

Disney's Director and Cast Network over time intervals between 1928 to 2021

Disney is one of the most influential entertainment companies in the world as they have originated by the by brothers Walt and Roy O. Disney in 1923. The company start to become more noticeable and successful since 1928 [1]. Currently, the company is producing animated and non-animated produces movies, TV Shows, short films including every year.

This project is interested in investigating the relationship between TV shows and movie cast members of Disney and how it developed throughout the years.

Legend and figure explanation:

- The data is divided distribute using interval time of 10 years each except the first and last intervals (1928-1940 and 2011-2021)
- The directors are in red and cast members are in purple.
- The size of the node indicates the number of edges for that is attached to the node.

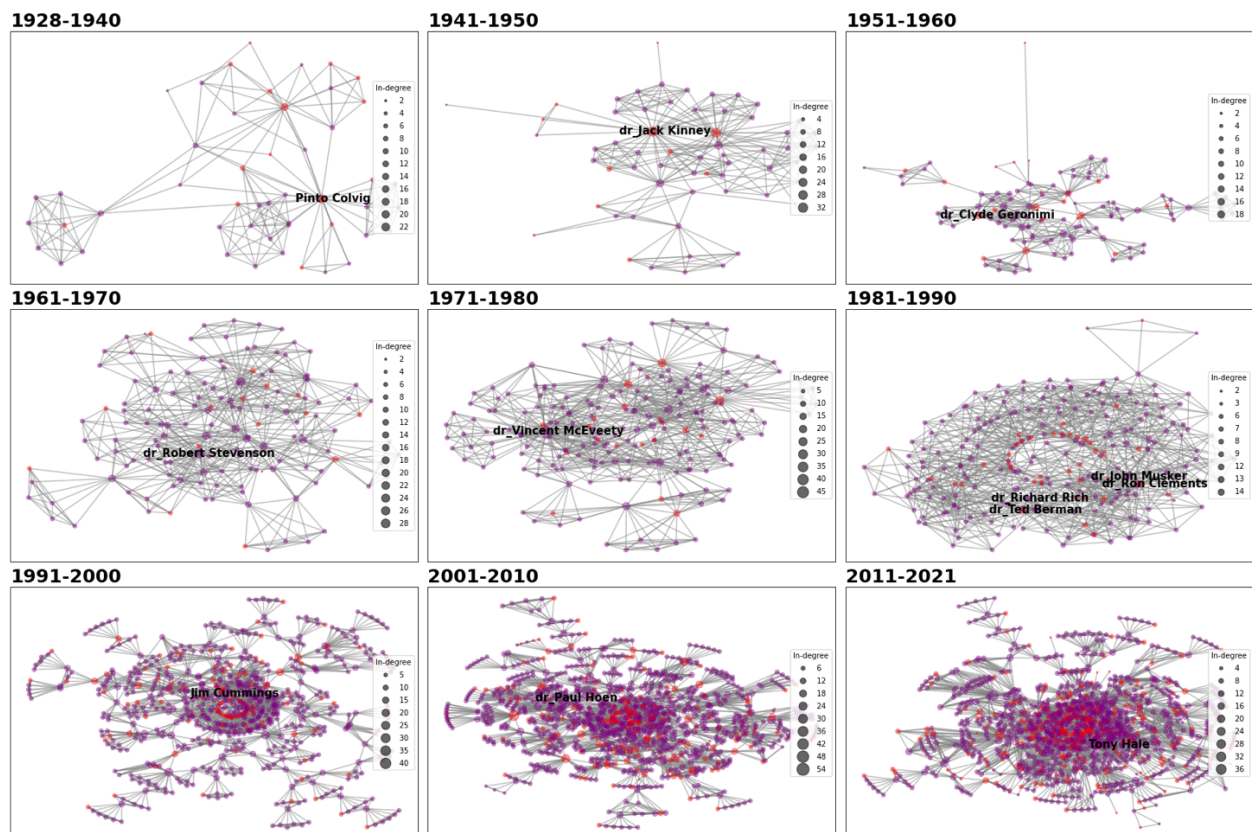


Figure 1: Disney's Director and Cast Network

Legend and figure explanation:

- The directors are in gold and cast members are in white.
- The size of the node indicates the number of relationships created between individuals.
- X-axis: the data is divided distribute using interval time of 10 years each except the first and last intervals (1928-1940 and 2011-2021)
- Y-axis: it represents how number of movies a person has participated.

