**Deadline: 3/13, 11:59pm**

**5% of final course grade**

**The goal of the project proposal is to outline your plan for the final project in order to get instructor approval. You should turn in a 1 page document plus references (single spaced; 1 inch margins, Times New Roman, 12pt font) describing your initial plan. You should describe the scope and goal of your project and explain why it is an important/interesting problem.**

**Make sure to include:**

* the goal of the project
* the problem you intend to solve
* 2-3 references of prior work that relates to your topic
  + <http://www.aclweb.org/anthology/W16-0204> (Using NLP to distinguish the gender of speaker in Film Dialogue, words, also the gender they speak to)
  + <https://unora.unior.it/retrieve/handle/11574/177394/41377/9788899982768.pdf#page=87> (Gender stereotypes in Movie Dialogue)
  + <https://www.jstor.org/stable/pdf/41679911.pdf?casa_token=0mVEhV9Uy68AAAAA:lBL41qx0f9B3c-AftVV0n9RsPolWLxjaetZ6Byib6_uqlJSf8Oy-pwZiqVcnuovqJbkO2za99R53V1nJZzr1qfegQKgZwdA6MOO9zLgCufNw07Z3rQ> (been to demonstrate how techniques from corpus linguistics might be employed to uncover some of the prototypical stylistic characteristics of dialogue in blockbust)
  + <http://cs224d.stanford.edu/reports/aashna.pdf>
  + <http://www.cs.cornell.edu/~cristian/papers/chameleons.pdf> (useful but I don’t quite understand yet, they also mentioned the difference between gender in initiator and responder)
  + The pudding analysis of movie dialogue: <https://pudding.cool/2017/03/film-dialogue>

https://github.com/matthewfdaniels/scripts

* + The superman speaks, the wonder woman keeps quiet: <http://www.diva-portal.org/smash/get/diva2:1290736/FULLTEXT01.pdf> (linguistic markers are useful)
  + Automatic Identification of Character Types (Character profiling):

<https://www.tandfonline.com/doi/pdf/10.1080/08839514.2017.1289311?needAccess=true>

* Bechdel test

http://bechdeltest.com/

* data you plan to use
* overview of the proposed approach
* evaluation plan (how you will measure the success of your work?)
* timeline for project completion

**Idea 1:**

Analyze gender in movies dialogs

<https://www.cs.cornell.edu/~cristian/Cornell_Movie-Dialogs_Corpus.html>

<https://www.kaggle.com/c/movie-review-sentiment-analysis-kernels-only/>

Variables:

* Movie Genre
* Release Year
* Lines/dialogue (I have confusions how to define a dialogue when it ends?)
* The movie ratings (discover common features in famous movies). (should we consider the number of votes as a weight of rating?)
* Characters involved in the dialog:
  + Gender.
  + Gender of another person in conversation.
* Length.
* Topic.

Questions:

* How are the dialogs distributed among the characters?
* Do movies of a specific genre have common dialog styles?
* Sentiment analysis for dialogues (or we can pair this dataset with a movie review dataset, and see if specific dialogues trigger bad/good reviews?).
* Explore the average length of words in a specific genre, the average length of sentences and their connection to how sophisticated the scripts of the movies are? And how it changed with time, genre, rating score and character genders?

Hypothesis:

1. Female characters dialogue topics have changed through time, it became more diverse. (define topics, how you will define, and how you are classifying diverse)
2. Does the dialogue of the female characters differ across genres? For this study, we will specifically look at if the number of times they start a dialogue vs respond to someone else is different across genres. We will also examine if the length (DEFINE LENGTH) of their dialogues differ across genres.
3. Does the number of lead roles that are female vs male differ across genre?
   1. (This will be answered with same analysis as above.)
4. Change with time (Older movies would have more sophisticated scripts and dialogs than newer movies)
   1. Define sophisticated
5. Do movies with higher ratings tend to have more males with leading roles than females with leading roles?
   1. Make sure to be clear in your paper that you know this assumes there aren’t other factors coming into play and note what those possible other factors are, such as genre. You could run a stat to assess if any of the extraneous variables are coming into play.

