

### **Written report (criterion 1)**

1) Description of main results (20)

2) Figures and captions (15)

This criterion is linked to a Learning Outcome

### **Written report (criterion 2)**

#### **Abstract**

This goal of this data analysis project is to find out the impact and changes World War II (1939 to 1945) had on the occupations for individuals in the United States that were born during the *Pre-War, and In-War decades*: the Pre-War dataset is from the years of 1890 to 1909, and the second dataset for In-War from the years of 1920 to 1939.

In this data analysis, the presumption is that: these individuals started their career 20 to 30 years after their birth year, and their occupation decisions would be influenced by the social norm and economic status of the United States at the time. These shifts in occupations will be discussed in the following six sections:

T1)

- A. 18901990\_coed.nb
- B. 18901990\_men.nb
- C. 18901990\_women.nb

T2)

- D. 19201930\_coed.nb
- E. 19201930\_men.nb
- F. 19201930\_women.nb

#### **Result**

Individuals who were born during the Pre-War period (1890s to 1900s) were more likely to be famous for these occupations: baseball player, politician, actor, football player, and lawyer. In a random sample data of 200 males, the popular occupations were: football player, baseball player, business person/politician, actor, and basketball player; while among 200 females sample data obtained: actor, politician, author, singer, and writer.

Individuals who were born during the Post-War period (1920s to 1930s) were more likely to be famous for these occupations: football player, baseball player, actor, politician, and business person. In a random sample data of 200 males, the popular occupations were: football player,

baseball player, business person/politician, actor, and basketball player; while among 200 females sample data obtained: actor, politician, author, singer, and writer.

## **Introduction**

World War II was a global war that happened from 1939 to 1945. The vast majority of the world's countries (30+) were involved and eventually formed two opposing military alliances. Each country sacrificed its entire economic, industrial, and scientific capabilities for this war for civilian and military resources. It was considered the most deadliest conflict in human history, and resulted by 50 to 85 million fatalities.

United States, during this time period, had also just gone through the Great Depression in 1929 to 1939. With its unstable economic and negative in-war impacts, the occupations for civilians had also undergone some dramatic shifts.

## **T1)**

**A summary of insights from your analysis Include anecdotal reflection:**

[Time Period Between 1890 s and 1900 s -- Occupation Types in the United States \[ ~20 Years before World War II \]](#)

### **18901900\_coed.nb:**

From the obtained dataset, for famous individuals of that were born in 1890 - 1909, in the United States, a total of 9314 individuals, had the five most popular occupations of the following: baseball player (2542), politician (1096), actor (953), football player (944), and lawyer (484).

**For the following datasets, the first 200 males and 200 females in the 18901900\_coed.nb are chosen to be in each gender-based dataset for the analysis.**

### **a. 18901900\_men.nb:**

From the obtained dataset, for famous males of that were born in 1890 to 1909, in the United States, a total of 200 individuals, had the five most popular occupations of the following: baseball player, politician , football player, actor, and athlete.

### **B. 18901900\_women.nb:**

From the obtained dataset, for famous females of that were born in 1890 to 1909, in the United States, a total of 200 individuals, had the five most popular occupations of the following: actor, author, singer, novelist, and athlete/writer.

### **How is their historical/cultural role reflected in the network? (1/3)**

#### **18901900\_coed.nb:**

These occupations make sense. Becoming an athlete was a trend because during the 1920's, a large number of Americans began to pay money to watch other people compete in athletic contests. Baseball and football were the "national pastime" in the 1920s. On the other hand, actors also played a huge part in the society: the era of the 1920s, the decade when popular films "Fantastic Beasts" and "Where to Find Them took place". As for lawyers, they were needed in the society, as it was the beginning of a new series of laws affecting business, during the time many important documents were written: pieces of legislation as the Fair Labor Standards Act, the National Labor Relations Act, the Securities Act of 1933, the Securities Exchange Act of 1934, and more.

#### **18901900\_men.nb:**

The results have shown that out of a random 200 famous males who were born in the 1890 to 1909, most were indeed mostly athlete, politician, and actor. This shows the norm of a male dominant-society, with males taking over the popular jobs and had an important role.

