

Impact of Wars on Music and Music Broadcasting: The Russia-Ukraine Experience

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Abstract

This article examines the effects of wars on music and music broadcasting, particularly the Russia-Ukraine war. The research is qualitative and literature-based. It has been revealed that music is a powerful tool for social action and propaganda in times of war but can also inflame ill-will, as in the case of the Russia-Ukraine war. The article has also established key connections between research on music and radio and online music transmission in wartime periods. It concluded that music and music broadcasting will continue to influence people despite the negative impact of conflicts and should be encouraged by nations during and in the absence of wars. Therefore, case studies by experts in multimedia and music studies are needed to further examine the significant events and issues in music and music broadcasting in war-torn countries.

Keywords: Wars, Music, Media, Broadcasting, Russia, Ukraine

1. Introduction

Historically, wars have had a significant impact on music, but their destructive forces have grown to the point that they may potentially end all life, including human attitudinal change towards war. In addition to the reality that technology has significantly changed people's music consumption patterns, wars and conflicts have consistently brought about significant changes in a variety of facets of human civilization, including musical genres (Morgan, 1991; Arnold, 1993). People have experienced battles throughout history that have claimed the lives of many well-known artists. Because of this, a study on the effects of conflicts on music would produce outstanding music research. Thus, special interest in researching the history of music broadcasting in connection to world events will reveal that over 580 million individuals have been found to now connect to a multimedia streaming service that has to do with music (Statista, 2023). In the event of the Russia-Ukraine war, films, television programmes, music concerts, and other kinds of entertainment have been restricted as a result of harassment directed against Ukrainian and Russian pop singers and artists who sometimes chose to prioritize their financial interests above national ideals. On the other hand, civic organizations in Ukraine campaigned for limitations on Russian musicians to protect the nation's online environment, cultural safety, and financial penalties.

This article, which is qualitative and literature-based, is aimed at examining the impact of wars on music and music broadcasting with special reference to the Russia-Ukraine war, which is still ongoing. To achieve the above objective, the article first discussed music and music broadcasting conceptually. Second, it

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examined the weaponization of music during wars and the impact on music and music broadcasting. Next, the article proceeded to briefly examine the current war between Russia and Ukraine. Fourthly, the paper explored music and music broadcasting in the ongoing war between Russia and Ukraine. Finally, the effects of the Russia-Ukraine war on music and music broadcasting were identified and discussed. Significantly, the paper provided a detailed qualitative examination of the portrayal of the ongoing Russian-Ukrainian War on a particular platform. This research has added to the expanding collection of writings that examine the unique characteristics of music, including music broadcasting. The study also presented music and music broadcasting in a timely manner following war reporting's technological advancements within modern participatory paradigms of hybridization of music media systems.

2. Music and Music Broadcasting

In general, the word "media" is interpreted to refer to a platform via which material is disseminated from the author to the audience. The media industry is made up of the businesses and people, who produce, handle, distribute, and use this material (Schramm, 2020). The digitalization and internet use of the past ten years have led to exponential growth in the business. For the majority of people, the Internet has emerged as a traditional form of entertainment that is used across demographics and via a variety of media, from the most archaic to the most cutting-edge, including radio waves, theatre, print, television, movies, video games, advertisements, music, and OTT (over-the-top) services, among others (Thomson, 2022). The media sector may now use big data and data analytics technologies to improve viewer perception since a new player enters the market every day and consumer requirements and the distribution of their preferred content are greatly fragmented. These formats allow for the distribution of material for a variety of reasons, including entertainment, education, and concept promotion. These forms may be generally divided into groups; for instance, traditional media A frequent phrase for music composed especially for use in movies, television shows, advertisements, radio, video games, corporate videos, the internet, and other media is "media music" or "music media" (Macmillan, 2015; Bakir & McStay, 2018). On the other hand, music broadcasting is the act of sending music across satellite, AM (amplitude modulation), FM (frequency modulation), as well as television networks and stations. In Canada, for example, music broadcasting has been more significant than television, with Montreal's XWA (which is currently CIQC) becoming one of the earliest stations to provide regularly scheduled broadcasts (Bakir & McStay, 2018). Similarly, the Canadian National Railways constructed radio studios around the nation in the early 1920s, and by the mid-1920s, whole Gilbert and Sullivan operas as well as the ambitious series "The Music Makers" had been transmitted from these facilities (Brown, 1976; Macmillan, 2015). Generally, the survival of music in most nations of the world has depended heavily on music broadcasting. Form and style are impacted by new technologies and shifting preferences, but broadcasting continues to be a key medium for distributing music to the general public at all times.

