Process Book for Genreology: On the Origin of Genres

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Introduction

Background and Motivation

We wanted to work with a mutual interest and with a database that had a lot of interesting data, and music seemed like the intuitive choice. We particularly liked visualizations that evolved with time, and we thought that it would be interesting to look at how and where genres develop, spread, and become popular across the United States.

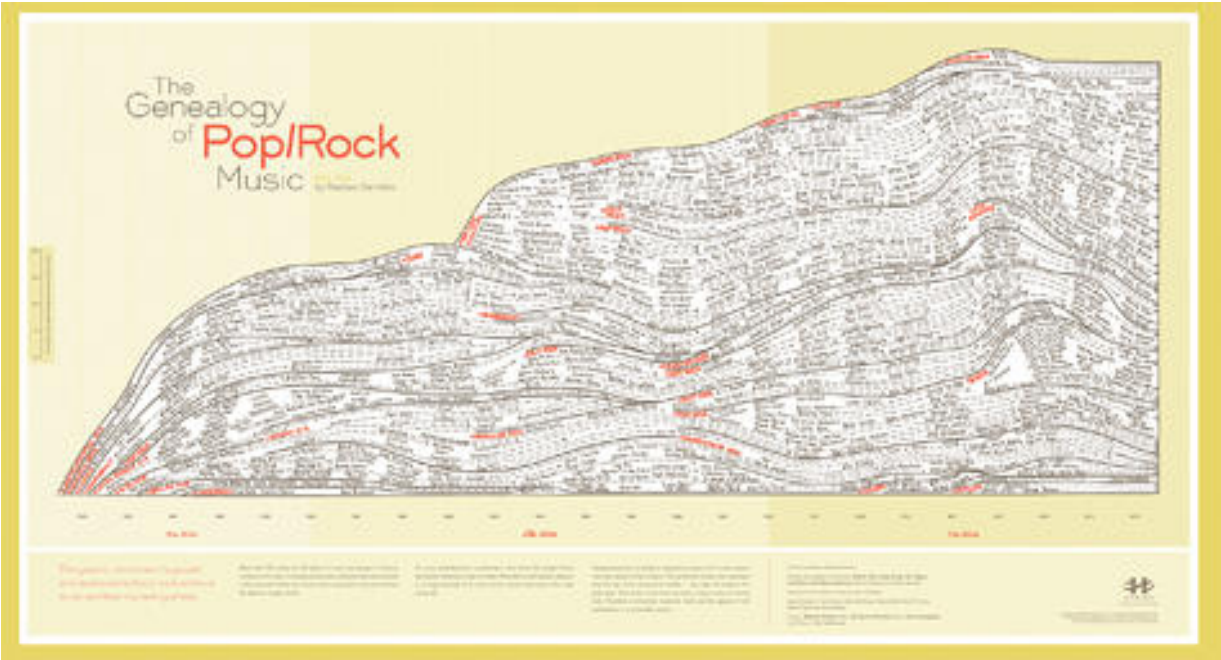
Upon identifying that we were interested in seeing the geographical start and evolution of specific genres, we then discussed potential metrics by which we could track and visualize this information. We concluded that the starting locations and dates of various artists/bands would be an ideal metric for genre start and geographic dissemination. We are basing this assumption on the idea that the popularity of a given genre will inspire other musicians in a given area to start and pursue that movement (e.g. the top four bands of the grunge movement, Nirvana, Pearl Jam, Soundgarden, and Alice and Chains, all originated in and around Seattle).

Project Objectives

We are trying to see how music spreads, and if the nature of a specific genre's dissemination varies based on origin. Are different genres better received in different areas? What about during different times? We want to learn about a lot of different kinds of music, and what music preferences look like in the United States. The benefits of this visualization are to provide information to people who love music or people who wish to study its evolution. In the end, we want to see how music crosses geographic barriers and how that changes in different eras (even if it's just focused on the 20th century and beyond).

