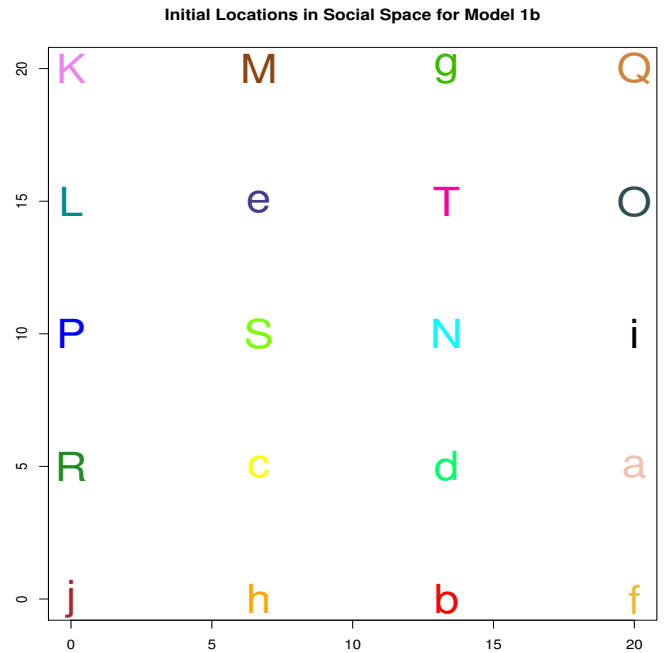
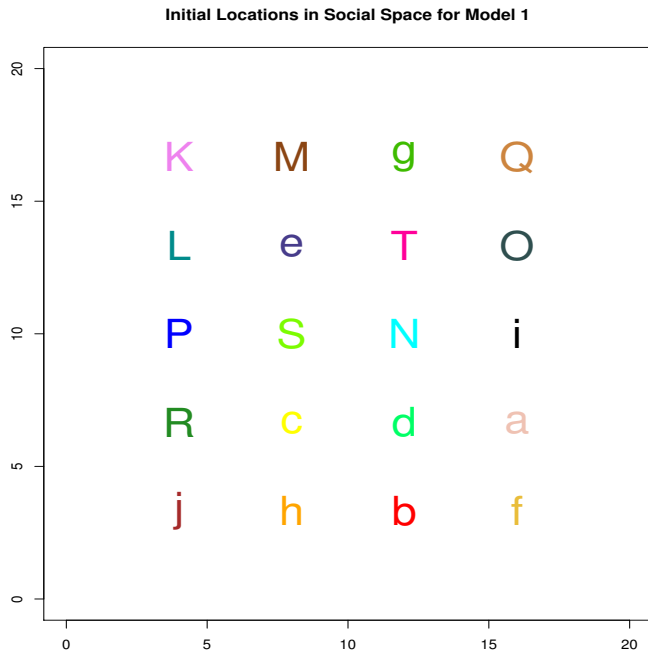