In broadcasting, music has a long history of dominance, and people encounter the widest range of musical genres, styles, and civilizations every day. Russia and Ukraine, for example, are music-loving nations with a vibrant music scene and a rich cultural past (Zhurzhenko, 2021). There are millions of individuals in those countries who play instruments or sing in choirs; music theatres, orchestras, groups, and bands make up the diverse musical environment. Due to the public's strong preference for music, broadcasters often include it in their programmes. Access to over 50 million songs has been feasible as a result of streaming services like Spotify and Apple Music during the last 10 years (Schramm, 2020). Additionally, music is increasingly being presented online by broadcasters themselves, making it available every day. Music has played a significant role in radio shows across all nations of the world. For instance, gramophone recordings swiftly gained popularity, paving the way for the 1960s rise of rock and pop and the 1970s growth of youth-oriented and pop-centric radio stations (Zhurzhenko, 2021). Also, service waves provided continuous programming with a

distinct spectrum. Since the middle of the 1990s, music radio networks and broadcasters have found success on the internet, providing limitless capacity that does not require a significant financial commitment or licence. With specialty and special-interest portfolios, providers may concentrate on limited target groups without needing broad transmission regions. Thus, to be viable, low expenses and modest revenues are required. This enables providers to focus on narrow target markets with specialized portfolios.

3. Weaponizing Music during Wars and its Impact

Music serves as a potent weapon for social action and propaganda, but it can also be employed to inflame ill-will. Available information indicates that the most effective music propaganda is an optimistic one that creates good connections (Cuyler, 1973; BBC Music Magazine, 2021). However, there are several instances of harmful impacts in music, prompting the question of whether restriction is justified. Since it may be used for the oppression of others as well as to incite hate and violence, music cannot be entirely seen as beneficial to human society. When utilized to change conflict, avoid or end conflict amicably, aid in healing and rehabilitation processes, and give people a sense of direction and empowerment, music has enormous potential (Brown, 1976). It may also serve as a place of solace, reassurance, and refuge, offering a sense of direction and empowerment. Additionally, music may be a source of solace, comfort, and safety, offering a sense of direction and empowerment as well as promoting empathy, which is essential for fostering world peace. Numerous musicians and performers lost their lives in war or suffered permanent scars during the First World War, which had a severe impact on classical music. George Butterworth, a British composer, was shot on the battlefields in 1916 and only left behind a few pieces of music (Merry, 2015). Russian sniper Rudi Stephan, a German composer, was shot and murdered in Tarnopol, Ukraine (BBC Music Magazine, 2021). Prior to his death, Scottish musician Cecil Coles sent manuscripts of his compositions to his close companion Gustav Holst while serving on the Western Front. Other composers who perished in the fight were the Belgian Andre Devaere, the British William Denis Browne and Ernest Farrar, the Hungarian Aladar Rado, the British Willie B. Manson as well as Frederick Kelly, and the French Fernand Halphen (Fauser, 2013).