Plan:

* Explore the dataset and examine a few data points.
* Read the literature on analyzing this dataset or other similar dialogue datasets.
* Read the literature on analyzing human dialogue (not only in movies).

We suppose that movies are actually a projection of real life. Through the study of movie dialogues, we may get a hint of the trend of thought in different eras and different societies.

Exploratory studies?

Add March 8th, on the 5th hypothesis, we could discuss it in three aspects (per genre):

1. Female lead or Male lead
2. Considering over all characters in one movie, rating changes with (#female characters)/(#male characters + #female characters), (#male characters)/(#male characters + #female characters)
3. Considering over all characters in one movie, rating changes with (#lines of females)/(#lines of males + #lines of females), (#lines of males)/(#lines of males + #lines of females)

The 2) and 3) are discussing do high rated movies are more diverse in gender.

In the review part, we could discuss in two ways: previous study of female position in movies (may be with different technologies); previous study of movie dialogues (may not focus on gender gap, and may be more technical)

In the proposal part, we could describe our plan in two levels: basic and fancy. We could start our study with the basic way, and if we have spare time, we could upgrade our technology to do a more sophisticated study. For example

1. How do we define the lead role? The basic way is to use the person with the most lines, the fancy way is to do a graph with all characters and find the most important person (like speak to the largest number of characters, or linked/mentioned by the most times).
2. How do we find the gender of characters? The basic way is to use the labels in the database. There are two more ways: use the gender distinguish tech in the reference paper(<http://www.aclweb.org/anthology/W16-0204> ); use link the Cornell DB to IMDB database and find the actual gender for the person act this character.

Extra:

Older movies would have more sophisticated scripts and dialogs than newer movies.

Define sophisticated, Change with time

Useful References:

COMS 6998-7: Empirical Methods of Data Science

**Final Project Proposal**

Amal Alabdulkarim (aa4235), Jing Qian (jq2282)

# **Project Goa**l

Movie dialogues are a projection of people’s interactions in real life. We can use these dialogues to understand the actual human interactions and get a hint of the trend of thought and its change through time. In this project, we want to understand the female character roles in movies through studying these dialogues. We are going to analyze the change of the dialogues through time, genre and rating of movies.

# 

# **The Problem**

To achieve the goal of the project we want to answer the following questions:

* How do female character topics of dialogues change with time?
* Does the dialogue of the female characters differ across genres?
* Does the number of lead roles that are female vs male differ across genre?
* Do movies with higher ratings tend to have male-leading roles than female-leading roles?

## Hypotheses:

1. Female characters dialogue topics became more diverse (using the Bechdel test) in recent movies compared to older ones.
2. Female characters have a more powerful appearance in specific genres.
   1. Females tend to have more lines in dramatic and romantic movies and fewer lines in other genres than male characters.
   2. Females tend to have more significant roles in dramatic and romantic movies and fewer in other genres.
3. Movies with higher rating tend to have a stronger male presence.

# **Prior Work**

There are plenty of gender studies of movie dialogues. In 2012, Mclntyre performed a comprehensive analysis of the prototypical stylistic characteristics of dialogue in blockbuster movies using multiple techniques from corpus linguistics. Schofield and Mehr (2016) used NLP to distinguish the gender of the speaker in film dialogues in the same dataset we will use and found differences between single-gender and two-gender conversations and gendered speech. Basili, Nissim, and Satta (2017) studied the gender stereotype in movie dialogues and concluded that movie languages portray the stereotype that men and women talk on recognizable traits attached to femininity and masculinity.

# **Dataset**

For this project, we will be using the Cornell Movie Dialogs Corpus in Danescu-Niculescu-Mizil (2011). This corpus contains a large metadata-rich collection of fictional conversations extracted from raw movie scripts:

* 220,579 conversational exchanges between 10,292 pairs of movie characters
* Involves 9,035 characters from 617 movies
* In total 304,713 utterances

Movie metadata included:

* Genres
* Release year
* IMDB rating
* Number of IMDB votes
* Character metadata included:
  + gender (for 3,774 characters)
  + position on movie credits (3,321 characters)

Because our hypotheses are gender-related, we will extract only the 3,774 characters with gender data and their utterances.

