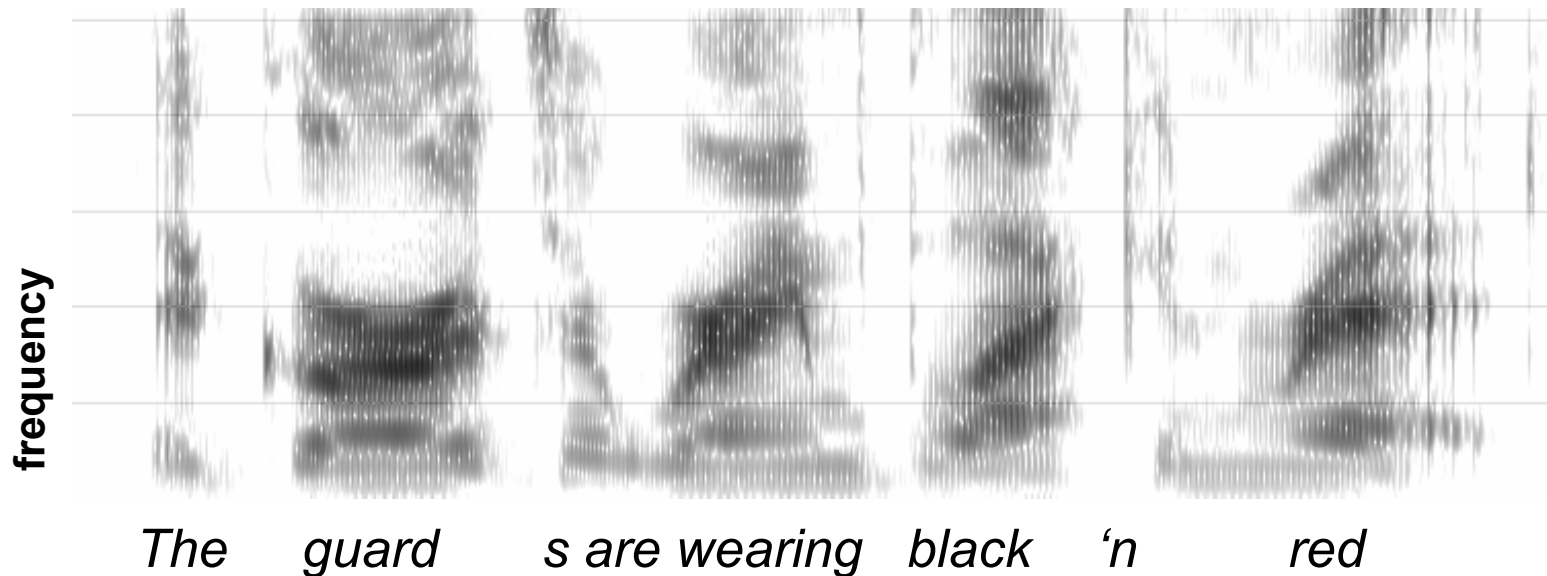


Spectrogram: a way of plotting how the spectrum changes over time.

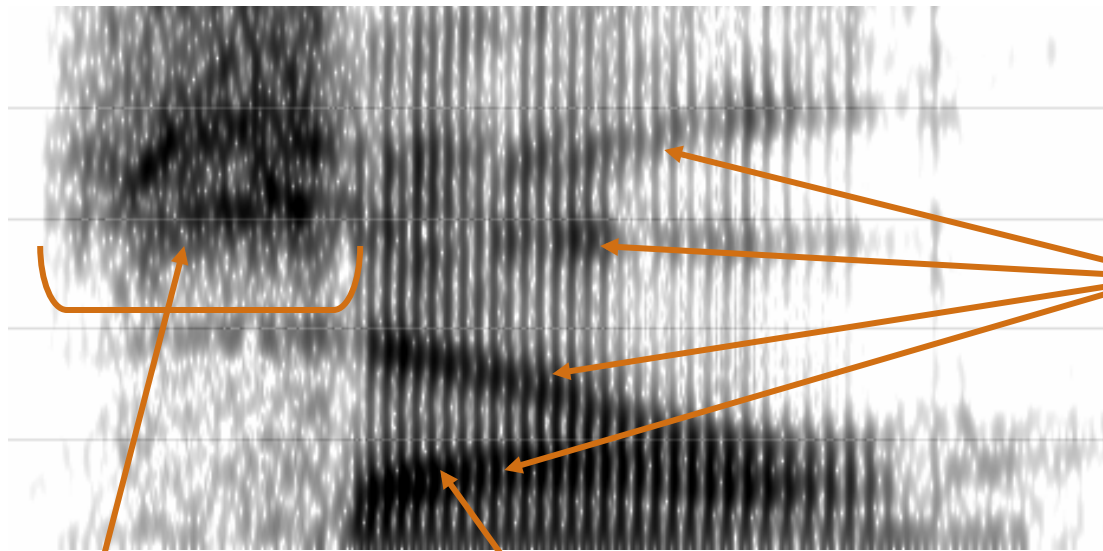


X: Time

Y: Frequency

Z: Darkness indicates amplitude

## Some cues to speech



Formants  
(numbered  
from bottom)

*Frequencies  
change over  
time.*

Frication  
(mean frequency,  
duration)

Voicing  
Appears as a corrugated  
pattern