New technologies like the automobile, telegraph, and the invention of recording had a big impact on music, while the war itself made use of new technologies like tanks and submarines. In one of history's most prophetic coincidences, the first jazz albums were issued in New York in March 1917, only one month before the United States (US) joined World War One. The First World War introduced ragtime and jazz to Europe, introducing them to the new delights of American music. Jazz acquired a new persona when bands like the "Hellfighters" and "Seventy Black Devils" accompanied black troops (Sullivan, 2011). Some women gained the right to vote in 1918 after having the chance to demonstrate their ability to do what was previously considered to be men's work. This was not a turning point in the history of classical music, however. According to the Halle's archives, eight women were accepted in 1916, but by 1920, the orchestra had returned to being exclusively male until 1941 (Sullivan, 2011). The LSO continued to perform in the capital up to 1917, at which point performances were postponed until the war was over. In 1912, the Queen's Hall Symphony became the first professional symphony to hire women, but it took many more years before other orchestras started to follow suit. First World War veterans who were also composers often and extensively wrote about their experiences (Sullivan, 2011). George Butterworth detailed the monotony of life at rest behind the trenches in his long letters home. Throughout the war, Ivor Gurney wrote almost every day to his colleague, composer Herbert Howells, and other Royal College acquaintances. His letters showed a courageous blending of humour and intense love for his fellow troops.

The first war to occur in the era of widely accessible electronic music was World War II. In 1940, radio was in 96.2% of urban homes in the Northeastern United States, while just one radio per two rural households remained in the South (Bolden, 2007). Millions of people in Europe had home radios, and the number of

homes with radios increased from four to sixteen million. Given that single songs and song recordings could be so extensively disseminated to the populace, this was a rare circumstance for music as well as its connection to conflict. Many of these songs were specifically premastered by the original artists for a Department of Defence musical and morale mission called V-Discs for the sole consumption of military personnel (Bolden, 2007). American soldiers had frequent access to radio in all but the most extreme combat conditions. During World War II, the US had the opportunity to leverage the exponential advancement of technology to create music for a variety of reasons. "I Will Be Seeing You" (1938) as well as "Praise the Lord and Pass the Ammunition" (1942), for instance, are just a few of the many examples that can be found in the many genres of music that were created and popularized during this period. Military bands, which would serve the aim of raising morale on the home front and maintaining nationalistic and patriotic sentiments at an all-time high, were among the other attempts to aid the troops in continuing the war. "God Bless America," composed by Irving Berlin for a World War I combat revue but suppressed, then reworked, and used in World War II, was the first patriotic war song of that conflict in the United States (Fauser, 2013). Other patriotic wartime songs, including "A Nightingale Sings in Berkeley Square" by Glenn Miller and "Arms for the Love of America" by Irving Berlin, were also utilised to maintain stability and keep hopes alive both at home and on the home front (Sheldon, 2019). The influence that 1940s music had on individuals at the time and how it still has an impact today is a matter of historical interest. According to the book *Sounds of War: Music in the United States during World War II*, the focus placed on having the listener feel as if they were a part of the fight or that they were someplace else during the 1940s made 1940s music unique from earlier periods of music composition (cited in Sheldon, 2019). It continues by saying that World War II songs are still sung to recall those trying days of conflict and to remind people of the price of independence and freedom.

To support President Franklin Roosevelt's "good neighbour policy and Pan-Americanism", the US State Department promoted the sharing of music over the radio between the neutral nations of Latin America (Fauser, 2013). The US Army continued to use music as a type of cultural diplomacy in the years immediately after World War II, amid the wreckage of Western Europe (Beeny, 2011). In an attempt to highlight the joint musical history of the United States and the defeated countries of Europe, the Seventh Army Symphony Orchestra was founded in 1952 under the artistic leadership of Samuel Adler. Along with the inclusion of female and African American musicians in military bands and organisations, the number of performances significantly rose. Uncertainty still exists over music's place in the age of racism and misogyny. The British Broadcasting Corporation (BBC) was compelled to adjust during the war and increased the quantity of dance music aired, although censorship was harsh (BBC Music Magazine, 2021). Due to its combination of religious language and foxtrot music, the popular American song "Coming in on a Wing and a Prayer" was prohibited. Additionally, BBC executives were concerned that American-style crooners might diminish the virility of British men. German troops located in France, the Low Countries, and those flying over Britain were avid fans of the popular music broadcast by Britain's mass media (BBC Music Magazine, 2021). The most well-known solo artist was Vera Lynn, commonly referred to as "the forces' sweetheart."