# 1 Model 1b addition

## ★ p-Model 1:

$$\text{logit}(p_{ij}) = \beta_0 - |z_i - z_j|$$

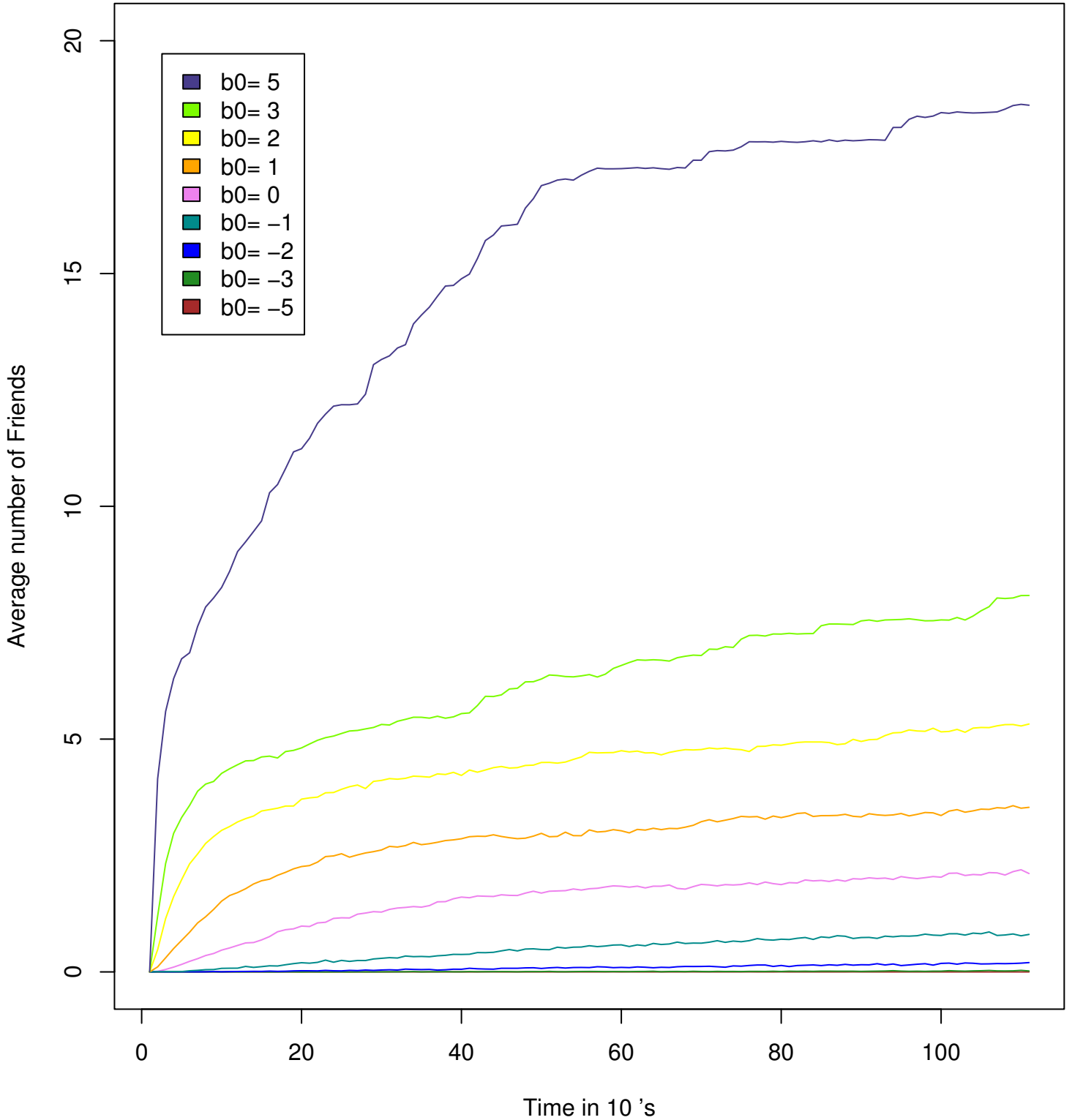
- In the previous analysis of **Model 1**, the agents' initial positions in Social Space were random on the smaller left grid. In **Model 1b** and the subsequent analyses the agents started on the larger grid on the right.
- This difference in the “**size**” of Social Space noticeably changes the behavior of the agents. Agents are much less likely to converge to one perfect cluster, and the average number of friends for each agent is much lower in a larger Social Space. The number of clusters increase when Social Space is smaller.
- In the following results for **Model 1b**, 50 simulations were averaged to obtain each curve.



