Auralization and Sonification

Med8 2011

Lecture 1 Exercises

Find and download a copy of the following paper:

Povel, D.-J. and Essens, P. (1985). Perception of temporal patterns. *Music Perception*, Vol.2, pp. 411–440.

(Hint: Use aub.aau.dk)

Now answer the following questions.

1. Which elementary transformations, defined on an alphabet, have been shown to be adequate for describing the internal representation of serial patterns? Which of these doesn't really make sense in the case of temporal patterns?
2. What is the filled-duration illusion and why does the notion of an absolute internal clock fail to account for it?
3. Explain how the formula
   C = (W * -ev) + (1 * 0ev)
   is used to determine the induction strength of a clock. Why should W be larger than 1?
4. Explain why, when selecting the temporal patterns to use in their experiments, Povel and Essens avoided using patterns that were cyclic permutations of each other. According to the "gap principle" how will a listener hear the sequence 2 2 2 2 3 4 1 when this sequence is stated repeatedly?
5. Explain the meaning of a "Category 4" clock and why this is more weakly induced than a "Category 1" clock.
6. What is a "process model"? Is Povel and Essens' model a "process model"?
7. In what way do Povel and Essens suggest that their coding rules might be developed further?
8. What were the dependent variables studied in Experiment 1? How were these measured?
9. Who coined the terms "durational" and "figural" coding and how are these terms used by Povel and Essens?