Makarenko (cited in Mulhall, 2023) sees music as a tool for the eastern Ukrainian regions, which have long had a significant influence from Russian language and culture. The station is starting musical expeditions to learn more about regional folk music that may be utilized to promote Ukrainian cultural independence from other countries. Makarenko thinks that by teaching people about the music and culture of Russia and Ukraine, more people will be able to appreciate the distinctions between the two countries. Military medic and member of the revolutionary band Beton Andriy Zholob keeps on writing music despite the turmoil and horror going on all around him (Mulhall, 2023). He performs with an acoustic guitar and records new tunes with his phone camera. He has shed tears while reading emails from troops who claim to have listened to his music before entering combat. When his buddies on the battlefield are travelling to their positions, they listen

to his songs in their automobiles, which give them intense sentiments. A small number of citizens sought safety at K41, which is among the most well-known nightclubs in the city, at the commencement of the conflict. The Prodigy-like Peacedove, a sarcastic attack on the artists pushing for appeasement rather than triumph, was created by DJ Taras Clasps, who funnelled his rage into his music (Mulhall, 2023). People left the club when the prospect of Kyiv falling receded, turning it back into a centre for electronic music; however, now the proceeds are used to purchase vehicles for army battalions. Clasps' music has started to express its politics more blatantly, with songs like "Fuck off Russia" and "Get out of this territory." Mystictrax creator and DJ Volodymyr Baranovskyi collaborated with a different subterranean label, Standard Deviation, in an effort to compile a 65-track electronic music compilation to support military projects (Mulhall, 2023). Electronic music has altered as a result of the conflict, with Baranovskyi beginning to examine the national music and combine samples with traditional musical instruments to infuse the genre with some deeply ingrained roots and culture. Due to the curfew in Kyiv, club nights have changed into day raves, yet they are still held every weekend around Ukraine.

According to Primig et al. (2023), sound and background music are crucial components of platform-specific remixing techniques. They further argued that majority of the time; rich background music is chosen to match the atmosphere of the visual material. However, many videos exhibit extensive audio editing, with music that is carefully chosen and synchronized with the visuals. For example, "Video 1802" by a reputable interior design firm in Ukraine, depicts its work environment prior to and following its destruction during the Russia-Ukraine War (WTO, 2022). Musical videos and films of tangible items are used to show the effects of the conflict, but human suffering and fatalities are seldom shown. In musical videos, before-and-after images of Ukrainian towns and structures are shown in photomontages that have been manipulated to complement evocative music (Primig et al., 2023). However, there are times when troops are shown doing something other than combat, like laughing or dancing, which humanizes them. The purpose of the conflict for the Ukrainian people is unclear since the Russia-Ukraine conflict merely threatens people's lives and environments. The military anesthesia video is an example of this kind of musical material. By presenting oneself in front of the material and displaying their emotional state, content producers utilize psychological cueing to elicit the right emotional reaction from their audience. The common category of response videos includes these videos. Music broadcasting as a practise affects the reimagining of the events of the war between Russia and Ukraine on different levels (Primig et al., 2023). For instance, visual editing techniques are used by creators to repurpose material from social media and television that is linked to their online profiles. Second, the platform's advantages, which include reworking as a platform feature, both enable and hinder this recontextualization. The logic of music media or broadcasting has been designed to allow for its maximum consumption. Trending music may be seen in this light as a way-marker that helps create a feeling of location. Voices may therefore, as an original sound, develop and remain a crucial component of a network even after the voice carriers themselves have long ago vanished, as Ramati and Abeliovich (2022) pointed out.

4. The War between Russia and Ukraine

Following the collapse of the former Soviet Union in 1991, Russia gained independence and expanded throughout Eastern Europe as well as northern Asia. Russia has a long history of being exceptional in all fields of science and art. The works and music of such luminaries of the world's culture as Anton Chekhov, Aleksandr Pushkin, Leo Tolstoy, Nikolay Gogol, Fyodor Dostoyevsky, and Pyotr Ilyich Tchaikovsky were created by pre-revolutionary Russian society (Riasanovsky et al., 2023). After the Russian Federation, Ukraine happens to be the second-largest country in Europe. From 1918 until 1920, it had a short period of independence but was ruled by Czechoslovakia, Romania, and Poland. Prior to announcing full independence in 1991, the Ukrainian SSR proclaimed statehood in 1990–1991 (Zasenko et al., 2023). A cappella or with the accompaniment of folk

instruments, ceremonial music, song lyrics, and historical songs continue to be popular in Ukraine today. In Ukraine, Byzantine and Bulgarian music were used as models for church music, and polyphonic singing emerged in the 16th century. The 19th century saw the rise of secular music, while the 1960s and 1970s saw the emergence of the Kyiv avant-garde (Zasenko et al., 2023).

