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Team 1- The Bechdel Test

Introduction

The Bechdel Test was invented by Alison Bechdel as a means of analyzing films through a feminist lens. Films pass or fail based on three criteria (Selisker): the film must have at least two women in it, the women in the film must talk to each other, and the women must talk to each other about something other than a man. We proposed to create a filtering program based on this test. For our purposes, it was decided that relevant discourse would be restricted to conversations between women wherein both parties spoke (the language variety used being English). We hypothesize that we will not get a high percentage of conversations that will pass the Bechdel Test. We believe that making a conversation count only if both women say at least one line of dialogue count rather than only one line from one of them will lower the number. This study is of interest to us because it could give an interesting insight into how 'feminist' (passed Bechdel Test) films affect/ are affected by trends in the industry. The data used for our filtering program came in the form of a corpus assembled by linguistics researcher Cristian Danescu-Niculescu-Mizil and published by Cornell University in 2011. It is a collection of fictional conversations extracted from 616 movie scripts in English. This corpus was selected due to both its large volume of data and the extensive metadata/ annotation that accompanied it.

Background

The Bechdel Test is supposed to be a step towards feminism, but it has many shortcomings to it. The bare minimum of the test was two women need to have a conversation about something other than a man. There have been many studies testing to see if certain movies pass the Bechdel test and the importance of it. Agarwal, Apoorv, et al (2015) test movie screenplays from the Internet Movie Script Database (IMSDB) with the three criteria of the Bechdel Test. They go through the steps of how they determine how a movie screenplay passes or fails the Bechdel Test and the importance of women's roles in these movies. The importance of the roles of these women characters is not necessarily taken into account using the Bechdel Test as it's not one of the main three criteria.

Other studies using the Bechdel Test can be seen with Fogel and Criscione (2020) and Lindner, Lindquist, and Arnold (2015). Lindner, Lindquist, and Arnold (2015) compare how well a movie did in the box office to whether they passed or failed the Bechdel Test. Fogel and Criscione (2020) survey people to ask if a movie passing the Bechdel Test is important. In the survey, they include the importance of age and race/ethnicity of these women's roles. Their results show how inclined the participants are towards watching new movie releases based on how they were advertised through the Internet and social media. Where previous studies have shown that movies that pass the Bechdel Test have less box office revenue, their studies show

that their participants feel more inclined to see a movie if they know it passes the Bechdel Test and if there is a woman as the lead role.

Our study is purely filtering out movies that do not pass the Bechdel Test. We would like to count the number of movies and conversations in those movies that do pass the Bechdel Test. However, there have been studies where they propose a test that may be better than the Bechdel Test. Lakhotia, Nagesh, and Madgula (2019) mention using Principal Component Analysis (PCA) to account for what content the Bechdel Test is missing. Some of those components are the content of the female dialogue, the category/genre of the female dialogue, and the gender diversity in the cast and crew of the movie. Their proposal is meant to be more inclusive and has a more feminist-like lens when looking at women's roles and conversations in movies.

Methods

Due to the large volume of data contained in our selected corpus, there was a substantial amount of superfluous information that needed to be sifted through and trimmed. Prior to being able to work with the corpus, however, it had to be manually formatted and changed from the original txt. files into usable csv. files. This was accomplished using the text editing application TextMate. Once the files were in usable formats, we were able to begin our first official order of business: narrowing down relevant information by removing unnecessary categories. The original corpus was split into five files (as well as a README file). Each of these separate files contained some type of relevant data and at least one overlapping data point to relate said data to other files (See fig.1)

fig.1

movie_titles - contains information about each movie title - fields: movieID, movie title, movie year, IMDB rating, no. IMDB votes, genres
movie_characters - contains information about each movie character - fields: characterID, character name, movieID, movie title, gender ("?" for unlabeled cases), position in credits ("?" for unlabeled cases)
movie_lines - contains the actual text of each utterance - fields: lineID, characterID (who uttered this phrase), movieID, character name, text of the utterance
movie_conversations - the structure of the conversations - fields: characterID of the first character involved in the conversation, characterID of the second character involved in the conversation, movieID of the movie in which the conversation occurred, list of the utterances that make the conversation, in chronological order (has to be matched with movie_lines.txt to reconstruct content)
raw_script_urls - the urls from which the raw sources were retrieved

These unneeded categories included things like IMDB ratings, number of IMDB votes, release year, and several others. For example, in the characters file alone, we removed columns for the character name, movie title, and credit. Initial attempts to remove data columns in excel proved frustrating and fruitless when uploaded to our main workspace (replit). So it was decided to do our data trimming directly through python and the python package 'pandas'. This package was also heavily relied upon for our main filtering program.

