Examining Guns in Media
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Background and Data

Three datasets were made from scraping two websites. The first came from scraping the NRA's "Gun of the Week" series, and the second came from the Internet Movie Firearms Database (IMFDB).

The American Rifleman—a hunter's magazine under the NRA banner–since 2012 has hosted a weekly gun review series called Gun of the Week sponsored by e-commerce firearms website Gallery of Guns. The database has each gun reviewed, the content of each article, the specifications for each gun, and keywords from each article.

The Internet Movie Firearms Database is a volunteer-ran wiki-style database of guns in movies, video games, television, anime, and animation. Two datasets were organized from the scraping of this site. The first is composed from information on each individual gun, along with how many times each gun appears in each kind of media (films, TV, etc.), along with the type, weight, length, barrel length, caliber, and fire mode of each kind of gun. The second dataset is composed from each movie listed on the site, along with a list of the guns which appeared in the movie, how many guns appeared in the movie. IMDB data outlining the budget, gross revenue, crew, and genres of each movie also appear in the dataset.

Descriptive Statistics

i.   Dataset 1: NRA
476 observations ranging from **2012-2023**
Of the thirty-four types of guns in the dataset, **15.8%** of guns in the dataset are **recoil-operated** and **9.54%** are **bolt-action**
The **average price** listed was $1,155.70, the **minimum** was $199.00 and the **maximum** was $5299.00.
Guns from many manufacturers are reviewed, including those from lesser-known manufacturers. However, the most-reviewed companies are big-name, such as **Ruger** (thirty-five guns), **Smith & Wesson** (twenty-six guns), and **Springfield Armory** (twenty-two guns).
The average weight is **23.26 lbs**, the average length is **23.26 in**, and the average width is **1.253 in**.
The most commonly used word is **gun** (269 times), followed by **pistol** (251), **American** (242–**USA** is used 61 times), and **arms** (237).
ii.   Dataset 2: IMFDB– firearms
2,149 observations
The average gun appears in **twenty-six** pieces of media in total, sixteen films, three television shows, six video games, one anime, and >1 animation program.
The majority (**81.2%**) of firearms shown in media are no longer manufactured.
The average gun length in the database is **27.4 in** and the average weight is **44.78 lbs.**
19.5% of firearms in the database are rifles, **17.64%** are pistols, and **8.93%** are revolvers. **42.58%** are filed as "miscellaneous", which include objects such as grenade launchers and muskets.
iii.   Dataset 3: IMFDB– movies
1,655 observations ranging from **1956-2019**
The average **budget** is **$49,470,80.00**, and the average **gross revenue** is **$173200000.00**.
The average **number of unique guns** is **eleven**, with a **maximum** of **sixty-two** and a **minimum** of **one**.
53.1% of movies on the database are **action films**, **42.2%** are **thrillers**, and **34%** are **dramas**. Surprisingly, only **3.3%** are **Westerns** (Fig. 1).
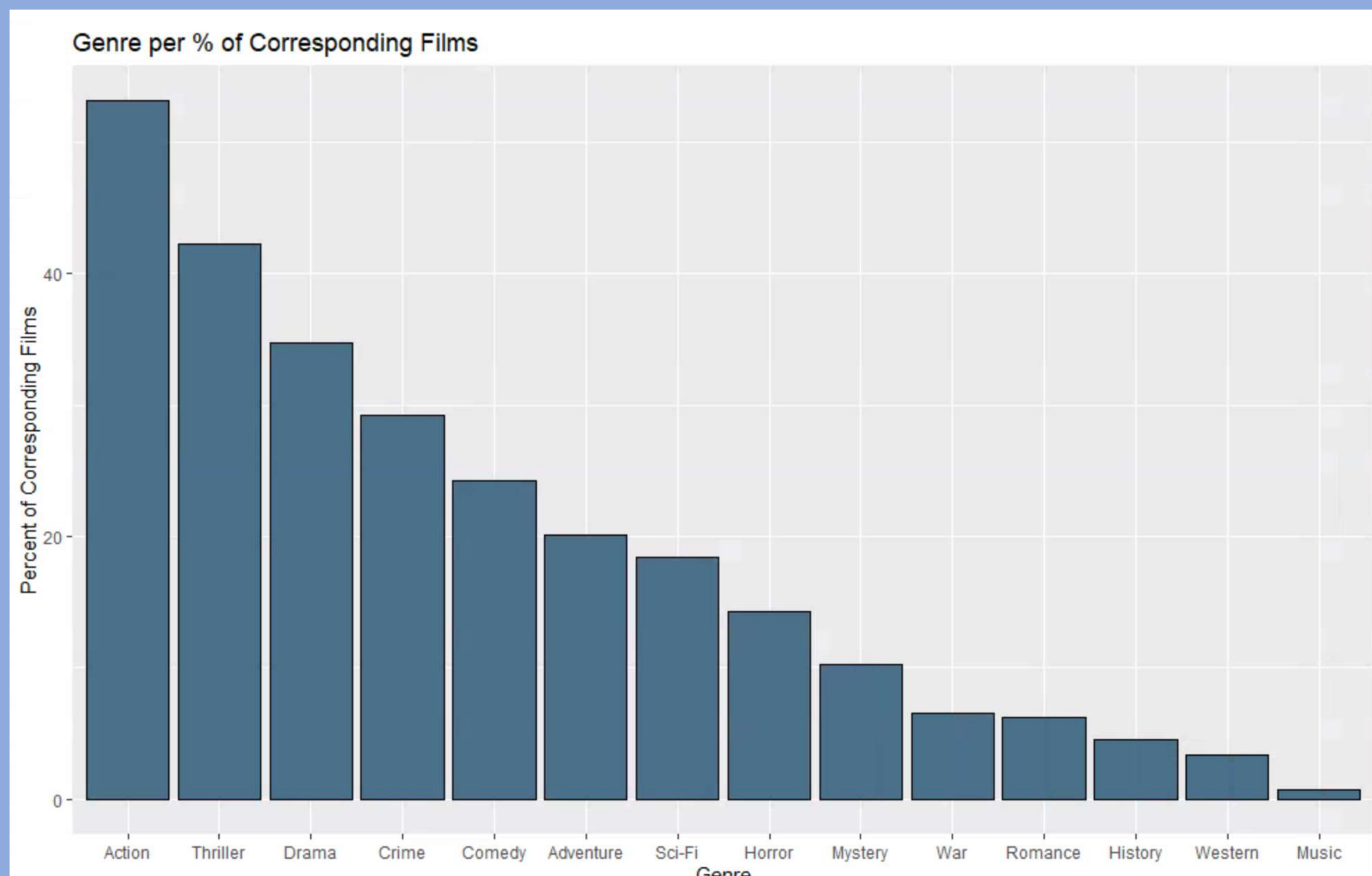
Analysis and Results