On February 24, 2022, strikes on important cities including Berdyansk, Chernihiv, Kharkiv, Odesa, Sumy, and Kyiv signaled the start of Russia's invasion of Ukraine. Over 8,700 civilian fatalities were confirmed by the Office of the United Nations High Commissioner for Human Rights (OHCHR). A humanitarian catastrophe was caused by the conflict, with the majority of border crossings from Ukraine occurring in the nearby country of Poland. According to Ottuh et al. (2022), Western nations have placed sanctions on Russia that target the banking industry, people connected to the government, and high-tech exports. While both India and China have adopted a neutral posture, several major foreign corporations have stopped doing business in Russia. However, Russia has received formal backing from the governing bodies of Belarus, Cuba, Iran, Myanmar, and Syria, as well as Venezuela (Ottuh et al., 2022). Due to the invasion, the purchasing power of the Russian ruble fell, but Central Bank operations and the need to make payments for gas have bolstered it. China is now the main destination for the export of fossil fuels, which have moved to Asian nations. The major world producers of wheat, aluminum, and palladium are Russia and Ukraine (Merry, 2015).

5. The Russia-Ukraine War and Music Broadcasting Dilemma

According to Zhurzhenko (2021), Ukrainian musical artists were often humiliated in public for putting their financial interests ahead of national beliefs, which sparked a discussion regarding whether or not their actions were morally righteous. Ukrainian pop artists and musicians, as well as television, are heavily influenced by Russian items. The first restrictions on films, TV shows, music shows, and other forms of entertainment were made possible by Russian aggressiveness and a growing understanding of how Russian media as well as media goods were escalating the conflict. A variety of Russian films and music were outlawed by the Ukrainian Government Film Agency in October 2014 on the assumption that their content promoted the Russian security agencies and Special Forces. Similar to Russian publications, initiatives were undertaken at the exact same time to amend Ukrainian law in the same manner. The first draught of a bill to legitimize limitations on Russian television, film, and music productions was presented to the parliament in October 2014 (Robinson, 2017). With the exception of Soviet audio-visual works produced before August 1991, the proposal called for a ban on audio-visual works that portrayed the military services as well as special services of the Russian Federation, the USSR, and the Russian Empire favourably (Rasler & Thompson, 2000). On February 5, 2015, the legislation on Modifications to Some Legal Acts of Ukraine Concerning the Protection of the Information Television and Radio Space of Ukraine was approved. The new rule forbade the distribution and showing of audio-visual works that promoted the propaganda of an aggressor state, portrayed the Soviet and Russian security agencies favourably, or legitimized the annexation of Ukrainian land (Miller, 2018). This applied to both non-Russian and Russian television programmes created after August 1, 1991.

The legislation also outlawed the transmission on television of any films or music made by an aggressor state, which *de facto* included any Russian films or music created after January 1, 2014, regardless of their contents. This second limitation was obviously intended as an economic penalty against Russia rather than a security precaution. According to Zhurzhenko (2021), the Ukrainian Parliament passed the Law on the State Support of Cinematography in March 2017, which outlawed 780 Russian films and television shows between August 2014 and October 2018. Thus, 59.6% of the populace agreed that it was wrong, while just 27.7% supported it (Zhurzhenko, 2021; Miller, 2018). Also, 47 MPs filed an appeal with the Constitutional Court in July 2018 asking for confirmation of the legitimacy of the new law. However, the resurgence within the Ukrainian film and music businesses and the rising public interest in films and music made in Ukraine

appeared to support the limits. The legislation on the governmental support of cinematography and music in Ukraine was passed by the parliament in March 2017, thus increasing governmental financing for the creation, release, and marketing of Ukrainian films and music. The resurgence of the Ukrainian film and music industries was accompanied by conflict between patriotic values and artistic or musical freedom. Ukrainian civic groups pushed for the introduction of restrictions on Russian artists in order to defend the country's information space, secure cultural security, and impose financial penalties on those who violated Ukraine's territorial integrity.

