

Piracy of Music through the ages and how technology has evolved to enable copyright infringement.

In this essay, I will examine the impact of new technology on the unauthorised use of copyrighted music. This problem existed even before music streaming, which poses additional challenges for artists. Piracy, in this context, refers to taking a product or service without giving payment or credit to the author, an "unauthorised duplication on a commercial scale of copyrighted work to defraud the rights holder" (Siegfried, no date).

Before 1831, written music was not protected by copyright law, and recorded music only gained protection in 1972 due to licenses held by the performer and the writer (Langdon, 2021). Before the 19th century and the widespread use of the printing press, song sheets were the primary means of circulating music. These sheets contained lyrics to popular songs and new lyrics set to familiar tunes (About this Collection | America Singing: Nineteenth-Century Song Sheets | Digital Collections | Library of Congress, no date). Printers found it faster and cheaper to print one sheet of music rather than publishing entire books, resulting in faster distribution of sheet music (Langdon, 2021). During this time, musicians and songwriters had no legal protection, and even today, there are countless instances of chords and melodies sounding similar in different songs. Additionally, any performer could play their version of a song (what's your point?) (Cummings, 2017).

We can learn that from innocently circulating well-known lyrics sheets to the locales, the ease and speed of printing music became more popular. This meant increased accessibility to sheet music for performers to make money off songwriters' work. They benefited those who performed, whereas those who wrote gained no profit or credit. The problem this leads to, after losing income of course, is that music could be passed off as anyone's work. This contrasts literature at the time where the authors were allowed to copyright, and would receive credit along with income for their work. It was only possible to stop this with the government's backing, which already thought copyright was a monopoly (Cummings, 2017).

Some years later, the problem increased from sheet music to recorded music. Thomas Edison created the phonograph, leading to creators trying to better the technology (Langdon, 2021). The sale of phonographs meant those who owned one could record music. However, piracy was limited as one could not distribute their recordings due to the foil nature of the record falling apart once removed (Young, 2016). Thomas Edison, however, patented his machine and related technology, which meant that any profits from using his technology would go to him.

After the tinfoil recording came the revolution of the wax cylinder recorded and played on the graphophone (Alexander Graham Bell | Biography, Education, Telephone, Inventions, & Facts | Britannica, 2023), which was better for mass production. What was remarkable was that performers were being paid for each round of recording, but royalties for recorded music were still not enforced (Young, 2016). The wax cylinder was cheap and could be removed, sold, and duplicated, making the possibility of piracy much more convenient for the consumer. Using pantographic machines, a copying machine (Ardunio Team, 2022), pirates could create doubles of recordings faster than two photographs. Despite this, Pantographic machines were not easily come by, and Columbia ended up patenting them to

use and to halt illicit clones. The gramophone went into distribution not ten years later (Young, 2016). Next, in this race to record and listen to music, we had the gramophone using the first kind of disc. The shellac track could be easily replicated by other printing companies, so, much like the wax cylinder could be massed produced and distributed (Young, 2016).

For these original machines, the benefits to consumers were that if they held one, they could listen to recordings in the comfort of their home, a different kind of entertainment. The cost would have been a profound factor in the spread of piracy depending on how many recordings they wanted. Having any of these devices also means that consumers could become distributors assuming they had a second machine to record or the other necessary duplicating machines. From selling sheet music, distributors can now sell entertainment at a potentially worse quality but for the same price as the originals. The players benefitted musicians through word of mouth and owners of the recordings having people round to listen. Also, they were paid for the rounds of recordings, which is beneficial, but they did not profit from the sale of the recording and the then pirated recordings. Today there is plenty that recording musicians and songwriters can claim.

In the 1980s, after the recognition of music rightsholders. There was the boom of cassettes and VHS. Although lower quality than the vinyl used before, they were cheaper and smaller than 8-track and reel-to-reel Fields(Martin, 2016). Blank tapes were cheap and created a market for recording a track list from your home, thus eliminating a significant obstacle to piracy of the past. Furthermore, consumers could now record live recordings and even the radio using a tape recorder, making mixtapes of any collected recordings (Baguley, 2013). The ease of this to consumers meant they could share music with friends and family from what they owned.

