

The Black Keys and Their Spotify Metadata*

Liam Wall

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1 Introduction

This short paper will not be a rundown of the history of a band, or the story of their making, or reason they are so successful. This will be a paper about a band I really, some of the facts I know about them, the reason they are so appealing to me, and some of the explanations I give to the trends I observe in the data I have. The band in question is The Black Keys. To start, The Black Keys are a rock band from Akron, Ohio with singer/guitarist Dan Auerbach and drummer Patrick Carney. The band itself started as just a duo of good friends who enjoyed similar music. Their first album, *The Big Come Up* was released in 2002, the year I was born. Their second album, released in 2003, named *Thickfreakness*, is where my appreciation for the band began.

Starting with *Thickfreakness*, The Black Keys could be considered a garage rock band. Raw sounds from a distorted guitar and a solo drummer drew me in. They adopt a blues sound which I really enjoy and is very present in their second to fifth albums. In particular they draw inspiration from Mississippi Hill Country Blues. A genre of blues that comes from none other than the Mississippi hill country by artists like Junior Kimbrough and R.L. Burnside. Before getting into their influence on The Black Keys, the Mississippi hill country blues was popularized by Junior Kimbrough's rural juke joint. It was a small juke joint (or bar/restaurant) in Chulahoma, Mississippi, where this sound made its way to greater public. The sound was so attractive to musicians and fans alike that even famous names like Keith Richards, The Edge from U2, and Iggy Pop would come out to hear and even join in with the bands that were playing and showcasing this unique blues music.

Dan Auerbach and Pat Carney enjoyed the music of the Mississippi hill country in their early days and their chemistry as artists began by jamming to songs from Junior Kimbrough and R.L. Burnside. Their third album, *Rubber Factory*, is a display of their passion for the hill country blues mixed with the innovative sound they developed on their own. None of the songs

*Code and data are available at: <https://github.com/Lwall02/Spotify>

are covers, but the lyrics emmenate the hill country genre while the sound is a more upbeat and cleaner take on the genre. A interesting fact I like about this album is the name Rubber Factory came from the studio they recorded the album in - a decommisioned tire factory in their hometown of Akron, Ohio.

Their fourth album, one of my favorites, is called Chulahoma. As mentioned before, Chulahoma is a town in Mississippi where Junior Kimbrough would play and the album is a tribute to Junior after his death. This album is very unique for The Black Keys because the songs are covers of Junior's songs with the influence of Dan and Pat's sound. They are longer songs with soulful lyrics and sounds from the guitar that mencompass what the blues used to be. The songs would convey just as much emotion without lyrics as they do with. The album even features a recorded voice mail from Junior's wife complimenting The Black Keys take on his music.

Their later albums, Attack and Release to present, showcase a different side of The Black Keys. A side where they start making money and have the ability to introduce a lot more production and extra musicians to bring their vision to life. They include other instruments like piano, electronic sounds, and more upbeat "poppy" sounds. Their albums Brothers and El Camino respectively released in 2010 and 2011 are particularly large hits. It hit me one day when I was in middle school just how popular they were when I saw them playing live at an NBA game. Some of their most popular songs ever are from these albums like "Gold on the Celing," "Lonely Boy" and "Howlin For You."

2 Data

The data was retrieved using Spotify's API on the open source programming language R [R Core Team (2023)](Thompson et al. 2022). Spotify organizes its music library into variables like tracks, artists, albums, playlists, and more. Each variable has a unique identifier (like a track ID for each song). The metadata for a song, such as its duration or volume, is stored in Spotify's database and can be accessed via its API.

The available data regarding The Black Keys is a table with 222 observations over 39 variables. The observations are for each song in in each album in their discography. The variables range from links, previews of the songs, images of the albums, album name, song name and duration, to variables that examine features of the audio (Spotify 2024). The features of the audio that Spotify gives us are things like a measure of bpm, key, valence (a measure fo the songs happiness), loudness, likelihood of being live, acousticness, and 'speechiness.' Spotify has a well defined way of attaining these values that can be explored at the Spotify Developer Page.

A few of the less explanatory variables are used in this paper. Valence, a measure of the songs happiness, is a value from 0 to 1 where 1 is the most happy and upbeat and 0 is a very sad or dark song. Likewise, liveness is a 0-1 measure of how likely a song is to be a live recording where 0.8 to 1 represents a song that is very likely recorded in a completely live

setting and below 0.15 represents a song very likely recorded entirely in studio. Speechiness is a 0-1 measure of the amount of spoken words in a song. 0 represents a purely instrumental song and below 0.33 represents a song with minimal lyrics. Between 0.33 and 0.66 represents tracks with both music and spoken words such as songs with significant lyrics like rap or perhaps recorded musicals. The values 0.66 to 1 represents tracks with very little else besides spoken word such as a podcast or audiobook. Lastly acousticness is a 0-1 measure of how acoustic or non-electronic a song is. A score of 0 suggests the song is heavily produced with little or no acoustic instruments. A score of 1 suggests the track is nearly only acoustic using only acoustic instruments like acoustic guitar or piano.