6. Impact of Russia-Ukraine War on Music and Music Broadcasting

Throughout Ukraine's decades of independence, Russia attempted to have a significant impact on its cultural landscape. The same was true with music. The Ukrainian music business had close relations with Russia before the conflict, especially in the area of digital distribution. Russia has been actively dominating the Ukrainian music business for the last 30 years. Ukrainian music was not seen as a separate genre but rather as a component of Russian music. Russia has mostly been successful, notwithstanding the nationalistic upsurge of 2013–2014. But with the war that started on February 24, 2022, everything became different. An excellent illustration to demonstrate the abovementioned Russian influence is this: Some of the many so-called Russian liberal intellectuals include Gorbachev. He had participated in rallies in Moscow, covered Aleksei Navalnyi, the head of the Russian opposition, and had considerable experience in Russian media (Mulhall, 2023). Additionally, he was among the first journalists in Russia to denounce the full-scale conflict in Ukraine. In spite of this, Gorbachev continues to see Ukrainian music as a component of post-Soviet Russian music in the thirty-first year of independence of Ukraine as well as the seventh anniversary of the Donbas conflict and the annexation of Crimea. Both Russian liberals and Ukrainian musicians often have this viewpoint. Despite leaning towards the shared Slavic culture which comprised of Russian, Belarussian, and Ukrainian (or, in a nutshell, Russian-language music), many of the latter group considered themselves Ukrainians (Koulos, 2022). The situation has altered since the start of the full-scale Russian invasion of Ukraine. The music business entered a state of uncertainty. Gunshots may be heard when new songs are released and music events are postponed. International music titans started boycotting Russia and shifting their operations to other European nations, either through their own initiative or as a result of sanctions. This implies that Ukraine's music business has to be rebuilt. The world is now concentrating on Ukraine as well as its culture since doing business with Russia is no longer an option (Demedziuk 2017). The missiles, which have started to land on Ukrainian territory, have emerged as the primary justification for breaking off links with Russia in both commerce and culture. The concept of writing a work of literature on post-Soviet music now is as terrifying as the tracks from the "Brat-2" album by Okean Elzy (Primig et al., 2023). Ukraine paid a steep price for its breakup with Russia in more ways than one, including economically.

Following Russia's invasion of Ukraine earlier this year, most of the music industries there have temporarily ceased operations. Due to the situation in Ukraine, for example, Sony Group Corp.'s music division has left Russia and transferred its operations and artists to other local administrations (BBC Music Magazine, 2021). They said that they can no longer have a relationship with Russia while the conflict continues to have a terrible humanitarian effect on Ukraine, including the rising sanctions against Russia. Numerous firms breaking links with Russian corporations throughout the world are added every day, in addition to the hundreds of thousands of innocent people leaving Ukraine as a result of the war with Russia. It is, however, impossible to predict how long these impacts will persist, but what is certain is the reality that this incursion has caused enormous loss and suffering for individuals all over the globe, as well as a wide range of enterprises from all walks of life (Aden et al., 1995). Many entertainment industries in both Russia and Ukraine, such as Disney, Hollywood Studios, Warner Bros, Adidas, Nike, Apple, Exxon Mobil, UPS, FedEx, Nokia, and dozens more, have all ceased their business relationships and regular operations with and within