i.
There does not appear to be any relationship between the specifications of a reviewed gun and the details of its review.
ii.
There does not appear to be any relationship between the number of times a gun appears in a piece of media and its length or weight.
It appears that the two most common gun types for films and video games are revolvers and pistols, whereas for TV shows it's carbines and machine guns (Fig. 2).
Between gun type and number of films, pistols and misc guns have a significant difference of 15.47.
Between gun type and number of TV shows, pistols and misc guns, revolvers and misc guns, and rifles and revolvers are significantly different from one another.
Between gun type and video game, rifles and revolvers, rifles and misc, revolvers and machine guns, and rifles and machine guns are all signicficantly different from one another.

The relationship between number of TV shows and gun type is confounded by gun length, and the only relationship which remains is between carbine and number of TV shows, wherein misc guns were on average in less than 1.8 TV shows than pistols (p-value=0.0345).

The majority of movies, TV shows, and video games display guns that are currently being manufactured (Fig. 3).
Carbines, misc guns and revolvers which are currently manufactured in the present are all on average in <1 film, video games, or TV shows more than those which are not.

iii.
There does not appear to be a relationship between number of guns in a movie, and the budget of a movie, nor the revenue of a movie, when not accounting for genre.

Crime movies and thrillers are the only genres which, on average, have more guns than non-crime movies and non-thrillers, but on average make less money than movies outside their respective genres.

Crime movies and thrillers make an average of ~$300,000 more dollars in gross revenue for each unit increase in firearms.