Due to the level of cassette infringement, the British Phonographic Industry released the "Home Taping is Killing Music...and its illegal" campaign to try and stunt the wave of home recordings (Zaleski, 2016). Instead, they were opposed; one instance was by the Dead Kennedys band, who quoted the campaign message on their album but with the twist that 'is killing record industry profits! We left this side blank so you can help" (Baguley, 2013). This retaliation was to hit at the record companies who were more worried about the rights they owned than the income for artists (*Did Home Taping Really Kill Music - Digital Converters*, no date). To try to recoup the money record companies were losing in the UK and the USA, they tried to impose a tax on the blank cassettes, which unfortunately did not go through but was implemented in some European countries and stretched to video and audio taping equipment (Baguley, 2013). One court case helped decrease the home tapings, "CBS Songs sued Amstrad over its dual cassette deck" but lost. The government had ruled that even though copying copyright material is illegal, using the equipment to create these home recordings was not (Zaleski, 2016). I find the above interesting as although governments seem to be seeking to make laws to reduce piracy to aid creators, not all creators see this as beneficial and encourage significant pushback as exemplified by The Dead Kennedys. Perhaps creators see greater value in the free spread of their work in the hopes of reaching a greater audience than receiving what they should be owed for illegal copies.

The recording companies tried to make up for what they lost, rumoured at about 15% or \$550-\$600 million in the United States (Harrington, 1980). With the cassette industry developing and being so cheap and widespread, there needed to be a way to reach consumers. The campaign was a desperate attempt to appeal to the hopefully upstanding nature of their consumers. Another factor that did not help the recording companies was radios; they would tell listeners what they would play without adverts and "get your tape recorders ready" (Harrington, 1980). Following that, numerous bands parodied their campaign to encourage consumers to use the blank side as they wished. A factor that negatively impacted record companies was a newspaper story advertising a twin cassette tower system that Sir Alan Sugar had endorsed to precautionary the already growing home tapings. An asterisk was placed to deter home tapings, saying, "It is illegal to copy copyrighted material. This machine should only be used to copy material you have generated yourself." (Zaleski, 2016) Unfavourably for creators, rather than a deterrent to consumers, it acted as an invitation to a new idea they may previously have not thought of themselves. (Zaleski, 2016).

So far, like the phonograph, the cassette has enabled piracy in a faster, better-quality way. The consumer's idea could stretch from innocent song sharing between friends to recorded bootlegged versions of songs to other consumers. There was no way to check if consumers were breaching copyright by entering homes to check against the law field (*Did Home Taping Really Kill Music - Digital Converters*, no date).

Shortly after the cassette came the Compact Disk (known more commonly as a CD), arguably the last push of piracy before we moved into digital files. Originally, CDs could not be copied; they could hold 700 megabytes of information, whereas the first computer with an internal hard drive could only hold 10 megabytes. This meant buying another CD Field would have been cheaper (Moody, 2012), explaining the original boost in CD sales. CDs boosted the music industry and record sales (Vandaele, Janssens and Beken, 2009) and appeared as a smaller vinyl-looking product (Moody, 2012). CDs boosted the industry by being a smaller, cheaper product that would only wear down more slowly than vinyl and cassettes (Turner, 2021). The quality was better, and each track was skippable (Devin Coldewey, 2012). CD paved the way for a boom in the music industry and in turn, also allowed for a new wave of piracy. The way to pirate a CD was by burning the CD to a CD-R on a CD-R Recorder (*What is the difference between a CD and a CD-R?*, no date). The format was the cheapest yet and was a replica of the music being burned. Consequently, infinitely repeatable, better-quality music was being produced and shared, and CDs could hold more information, quickly becoming capable of holding a whole album. CDs were also the shift to digital music from LPs and tapes (Moody, 2012). The change was the being of P2P file sharing.

Once Computers became readily available to more people, consumers soon found you could "rip" CDs to the computer as low-quality files, which were then transferred to CD-R (Waniata, 2018). The MP3 format followed, and faster drives created better-quality CDs that could be burned even faster. One reason that could be blamed for CD piracy, other than the speed and quality at which you could burn CDs, was that CD albums were expensive and rising in price. From 1999 to 2001 alone, the rise of CD price was 7.2 per cent from \$13.04

US dollars to \$14.19 (Vandaele, Janssens and Beken, 2009). If a consumer owned a computer, it was cheaper to have one friend buy the album, rip it and then distribute it for a lesser price using CD-Rs, quickly making back the money spent on the source. It appears that piracy was becoming a viable income stream for those who wished to pursue it and could potentially explain what led some people to do so.