Russia, causing the economic collapse brought on by this imperialist assault to be felt by both Ukrainian and Russian citizens (Bakir & McStay, 2018). The continuous invasion has had an effect on the music business; performers have cancelled their Russia tour dates, and entertainment ventures there have come to an end. A lot of musicians and bands are postponing concerts in Russia, including the Russian rapper Oxxxymiron, who postponed six sold-out gigs, and other international performers who postponed stops on their world tours or appearances at Park Live Festival (BBC Music Magazine, 2021). In the darkest of times, many artists in Ukraine's cultural sector have found solace and strength in music. Music is being used by them to fortify their spirits, claim their identity, and mobilize resistance to the invasion. Six of them share their experiences, ranging from radio broadcasters to punk groups and symphonies. In February 2022, an explosion completely demolished the Lysenko Column Hall of the National Philharmonic of Ukraine. Then the orchestra restarted its performances, broadcasting them online simultaneously and in person with a 160-person ticket cap when the prospect of Kyiv collapsing faded (BBC Music Magazine 2021). According to Ostapenko (Primig et al., 2023), those who perform under trying conditions do so because they want to cure their spirits and find a way out of the conflict. For example, Oleksii Makarenko founded Gasoline Radio two days before the invasion with the goal of redefining Ukrainian culture in light of its history and traditions. It includes a diverse range of musical styles, including avant-garde, experimental, electronic, ambient, and classical folk and classical music.

Generally, Russian performances and screenings have been cancelled at theatres, festival screenings, and other events as a result of Russia's invasion of Ukraine. In order to deliver correct information to Russian residents, Ukrainian artists and industry officials are requesting that streaming providers certify the incorporation of political themes in recorded artwork. Since February 24, 2022, when Russia invaded Ukraine, there has been persistent burning of houses, hospitals, and orphanages. Ukrainian musicians want to update their album and track covers to reflect this, but streaming services have maintained a "no politics in music" stance (Riasanovsky et al., 2023). They have banded together at the urging of the Ministry of Digital Transformation and the music media to ask the directors of streaming services to let them speak the truth and put an end to the carnage, but to no avail. A set of federal laws known as the Russian 2022 legislation governing war censorship, restricting anti-war expressions, and calling for sanctions have drawn criticism from opposing groups and human rights organizations (Ottuh et al., 2022). Due to this law, several Russian media sites, notably Colta.ru, Snob online magazine, Znak.com, Kolokol, and Novaya Gazeta, were compelled to cease reporting the Russian invasion of Ukraine. This has greatly affected music broadcasting in the country. Due to the legislation, independent television station Dozhd (TV Rain), for instance, had to halt its operations. Due to the new ban on fakes, Radio Liberty said it would cease operations in Russia but would continue to report on developments in Ukraine from afar. Additionally, several international media sources were prohibited inside Russia (BBC Music Magazine, 2021). Within a three-day period of the regulations taking effect on March 7, 2022, over 150 journalists reportedly departed Russia, according to the news website Agentstvo. This has also affected music broadcasting in the country. To avoid legal repercussions, Novaya Gazeta Europe was set up on April 7, 2022. Maxim Katz of the station "Maxim Katz" and Anastasia Bryukhanova of the channel "Objective" have both been charged with crimes. Even though they try to stay under the radar, Animators against War broadcasts segments relating to their struggle against the invasion of Ukraine on YouTube (Miller, 2018). Alla Pugacheva, a Russian musician, came out to oppose the invasion in September 2022, saying that Russians were suffering in Ukraine pursuing illusory purposes and that the assault was transforming Ukraine into a pariah as well as degrading the conditions of the citizens (Ramati & Abeliovich, 2022). Pugacheva was the subject of an investigation by the Russian government for defaming the military through music broadcasting.

The Metaverse Music Network (MMN) is a platform for remote musical performance that enables the distant performance of various musical activities. The MMN's inclusiveness gives audiences and artists with