# **Method and** Evaluation Plan

For the first hypothesis, to test the diversity of the female character dialogues, we define diversity in dialogue in two main aspects. The first aspect is when two female characters are talking to each other, they will be talking about something other than men. The second aspect is whether the female character conversations span across different topics. To test the first aspect, we are going to use the Bechdel test, which has this in its third criteria and shows which movies pass this test. To evaluate the second aspect, we will look more detailed into the dialogues, using the latent Dirichlet allocation (LDA) for topic modeling and comparing the topics in female-male, male-male, female-female and male-female dialogs and female monologues.

The second hypothesis has two sub-hypotheses and the both can be tested with similar statistical analysis. We will specifically look at if the number of times female character start a dialogue vs responding to someone else is different across genres. We will also examine if the length of their dialogues (measured by the number of words and number of lines) differ across genres. We will also identify lead characters in those movies by the length of their dialogues and their mentions in other characters’ dialogues.

For the third hypothesis, we will measure how the rating of the movie relate to the female character role (identified using the previous statistical analysis for the second hypothesis), the ratio of female to male characters in the movies and ratio of female to male characters dialogues lengths (measured by number of words and number of lines).

In evaluating these hypotheses, we will be testing for statistical significance. And we will also consider the other factors and extraneous variables that may affect the findings of the analysis and make sure we address them correctly. We will use graphs and exploratory visualization for the results and the data to discover the relations and patterns and explain the findings.

# 

# **Timeline**

3/13 Submit a project proposal

3/20 Download dataset and take a first exploration of the whole data

3/31 Finish literature review

4/15 Test Hypothesis 1 and Hypothesis 2, and get plots of corresponding results

4/25 Test Hypothesis 3 and get plots of corresponding results

4/28 Analyse result and finish the first draft of the project report

4/30 Finish the presentation slides

5/1 In class presentation and modify report according to the response from Professor

Levine and classmates

5/3 Submit final project

# **References**

Dan McIntyre (2012). Prototypical Characteristics of Blockbuster Movie Dialogue: A Corpus Stylistic Analysis. *Texas Studies in Literature and Language, 54*, 402-425.

Schofield, Alexandra & Mehr, Leo (2016). Gender-Distinguishing Features in Film Dialogue. *Texas Studies in Literature and Language, 54*, 32-39.

Busso, L., & Vignozzi, G. (2017). Gender Stereotypes in Film Language: A Corpus-Assisted Analysis. CLiC-it 2017 11-12 December 2017, Rome, 71.

Danescu-Niculescu-Mizil, C., & Lee, L. (2011). Chameleons in imagined conversations: A new approach to understanding coordination of linguistic style in dialogs. In Proceedings of the 2nd Workshop on Cognitive Modeling and Computational Linguistics (pp. 76-87). Association for Computational Linguistics.

Useful DB:

<http://opus.nlpl.eu/OpenSubtitles2016.php>

<https://toolbox.google.com/datasetsearch> -> We can find a lot of datasets here.

Cornell Movie Dialogues corpus (Found great work on gender in dialogues):

* <https://github.com/jayantj/movie-dialogues>
* <https://github.com/jsoma/playfair-projects/issues/259>
* <https://pudding.cool/2017/03/film-dialogue/index.html>

Analysis of female character roles in movies through dialogues

# Introduction

% Opening paragraph

Movie dialogues are a projection of people’s interactions in real life. We can use these dialogues to understand the actual human interactions and get a hint of the trend of thought and its change through time. In this project, we want to understand the female character roles in movies through studying these dialogues. We are going to analyze the evolution of the dialogues through time, genre and rating of movies.

% [Reference section: a minimum of 8 citations, where at least 4 are detailed]

%% Using movie dialogues as a projection of people’s interactions in real life. **Chameleons in imagined conversations: A new approach to understanding coordination of linguistic style in dialogs** [1 reference]

%%% Overall Purpose:

* Analyze the linguistic convergence in dialogue by using a imagined conversation obtained from a movies dialogue corpus. Linguistic convergence in this paper is defined as, the unintentional coordination of linguistic style in dialogues.

