

## Applications:

### Understanding tongue twisters

#### Sue sells sea shells by the sea shore

- Why is this so hard to say?
  - S = voiceless alveolar fricative
  - SH = voiceless palatal fricative
- It is difficult to move the tongue back and forth between alveolar (behind upper teeth) and palatal (hard palate) positions, where exact placement is vital- a small misplacement of the tongue gives a wrong phoneme

#### The sick sixth Sheik's sixth sheep's sick.

- S = voiceless alveolar fricative (behind the upper teeth)
- SH= voiceless palatal fricative (on hard palate)
- TH= voiceless interdental fricative (between teeth)
- K = voiceless velar oral stop (back soft palate)
- Three fricatives require the tongue to move between three different positions- so it's like the previous but more so
- To get the K in 'sheik'; and 'sixth' we have to stop and move our tongue to the bottom of the mouth, but the fricatives all require continuous air and a high tongue, so we are running the tongue up fast after a break that we don't want to extend because it is not a word-break
  - we get a similar problem with the 's' after 'sheep's', where we are forced to grind to a sudden halt
- There's also the way that 'ks' is used twice in different ways: 'sick sixth'

#### Black Bugs Bleed Black Blood

##### A big black bug bit a big black bear and the big black bear bled blood

- B = bilabial voiced oral stop (lips close together)
- L = voiced alveolar (just behind upper teeth) liquid (no constriction on air flow)
- A: low tongue height, front of tongue, not rounded
- U in bugs and blood = mid tongue height, mid tongue, semi-rounded
- EE high tongue, front of tongue, not rounded
- This seems to be an analogue to the s/sh problem: We have to move our tongue rapidly between ambiguously close sounds, plus move tongue from high position for 'l' to low position for 'a'
  - Compare my own:  
**Black-bat Bart's black bat's back**