disabilities access to musical experiences in previously unheard-of ways (Koulos, 2022). The absence of domain-specific tools for performing music, the high cost, and the lack of lightweight and natural control devices for XR (Extended Reality) technologies are some of the technological hurdles faced in the ongoing war between Russia and Ukraine. Additionally, music playing and broadcasting need domain-specific tools to facilitate musicians' expressivity, since contemporary XR gadgets were not designed expressly for a musical purpose. The latencies between user motions and the corresponding audio-visual stimuli should be as short as possible in musical XR applications, and any perceptible temporal mismatch among the rendered visual and auditory stimuli should be avoided. A crucial component that is often absent from musical instruments created using XR technology is haptic feedback. The creation of interactive, networked, interoperable applications like those envisioned in the MM is hampered by a lack of sufficient audio tools. Due to the fact that not all browsers enable the use of online XR and its connection with online audio, this presents a specific challenge for web-based solutions. The most popular option is Unity3D because of how well it integrates with the XR ecosystem, although it is less developed on this end and depends on third-party add-ons or necessitates the creation and integration of specialized audio plug-ins. A highly immersive experience, several concurrent users, and a flawless connection are all necessary for the MM. This presents several difficulties for networking systems, particularly wireless networks, including concerns with ubiquity, very low latency, extremely high capacity and dependability, and stringent security. End-users want real-time solutions that really give them the impression of being together in the same location and having the same musical experience, since current techniques to musically link artists as well as listeners in the metaverse are mainly inadequate in times of war. This is essential for the effective collaboration of sounds and motion and ultimately for the realization of powerful sentiments of shared musical experience and sense-making. For musicians to perform collaboratively over the network at a steady pace and in a realistic manner, latency and jitter are crucial.

As a result of the war going on between Russia and Ukraine, the war is having a heavy impact on the Internet revolution, which in turn is having a huge impact on the music business and music broadcasting in those countries. The war has established new power structures and hierarchies, giving the consumer authority that was formerly held by large record companies. It is entirely borne by independent musicians, while signed artists face a number of additional difficulties. In order to thrive, musicians must develop their entrepreneurial skills and contend for these spots on their own. A musician needs 120,000 streams regularly each month to make a respectable living. The music business has undergone significant upheaval in recent years as a result of the war, forcing musicians to release recordings swiftly in order to get an earnings return on what they have invested (Winkler, 2019). Emerging artists sometimes struggle to locate venues where they can best display their skill, and even well-known performers have difficulty selling out their gigs as a result of exorbitant ticket costs. The main outlet now for a musician's base of supporters is social media, with Instagram and Facebook. Instagram is a site with a strong visual component, so for music to have a chance of being seen at all, it has to include eye-catching or flashy material. In order to maintain their relevance, musicians are now making sure that their profiles consistently and inevitably patronize the camera, illumination, and aesthetic to appear good enough and attract a wider populace. The practise of jam-packing as much attention-grabbing material as possible should now be embraced more since the opening minute of a song has become more common because of outlets like TikTok, Instagram, and YouTube reels.

7. Conclusion

This article has examined the effects of wars on music and music broadcasting, with special reference to the Russia-Ukraine war. It has been shown that wars have had a significant impact on music. It has also been revealed that music is a powerful tool for social action and propaganda but can also inflame ill will. The music business in Ukraine has been in a state of uncertainty since the start of the war with Russia. Even though

Ukraine and Russia have related laws prohibiting anti-war music broadcasting, artists are still using music to fortify their spirits and those of other citizens, claim their identity, and mobilize resistance to the invasion. This article has not only reflected on the effects of war on music broadcasting but has also established key connections between research on music and radio on the one hand and between research on music and television on the other, looking at the restrictions, persistence, and advancements of online music transmission in wartime periods. Based on the findings of this article, it is obvious that music and music broadcasting will keep influencing people in times of conflict, despite the negative impact of such conflicts. During wars, nations can use technology to create music to raise morale and maintain patriotic sentiments. Irving Berlin's "God Bless America" and Glenn Miller's "Arms for the Love of America" were examples of patriotic songs during the war. Ukrainian pop artists and musicians were often humiliated for putting their financial interests ahead of national beliefs. The evolution of music and music broadcasting in the 21st century should be encouraged by nations during and in the absence of wars. Therefore, the patterns of political discourse on music and music broadcasting during the Russia-Ukraine war should be the subject of future investigation. Hence, we call for case studies by eminent experts in multimedia and music studies to further examine the significant events and issues in music and music broadcasting in war-torn countries both in the past and present.

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