Computational Model

Pseudocode Notation

Functions = *italicised*
Objects = **bold**

Define Inputs

priorKnowledge ← corpus of symbolic strings representing all possible n-grams of melodies
Consists of complex (IDyOM) and simple (pitch and rhythm) representation
threshold ← threshold set for **priorKnowledge** that determines which n-grams are explicitly represented
wmc ← individual limit on amount of information that can be held in memory
selectiveAttention ← buffer used to hold truncated melodies
targetMelody← novel melody represented as symbol string with calculated information content
stringPosition ← object used to track position in dictation
difficulty ← counter used to track number of iterations of model

dictation ← segmented string that holds n-grams parsed by model

Define Functions

listen ← function(**targetMelody**){
1. IF length(targetMelody == 0 { DONE }
2. ELSE{ Read in symbols of target melody until melody information content >= **wmc**
3. Put symbols into **selectiveAttention**
4. **stringPosition** ← floor(selectiveAttention$position)
5. Move contents of **selectiveAttention** to *transcribe* }

transcribe ← function(**selectiveAttention**){
1. Current string counter ++
2. Pattern match **selectiveAttention** to corpus where explicit == TRUE
   a. IF(Match == TRUE) { run notateReentry on **selectiveAttention** }
   b. IF(NO match found) { drop 1 token; re-run *transcribe* }
   c. IF(NO 2-gram found) { run separate searches on **priorKnowledge** simple notation}
3. Pattern match **selectiveAttention** to **priorKnowledge** pitch representation where explicit == TRUE
4. Pattern match **selectiveAttention** to **priorKnowledge** rhythm representation where explicit == TRUE
5. If no 2-grams found, run *notateReentry* with noMatch == TRUE

notateReentry ← function(**selectiveAttention**, noMatch == FALSE){
1. IF (noMatch == TRUE) { run *listen* at position **stringPosition** + 1 }
2. ELSE { **dictation** ←← **selectiveAttention**; run *listen* at position **stringPosition** + 1 }

Run Model

*listen(***targetMelody)**
transcribe()
notateReentry()