Related Work

The Genealogy of Pop/Rock Music



This image by Steve Chappel and Reebe Garofalo in *Rock 'N' Roll is Here to Pay: The History and Politics of the Music Industry* (1977) was shown to us in lecture. We thought that introducing a geographical dimension to this graph could allow for a lot more exploration. Using d3 and using interaction could also allow for a deeper understanding of music evolution.

Data

Data Collection

Genre

We collected data from the Echo Nest (http://echonest.com) which is a database/api that many modern music companies like Spotify use to create music recommendations. Several libraries were available to us which would provide the data we needed such as general genre information and top artists for each genre as well as artist start date and place of origin.

We initially structured our data to be a list of genres. We took every artist in the genre and organized them by their starting year. Thus each genre included a list of years, and each year included a list of bands that started that year as well as their starting location.

Location

Since our visualization is geographically-based, we needed a way to translate the starting location of each artist into a latitude and longitude that d3 could understand and place on the map. Thus, we used the Google Maps API to geocode each artist location.

Data Analysis

When we were first drafting our project, there was debate as to what the best method of gauging genre popularity was. Some of the other metrics we considered were through how much money a genre might have made that year or how many music plays it had. The main issue we found with these proposals was simply a lack of data. When we visited the data we did have, we found an interesting solution: using artist starting location. This allowed us to really incorporate both the geographic and the evolutionary elements we were looking to analyze.

Data Organization

When we began the project, we structured our data to be organized by year because that was how we originally envisioned the visualization. We then began to consider the idea that the data should be organized by city instead of year because that was a more accurate representation of what our visualization was actually doing. We were concerned about the design of our code as well as the design of our visualization, and we thought that the statistics we were going to use should be decided in the beginning instead of when executed.

Implementation

Overview

Our visualization is composed of three main parts: a dropdown menu that would allow the user to select which genre they wished to look at, a map of the United States with circles as cities where bands originated in, and a slider that shows the number of artists that originated that year over time and changes the map to reflect that point in time.

