

On Big Fishes in Small Ponds

Network Formation with Relative Concerns

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"I would rather be first in a small village in Gaul than second in command in Rome"
Attributed to Julius Caesar by Plutarchus, Life of Caesar.

We study the formation of networks when consumers care about their network neighborhood for two different reasons. First, the ‘intrinsic’ payoffs which a consumer gets out of the network depend on the talents of herself and the others in her network neighborhood. The payoff function allows for sub- and supermodularity and for positive or negative externalities. Second, consumers care about their relative position in their network neighborhood, i.e. about how their talent compares to the average talent in their network neighborhood. The population of consumers is heterogeneous on two different dimensions: talent and taste for relative position, and we allow for infinitely many types on both dimensions. We work with an infinite population and characterize the network structure by a many-to-many matching function.

We characterize a unique (up to zero mass deviations) stable network for the case of a typespace which is continuous for talent and binary for taste for status which can take 10 qualitatively different network structures. This analysis is then extended to the case where the typespace is continuous in both talent and taste for status. We then discuss the implications of these different equilibrium network structures for welfare and evolutionary fitness. We also consider the welfare effects of a progressive or regressive redistributive tax on the intrinsic payoffs of network formation. In which cases is progressive redistribution generating a ‘double dividend’ through relativistic network formation and in which cases is it counteracted by the same network formation process.

A last extension introduces endogenous effort choices into the network formation model. Consumers then anticipate the efforts which their partners will exert - after network formation – when they choose their optimal network links optimally.