3 Results and Discussion

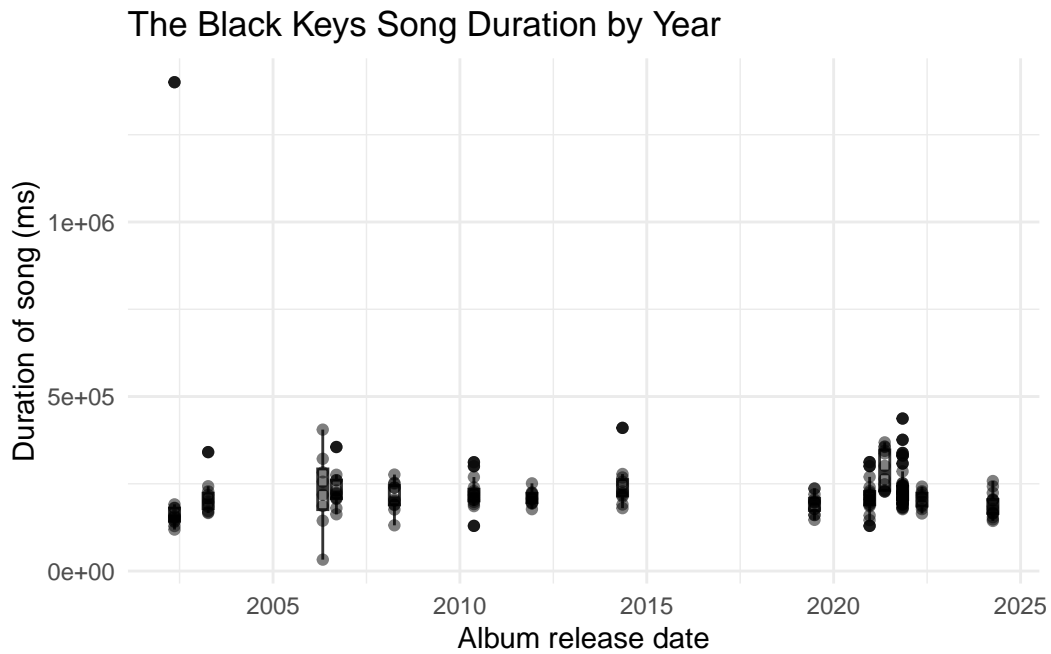


Figure 1: This graph shows the duration of The Black Keys songs by year of the album release.

The Figure 1 shows The Black Key's song duration in milliseconds by year of the album release. The third album, Rubber Factory, has the greatest range of song duration aside from the first album with one long song. That song is a large outlier at 23 minutes and 20 seconds titled '240 Years Before Your Time.'

The Figure 2 shows The Black Key's song valence value by year of album release. A higher valence is supposed to resemble a 'happier' song. In this figure we can see a noticeable dip in valence as they gained popularity with an increase in valence value very recently. The