%%% Research Questions:

* Has linguistic convergence become so deeply embedded in the language-generation process as to become an unconscious response? (means: screenwriters automatically generate the conversation to contain it to mimic real life conversation)
* Do imaginary conversation corpus reflect real life interactions?

%%% Hypotheses:

* We argue that fictional dialogues offer a way to study this question, since authors create the conversations but don’t receive the social benefits (rather, the imagined characters do).

%%% Method:

* Measuring linguistic style using LIWC.
* Measure using Convergence instead of Correlation.

%%% Results:

* Significance coordination between characters in their use of function words.
* Female characters are more influential in their dialogues and tend to trigger linguistic convergence with other characters, F-F is more significant than F-M and M-M has the lowest convergence.
* Dataset is baised (more male characters in lead roles)

%%% Conclusion:

* More work can be done in analyzing in the corpus (e.g. gender roles).
* Advocate for the importance of using fictional sources in studying linguistics and social phenomena.

%%%%% PARAGRAPH FORM

Researchers studying linguistic and social phenomena sometimes use fictional data. In (...), researchers have shown that studying linguistic convergence can be done by analyzing a movie dialogues corpus. They created the Cornell movie dialogues corpus to answer their research question; Has linguistic convergence become so deeply embedded in the language-generation process as to become an unconscious response? They hypothesize that fictional dialogues offer a way to study this question since authors create the conversations but do not receive the social benefits (instead, the imagined characters do). They used two methods to analyze the data, linguistic style by using LIWC’s nine category function words and convergence measure to measure the occurrence of these linguistic style features in dialogues. The results of this research showed significance coordination between characters and their use of function words. Also, it showed that female characters (F) are more influential than male characters (M) in their dialogues and tend to trigger more linguistic convergence with other characters. Convergence in F-F dialogues is more significant than F-M dialogues and M-M dialogues which has the lowest convergence. This last unintentional finding suggests that this corpus has more to offer regarding gender roles in movie dialogue.

%% Character Modeling using Movie dialogues [1 reference] **(Automatic Identification of Character Types from Film Dialogs)**

**TBD:**

%%% Overall Purpose:

We study the detection of character types from fictional dialog texts such as screenplays. We develop an integrative approach that complements linguistic analysis with interactive and communication characteristics. The interactive characteristics of fictional characters are captured by the descriptive analysis of semantic graphs weighted by linguistic markers of expressivity and social role.

%%% Research Questions:

Can character be detected from verbal behavior (from movie dialogue)?

%%% Hypotheses:

Film dialog (our primary source) actually provides enough clues to infer and distinguish characters from it

%%% Method:

1. 212 action movie screenplays, 2010 characters and aligned with additional data, including actor’s name, age, and gender are analysed. We conducted experiments to compare the different representations and measured their capacities to identify character types from sequences of multiparty dialogs and character interactions.

Different models: N-Grams—literal content of utterances; ST vect.—high-dimensional representation of utterances based on skip-thought model; LIWC—representation of utterances based on Linguistic Inquiry and Word Count dictionary; Ling. Markers—linguistic markers of expressivity and social role; Graph—features inferred from analysis of semantic dialog graphs and our Graph+N-grams.

Character types labeled: hero (H); antagonist (A); spouse/partner/lover (of either) (H-L) (A-L); sidekick (of either) (H-SK) (A-SK); supporting role characters for any of these (H-SR) (A-SR); mentor (M); the power in the background (e.g. businessman, government representative) (BUS); and representatives of the law (e.g. police detective, judge) (LAW).

Explanation of Graph and ST vect:

In order to allow for semantic reasoning at the sentence level, we explored use of the skip-thought model, which learns unsupervised representations of text.

We use descriptive analysis of graph structures to represent the interactive and communication characteristics of character roles in screenplays. We measured centrality (closeness centrality and betweenness centrality), and the topology of each graph by the clustering coefficient and the squared clustering coefficient.

