

Nobility and Stupidity: Modeling the Evolution of Class Endogamy

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Abstract

Class endogamy is a phenomenon in which nobles only marry other nobles and commoners only marry other commoners. The origin of class endogamy, and of social stratification in general, is a major open question in archaeology. This paper implements a verbal model proposed by Marcus and Flannery as a computer model by generalizing and simplifying a mathematical model of marriage markets developed by Burdett and Coles. One force that can produce class endogamy occurs if agents are only willing to marry agents with status at least equal to $s'_{\max} - f(H(s))$, where s'_{\max} is the status of the highest-status agent willing to marry them and $f(H(s)) \geq 0$ is some function of the distribution of status H among those willing to marry an agent with status s . In fact, to produce endogamy, it suffices if $f(H(s)) = \epsilon$, where ϵ is a non-negative integer constant. Another such force results if children inherit the average of their parents' statuses. In contrast, status achieved over an agent's lifetime can be viewed as noise, analogous to mutation in biological evolution. I propose that just as biological evolution is the product of multiple forces such as natural selection, crossover, mutation, and genetic drift, class endogamy may have been produced by the interaction of the forces mentioned above, along with cultural factors such as chiefly ideology. Simulation results are presented, and potential areas for future research are sketched out. The validity of these models for any particular culture depends, of course, on whether these forces were actually operating in that society.