

How have improvements in transport and communications infrastructure affected the history of music – and in what ways might they do so in future?

In order to assess how improvements in transport and communications infrastructure have affected the history of music, it is important to begin by first defining 'the start of music'. As Andrew Gant expresses in his work *Five Straight Lines: A History of Music*, "this is a story with no beginning ... When did two hominids first fall into step when walking, enjoying the subliminal sense of rhythm made by their footfall?"¹ Whilst there exists evidence of music in the early world that progressively came to fruition over thousands of years, for the purpose of this essay I will be focussing on the last five hundred years of music, where noticeable scientific advancements catalysed infrastructures that enabled the spread of music.

A History of Communications Infrastructure

Composers, conductors and musicians can be said to be the real communicators when it comes to bringing the black dots on a stave to life. However, in reality, these individual communicators are reliant upon firm communication structures to disseminate their work.

The establishment of printing in the 16th century was essential in creating a platform to replicate and promulgate music. One of the most successful efforts was by Ottaviano Petrucci, whose triple-impression print system created beautifully refined scores and advocated musical literacy as opposed to the prior oral tradition.² In fact, although in France some twenty years later, Pierre Attaignant created a much more effective single printing method, scholar Sean Kisch suggests that Attaignant remained "In the Shadow of Petrucci"³ despite his creation being more cost and time efficient. Across the channel, it was Queen Elizabeth I who permitted Tallis and Byrd control of the printing press in 1575,⁴ spiralling the production of music in England.

Skipping forward several hundred years, the 19th century can be seen as one of the most significant centuries from the perspective of communication advancements. The first notable breakthrough was the creation of French inventor Leon Scott de Martinville in 1857 – the phonograph: the first device to record music. This invention was subsequently built upon by Thomas Edison who, two decades on from this, produced the phonograph, enabling the user to play back a recorded sound. This new ability to replicate music onto a machine, was something completely transformative and with the swift emergence of gramophone shortly after, firm foundations were laid down within the communications infrastructure.

Following on from this, the 20th century thrust improvements further forwards with 1906 marking the first time music was heard over radio (in Massachusetts). Subsequent developments in communication were soon to be made with the emergence of cassette tapes and vinyl records mid-century. Although all transported music into the home environment, it was not until the production of the Sony Walkman in the 80s (the first portable music player), that people began to realise the true capability of transportable music.

¹ (Gant 2021) – p.14

² (Gant 2021) – p.61 and (Sangis, 2016)

³ (Kisch 2016)

⁴ ([Britannica 2017](#))

These communication changes inevitably shifted the way in which people listened to music, with the exposure of such individual listening devices creating a greater personalization of music for the listener. However, although this portability of music grants the freedom of experiencing one's own preferred music, it is significant that people still choose to attend concerts to hear live music. Therefore, the growth of communications infrastructure is not as linear as it first appears, and prior communication structures have not become redundant despite later advancements.

Many would agree that communications infrastructures in the 21st century are highly accomplished and effectual. For example, the online streaming service Spotify provides its listeners with over 70 million songs and uploads 60,000 new songs onto the platform each day.⁵ However, although we have come a long way from the times where one would never hear the same piece performed twice, others argue that the communications framework has not gone far enough in terms of the distribution of music: clear marginalisation of certain genres still exists. In his paper *'The Future of Music in America'*, Bostein observes:

“although there is a long and honourable tradition of Black American composers and performers, and a significant history of collaboration between jazz and classical music in the United States, most concert organizations, performers, opera companies, and symphony orchestras, prior to 2020, have ignored both and done pitifully little to draw in the non-white population of the nation to the concert and operatic traditions”.⁶

Similarly, there are other cultures of music that have never reached the ears of the rest of the world. The existing communications infrastructures are heavily westernised, often overlooking these different genres.

Even in the present, there remain significant global disparities in communications structures. Music in the democratic west, for example, is circulated in a very different way to music in countries where the state has control of communications. For example, on 3rd March 2022, in response to Russia's banning of independent media outlets, television station 'Dozhd' (TV Rain) resigned by playing Tchaikovsky's Swan Lake live on air, a piece with its own historic emblem. Journalist Amelia Schonbek writes that “seeing [Tchaikovsky's Swan Lake] on television [emblematised] that all was not well in Moscow.”⁷ Thus, musical communication can be used subversively to critique state-control of communication.