Once unnecessary categories were identified and removed, we were able to continue narrowing our metadata by more targeted means. This process began with the 'characters' file, by reviewing character genders (within this gender category, there were assignments for 'm', 'M', 'f', 'F', and '?'). Because our interest lay primarily in the discourse of female characters, a program was written to systematically find and save only relevant assignments (f and F) in a new file (See fig.2). This effectively created a file containing only female character data, which could then count towards what we were looking for in passing the Bechdel Test; this file was labeled 'female_characters.cvs'. Using this new 'female_characters.csv' we were able to isolate character IDs assigned to females. These IDs were then saved into a list labeled female_ID_list (See fig.3).

fig.2

Removing lines containing characters with gender set to 'M', 'm', and '?':

```
#  reading CSV file
Gender_data = pd.read_csv("characters.csv", index_col
="Gender")

#  retrieving rows by loc method
female_gender = Gender_data.loc[['f','F']]

#  saving data to new file
female_gender.to_csv('female_characters.csv')
```

fig.3

Isolating female character IDs:

```
#  reading CSV file
female_characters_data =
pd.read_csv("female_characters.csv")

#  converting column data to list
females =
female_characters_data['CharacterID'].tolist()

#  saving list to new file
textfile = open("femaleID_list.txt", "w")
for element in females:
    textfile.write(element + "\n")
textfile.close()
```

Next, we referenced our new 'female_characteristics.csv' file to see which movieIDs had survived the first round of filters (and therefore contained at least one female characterID). We then repeated the above process of list-formation (fig.3) but this time to create a list of movies that contained women. This landed us with a list of movieIDs that contained at least one woman, but because the Bechdel test's first requirement is the existence of *two or more* women, we had to further cull our list of movieIDs. We did this by creating a 'for loop' to iterate through the data of 'female_characteristics.csv' in search of movieIDs that correspond to more than one female

character (See fig.4). This data was then converted to a list and saved in a text file labeled ‘multi_female_movies.txt’. At this point in our project, we were effectively able to isolate the subset of given movies that would pass the first criterion of the Bechdel Test. Although we were not able to fully complete our filtering process, we would have continued using the above techniques to do so.

fig.3

Isolating ‘female-containing’ movieIDs

```
#  reading CSV file
female_characters_data =
pd.read_csv("female_characters.csv")

# converting column data to list
female_movies =
female_characters_data['MovieID'].tolist()

#  saving list to new file
textfile = open("female_MovieID_list.txt", "w")
for element in female_movies:
    textfile.write(element + "\n")
textfile.close()
```

fig.4

Isolating movies containing more than 1 female character:

```
# defining output list
multi_f_movies = []

# condition for reviewing every element
for females in female_movies:

 # checking the occurrence of elements
      n = female_movies.count(females)

# if the occurrence is more than one it adds to the
output list
      if n > 1:

            if multi_f_movies.count(females) == 0:

             multi_f_movies.append(females)
```

Results

In the text file that contained all the movies that had one or more women present in the film, there were a total of 281 movies that fit those criteria. Out of all 616 movies included in the data, we ended up with 281 movies before even taking a look at the content of the lines. That is a little over 45 percent of the movies in the data. That eliminates more than half of the movies in the data that already do not pass the Bechdel Test. The next step was to filter through the lines in the movie scripts to the lines from the movies that pass the Bechdel Test, then the conversations that lead the movie to pass the Bechdel Test.

One of our limitations was the complexity of the lines.csv file. There were so many lines included in the file attached to multiple rows for a corresponding movie. It was difficult to delete the rows of the 335 movies that did not pass the Bechdel Test because those movies came with many lines of the conversations. Without a numerical value attached somehow, we would have to individually and manually delete each row which would take up too much time.

