

Recent spatialisation trends in electroacoustic music

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1. Introduction

Spatialisation of sound has been an important aspect of electroacoustic music since its early years (Zvonar) and its aesthetical evolution has been related to the development of new technological tools (Holmes). In the last years there has been a considerable development in the availability tools for the spatialisation of sound with cheaper sound cards, powerful software with automation tools as well as the development of standardised multi-channel systems as surround 5.1. Considering these issues the aim of this study was to try to understand how these new tools are being used and how they have shaped the composers conception of the use of space in their music compared to those used almost a decade ago by a similar group of composers.

2. The survey

As a way to determine which spatial systems are used today by composers and to understand their approaches to use of these systems a survey method was designed. The survey was built by using a of a questionnaire with two questions:

1. In your last works, in what spatial format have you created your pieces (stereo, surround, multi-channel, other)?
2. Can you explain some of your decisions about the use of space when you compose a piece of music?

The questionnaire was designed in English, French and Spanish and sent by email to different mailing lists related to electroacoustic music and also directly to specific composers working in the field. 43 composers interested in participating in the survey replied voluntarily by email with their answers in the period from March 2005 to May 2006.

3. Results

The results for each of the questions were identified as categories as it will be shown below. **Results for the use of spatial formats** show that composers nowadays work with more than just one spatial format and that stereo is the most popular as it is shown in table 1.

Spatial format	Composers that work or have worked with this format
Stereo (%)	63
8-channel (%)	44
Surround 5.1 (%)	26
4-channel (%)	21
Other (%)	16

Table 1. Results for question one: In your last works, in what spatial format have you created your pieces (stereo, surround, multi-channel, other)?

The results concerning the approaches by composers to the spatialisation of sound show a very diverse and detailed account of approaches as it can be seen in table 2 with a summary of the different categories mentioned.

Topics mentioned in connection to the spatialisation of sound	Composers that mention it (%)
Sound material	37
Movement	30
Localisation	28
Clarity	28
Musical structure	23
Creation of space	23
Room acoustics	21
Functionality	21
Perception	16
Depth	14
Instrumental music	12
Technical issues	12

Time	12
Performance	9
Frequency	7
Interpretation	7
Timbre	7
Pitch	5
Spread sound	5

Table 2. Summary of topics mentioned for question two: Can you explain some of your decisions about the use of space when you compose a piece of music?

4. Comparing systems used and approaches in 1997 and 2006

The results shown above were compared with similar information gathered from a compilation of articles by seventeen electroacoustic music composers published by the Institute International de Musique Electroacoustique of Bourges in 1997 (IMEB). The compared results show that there are considerable changes as it can be seen in column 3 of table 3. In the last nine years there has been a considerable increase in the use of 5.1 surround systems as well as 4 and 8-channel systems while a substantial decrease in the use of stereo.

Spatial format	1997 (%)	2006 (%)	Difference
Surround 5.1	0	26	26
4-channel	0	21	21
8-channel	29	44	15
Other	6	16	10
Multi-channel (>8 channels)	18	9	-8
Stereo	88	63	-25

Table 3. Compared results for spatial formats used by composers in 1997 and 2006.

Comparing the results for the approaches to the use of space obtained from the questionnaires with those of 1997 there are few similarities and some clear differences as shown in table 4. In general terms, results show a tendency towards a decline in interest by composers nowadays in most of the topics. Clarity is the only topic that stands out as more important to composers today while the topics of performance, interpretation and technical issues related to spatialisation showed to be considerably less important to composers in 2006 than in 1997.

Topics related to spatialisation of sound

1997 (%)

2006 (%)

Difference (%)

Clarity

6

28

22

Creation of space

24

23

-1

Spread sound

6

5

-1

Functionality

24

21

-3

Sound material

41

37

-4

Localisation

35

28

-7

Timbre

18

7

-11

Musical structure

35

23

-12

Room acoustics

35

21

-14

Frequency

24

7

-17

Time

29

12

-17

Perception

35

16

-19

Movement

53

30

-23

Pitch

29

	5
	-24
	Depth
	41
	14
	-27
	Instrumental music
	41
	12
	-29
	Interpretation
	47
	7
	-40
	Performance
	65
	9
	-55
	Technical issues
	71
	12
	-59

Table 4. Compared results of topics related to the use of spatialisation of sound mentioned by composers in 1997 and 2006.

5. Conclusions

The compared results of 1997 and 2006 of this study show that for the group of composers compared there have been substantial changes in the use of spatial systems as well as to the approaches to the spatialisation of sound. 5.1 surround and 8-channel systems are more popular than before and composers seem to be less interested in the performance and interpretation aspects of the spatialisation of sound in electroacoustic music.

Bibliography

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