Notebook

February 17, 2019

Question 1 According to Strogatz, why do people experience airplanes, restaurants, parks, and beaches to be more crowded than averages would suggest?
[Please answer in one or two sentences]

First answer

Question 2a Which two groups did Christakis and Fowler monitor to see who got the flu first? Which group ended up actually getting the flu first?
[Please answer in one or two sentences]

Write your answer here, replacing this text.

Question 2b Which two groups did Christakis and Fowler monitor to see who got the flu first? Which group ended up actually getting the flu first?
[Please answer in one or two sentences]

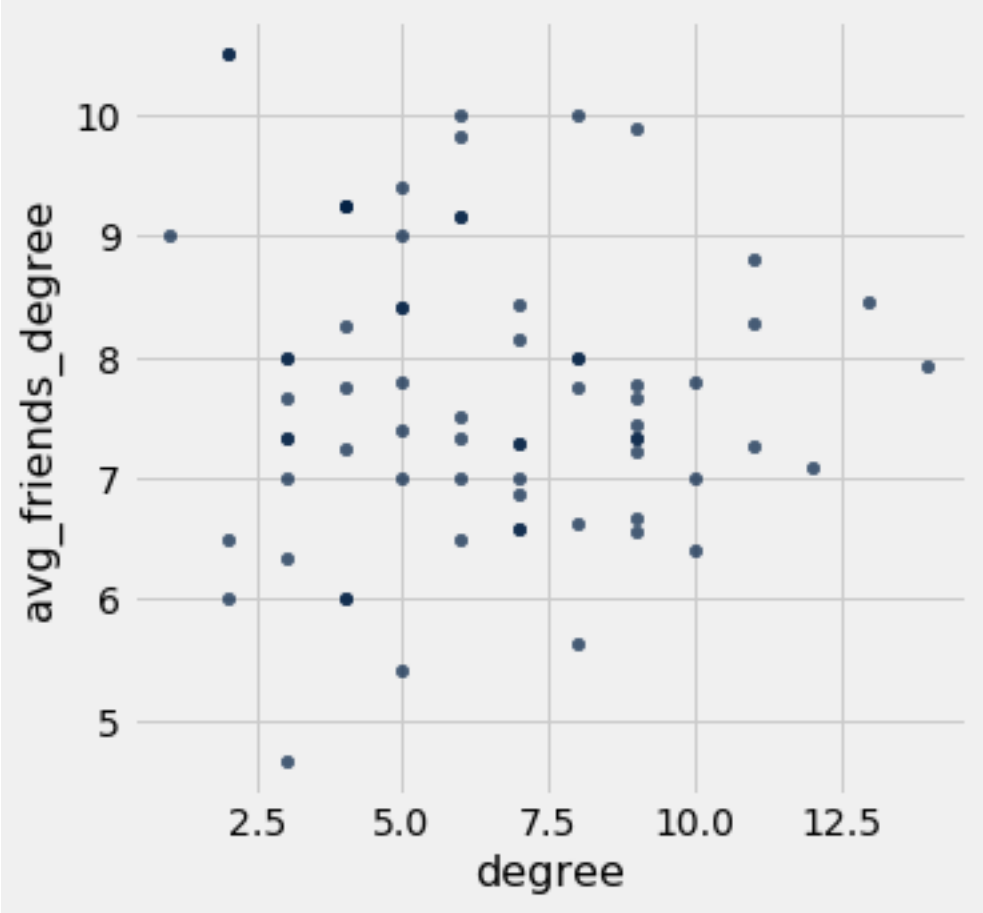
Answered 2b, but not 2a

Question 8 What does the friendship paradox predict about the values in the 'degree' and 'avg_friends_degree' column of the `friend_data` Table that you just made? Does it say that (i) on average, they should be about the same; (ii) on average, `degree` should be bigger than `avg_friends_degree`; or (iii) on average, `avg_friends_degree` should be bigger than `degree`?

Write your answer here, replacing this text.

Question 9 Now make a scatter plot that shows at the relationship between the degree of each node (x axis) and the average degree of the node's friends (y axis).

```
In [21]: friend_data.scatter('degree', 'avg_friends_degree')
```



Question 10 Does the plot you just made seem consistent with what would be predicted from the friendship paradox?

Write your answer here, replacing this text.

Question 13 Make a scatterplot that compares the average degree (x axis) and the average neighbor degree (y axis) across all of the Add Health networks.

```
In [56]: ...
```

Question 14 Does the scatterplot you just made seem to be consistent with the friendship paradox?
Write your answer here, replacing this text.

Question 15 Make a histogram that shows, across all of the Add Health networks, the distribution of the fraction of nodes whose degree is smaller than the neighbors' average degree.

```
In [57]: ...
```

Question 16 Does the histogram you just made seem to be consistent with what you would expect from the friendship paradox?

Write your answer here, replacing this text.