2. Single movie analysis -> Avatar

Manually annotate and perform simple statistical analyses.

Conducted an exercise in pairwise comparison of two characters to answer the question whether dialog behavior allows to draw a profile that provides hints to a character’s particularities and his/her roles and functions in the film.

Perform time-dependent analysis to study whether the annotated dimensions are able to reflect the “character arc,” i.e. the development of a character over the course of the film

%%% Results:

1. The overall best performing approach, as well as the best performing for four distinct dramatic character types, integrates the Graph and N-grams features.
2. Single movie analysis shows that it is possible to profile a character’s specific dialog behavior using a combination of the annotated features

%%% Conclusion:

In this paper, we have described an integrated approach for the identification of dramatic character types based on sequences of dialogs extracted from action movie scripts. The presented set of features integrates cues on characters’ presence, interactions, and content of utterances exchanged. Specifically, we applied an unsupervised representation of text, supervised quantization of vectors, and analysis of semantic dialog graphs incorporating social relationship and expressivity of characters. The approach was evaluated on a new data set of action movie characters. The results validate the presented multifaceted approach and a joint treatment of different aspects of characters’ presence, their communication, and interactions in sequences of multiparty dialogs for the identification of main dramatic character types. The presented approach demonstrates an improvement over baseline methods, and also enables for a more in-depth analysis of features that convey characteristics of latent personae in sequences of dialogs. In-depth analysis of a single screenplay has provided insights into character profile and development that will be used in further research.

%%%%% PARAGRAPH FORM

In the literature, the authors proposed an integrated approach to detect character types from movie dialogues. Based on a merged data set of action movie corpus, they designed experiments to compare different models (with different feature representations) by their capacities to identify character types, including several models with representations of utterances, graph models and their Graph+N-grams model. Their integrated model has the best performance in overall and four distinct dramatic character type detection.

They also did single-movie analysis in depth and supported the feasibility to profile one character’s verbal behavior. Moreover, the change of one’s verbal behavior implies the development of that character.

%% Gender focused studies on Specific Movies/Genre (A few studies have been done on specific movies to study the gender roles) (**Superman speaks**, **Criminal Justice, Gender Games**) [3 references]

%%% General statement and summary and mention those studies as an example.

1. (Superman speaks) Analyzes gender in two superhero movies Wonder Woman and Man of Steel. The researchers used five linguistic features, amount of speech, interruptions, questions, minimal responses and hedges. Their findings showed a correlation in three of those features (amount of speech, interruptions, and questions) and no clear patterns in the other two features. More specifically, the findings showed that men speak and interrupt more than women, while women ask more questions than men.
2. In (Gender Games), the researchers studied female journalists characters roles the television show House of Cards. They found that the female journalists characters were not depicted in a negative way, but at the same time, they were not presented as positively as their male peers. The researchers also analyzed other aspects of the female journalists' portrayal in this television show such as their ethical implications which might affect how society sees female journalists negatively.
3. (Criminal Justice) Examines how female criminal justice professionals are portrayed in fiction. The researchers analyzed ten prime-time television show and observed sixty-nine characters, their findings showed an overrepresentation of female criminal justice professionals but in subordinate roles and with emphasis on them being sexually attractive. Moreover, similar to the research on female journalists, the characters were not depicted negatively but were not portrayed as good as their male peers.

%%%%% PARAGRAPH FORM

In the literature, several studies focus on understanding gender roles in media, especially in movies and television shows. (Superman speaks) Analyzes gender in two superhero movies Wonder Woman and Man of Steel. The researchers used five linguistic features, amount of speech, interruptions, questions, minimal responses and hedges. Their findings showed a correlation in three of those features (amount of speech, interruptions, and questions) and no clear patterns in the other two features. More specifically, the findings showed that men speak and interrupt more than women, while women ask more questions than men.

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%% Gender focused on movies and TV: **(Gender Roles on Prime-Time Network Television: Demographics and Behaviors**) [1 reference]

%%% Overall Purpose:

* Explore Gender demographics in prime on television.
* Determine how the roles of female and male characters may have changed on prime-time television since 1970.

