

## Exercise 9

Social scientists have long debated why we often see similar persons experience diverging trajectories of accomplishment, with some accumulating long strings of successes and others failing repeatedly. One hypothesis states that “success breeds success”. This hypothesis claims that the ultimate success of select persons may be born out of small, random initial advantages that grow ever larger through runaway positive feedback.

To test this hypothesis, Van de Rijt *et. al.* constructed an experimental design in which they explicitly controlled the allocation of initial success. In their setup, they bestowed early successes upon randomly selected members of a population, thereby ensuring that the expectations of success before intervention are equal for recipients and nonrecipients. They deployed the design in four naturally occurring systems, representing distinct forms of personal success— financial gain, endorsement, social status, and social support

The goal of this exercise is to reproduce the paper's results. You will read the [paper](#) and perform two tasks: (i) **you will measure the effect of the experimentally induced success in each study, reproducing the paper's Figure 1 and measuring the statistical significance of the effect;** (ii) **to assess whether the effect of the treatment was only transient or instead had an enduring impact on success accumulation, you will calculate in each system the average number of posttreatment successes accumulated, reproducing the paper's Figure 2.**

### Exercise steps:

- 1 - Read carefully the article and understand the experimental design.
- 2 - Examine the dataset and identify the variables used to answer the questions.
- 3 - Perform the analyses.

### Resources:

[Paper](#), [Supporting Information](#), [Paper presentation](#).

### Data:

<https://github.com/tocunha/reflectionsdatascience/tree/master/exercise9-21-04-2020>

### Deliverables:

With the same groups assigned for the exam, each group will create a jupyter notebook with its analysis. Use markdown on the jupyter notebook to detail the strategy used and to communicate the findings. Submit the notebook by **28/04/2020** to get informal feedback which might be useful later for the last part of the exam. Only one submission per group.

Where to submit it: <https://learnit.itu.dk/mod/assign/view.php?id=118604>