- The people who have the maximum degree have their name printed. If the name start with “dr_”, this indicates that person is a director.

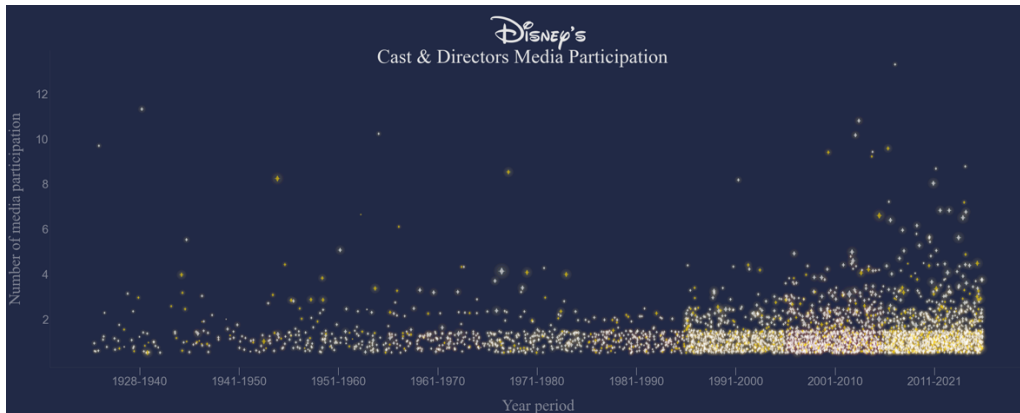


Figure 2: Disney's Director and Cast Media Participation

Data and methods:

The project uses Disney movies and TV shows dataset from [2]. The dataset contains 12 columns and the main columns used in this project are release_year, director, and cast. There are some eliminated rows from the data which the ones do not contain director or cast member is removed. To distinguish between the directors and casts, there is an extra string characters added to the director's name which is "dr_". This will help to distinguish between cast and directors later. Moreover, there is an additional dimension added to the data used which is the number of work that a person was part of.

There are over 3000 people in this data set therefore, it is preferable to distribute the relationships using interval time of 10 years each except the first and the last intervals.

In figure 1 and figure 2, I used network to build the network. In Figure 1 I used kamada_kawai_layout to determine the position of the nodes. However, in figure 2, I used jittering method to distribute the nodes around the actual values horizontally and vertically to spread them nodes instead of having them overlapped. I did this is because I want to imitate the randomness and the flow that a pixie dust (method used in Disney for magic transformation such as in Cinderella). Moreover, I used a "" package to make the nodes glow.

Graph 1 Findings:

- The complexity of the network is less in 1928 -1940. However, it become more complicated as there are more people in the graph which means newer cast and directors are introduced to the network.
- Directors have the highest degree over all the cast member, however in the interval 1991-2000 and 2011-2021 the two cast members has the highest degree.
- There is a main large heavily connected cluster in the last 3 intervals, and it is surrounded by smaller nodes that have minimal work participations.
- The directors and cast who surrounding the network are probably new to the work and they just started to join the network.
- Interval 1981-1990 is the start of developing a more complex network and may be the reason is because that the company changed the work infrastructure.

Graph 2 Findings:

- Most directors and cast members have only 1 work in all the periods.

- We see a director in 2011-2021 have more work (12) than others but did not have that many relationships compared to other people in the same period.
- We could see that people more involved in work as the period increases.

The significance of this project:

The significance of this project is showing how the size of an entertainment company over the years has minor influence on the relationship between the directors and the cast in addition to visualizing the history of Disney crew over the year. However, the increase of the workers (director and cast could affect the complexity of the network septically when there is verity of work, that include TV-show, movies, and short films. In the last years Disney has published the Disney+ app which I think has a significant affect to maintain the customer base that Disney has to meet the customers' expectations with new show.

GitHub link: <https://github.com/ArenAlyahya/Disney-s-Director-and-Cast-Network>

Reference:

- [1] C. Pallant, *Demystifying disney: A history of disney feature animation*. London: Bloomsbury, 2013.
- [2] S. Bansal, "Disney+ Movies and TV Shows," *kaggle.com*. [Online]. Available: <https://www.kaggle.com/datasets/shivamb/disney-movies-and-tv-shows>.