%%% Research Questions:

* Demographics, e.g. Do female characters get less screen time than their male peers?
* Behaviors. Differences in the treatment of male and female characters
* were more apparent by genre.

%%% Hypotheses:

* Demographics and Behaviors of movie character has changed over the years (specifically gender).
* Female Characters are better represented on movies in current year (2001) than before (1970s).

%%% Method:

* Dataset, a sample of television fictional series from three major networks and Fox.
* Five people “coders” manually coded the demographics, and they regularly met and discuss their coding. This step was used to formulate the final coding scheme. After that, each television show was coded by a single coder.
* Only characters with speaking parts were coded. Demographics Included, number of male/female characters, age, marital status, parental status, occupation, race, dress, hair color, and the gender of the show’s writer, cretators, directors and producers. Also, speaking time of the characters was recorded for each show.
* Scott’s Pi was used to asses coders reliability.

%%% Results:

* Significant gender differences were found in the marital and parental status of all prime-time characters
* females are still underrepresented on prime-time network television, but less so than in the past.
* Female characters are generally portrayed in lower paying and less prestigious occupations. This is supported by the finding that males were twice as likely to be bosses as females.
* More females now have jobs (previously they were only housewives).
* In terms of physical appearance, female characters remain younger, more provocatively dressed, and more likely to have red or blonde hair than male characters.
* Males were found more physically aggressive than females.
* Females were more verbally aggressive than males.

%%% Conclusion:

* Gender inequities persist on prime-time network television, primarily in the realm of demographics where females are still underrepresented, have lower work status, are younger, and have more parental responsibilities. While the gender gap on television has lessened since the 19705, the change has been more gradual than one might expect (Davis, 1990). One reason may be that some of these discrepancies are simply reflective, for example, of work status and parental responsibilities in the real world. As Farley (1998) notes, on average males still make more than females, and male participation (or lack thereof) in household tasks is often related to the discrepancy in earnings between spouses. Another reason may be inherent in the industry. Given the relationship between behind-the-camera representation and on-screen demographics, future gains may be at least partially dependent on progress behind the scenes.

%%%%% PARAGRAPH FORM

(Glascock) Conducted a study on prime-time television shows on four of the most popular networks among the audience during prime-time according to “People’s Choice.” Their primary goal is to determine how the roles of female and male characters have changed on prime-time television since the 1970s. Their first research questions focused on the change of the demographics of these movies. To answer this question, they measured several demographic features. Examples of these features are the number of female/male characters, marital status, age, and appearance features. Their second research question focuses on the differences in the behavior of female/male characters and how it changed in recent years. Their general hypothesis is that the female role in movies has improved through time, and they measured this using their demographic and behavioral data. Their findings showed that there was a change in how female characters are depicted in movies. However, female characters are still underrepresented in movies in general when compared to their male counterparts. To answer these questions, the researchers formed a committee of five coders. The coders' task was to record the demographic and behavioral features of each movie according to a coding scheme that they initially agree on after analyzing a subset of the data. The researchers used Scott’s Pi to assess the intercoder reliability and also used chi-square correlation as their primary test to analyze demographics. Their findings exhibited significant gender differences in several features, such as marital and parental status as female characters are usually assumed to be married or with children but that was not the case for male characters who were usually single. Also, even though more females characters now have jobs in comparison to older movies when they were mostly unemployed. Their jobs are generally in lower paying and less prestigious occupations. The finding supports this claim, as the male characters were twice as likely to be bosses in movies as female characters. With regards to physical appearance, female characters usually stay younger, more attractively dressed, and more likely to have red or blonde hair than male characters. On the behavioral side, female characters were more verbally aggressive than males while male characters were found more physically aggressive than females. While the gender gap on television has shrunk, the change has been slower than what the researchers initially expected. One reason could be that some of these discrepancies are merely reflective of the real world. Another reason may be innate in the movie industry, which the researchers attributed to the relations between the off-screen representation the and on-screen demographics as they showed evidence of male-dominance in the industry in their findings.

