Composition: Electronic Media I
Oct. 10, 2007
Gesture Matrix

1. In a gesture, each parameter is represented by a vector of a succession of – and + signs. The meaning of these signs varies according to the parameter, as discussed in the Gesture handout.

2. In 12-tone music, a series of uninterpreted pitch-classes is called a "lyne," a term coined by Michael Kassler in the 1960s. In gesture theory, a vector of – and + signs that is not assigned to a parameter will be called a "gesture lyne," or "lyne' for short.

3. 12-tone music is highly structured because all of the pitch material consists of variations of a basic row. Gestural music can be structured in a similar way. We begin by creating a Gesture Matrix. A 12-tone matrix is a table showing the row in its 48 forms: prograde or P, inversion or I, retrograde or R, and retrograde inversion or RI, each of which has 12 transposition levels mod 12. A Gesture Matrix is constructed similarly, as shown in the examples below:

Event	0	1	2	3	4	5	6	7	8	9	10	11
Lyne P_0	-	-	-	+	+	-	-	-	+	+	+	+
Lyne P_1	-	-	+	+	-	-	-	+	+	+	+	-
Lyne P_2	-	+	+	-	-	-	+	+	+	+	-	-
Lyne P_3	+	+	-	-	-	+	+	+	+	-	-	-
Lyne P_4	+	-	-	-	+	+	+	+	-	-	-	+
Lyne P_5	-	-	-	+	+	+	+	-	-	-	+	+
Lyne P_6	-	-	+	+	+	+	-	-	-	+	+	-
Lyne P_7	-	+	+	+	+	-	-	-	+	+	-	-
Lyne P_8	+	+	+	+	-	-	-	+	+	-	-	-
Lyne P_9	+	+	+	-	-	-	+	+	-	-	-	+
Lyne P_{10}	+	+	-	-	-	+	+	-	-	-	+	+
Lyne P_{11}	+	-	-	-	+	+	-	-	-	+	+	+

Event	0	1	2	3	4	5	6	7	8	9	10	11
Lyne I_0	+	+	+	-	-	+	+	+	-	-	-	-
Lyne I_1	+	+	-	-	+	+	+	-	-	-	-	+
Lyne I_2	+	-	-	+	+	+	-	-	-	-	+	+
Lyne I_3	-	-	+	+	+	-	-	-	-	+	+	+
Lyne I_4	-	+	+	+	-	-	-	-	+	+	+	-
Lyne I_5	+	+	+	-	-	-	-	+	+	+	-	-
Lyne I_6	+	+	-	-	-	-	+	+	+	-	-	+
Lyne I_7	+	-	-	-	-	+	+	+	-	-	+	+
Lyne I_8	-	-	-	-	+	+	+	-	-	+	+	+
Lyne I_9	-	-	-	+	+	+	-	-	+	+	+	-
Lyne I_{10}	-	-	+	+	+	-	-	+	+	+	-	-
Lyne I_{11}	-	-	+	+	+	-	-	+	+	+	-	-

A 12-tone matrix shows all 48 forms in a single table, with prograde being read left to right, retrograde being read right to left, inversion being read top to bottom, and retrograde inversion being read bottom to top. A gesture matrix is represented by two tables, like the ones above. Here, prograde is read left to right in the top table, and retrograde is read right to left. Inversion is read left to right in the bottom table and retrograde inversion is read right to left.

Note that this Gesture Matrix has 12 events. This number is arbitrary. One could construct a Gesture Matrix of 13 events, 99 events, etc.

4. To create a Gesture Matrix, do the following:

   a. Create a basic 12-event lyne by writing out a pattern of – and +. Consider the patterns below:

Event	0	1	2	3	4	5	6	7	8	9	10	11
Lyne 1	-	-	-	+	+	-	-	-	+	+	+	+
Lyne 2	-	+	-	+	-	-	+	-	+	-	+	+

   Lyne 1 creates a relatively smooth pattern of less, more, less, more (depending on the meaning of – and +). Lyne 2 creates a choppy pattern by alternating – and +. This makes it difficult to apprehend larger shapes or gestures. For this assignment, then, try to create a lyne that is similar to Lyne 1, above.

   b. Label your lyne "Lyne 1, P_0".

   c. Create a prograde table like the one above in Step 3. Create transpositions "Lyne 1, P_0", "Lyne 1, P_1", "Lyne 1, P_2"…"Lyne 1, P_{11}" by successively adding 1 mod 12 to each event number. This causes the pattern of – and + to rotate to the left in the table, as shown above in Step 3.

   d. Next, write out the inversion of "Lyne 1, P_0" by substituting + for - and - for +. Label the inversion "Lyne 1, I_0".

   e. Create an inversion table like the one above in Step 3. Create transpositions of the inversion "Lyne 1, I_0", "Lyne 1, I_1", "Lyne 1, I_2"…"Lyne 1, I_{11}" by successively adding 1 mod 12 to each event number of "Lyne 1, I_0". This causes the pattern of – and + to rotate to the left in the table, as shown above in Step 3.