#### **18901900\_women.nb:**

The results have shown that out of a random 200 famous females who were born in 1890 to 1909, most were indeed actor, author/novelist, and athlete. This shows the norm of a stay-home woman society norm, with the fact that only a few women were participating in sports, though the popularity in the culture at the time.

### **How did the results deviate from your expectation? (1/3)**

These results actually match my expectation. During the time period, sports played a significant role in United States. Americans named baseball as the most popular sport in 1948 and 1960. Many sport teams, like the Brooklyn Dodgers and New York Yankees, were famous nationally and internationally. I was not surprised that occupations were mostly athletes. As for politicians and lawyers, as I have explained, they were needed to fulfill the needs for the war and to better the society.

Before the feminist movement in the 1960s, women were not socially accepted to be 'out there.' They tended to take the roles of staying at home, and occupations that were not significantly 'influential.' The only thing that surprised me was that women were actually participating in sports. On the other hand, men simply just took the important roles and became the face of the society.





shows that the probability of degree of occupation #45 is 1, #47 is 1, and #64 is 0.70.

Figure 3. (Right) Network of occupations for individuals who were born in 1890s to 1900s.

This network has shown that the popular occupations such as: baseball player and politician, baseball player and football player, baseball player and actor, politician and lawyer are strongly linked together.

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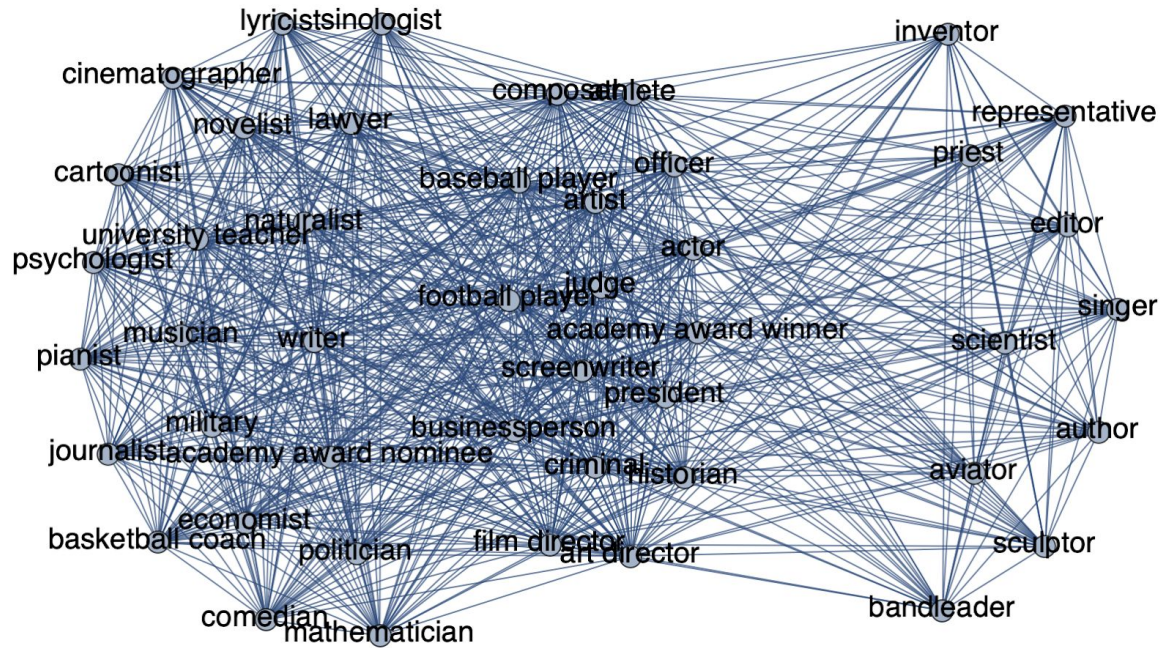


Figure 4. A plot network for occupations for 200 male individuals who were born in 1890s to 1900s. If an individual had multiple occupations, the two occupations are connected by an edge.