Comedies and dramas make an average of $2 million more dollars in gross revenue for each unit increase in firearms.

Results and Acknowledgments

It makes sense that comedies and dramas make more money if they have more guns since that may combine them with an action or crime genres which have wider audiences than straight-up comedies.

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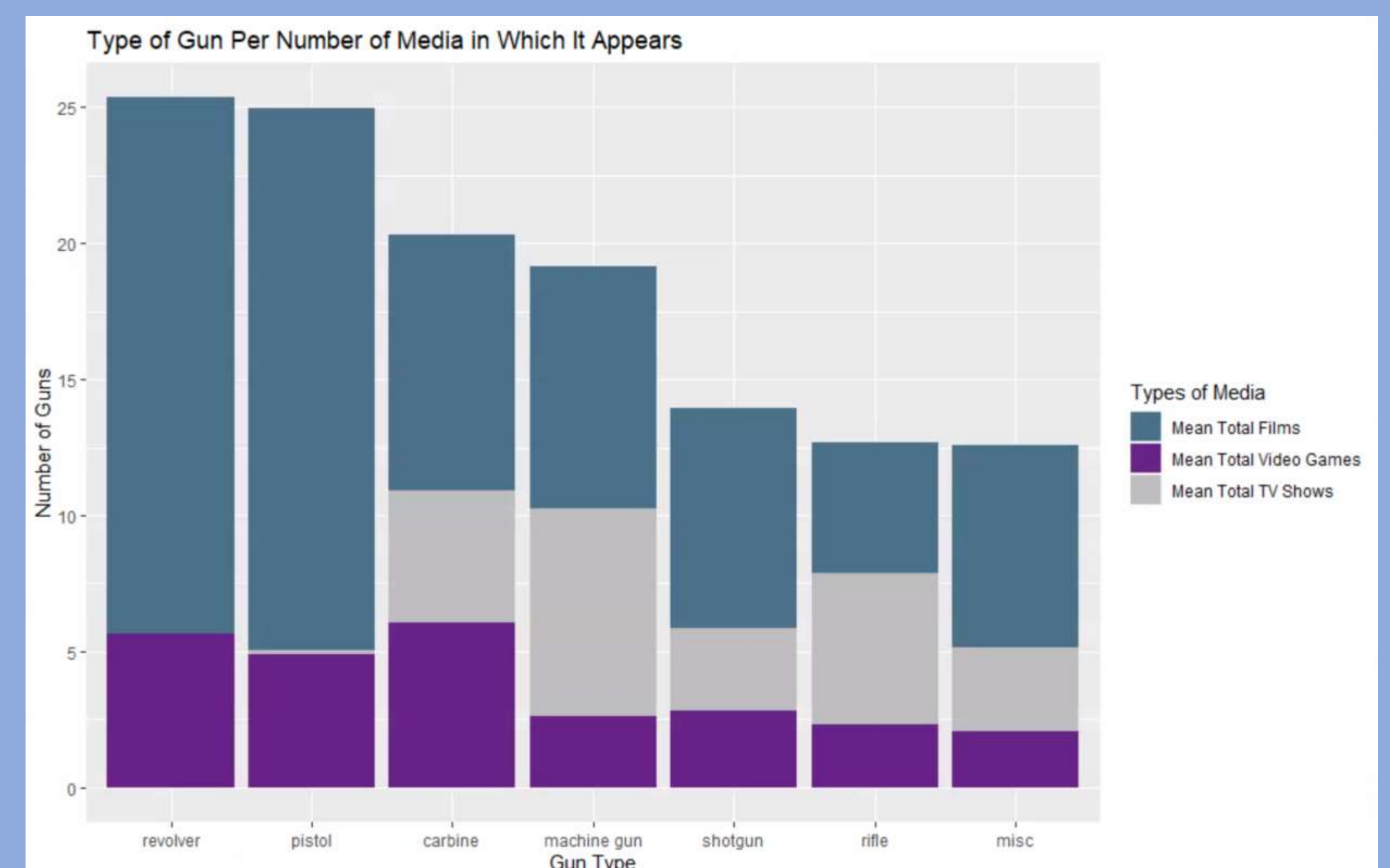

