Music is in the air. Sounding performances in hybrid and virtual space

By Miriam Akkermann

While physical space is fundamental to any sound's (physical) being – and thus being heard – advancements in technology and COVID pandemic-related limitations to physical travel and meeting in larger crowds prompted debate on how to design hybrid and virtual spaces in which music and sound art can be performed adequately. The question of how to make music together while being located at distant places, as well as issues concerning the integration of a wide-spread audience using telecommunication technologies, is, however, neither completely new nor limited to digital virtuality. Currently termed as 'telematic' and 'networked' art works and performances, there exists a quite long history of using distributed sounds and sound related information in order to create artistic settings and performances. For example, listening to live music performances or entertainment programs from a distance was already possible in the transition to the 20th century. Facilitated by *Electrophone telephone broadcast services* (which are best documented in the UK and France), listeners could dial in and listen to requested performances (theatre plays, music performances, etc.) via telephone by means of headphones. This was possible both alone or in groups, the latter enabled by multi-headset tables ("*Electrophone tables*") at home and in public, for example in commercial *Electrophone salons* as a 'pay as you go' service. This service was succeeded by radio broadcasts which were less expensive for the audience and more easy to receive.
While telephone lines and most of the emerging television programs formats aimed at a single directed (sending) broadcast, Simon Emmerson emphasizes the role of the radio which "could be turned into a bi- or multi-directional instrument, a network of connections that could facilitate a telematic exchange between all participants" (Emmerson 2000: 181). As an example, Emmerson mentions *Horizontal Radio* (1995) and *Rivers and Bridges* (1996), two projects organized by *ORF-Kunstradio* which explore the radio's capacity for global networking by bringing remotely situated sound artists, engineers and producers in contact

and interaction.
The idea of a real-time interaction between distant partitioners was also explored using the emerging digital technologies towards the end of the 20th century. Starting with single connection lines, it was due to Georg Hajdu in 1991/92 that Richard Teitelbaum could participate in the anniversary concert of the composers' collective *Musica Elettronica Viva* at Mills College while being stuck in his car due to a blizzard using a modem connection "that would enable him to remotely play a MIDI keyboard while listening to the performance over the telephone" (Hajdu 2012: 2). The developments of the early 1990s were followed by a decent number of widespread, artistically and technically diverse approaches which can be subsumed under the terms 'Netzmusik' (Föllmer 2005), 'internet music' or 'internet-based music networks' (Manning 2004), and 'computer network music' (Gresham-Lancaster 2013; for an overview until 2008 see also Akkermann 2014), while other works appeared in the context of multi-media art and web-based (fine) arts, sound art, or simply as music performances (Wahl 2013). Not all of these artworks deliberately work on space as a fundamental, but all involve to some extent the creative examination and handling of musical material at geographically distant locations which are meant to share ideally synchronous sound at different locations, whether by networked distribution or via a shared virtual space.

Together apart in the same (virtual) space

With the possibility of being independent from physical (or architectural) space, it becomes obvious – even though not explicitly addressed – how strongly the aspect of space relates to the created musical work. Being able to play or perceive the same sound together without the limitations of physical space opens up new perspectives on artistic processes in sound creation and its performance. Hence, the technologies that enable real-time and offline transmitting and receiving of data including sound and visuals seem to lead to a situation where temporal and geographic boundaries start to dissolve. This raises new questions for artistic creations: How can or should the com-

plex (technical and artistic) setting be integrated in a composition's outline? How can sounds, musicians, interfaces, audience, responses, etc. be (re)present(ed) at distant locations? What does it mean to create a shared moment in a virtual performance? How do artistic works deal with the relationship of physical and virtual spaces? And how does this influence the way an artwork can be documented and analyzed?
A challenge that emerges for telematic performances is, following Emmerson in 2000, that it is difficult to understand what "happens" when 'just' following a performance – the interaction can seem incomprehensible for the audience (Emmerson 2000, 186).

Emmerson claims that

> "[t]elematic work is an offer for exchange. Artists and businesses alike will have to come to terms with these new technological and cultural facts […] [suggesting] changes in sound art creation and perception that go beyond modernist concepts of authorship, owner-ship, artistic self-expression through the production of unique works and 'truthful' perception. They advocate new ways of art making – not defined by work but process; not through the polarisation of creator and receiver, but rather through communication and interaction between them." (Emmerson 2000, 187).

In 2000, Randall Packer and Steve Bradley presented *Telemusic#1*, a collaborative performance in which Packer and Bradley mention seven designers and two studios as co-creators. In their introduction to the premiere they explained that

> „the demarcation between physical and virtual space, between on-line and local proximity, between the self and the network, converges and blurs into a shared, participatory experience through sound and our attention to its spatial and transformational qualities." (Packer and Bradley 2000)

Now, in the early 2020s, technical developments such as real-time online platforms for concerts and music festivals, interactive virtual spaces in 2D and 3D including Virtual Reality and Augmented Reality technologies, online platforms for collaborative music making in real-time and offline as well as a variety of streaming and receiving options for audio-visual contents exist (see e.g. Cope 2001; Lazzaro 2001; Hugill 2005; Duckworth 2013; Serafin et al. 2016; 2017; Hamilton 2019). Meanwhile, some of the basic questions are still in negotiation; for example:

How to deal with shared author- and ownerships in a multi-dimensional setting? What does a musical or sound related work look like that is genuinely made for virtual space and takes all the advantages of this setting? How does virtual space change the roles of audience, composers and musicians when a performance is intended to be accessible (also) via telecommunication devices – online and offline?

Settings and spaces side by side

It seems especially clear that new digitally enabled virtual spaces present major changes concerning artistic, technical, and social aspects, ranging from creating musical works dedicated to this very specific performance environment, establishing performances in virtual space, and providing experiences for the audience that include interaction and involvement as intended in physical settings. This goes hand in hand with new technological developments including virtual spatialization of sounds and their representations, leading to another new challenge: While invisible connections enable the audience to explore and eventually interact with sounds from all over the world, the listening situation (as well as the audio-visual representation at the moment of perceiving a musical work) becomes both a tool for creation and a requirement for the individual audience who can not necessarily expect a prepared and accessible listening room but who needs to facilitate their own personal setting for experiencing a performance. This again leads to a choice for the audience and to the need of a suitable technical set-up. What equipment does someone need to experience the virtual space in the intended way? Does everyone need speaker systems or is it created to be for headphones? This, in some ways, would this lead us back to the idea of the *Electrophone table*, maybe now as a 'VR headset station' providing public access to technology that may not be at each home, thus enabling audiences to experience on demand content together in virtual space – side by side.

Notes

Science Museum Group. „Electrophone table, by National Telephone Company, England, c.1895-1925"; https://collection.sciencemuseumgroup.org.uk/objects/co8615954/

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