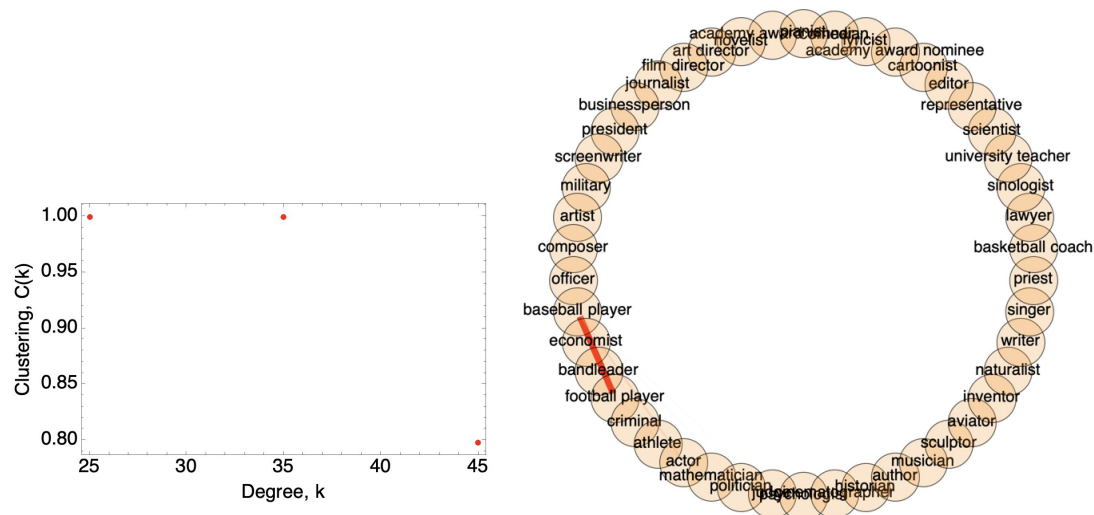


Figure 5. (Left) A clustering degree distribution of occupations for 200 male individuals who were born in 1890s to 1900s. This network indicates probability of each degree, the more common an occupation, the higher the

probability. It shows that the probability of degree of occupation #25 is 1, #35 is 1, and #45 is 0.80.

Figure 6. (Right) Network of occupations for 200 male individuals who were born in 1890s to 1900s. This network has shown that the popular occupations such as: baseball player and football player are strongly connected.

18901900\_women.nb:

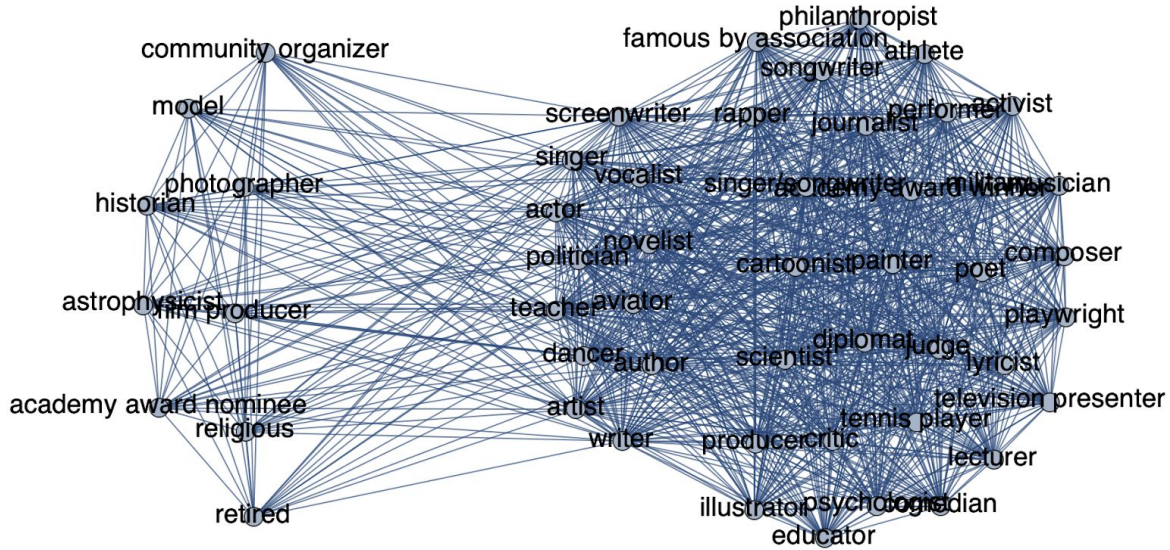


Figure 7. A plot network for occupations for 200 female individuals who were born in 1890s to 1900s. If an individual had multiple occupations, the two occupations are connected by an edge.