As with cassettes and the phonograph, the availability and price of the CD were a determining factor in the increase of piracy. Each new technology presents a unique accessibility to music and a new way to pirate music. However, piracy was not the intended purpose and maybe is not the thinking of those infringing. One way Record Companies could spot the illegitimate discs was the format; CD-R and CD-RW were the once-blank products the local pirate used. Spotting the fakes was beneficial because they could be confiscated and charged for copyright infringement (Report, 1998).

From CDs came MP3 files and P2P file sharing. The speed of the internet was increasing, and MP3s could contain more information than before. Much like their predecessors, the best quality yet and a new, better way of sharing music digitally was born. Although less consuming than home taping, P2P file sharing was the digital equivalent (Cooke, 2017). What was challenging about digital sharing was that it became general practice; rather than selling CDs out of the boot of your car, you could share music quickly over websites like Napster. The rightsholder could not sue everyone; not everyone had the money to pay what would have been owed for the crime they may not have even known they were committing (Cooke, 2017).

Steven Witt, a self-proclaimed “pirate generation” member, wrote about his massive collection of tracks he had procured over the years and how he did not like some of that music. He collected to be part of a clique that was frowned upon by CD and Vinyl collectors. Whilst digging into the origins of some of the tracks he owned, one exciting fact Witt found was that while the average uploaded some ways, most were uploaded by organised releasing groups, some of which tried to capitalise on the technology they created but failed (Witt, 2015).

In 1999 Napster was created, a P2P file-sharing website specifically for music; there were already websites like this but nothing specific to music and quite so easily accessed (McIntyre, 2018). P2P file sharing is a technology that enables users to share files across computers and networks. Napster wasn't monitored or managed; anyone could upload any quality file, and multiple files were misnamed and miss-located (Martin, 2016), unlike a familiar site called 'OiNK'. OiNK, which was controlled on a give-and-take basis, a consumer could only download as much as they uploaded. To even get that far, the consumer needed to upload new music from the original CD source that wasn't already found on the website (Witt, 2015). So, Napster was quickly shut down not two years later for facilitating copyright infringement (McIntyre, 2018), followed shortly by OiNK in 2007. which would have been a win for rightsholders had other companies like LimeWire and BitTorrent not sprung up.

From MP3 files to Mp3 players, the upgrade meant that rather than listening to torrented music from your computer on a CD in the car, a listener could have it on the go ('The Failed MP3 Player That Changed the Music Industry Forever - Consequence', 2018). Enabling

consumers to have countless torrented music at their fingertips meant that money that could be going to artists and rightsholders would instead go to the companies making the MP3 Players.

Continuing with digital music nowadays, technology has advanced to streaming sites, with YouTube being a big player in piracy (Langdon, 2021). To ensure the correct rightsholder gets their earned revenue, websites like YouTube, Spotify, and Tidal make you pay a premium to access their catalogue or have adverts that will be the fund for payment. Importantly consumers are mainly happy to pay a price to access all the music they want (Langdon, 2021). YouTube has its technology that works for rightsholders, where it can identify whether copyrighted works are being uploaded and then attach the revenue to the actual owner, which is a great way to get the money to the right people. However, even with the sites like YouTube and Spotify working to get the correct revenue to artists, there are still ways to pirate. Countless “YouTube to Mp3 Converter” websites can be found online, some paid, and some free. “Stream ripping” is a way to get music off streaming websites without adverts and for free; IFPI’s insight reports that more than a third of internet users use stream rippers to access music (Ernesto Van Der Sar, 2017). The other problem with streaming services is that they are already paying measly fees to rightsholders, so with the addition of converters, artists are at a loss.

The rise of piracy and new technology has shown that technology can be a powerful tool. For consumers, technology offers faster, more convenient, and often cheaper ways to access music. Thanks to technology, consumers can buy, sell, or listen to music without fear of legal repercussions unless they enable piracy. The downside for record companies is that technology has made it harder to maintain control. They cannot keep track of every transaction, from the introduction of new ways to the use of technology against them, which can hurt their sales. However, it's not fair to blame technology alone; record companies have also been accused of greedily raising prices, driving consumers away from legitimate sources and causing artists to feel disregarded. Despite this, technology has also brought positive changes, such as allowing artists to reach a wider audience through different formats.

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