%% Gender focused on movies and TV:(**Fewer, Younger, but Increasingly Powerful: How Portrayals of Women, Age, and Power Have Changed from 2002 to 2016 in the 50 Top-Grossing U.S. Films** )[1 reference]--JQ

%%% Overall Purpose:

Investigate whether representations of gender and age in top grossing films have changed over the past 15 years in terms of the frequency with which women are portrayed, as well as how their age, occupational power, and levels of both overt and social aggression are compared to portrayals by men.

%%% Research Questions:

Follow Lauzen and Dozier:

Q1: Do popular films continue to misrepresent the age and gender distribution of the U.S. population? If so, has the proportion changed since 2002?

Q2: For major characters, does gender continue to interact with age to influence a character’s leadership status, occupational power, and possession of goals? Does it interact with the effectiveness in achieving those goals?

Extension:

Q3: For major characters, are gender differences in terms of leadership, occupational power, and goal achievement consistent across genres?

Q4: For major characters, are there gender differences in terms of either overt or social aggression? If so, does it interact with genre?

%%% Hypotheses:

%%% Method:

We followed the methodology of Lauzen and Dozier (2005), asked their research questions, and expanded on them by adding measures of overt and social aggression among male and female characters in the 50 top-grossing U.S. films of 2016.

All characters were coded manually for gender, actor’s age, and for major or minor character status. The variables subsequently coded for major characters included the character’s leadership status, occupational power, possession of goals, and effectiveness of achieving those goals. Also, both film genre and levels of a character’s physical aggression and social aggression.

(Details of coding in text)

They basically use two methods: count numbers to see one variable difference; use Chi-square Test of Independence to see relationship between two variables, like that between gender (or age) and roles.

%%% Results:

1. Male characters continued to dominate in film, but not by as much as they did in 2002.
2. Both female and male characters appear to be slightly aging as compared to the 2002 sample, but male characters are out-pacing female characters in that regard.
3. No gender differences across genre in terms of leadership roles, which is consistent with our overall finding that there were no real differences in leadership roles between gender when collapsed across genre. In terms of occupational power, male characters overall held significantly more occupational power than female characters overall did, especially in Drama genre. Female characters attained their goals more often (86.4%) than male characters did.
4. For female characters, there was no difference in type of aggression exhibited; while the majority of male characters exhibited physical aggression (50.6%), differing from both categories of no aggression (29.1%) and verbal aggression only (20.3%).

The genres of Action (72.8%), Horror (50.0%), and Adventure (47.8%) in which characters exhibited physical aggression with the most frequency; those in Drama displayed the lowest frequency. The pattern was similar for both male characters and for female characters.Analyses within each genre resulted in no significant relationships between gender and type of aggression. gender and level of social aggression showed no significant relationship

%%% Conclusion:

They provided evidence that progress has been made toward more powerful portrayals and greater representation of female characters in film. However, the screen exposure of women was still not comparable to that of men.

%%%%% PARAGRAPH FORM

In the literature, the authors tried to find whether the gender and age inequalities in the U.S. movies found in 2005 by Lauzen and Dozier have changed in 2016. Following the methodology of Lauzen and Dozier, they coded characters in the 50 best-selling U.S. films manually for gender, age, leadership status and etc. As an extension, they also introduced film genre, levels of aggression into coding.

They found that: although female major characters increased significantly, male characters still dominated. The age inequality in both men and women decreased and the decrease was more significant in men’s. There is no significant gender gap in leadership roles, social aggression and holding goals.

The authors called for more female and older characters in films, which could promote gender and age equality in real life.

%% (**Key Female Characters in Film Have More to Talk About Besides Men: Automating the Bechdel Test)** [1 reference]



%%% Overall Purpose:

* Automate the Bechdel test.
* Combining the Bechdel test with computational analysis can allow for the exposure of gender inequality over a large body of films and literature, thus having the potential to alert society of the necessity to challenge the status quo of male dominance.

%%% Research Questions:

* How can Bechdel test be automated?

%%% Hypotheses:

* It is possible to automate Bechdel test.

