Final Project Progress Reports
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Agent Behavior
After last Tuesday's class discussion and feedback, I think I will model four individual types of network behaviors: preferential attachment, resource dependence, homophily, and social influence. Preferential attachment describes the tendency to connect with actors that are already very popular (already in the Model Library). Resource dependence refers to the preference to link with actors that have abundant resources. Homophily describes the tendency to select actors similar to oneself. And social influence describes the influence of one's connections.

System Behavior
At the system level, I want to see which one of the four network mechanisms has the most profound impact on the overall network structure. By "profound" I mean several global network measures, such as centralization, clustering coefficient, clique, density, and average degree/ closeness centrality/ betweenness centrality/egenvector centrality.

Rationale for Agent Rules
According to Fu and Shumate (2015), homophily and resource dependence theories are two additive network mechanisms rather than two competitive network mechanisms to shape the overall network structure. Extending this line of research, I am interested in several other network mechanisms described in Monge and Contractor's (2003) work, such as preferential attachment and social influence.

Model Output
I will add several monitors to track the networks measures, including centralization, clustering coefficient, clique, density, and average degree/ closeness centrality/ betweenness centrality/egenvector centrality. In addition, I will add some plots to track the degree distribution of the agents in the model. Further, these distributions will be compared across the four types of mechanisms.

Questions
For the three network mechanisms (resource dependence, homophily, and social influence), I have completed about 80% for each. However, there are some consistent errors across the three models that I need to seek the advice from TAs this week on Wednesday.

Next Steps
For the next step, I plan to finish modeling all three network mechanisms and start to combine all four types of network mechanisms into one model. In addition, I plan to research on the [nw] extention from GitHub on several network measures.

Model Analysis
I have not started model analysis. I plan to use BehaviorSpace to do experiments and see which one of the network mechanism has the most profound impact on each of the global network structure measures.

Advanced Features
I will use the [nw] extension from GitHub to model some extra network properties.

Monge, P. R., & Contractor, N. S. (2003). *Theories of communication networks*. Oxford: Oxford University Press.

Fu, J.S. & Shumate, M. (2015). *Social Media Activity and Hyperlink Network Analysis: A Holistic Media Ecology Perspective*. Proceedings of the 48th Hawaii International Conference on System Sciences- 2015.