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Psychology

Silver-screen or starving? Predicting success in showbiz

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ABSTRACT

Are parts in film and TV fairly allocated? How long will an actor or actresses good, or bad, luck last? Can we predict if my favourite actor is going to be more successful in the future or not? By studying the careers of 1,512,472 actors and 896,029 actresses, including careers stretching back to the birth of film in 1888, we unlock the secrets of the silver screen.

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In 1905 Albert Einstein had his “annus mirabilis”, giving him an unassailable status as a genius in modern culture. Was this year a miraculous coincidence, or on the other hand could this have been predicted? Recent research suggests that, perhaps unexpectedly, the answer is no. Can the same be said of people working in showbusiness? Are their successes just as unpredictable? The modern “science of success” attempts to answer just this: through careful abstraction of what it means to be successful we can study any career with a scientific approach.

Are stars really a product of talent, or is there luck involved? Are there any inherent gender biases? And can we predict whether someone is having a bad few years, or if their best days are behind them?

We have made use of the Internet Movie Database (IMDb, as of January 16th, 2016), which provides information about acting roles in films and TV. Equipped with this, we were able to study the careers of 1,512,472 actors and 896,029 actresses, including careers stretching back to 1888. Our first task was to investigate what actors themselves consider success to be. The answer was clear: in an environment where unemployment rates hover around 90% it seems that making a living matters more than high impact or recognition, no Oscar, no Golden Globe, no glittering awards, just work. Accordingly, we defined the annus mirabilis (AM) of a given actor as the year where they had the most jobs.

With this vast dataset and a justified measure of success, we can address all kinds of questions. The first message that emerges from our analysis is that careers spanning only a single year are the norm; more than two thirds of actors and actresses only had one appearance. This finding, together with the fact that long career lengths and high activity were found to be exponentially rare, suggest (or better put, confirmed) a scarcity of resources in the acting world. Getting a job can be hard! Do actresses get fewer jobs than actors? Yes, they do. Gender bias, check one.

We know that work is scarce, but how are parts allocated? We find that most actors get very few jobs, while a lucky few have more than a hundred. The distribution of productivity we observe indicates a "rich-get-richer" mechanism underpinning the way jobs are assigned, where individuals who have worked a lot in the past are more likely to get jobs again. This should not be unexpected, if you were making a film would you choose a household name or a nobody? Besides, it is well known that these mechanisms are not meritocratic: stars can appear out of unpredictable and random initial fluctuations, and are not always based on any particular intrinsic ability. In other words, it's not what you know, but who knows you.

We have confirmed that actors and actresses work in streaks: when things are going well, they tend to stay that way, but, when they aren't, the same is unfortunately true. That said, nothing lasts forever. Somehow the world forgets, and fortunes can change for the better, or worse. But are there any differences between actors and actresses here? Sadly yes, actresses are less likely to recover from a cold streak than actors. Gender bias, check two.

Where is the most productive year? We discovered that, for both actors and actresses, the AM tends to be located towards the beginning of their career. However this effect is more pronounced for actresses than for actors. Gender bias, check three. Furthermore, there are clear 'early warning signals' preceding the AM, and similarly clear patterns following it. This suggests that the careers are not random, but can we make predictions? More precisely: if I observe the career of an actor up to a certain point in time, can I predict whether his AM has already passed, or whether their best days are yet to come? Yes! By taking into account years in which there was a decrease in productivity we were able to train a basic classification algorithm, which was correct around 85% of the time. This might seem a bit off-putting for a working actor or actress, who might have the perception that the future is set. While this prediction is successful due to the marked patterns arising in the data, let us note that many of the 15% of incorrectly classified actors are indeed those that make a comeback. When this happens is intrinsically difficult to predict: not everything is written!

Disclaimer: our analysis does not incorporate theatrical roles due to the fact that such data was not available on a global scale.