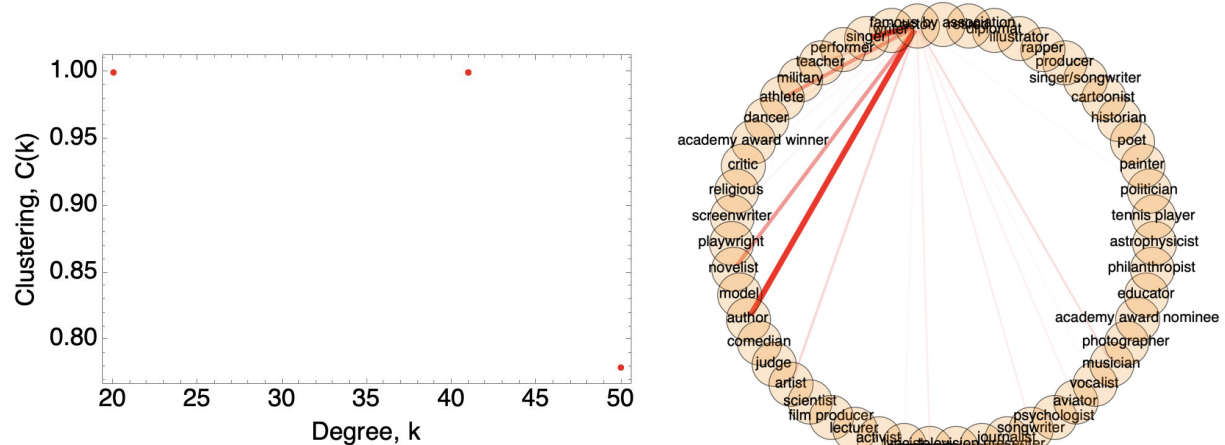


Figure 8. (Left) A clustering degree distribution of occupations for 200 female individuals who were born in 1890s to 1900s. This network indicates probability of each degree, the more common an occupation, the higher the probability. It shows that the probability of degree of occupation #20 is 1, #41 is 1, and #50 is 0.75.

*Figure 9. (Right) Network of occupations for 200 female individuals who were born in 1890s to 1900s. This network has shown that the popular occupations such as: actor and writer, actor and singer, actor and performer are strongly connected.*

**T2)**

**A summary of insights from your analysis Include anecdotal reflection:**

**Time Period Between 1920s and 1930s -- Occupation Types in the United States [ During World War II ]**

**19201930\_coed.nb:**

From the obtained dataset, for famous individuals of that were born in 1920 to 1930, in the United States, a total of 19327 individuals, had the five most popular occupations of the following: football player (2678), baseball player (2113), actor (1886), politician (1761), and business person (1236).

**For the following datasets, the first 200 males and 200 females in the 18901990\_coed.nb are chosen to be in each gender-based dataset for the analysis.**

**a. 19201930\_men.nb:**

From the obtained dataset, for famous males of that were born in 1920 to 1930, in the United States, a total of 200 individuals, had the five most popular occupations of the following: football player, baseball player, business person/politician, actor, and basketball player.

**B. 19201930\_women.nb:**

From the obtained dataset, for famous females of that were born in 1920 to 1930, in the United States, a total of 200 individuals, had the five most popular occupations of the following: actor, politician, author, singer, and writer.

**How is their historical/cultural role reflected in the network? (1/3)**

**19201930\_coed.nb:**

These occupations make sense. The society shifted its sport focus from Baseball to Football. During 1960s was the rise of the original NASL [North American Soccer League (1968–1984)], and since then, football has been the public's favourite sports in the United States. There was also a rise for popularity another sport: Basketball. Besides the needs for politicians, there was a rise for business people after World War II : to renovate the city and create ideas to fix the damages that World War II had brought. The economy overall grew by 37% during the 1950s to 1960s. Acting remained as a main occupation as for entertainment.



### **19201930\_men.nb:**

The results have shown that out of a random 200 famous males who were born in the 1920 to 1930, most were indeed football player, baseball player, business person/politician, actor, and basketball player.

