/kəha: bəna: a:pne/	कहा बना आपने		/kəha: ɖəgər a:pne/	कहा डगर आपने
/kəha: geru: a:pne/	कहा गेरू आपने			
/kəha: geɽi: a:pne/	कहा गेती आपने			
/kəha: gela: a:pne/	कहा गेला आपने			
/kəha: geruə a:pne/	कहा गेरुआ आपने			
/kəha: gəɖʒ a:pne/	कहा गज आपने			
/kəha: gəi: a:pne/	कहा गई आपने			
/kəha: gərəm a:pne/	कहा गरम आपने			
/kəha: gəɽ a:pne/	कहा गत आपने			
/kəha: gəɽi a:pne/	कहा गति आपने			
/kəha: gəja: a:pne/	कहा गया आपने			

Figure S5: Hindi word-list stimuli