Like Mardie Younglof, David Davis had auditory training with Helen Beebe as a child. Then as an adult with CI, he went through the following classic steps with the assistance of an AVT who was trained by Daniel Ling.

1. Nonsegmentals:

   **DIP:**
   - Duration: (How many syllables? How long?)
   - Intensity: (How loud/soft?)
   - Pitch: (male/female?, inflections at end of questions, etc.)

2. Vowels:

   Discriminating between vowels

   e.g.: panda vs. tiger: they share similar consonants (p/t and d/g), but have very different vowels.

   Formant information: F1 v. F2

   F1, F2: differentiating between differences in F2 (2nd formant)
   - F1 is lower-frequency information and accessible with HAs.
   - F2 is much higher-frequency information and not accessible via HAs.
   - e.g. “oo” and “ee” share same F1, but different F2.

3. Consonants: (in order of ascending frequency information; this is where hearing aids generally start to fail, especially with place information and even higher-frequency manner information).

   **Manner (how a sound is made):**
   - nasals: m/n (made when nasal cavity resonates)
   - plosives: p/t/k and their voiced counterparts: b/d/g
     - (made through an “explosion” of air)
   - fricatives: s/sh/f/z (made through friction of air)

   **Voiced/devoiced (s/z, b/p, d/t):**
   - voicing has a lower-frequency component, but distinguishing between voice/devoiced requires access to manner and place

   **Place (p/t/k, b/d/g):** (where a sound is actually made)
   - bilabial plosive: p
   - dental plosive: t
   - guttural plosive: k
   - semivowels: j/w/y (as in jay/way/yay)
   - liquids: l/r

   Place is the HIGHEST-frequency component of speech (4kHz and as high as 8kHz) and hence is usually the last step to master (and the first to go in people with high-frequency hearing loss)

   Sequential order of place understanding (easiest to most difficult):
   - Fricatives (with “sh” sticking out because nothing sounds like it)
   - s/ths: (though “f” and “th” are the two softest English sounds)
   - nasals m/n
   - p/t/k usually comes then, and even though, the voiced usually comes first (b/d/g), and then the unvoiced p/t/k
   - Semivowels and liquids are usually last (usually in that order)

**Sequential steps in developing listening sophistication:**

1. Detection: Do you hear the speech sound?
2. Discrimination: Can you differentiate between different speech sounds?
3. Identification: Can you actually identify the speech sound?
4. Comprehension: Can you gain meaning from speech sounds? (speech tracking and auditory closure)