A History of Transports Infrastructure

When assessing the impacts that improvements in the transport industry have made to music, it is important to note that in earlier centuries, transport was the limiting factor when it came to the spread of music. With limitations on how far one could travel by land, music remained culturally specific.

Glancing back to the 16th century, it is evident that transport was indeed viewed as the key to unlocking many musical doors. Gant highlights early composers' desires for transportation with many relying on long sea journeys (accepting the potential risks) to inform themselves of other musical cultures. He describes “Pierre de la Rue, inadvertently picking up three months of English influence when he was shipwrecked in the English Channel on his way to Spain in 1506.”⁸ He also references

⁵ (Iqbal 2022)

⁶ (Bostein 2020) – p.355

⁷([Schonbek 2015](#))

⁸ (Gant 2021) – p.72

others who went beyond their borders: the French composer Antoine Brumel who spent time in Italy and the Spaniard Francisco de Peñalosa who visited Rome.

This desire for transportation to experience musical cultures elsewhere was aided in later centuries through scientific advancements. The steam train, developed in the early 1800s, massively elevated transport links and was vital in promoting demographics to travel. Mattera writes that “Wanderlust fuelled the journeys of many nineteenth-century elite artists. Travelling to foreign lands was crucial for the artist to absorb and experience cultural traditions outside of their home country and was a pivotal rite of passage for young European men.”⁹ Franz Liszt is one composer who took great advantage of the transport infrastructure at his disposal. The Hungarian-born virtuoso travelled from a young age, performing in an area now considered Slovakia, aged nine, before moving to Vienna to receive piano lessons from Carl Czerny. Liszt toured, lived and taught all over Europe; not only did the transport network allow him to make acquaintances with other contemporary composers who had a profound impact on his writing (such as Chopin, Wagner and Berlioz) but in doing so he also helped to establish the idea of ‘Travel Music.’ This is represented by his work ‘Years of Pilgrimage’, a collection of piano pieces primarily based on the Italian and Swiss landscapes.

But was this transport infrastructure really necessary for the propagation of music? Gustave Reese suggests that “the European musical world could be very small for those who lived in the right place and operated in the right circles.”¹⁰ And similarly, in the mid-1700s, the first major female hymnwriter, Anne Steele, serves as a prime example of someone who had very little reliance upon transport infrastructures. Steele never travelled beyond the borders of South-West England¹¹ yet, as Cynthia Aalders indicates, the hymn writer was tremendously popular in North America, “where, between 1791 and 1978, her texts were published almost 13,000 times.”¹² From these examples, perhaps it seems that there is no direct correlation between the spread of music and transportation infrastructure.

Yet, on the other hand, before the digital age of technology, transport was the enabling factor that permitted music to cross cultures. One could certainly make a strong case in attributing the existence of fusion music to the vast improvements made in transport that in essence granted its creation. Only through transport, could two composers from completely different musical backgrounds and understandings come together, united by the universal language of music, and create new ideas and styles.

Furthermore, the worldwide spread of music and the fame of artists and bands has been heavily reliant upon transport connections. The Beatles, for example, toured nine different European countries as well as America, Japan, China and Australia.¹³ To become a global phenomenon, the band was indeed highly dependent upon transport infrastructure.

In the 21st century rapid global transport systems continue to assist the expansion of music, with artists able to perform on one side of the world and then the other in the space of 24 hours. Furthermore, the appeal of live concerts means that transport is still important, even though one might expect that with the growth of online communications infrastructure, that physical presence is perhaps less necessary.

⁹ (Mattera 2019) – p.1

¹⁰ (Reese 1940) – p.5

¹¹ (Cho 2006) – p.44

¹² (Aalders 2009) – p.3

¹³ (Dermon, 2008)

The Future of Communications Infrastructure

Looking to the future, it is inevitable that both communications and transport infrastructure will continue to evolve. Arguably technological advancements will have the biggest impact on existing frameworks with artificial intelligence (AI) technology in particular seeming set to make its mark in future years. Although some AI technology already exists, (Spotify's 'Made For You' playlists use AI to analyse listeners' music choices and recommend similar pieces), industry experts predict that we will see a huge surge in its future use, perhaps most prominently in generating algorithmicized loops that can be used widely in the music production industry, making the process of music-making easier and faster and exponentially increasing the volume of music.