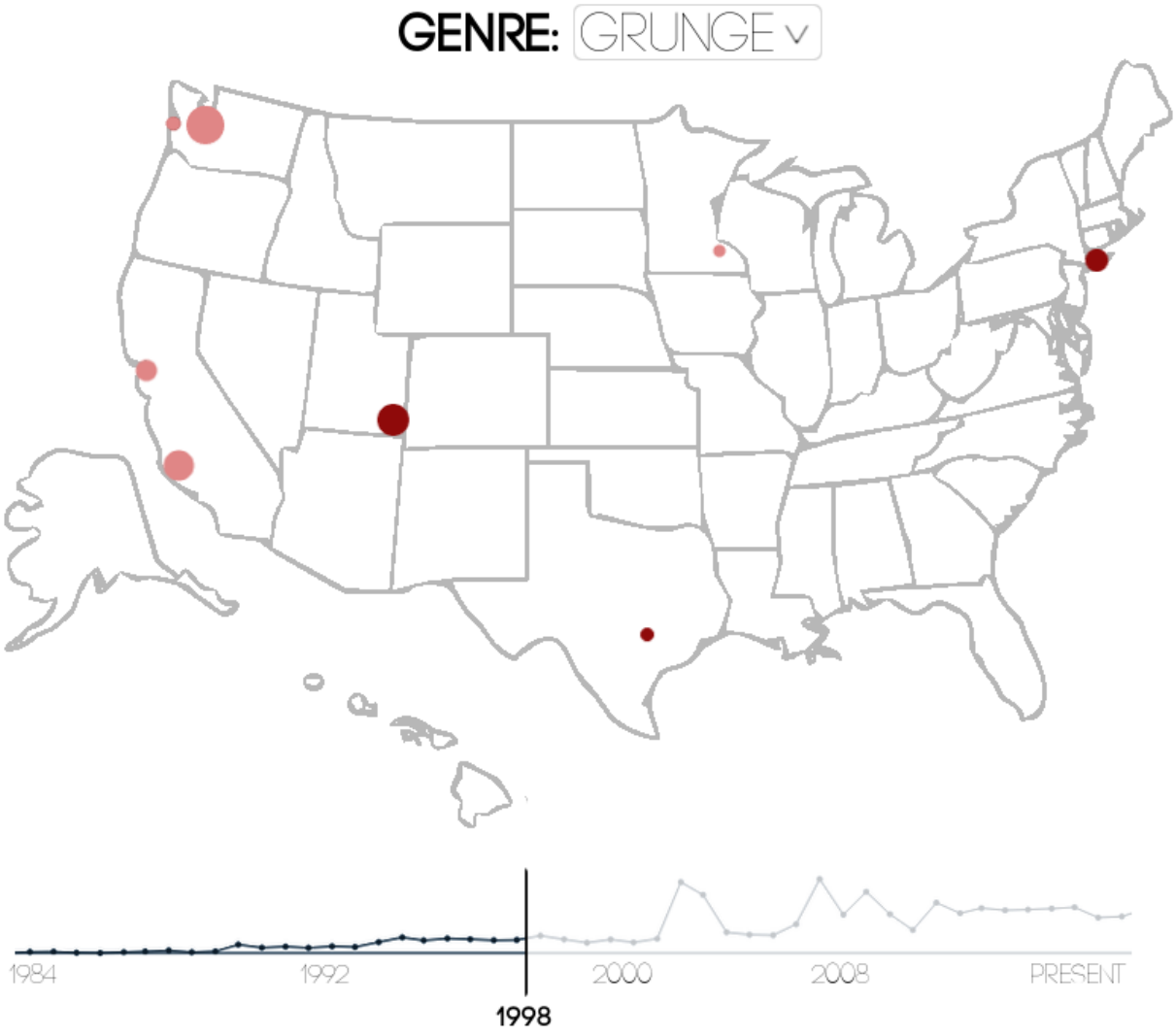
Functionality and Rationale

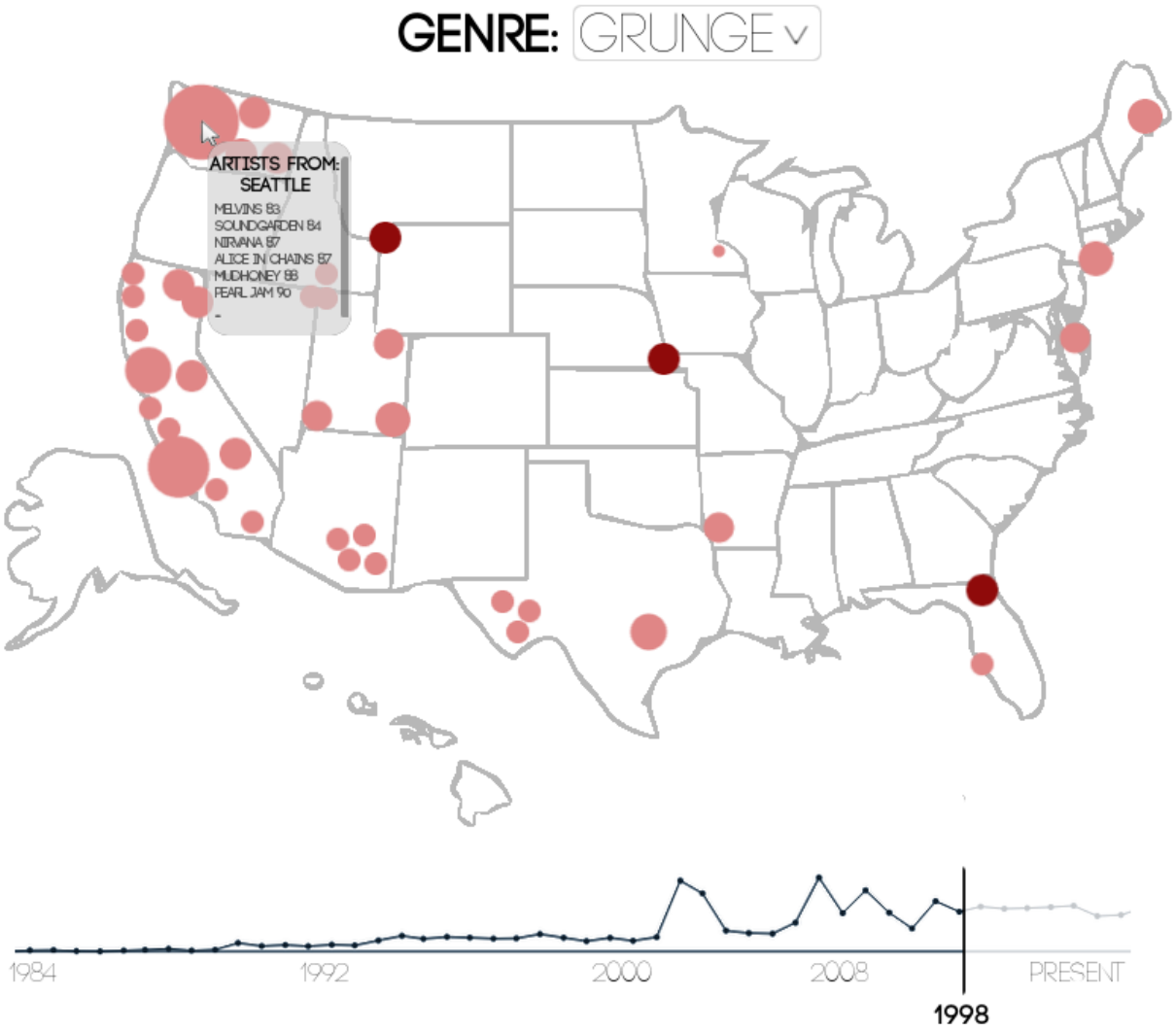
By separating the genres out and allowing the user to only look at them one at a time, we realize that we lost some of the overarching view of music that the “Genealogy of Pop/Rock Music” had, but we decided that our visualization could be a medium to examine music more closely and it would allow for more information to be gleaned out of a lot of different genres in a less overwhelming way.

We decided that marking artists as circles on the map and then changing their radius by how many bands originated in that city would encode the most visual information. Even if the user would only look at one year of one genre, they could still potentially determine where that genre gained popularity first.

In involving the time component, a user could then use the spread of the genre to continue to gauge where the genre was most popular, but they could also determine how music spreads. We thought that using these visualizations would allow the user to have control over exploring whichever genre they found interesting, and it would allow them to come up with their own theories as to where and why music was popular.

Sketches




GENRE: GRUNGE
ARTISTS FROM:
SEATTLE
MELVINS 83
SOUNDGARDEN 84
NIRVANA 87
ALICE IN CHAINS 87
MUDHONEY 88
PEARL JAM 90
-
1984
1992
2000
2008
PRESENT
1998

Design Evolution

Representing Artists by Time

Scaling

When we first designed the slider, we first questioned how we would determine the y-scale and the x-scale. One option would be to have a universal scale for each genre so that even the slider itself could be a comparative measure of one genre against another, but we decided in the end that the slider should evolve with the genre it was representing. Thus the x-scale of each genre would start at the first and last years a band originated in that genre. With the y-scale we decided that we shouldn't have a y-axis. The slider was really only supposed to provide an overview over time, so with this in mind, we had the y-scale range from zero to the number of the most artists originated in one year.

Empty Years

Before we changed the data structure to be organized by city instead of year, another question we ran into when implementing the slider was what to do with years that had no bands originate. We could either only change the map when a data point was selected, or we could populate the array of years to encompass years with no information. We decided that because we technically did have the information, we should include the zero data-points. This allowed for the slider to look cleaner and more accurate.