Type of Gun Per Number of Media in Which It Appears
Figure 2: Type of Gun Per Number of Media Appearances

Figure 1: Genre per Corresponding Percent of Films
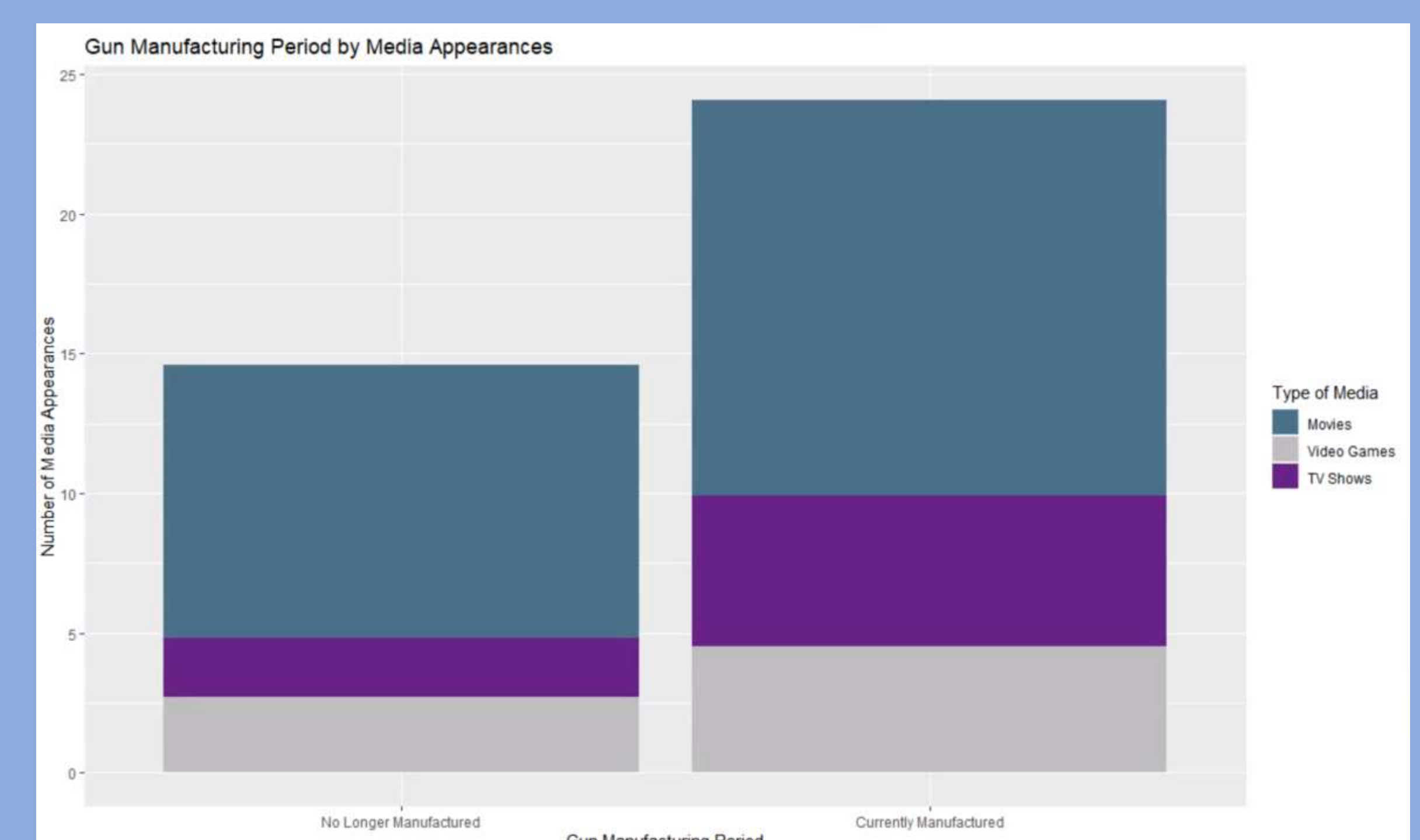

Gun Manufacturing Period by Media Appearances
Figure 4: Gun Manufacturing Period by Media Appearances