One of the major benefits will be improved accessibility. Instead of composing being preserved for the elite, as was largely the case in eras such as the Classical period, where one had to have a certain social standing to access these opportunities, there is no doubt that music will become ever more attainable for all, diversifying and creating a greater sense of equality in the music world. However, we could potentially lose this sense of diversity if, with the implementation of AI, technology starts making musical choices for us. Whereas in the past, one would actively choose to attend a concert or buy a record, with AI recommending certain music based on genres listeners are already exposed to, technology starts diminishing our own sense of agency and music's diversity.

Furthermore, with this new ease of creating music, could also come a "saturation of the musical landscape"¹⁴: although it may become easier to release music, the amount of such digitised, almost robotic content could perhaps dilute music and meaning. If notes are selected algorithmically by a computer, instead of carefully experimented with by real human beings, could the true meanings and intentions behind pieces be completely eradicated? Particularly when compared with the programmatic music of the Romantic era, for example Beethoven's interpretation of an ebbing brook in '*Des Baches Wiegenlied*', computer-generated music would seem to be the antithesis of true expression. To quote Gustav Mahler "If a composer could say what he had to say in words he would not bother trying to say it in music." It seems then, that there is some irony in the fact that an advanced future communications framework, composed of synthesised notes, would in essence, strip the listener of the true 'communication' element of music: the composer's thoughts and emotions.

The Future of Transport Infrastructure

Finally, focussing specifically on the future transport infrastructure, what appears to be the main question is whether transport infrastructure will still be important in the future world of music, if communication infrastructure can fully substitute it?

To explore this in greater depth let us again turn to the way in which future technology can affect transport, with reference to concerts and touring. With audio quality ever-improving, questions arise as to whether, in the future, there will remain demand for live concerts when, with such technological progress, the same experience can be replicated through a screen with the aid of advanced headsets, for example. Not only would virtual concerts prove to be cheaper and safer on an individual level but would also minimise environmental damage, something that would seem highly attractive among a future population likely to be even more conscious of the global impact of travelling on an ever-warming planet.

¹⁴ ([Sage Audio](#))

Throughout the Coronavirus pandemic, many music groups have shown the potential of virtual concerts, even though it presents the challenge of establishing a true sense of connection between artists and fans. With pop group ABBA soon to demonstrate the possibility of having lead acts perform virtually as 'avatars' (or 'abbatars' in this case), their tour is set to highlight the lack of need for transport in the modern era. Surely then, if the lead performer can be absent from a venue (yet present through technology) then we can envision a future, without a pandemic, where artists and fans choose to willingly attend concert without the need of any transport in place to take them there.

The future impact that transport infrastructure will have on music is inextricably linked to how far communications infrastructure goes, and how successful it is. Although, we have seen how centuries ago there was a much greater thirst for transport when communication lacked, in the future with satisfactory communication, perhaps our prior reliance upon transport infrastructure will diminish. Alternatively, if changes to the communications infrastructure "come at a price where the richness of musical experience is compromised, leaving only remnants of a living, vibrating, dynamic musical past,"¹⁵ then perhaps we will see greater revival of live music, with transport infrastructure emerging more important, in the way it was deemed so essential in earlier centuries.

Overall, having surveyed the landscape of ways in which communications and transport infrastructure have seminally impacted the history of music, progress is not as linear as it may first appear, with frameworks proving to be both complex and multifaceted. Whilst methods have been built upon by new developments, pre-existing platforms of music dissemination, such as the printing and recording of music, continue to hold great importance. However, although these developments have massively aided its promulgation, arguably the European dominance of infrastructures has suffocated other genres. Future technology undoubtedly has the capability to make music more encompassing, yet conversely, could be more exclusive than inclusive, in the same way it may unintentionally shift popularity away from infrastructure if it tries to overcompensate.

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¹⁵ (Tanaka 2006) – p.267

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