This shows the norm of a male dominant-society was started to fade away after World War II. Athlete was still a popular occupation choice as the American Football, baseball and basketball teams were getting recognitions by nations. Politicians remained popular, but business person took over the status of lawyers in this period of time. Though it was still man who were mainly in charge of the economy, not women.

### **19201930\_women.nb:**

The results have shown that out of a random 200 famous females who were born in 1920 to 1930, most were actor, politician, author, singer, and writer. This shows the norm of a stay-home woman society norm was faded away after World War II: women were participating in political parties and were able to have their voices heard not only through writing and publishing books, but now also through going to hearings and speaking in front of the public. This was a change brought by the feminist movement in the 1950s to 1960s. Women started to gain more power such as being able to enter the other parts of the workforce, to vote, etc. The entertainment industry was still a huge part in women's choices for occupations: actor and singer remained popular among them.

### **How did the results deviate from your expectation? (1/3)**

I personally did not know much about sports, and by doing this analysis I had gained insights about how sports have changed throughout history in the United States. During the time period, football slowly took over baseball's place in the public's heart in the United States. The NASL (North American Soccer League) was found, and for decades, to better the teams, they signed European and South American for the teams. Later on, the FIFA-sanctioned United Soccer Association was also found. The leagues merged later in the 1960's and had caught a huge amount of attention given throughout the English-speaking world. This had made becoming an athlete for the nation, especially for football, and baseball, very honorable.

As for the rise of business person, I have also learned about the Decade of Prosperity: the economy overall grew by 37% during the 1950s. At the end of the decade, the median American family had 30% more purchasing power than at the beginning, and unemployment remained low, bottoming at less than 4.5% in the middle of the decade.

I expected the rise of politicians in women because of the feminist movement. Women were then more socially acceptable to be out there, and voicing their opinions. They were now part of the influential part of the society.



How do other scalar network measures (mean degree, average path length, network diameter, clustering coefficient) compare between the networks? (1/3)

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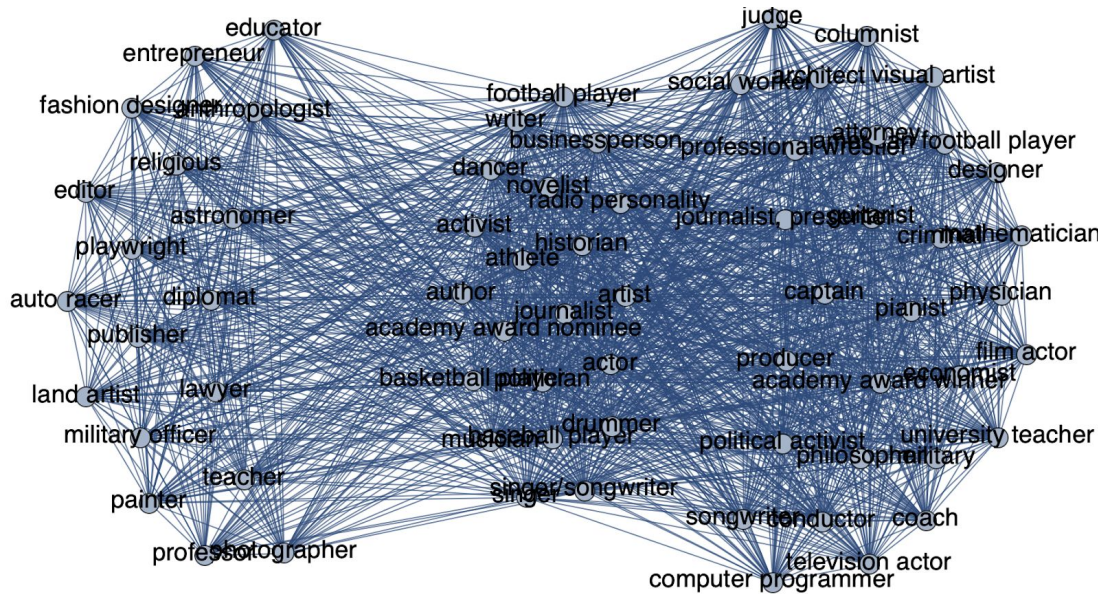


Figure 10. A plot network for occupations for individuals who were born in 1920s to 1930s. If an individual had multiple occupations, the two occupations are connected by an edge.