%%% Method:

* For the first Bechdel test: are there at least two named women in the movie?
  + Name to gender resources, combined multiple resources and ran them on screenplay descriptions and then on dialogues.
  + Measurements, F1, P, R.
  + Certain characters are credited with a name different from the way they appear in the screenplay, which may have caused several false negatives.
* Test 2: Do these women talk to each other?
  + Identify names and gender from screenplay, and then see if these characters talk to each other
* Test 3: Do these women talk to each other about something besides a man?
  + Combined several feature vectors, such as topic and linguistic features.
  + The features that best answered this question were network analysis features.
* In general, their combined task achieved 80% F1-score.

%%% Results:

* Our results show that the features based on social network analysis metrics (such as betweenness centrality) are most effective. More specifically, in movies that fail the test, women are significantly less centrally connected as compared to movies that pass the test.
* Our results also show that word unigrams, topic modeling features, and features that capture mentions of men in conversations are less effective. This may look like a rather surprising result since the question, (T3) do these women talk to each other about something besides a man? seems to be one that linguistic features should be able to answer. A closer analysis suggests why this may be the case. Even in conversations where men are not the central topic there maybe a mention of a man.

%%% Conclusion:

* We were thus able to show a significant correlation between the importance of roles of women in movies with the Bechdel test. Indeed, movies that fail the test tend to portray women as less-important and peripheral characters.

%%%%% PARAGRAPH FORM

One method for analyzing gender roles in movies is the Bechdel test, which was introduced by Alison Bechdel in her comic “Dykes to Watch Out For” (Bechdel, 1986). The test aims to measure women’s representation in fiction, and it consists of three questions.

Does the movie have at least two women in it?

Do they talk to each other?

Do they talk to each other about something besides a man?

In (Automate Bechdel), the authors aimed to automate the Bechdel test through analyzing each question separately and then combine these features into a support vector machine model to predict if these movies passed the test or not. They relied on multiple sources of data such as the labeled Bechdel test dataset and IMDB dataset. Identifying features were not trivial; there were some issues in identifying character names; certain characters are credited with a name different from the way they appear in the screenplay. This issue may have caused several false negatives in answering the first question and second question. For the third question, the researchers combined several feature vectors, such as topic and linguistic features. The features that best answered this question were network analysis features. In general, their combined task achieved 80% F1-score. Their results showed that features based on social network analysis metrics (such as betweenness centrality) are most active. As they noticed in movies that failed the test, that the female characters were less centralized when compared to the movies that passed. Word unigrams, topic modeling features, and features that capture mentions of men in conversations are less effective in their experiments. They attributed it to a result they found in their analysis that even in conversations where men are not the central topic there may be a mention of a man. Through the analysis of the results, the researchers were able to show a significant correlation between the importance of roles of women in movies with the Bechdel test.

%% Gender Gap in Film industry **(Using Data Science to Understand the Film Industry’s Gender Gap)** [ 1 reference]

%%% Overall Purpose:

%%% Research Questions:

%%% Hypotheses:

%%% Method:

%%% Results:

%%% Conclusion:

%%%%% PARAGRAPH FORM

% Research question(s) + specific goal of study

We are specifically interested in understanding female character roles in movies and how it changes through time, movie genre and ratings. Besides, we want to find answers to the following questions:

* How do female character topics of dialogues change with time?
* Does the dialogue of the female characters differ across genres?
* Does the number of female lead roles versus male lead roles differ across genre?
* Do movies with higher ratings tend to have male-leading roles than female-leading roles?

% Hypotheses and Variables

We anticipate that female characters dialogue topics became more diverse in recent movies compared to older ones, this can be measured using Linguistic Inquiry and Word Count (LIWC) to conduct a Bechdel test on the dialogue level and Latent We also think that female characters have a more powerful appearance in specific genres. Which we will measure using the number of lines, and the significance of their roles in those genres. Lastly, we expect that movies with higher rating tend to have a stronger male presence.

Overall style/format (NAACL)

The literature review provides an opportunity to expand on your project proposal with greater detail and to closely examine the relevant prior research. You should turn in a document plus references in the NACL format that you will use for the final report. This should include all relevant previous research on the topic (a minimum of 8 citations, where at least 4 are detailed).