Discussed before christmas break

- Making network connections based on links instead of probabilities
- When decreasing the nodes with x, decrease edges with (x**2/2)
- Making a popularity parameter

What I did in the last few days

- Reading more literature about multilayer social networks
- Mostly from the book of Dickens et al.,
- Which give a inside in how a multilayered network differs from a monolayered network and what the different kind of analysis one can make

Building the network

- Made all the layers of the multilayer network but than a smaller fraction
- Nodes/10, edges/(10**2/2)
- The neighbour layer and Workschool layer are random while household and family are random but symmetric

- 1 + links node has / total_links take it to a power p to make popularity parameter

Some analysis on the monolayer level

	edges	nodes	connected_nodes	avg indegree	max in degree	avg out degree	max out degree	avg clustercoefficient	max cluster coefficient	reciprocity
huishouden	141572	86100	50459	2.805684	57_1534, [0,20), Overig, 1	2.805684	57_1534, [0,20), Overig, 1	0.000191	44_664, [50,60), Overig, 3	1.000000
familie	136988	86100	56482	2.425339	57_2460, [0,20), Overig, 1	2.425339	57_2460, [0,20), Overig, 1	0.000251	128_132, [50,60), Autochtoon, 3	0.999898
buren	437425	86100	85508	5.115603	68_614, [20,30), Overig, 3	5.115603	68_484, [20,30), Overig, 3	0.000736	127_207, [50,60), Autochtoon, 2	0.009099
werkschool	587055	86100	79422	7.391592	52_133, [0,20), Overig, 2	7.391592	58_99, [0,20), Overig, 2	0.000219	34_221, [60,70), Overig, 2	0.000371

Looking for a way to make the monolayers into a multilayered network

- Found a package which does that but it had some problems with installing
- Otherwise maybe trying to implement it myself

Other thoughts

- Family and household are symmetric but neighbour and work/school should give a higher probability of connecting when there is already one connection
- When X -> Y then 0.8 probability that Y -> X
- Not sure how much a scale free network makes sense as the data is not scale free (10 neighbours, 100 closest colleague/classmate) but might still give interesting results

- Spatial data?
- look at the parameters and objective function
- look at the degree distribution (scale-free) for the bins
- Look at degree distibution whole network
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