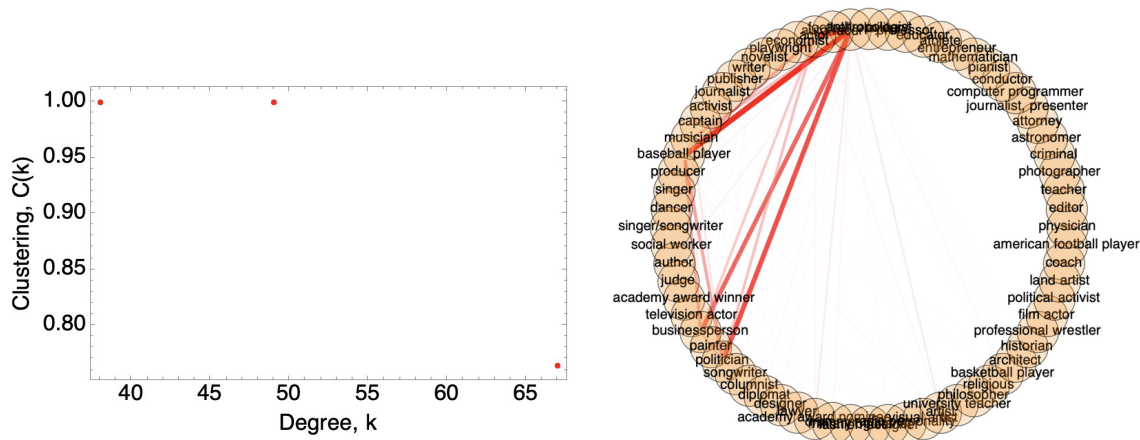


Figure 11. (Left) A clustering degree distribution of occupations for individuals who were born in 1920s to 1930s. This network indicates probability of each degree, the more common an occupation, the higher the probability. It shows that the probability of degree of occupation #43 is 1, #49 is 1, and #67 is 0.75.

Figure 12. (Right) Network of occupations for individuals who were born in 1920s to 1930s. This network has shown that the popular occupations such as: football player and baseball player, football player and actor, and politician and business person.

19201930\_men.nb:

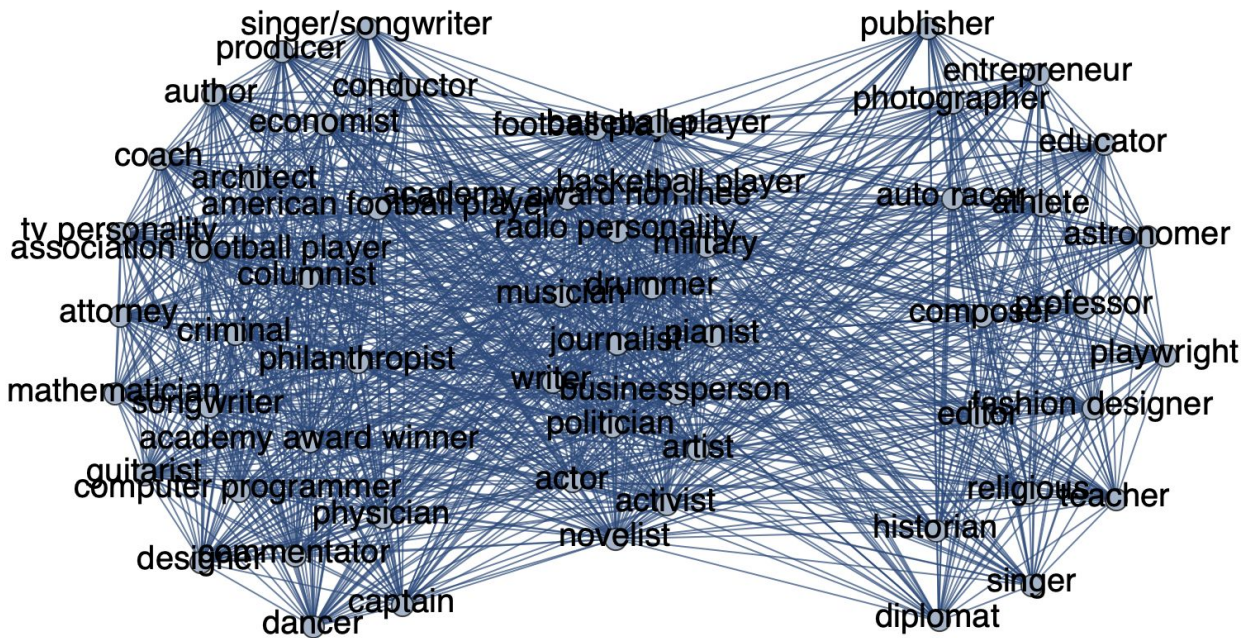


Figure 13. A plot network for occupations for 200 male individuals who were born in 1920s to 1930s. If an individual had multiple occupations, the two occupations are connected by an edge.

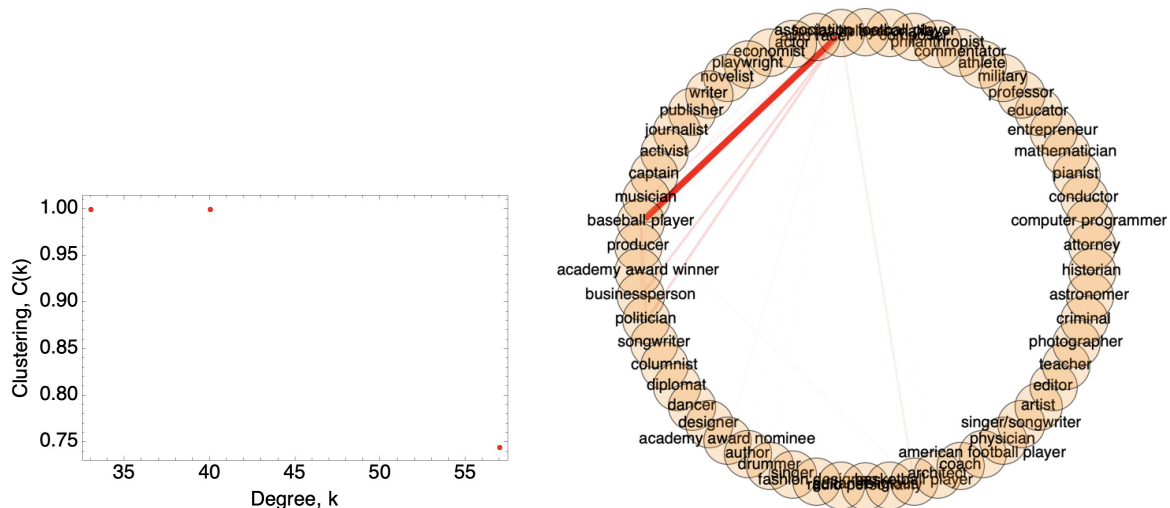


Figure 14. (Left) A clustering degree distribution of occupations for 200 male individuals who were born in 1920s to 1930s. This network indicates probability of each degree, the more common an occupation, the higher the probability. It shows that the probability of degree of occupation #33 is 1, #40 is 1, and #57 is 0.75.

Figure 15. (Right) Network of occupations for 200 male individuals who were born in 1920s to 1930s. This network has shown that the popular occupations such as: football player and baseball player are strongly connected.



19201930\_women.nb:

