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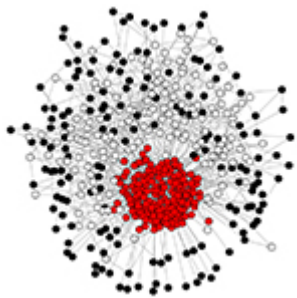
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A Micro-Foundation of Social Capital in Evolving Social Networks

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A social network confers benefits and advantages on individuals (and on groups); the literature refers to these benefits and advantages as social capital. An individual's social capital depends on its position in the network and on the shape of the network—but positions in the network and the shape of the network are determined endogenously and change as the network forms and evolves. This paper presents a micro-founded mathematical model of the evolution of a social network and of the social capital of individuals within the network. The evolution of the network and of social capital are driven by exogenous and endogenous processes—entry, meeting, linking—that have both random and deterministic components. These processes are influenced by the extent to which individuals are homophilic (prefer others of their own type), structurally opportunistic (prefer neighbors of neighbors to strangers), socially gregarious (desire more or fewer connections) and by the distribution of types in the society. In the analysis, we identify different kinds of social capital: bonding capital refers to links to others; popularity capital refers to links from others; bridging capital refers to connections between others. We show that each form of capital plays a different role and is affected differently by the characteristics of the society. Bonding capital is created by forming a circle of connections; homophily increases bonding capital because it makes this circle of connections more homogeneous. Popularity capital leads to preferential attachment : individuals who become popular tend to become more and more popular because others are more likely to link to them. Homophily creates inequality in the popularity capital attained by different social categories; more gregarious types of agents are more likely to become popular. However, in homophilic societies, individuals who belong to less gregarious, less opportunistic, or major types are likely to be more central in the network and thus acquire a bridging capital. And, while extreme homophily maximizes an individual's bonding capital, it also creates structural holes in the network, which hinder the exchange of ideas and information across social categories. Such structural holes represent a potential source of bridging capital: non-homophilic (tolerant or open-minded) individuals can fill these holes and broker interactions at the interface between different social categories.

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