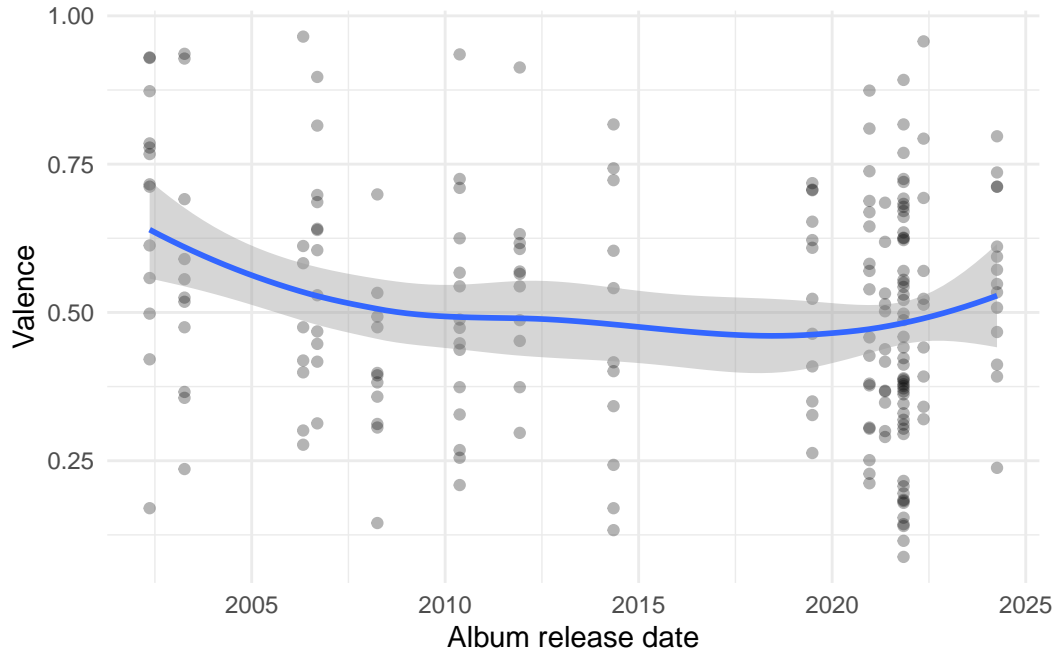


Figure 2: This graph shows the valence value on a scale of 0 to 1 of The Black Keys songs by year of the album release.

explanation for this is that in the early days they were searching for the sound they enjoyed and their fans would enjoy. In 2010 and 2011 when they were at their peak, valence was at it's lowest. Since they attained their popularity, The Black Keys began experimenting with their music and seemingly went back to a similar valence that they started with. It shows that a band may start playing in a way they enjoy but have to sacrifice that sound for something that makes them a living. With the success already attained, in their later years they can return to what they desire.

Lastly, in Figure 3 we observe a less linear change in the loudness of The Black Key's music as time went on. They started loud, however their albums got quieter towards the middle of their career, and very recently, as their music becomes more experimental, the loudness increases again. In the middle of their career, around the 2013 mark with the release of *Turn Blue* in 2014, The Black Keys become slightly louder. The explanation for this I believe lies in a quick try of being experimental for the *Turn Blue* album. This album was a noticeable departure from their previous sound and the reception was not too great. In this album, the sound becomes more electronic as opposed to a raw guitar and drum sound. They experiment with electronic backing tracks and unique instruments. Because of the slightly bad reception of the album by the greater public, The Black Keys returned to a tried and true level of loudness that is similar to levels in 2010 and 2011 with *Brothers* and *El Camino*. However after a long break, they eventually experimented with a sound they like and recently the loudness levels

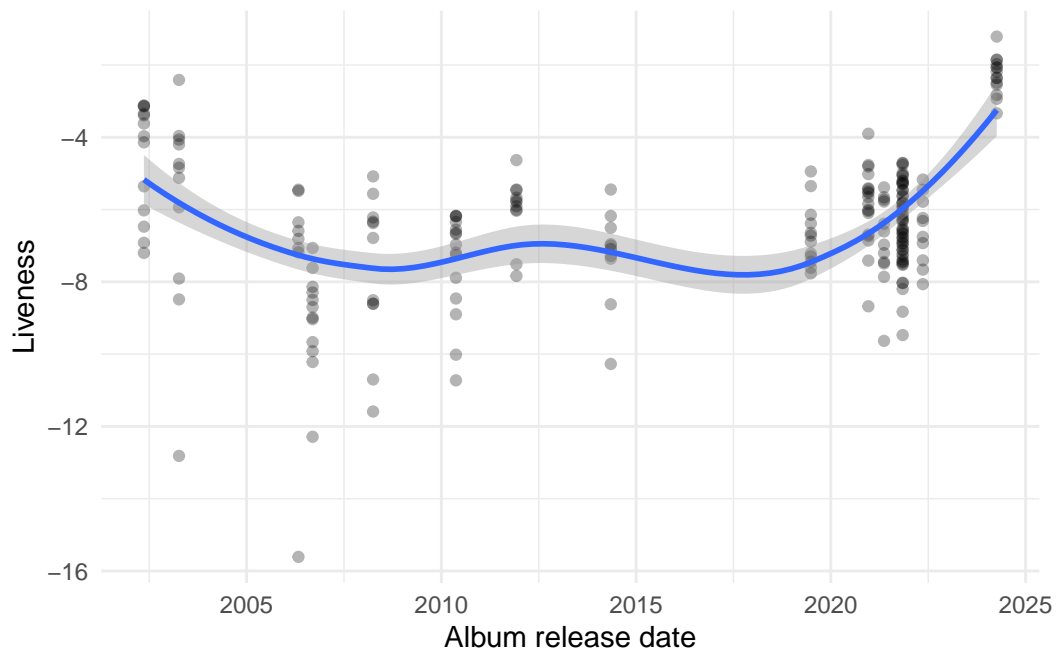


Figure 3: This graph shows the loudness on a scale from 0 to 1 of The Black Keys songs by year of the album release.

have increased.

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