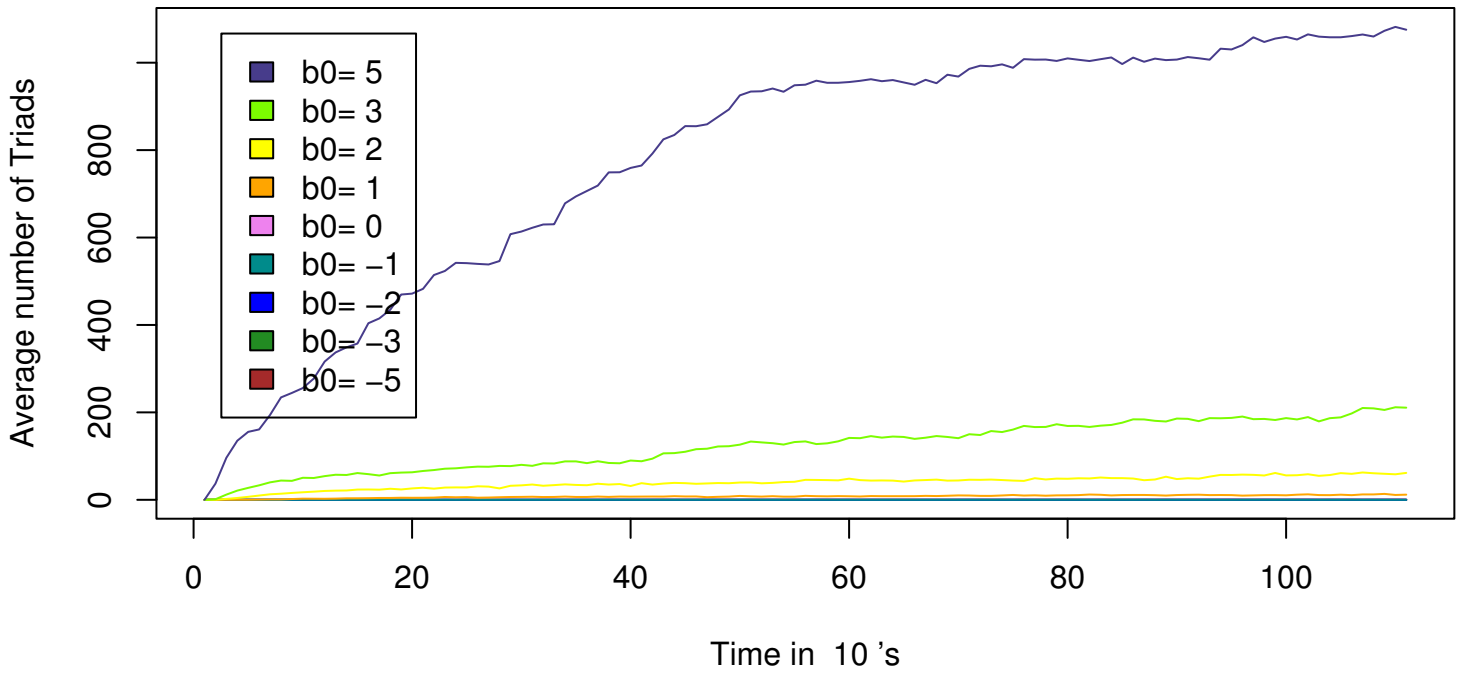
## 2 Model 1b Results

I ran 50 simulations for 1098 steps for eleven values of the  $\beta_0$  baseline friendship rate. These averaged curves clearly show the increasing relationship between  $\beta_0$  and the average number of friends for the intelligent agent **Model 1b**.

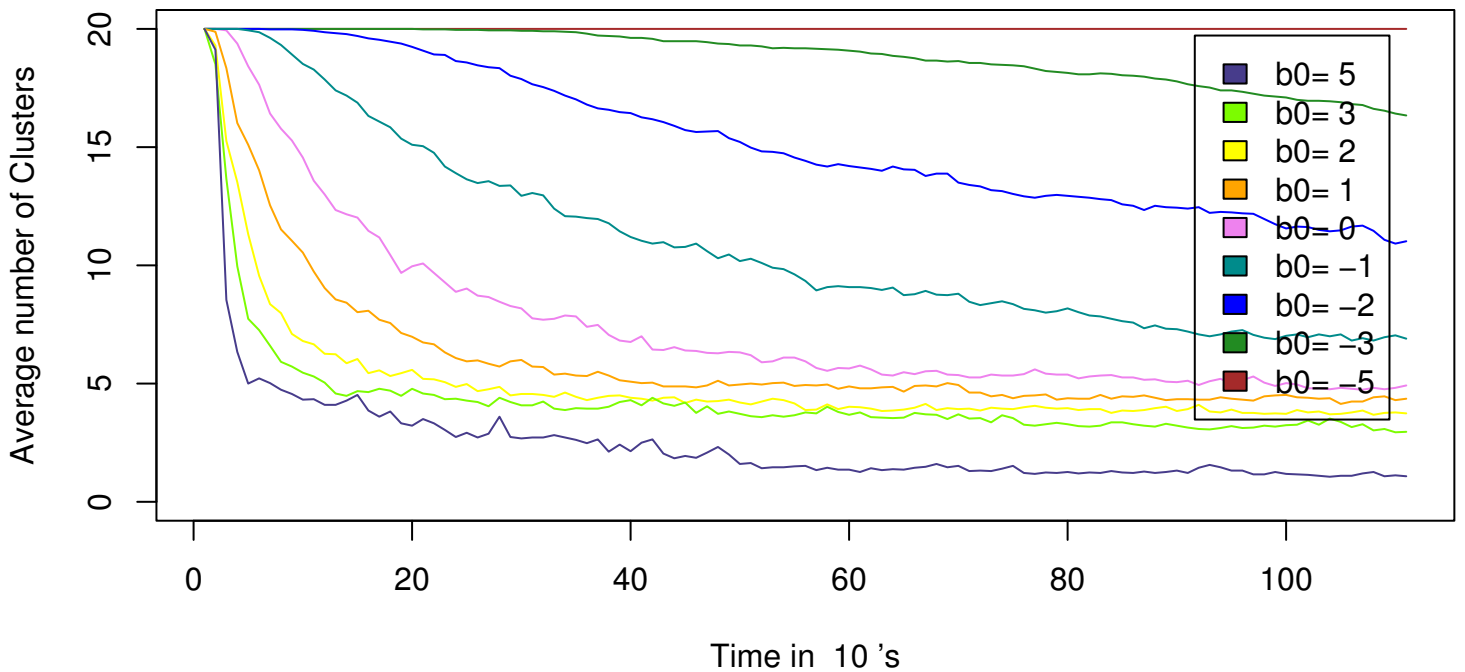
**Average number of Friends Model 1b**



### Average number of Triads Model 1b



### Average number of Clusters Model 1b



Notice that for  $\beta_0 = 0, 1, 2, 3$ , social spaces with 3-5 clusters tend to be “stationary”. These configurations of a handful of clusters of agents tend to persist for a long time.

When **move.fraction** is varied between 0 and 1, with  $\beta_0 = 0$ , the average numbers of friends over 50 simulations remain low. Perfect clustering (all agents together in same location in Social Space) seems to be an atypical occurrence. This is in contrast to **Model 1** when the agents started closer together and perfect clustering was common.

### Avg #Friends Model 1 with different Move Fractions

