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## EVOLUTION, GAMES AND ENTREPRENEURSHIP THEORY (SUMMARY)

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## SUMMARY

### EVOLUTION, GAMES AND ENTREPRENEURSHIP THEORY

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#### **Principal Topic**

The aggregate level of entrepreneurial activity varies considerably between countries. Yet several studies show that these differences are persistent, indicating that the level of entrepreneurial activity may be a structural characteristic of a country (Acs, Arenius, Hay & Minniti, 2004). Assuming that entrepreneurial activities have the potential for improving the relative payoffs of those pursuing them and the productivity of society as a whole, it seems obvious that the forces of natural selection could have selected and retained them. However, most individuals never take steps towards self-employment and most of those who try, fail. We therefore pose the following question. Under which conditions would individual behaviors lead societies to display a relatively stable proportion of people who start businesses and people who do not? We address this issue from an evolutionary game theoretic perspective and argue that this framework suggests a new way of answering a question that still motivates entrepreneurial research, namely, whether entrepreneurs are different from other economic agents.

#### **Method**

We analyze two simple games that capture important features of the entrepreneurial phenomenon: a market entry game that captures its competitive aspect and a game in which individuals decide between a safe and a risky action, akin to occupational-choice situations. We examine pairwise interactions and games in which individuals play the field. Concomitantly, we consider homogeneous and heterogeneous populations in which individuals have varying payoffs and success likelihoods.

#### **Results and Implications**

We establish the conditions under which the games have mixed evolutionary stable strategies, so that in equilibrium only a percentage of the population engages in entrepreneurship. In these cases, populations consisting only of either entrepreneurs or non-entrepreneurs will be easily invaded by mixed populations. Regarding the question of whether entrepreneurs are different from other economic agents, our framework suggests looking at the payoffs to entrepreneurs. If individuals in a population are playing a mixed strategy equilibrium, then the pure strategies also involved should have equal expected payoffs. Hamilton (2000) reports insignificant pecuniary earnings differentials in self-employment and paid employment in America for the period 1983-1986. According to our analysis, this evidence should lead us not to reject the homogeneity assumption. We conclude that more research comparing earnings across markets and industrial sectors could shed light on the heterogeneity matter.

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