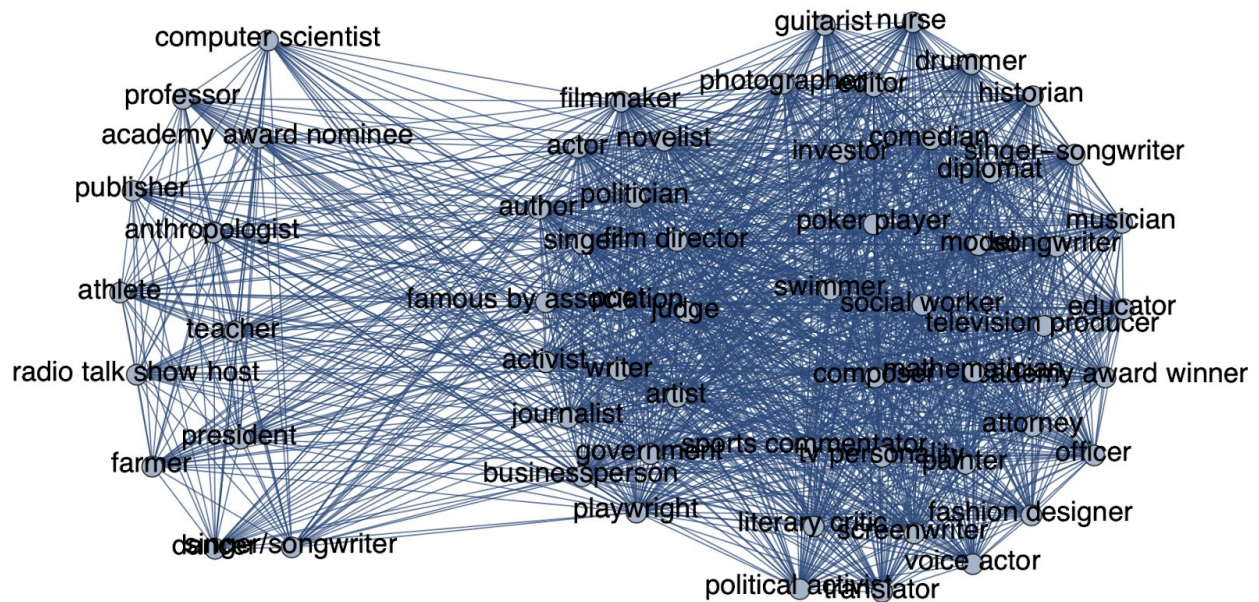


Figure 15. A plot network for occupations for 200 male individuals who were born in 1920s to 1930s. If an individual had multiple occupations, the two occupations are connected by an edge.

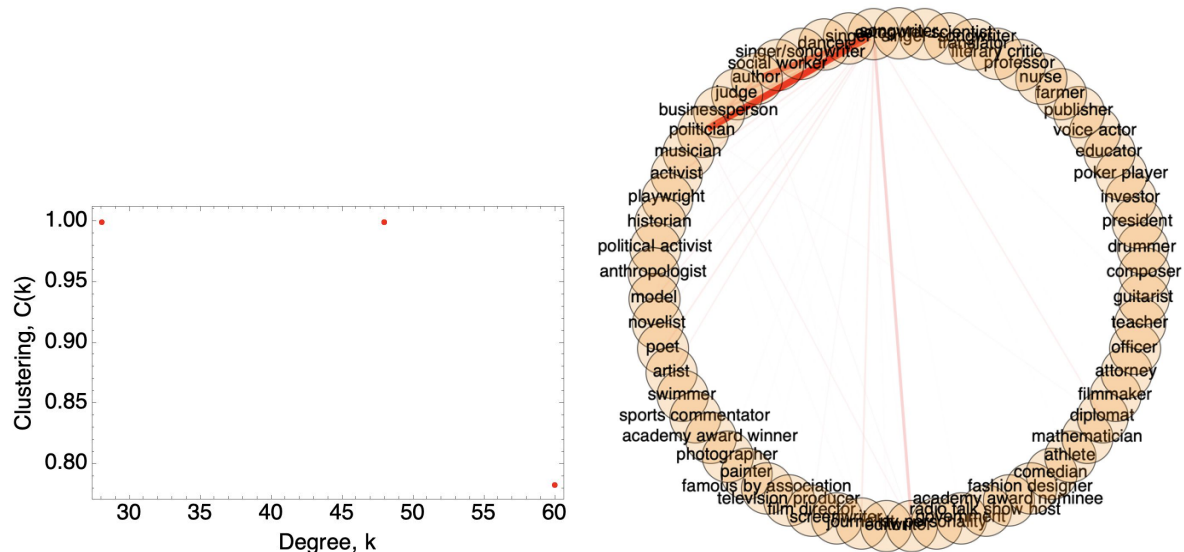


Figure 16. (Left) A clustering degree distribution of occupations for 200 female individuals who were born in 1920s to 1930s. This network indicates probability of each degree, the more common an occupation, the higher the probability. It shows that the probability of degree of occupation #28 is 1, #47 is 1, and #60 is 0.80.

Figure 17. (Right) Network of occupations for 200 female individuals who were born in 1920s to 1930s. This network has shown that the popular occupations such as: actor and politician, actor and singer, actor and dancer are strongly connected.