Due to this complexity, we will talk about what we would've done and our hypothetical results. Once we'd successfully gotten rid of all the conversations and lines from the movies that were filtered out, we would have been able to shift our focus to the remaining conversations. One of the first things to get rid of would have been the lines where there is no conversation, just one woman talking to another with no reply. We do this because we defined a conversation with each woman in the conversation needing to say at least one line.

Once the remaining conversations and lines were filtered, we could attempt to filter out words and phrases that stereotypically are seen in a conversation between two women in a movie talking about a man. These can be keywords and phrases such as "boyfriend", "husband", "he's mine". We could possibly gather the conversations just with "he" included. We hypothesize that filtering "he" may result in the deletion of a majority of the conversations. If the number of conversations and lines is a low number, we could manually take a look at them and filter out the ones where the female characters are talking about a man. Once we are done filtering the movies, we would be able to see the final number of movies out of the 281 that pass the Bechdel Test. Within the final number of movies we find, we will also be able to see the number of conversations in each of those movies that helped them pass the Bechdel Test. Considering we filtered out more than half of the movies before even looking at the content of the lines and conversations, we hypothesized that we would narrow the 281 movies by at the very least 25 percent. We believe that once filtering through the numerous conversations, we will still find that the content of some of them is about men. We believe that we will find quite a few conversations where both women are talking about a man. We believe this because we have already narrowed down a lot of movies where women are not main characters and it is known that many women in these movies end up either being all about men or talking about men to fellow women in the movie. We expect no difference with the movies that have been filtered down. With our hypothesis, we fully expect to end up with a low number of movies that pass the Bechdel test.

Discussion

There is still a lot of progress to be made with how women are shown in films and media. The Bechdel Test is only a grain, a very small test to pass. With our findings, we can conclude that there are still not many movies that pass the Bechdel Test. The Bechdel Test was created to be a stepping stone towards feminism in films. However, we can see that even with the test being the bare minimum, movies that pass the Bechdel Test are not exactly taking a step towards feminism. Once again, there is a lot of room for improvement. We have seen other studies where they also test the Bechdel Test but even in a means of how progressive it actually is. In one example, Bouchat (2019) tests the Bechdel Test and how progressive it actually is. It compares two Netflix original movies, *Kissing Booth* and *Sierra Burgess is a Loser*, where one passes the Bechdel Test and one doesn't versus how progressive each movie is towards feminism. *Sierra Burgess is a Loser* is the movie out of the two that passes the Bechdel, but the conversation is the school "nerd" protagonist is helping the popular girl study. The popular girl had asked the

protagonist, however, because she wanted to appear smart for the guy she likes. Bouchat cites Behm-Morawitz et. al (2008) in saying that this scene relays the stereotype that women in film cannot get along because they are after a love interest. *Kissing Booth* did not pass the Bechdel Test, but we see that the movie isn't less progressive than *Sierra Burgess is a Loser*, even though it does pass the Bechdel Test. O'Meara (2016) also mentions the shortcomings of the Bechdel Test. Despite the good intentions of the test, it is the bare minimum for feminism, as even one line between two women characters that is not about a man counts as passing the Bechdel Test. Even though the conversation is not about a man, the content might still enforce negative stereotypes about women.

Conclusion

The Bechdel Test was invented because, in movies, we see that many of the female characters would only talk about men. There are still many improvements films can make towards passing the Bechdel Test as the bare minimum for feminism. There are also many things that can improve the Bechdel Test, as it lacks much. A new test can be invented or the Bechdel Test can improve its criteria. As many studies, including our own, have shown that not many movies pass the Bechdel Test, and just because they do pass the Bechdel Test, that doesn't mean that the movie is taking the right step in the direction of feminism (Bouchat 2019 and O'Meara 2016). Some of the movies that pass the Bechdel Test still reinforce negative stereotypes about women and their attitudes towards each other over men. One conversation out of a whole movie dictating that a movie passes the Bechdel Test when there are many other issues is not how to decide when a film is a feminist film. Further studies should be made to improve the Bechdel Test or to create a new one to determine if a film really is taking a step towards feminism.

References

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