Etude pour Espace (1947)

Edgard Varèse

Potential Sound Trajectories*

Speaker locations for rectangular/square hall
8 speakers

1   Front
2
5
4   6
8   3
Back
7
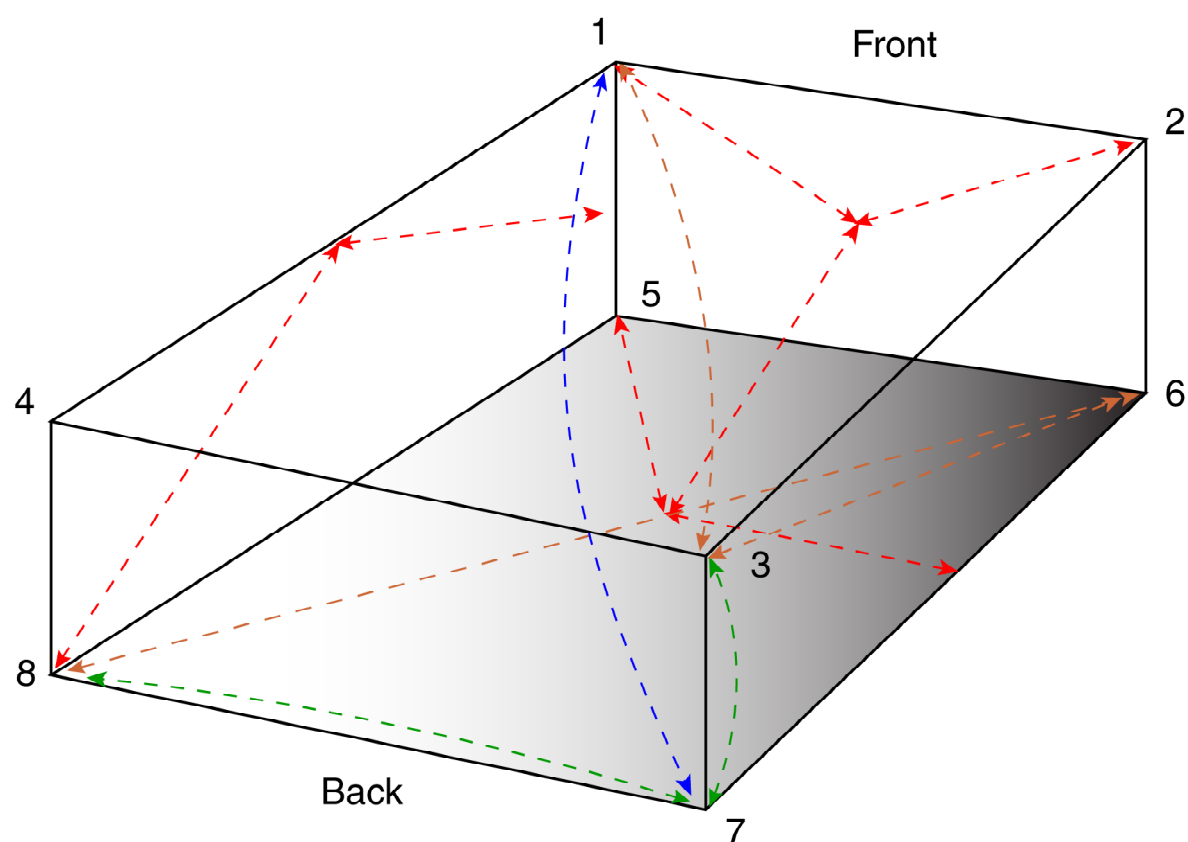
Sound trajectories:

straight line between speakers – – – – –
diagonal line between speakers – – – – –
diagonal line between planes – – – – –
midpoint between speakers or planes – – – – –

* It is understood that these projected sound trajectories cannot be achieved with the present technology.

Notation

1) The speaker numbers as shown above are given over the timeline in the score for each channel.

2) When a number is followed by space, the position remains in action until the next number, whether the sound continues or is followed by a rest or another pitch.

3) When two or more numbers are bracketed together, all specified speakers are in action simultaneously matching in loudness.

4) A dash appearing between two numbers or a group of numbers signifies a trajectory movement from one to the other.

5) The term random signifies a random computer permutation of the numbers within the duration as indicated by a line with an arrow.

6) The actual duration for each position change is given underneath the timeline in the score at every change of position for each of the channels.

7) However, the practicality of rounding up decimals in the time indications makes the timing inaccurate and inconsistent. Therefore, cues (indicated as Q) are given at the bottom of the timeline for cues given by the conductor for necessary re-adjustment of the timeline at that point. Such adjustments are provided especially for tempo changes, fermatas, accel. or rall. as well.

For the premiere, the spatialization speaker system was developed and operated by Jan Panis, Tao Vhrovec Sambolec, with the Max/MSP software using VBAP (Ville Pulkki) also developed by them. Jan Panis also served as sound consultant to Chou Wen-chung.

Other Notes

Varèse was fond of extreme ranges in general, particularly in his writing for voices, and he knew how to help singers achieve the quality he wanted in such tessituras. However, it is not always practical to expect singers to take risks in actual performances. For the low register of the choral parts, the spatialization can be adjusted to facilitate the performance. For the high F and Eb in the solo soprano part, such pitches may be, if desired, patched by fading in and out a pitch-shifted pre-recorded note as part of the spatialization process. The pitches however may also be generated synthetically if preferred.

Credit for copying and proofreading the score is due Hendrik Jan Lindhout.