



**UNIVERSITA' DEGLI STUDI DI TRENTO**  
**DIPARTIMENTO DI INFORMATICA E STUDI AZIENDALI**

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**DISA Seminari**

**ROCK SEMINAR**

**Population Learning in a Model with Random Payoff  
Landscapes and Endogenous Networks.**

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S. Anna School of Advanced Studies - Pisa

Mercoledì 19 novembre, ore 17.00

Sala riunioni DISA

Population learning in dynamic economies with endogenous network formation has been traditionally studied in basic settings where agents face quite simple and predictable strategic situations (e.g. coordination). In this paper, we start instead to explore economies where the overall payoff landscape is very complicated (rugged). We propose a model where the payoff of any agent changes in an unpredictable way as soon as any small variation in the strategy configuration within her network occurs. We study population learning when agents: (i) are allowed to periodically adjust both the strategy to play in the game and their interaction network; (ii) employ some simple criteria (e.g. statistics such as MIN, MAX, MEAN, etc.) to myopically form expectations about their payoff under alternative strategy and network configurations. Computer simulations show that: (i) allowing for endogenous networks implies higher average payoff as compared to "frozen" networks; (ii) populations learn by employing network updating as a "global learning" device, while strategy updating is used to perform "fine tuning"; (iii) the statistics employed to evaluate payoffs strongly affect the efficiency of the system, i.e. convergence to a unique (multiple) steady-state(s); (iv) for some class of statistics (e.g. MIN or MAX), the likelihood of efficient population learning strongly depends on whether agents are change-averse or not in discriminating between options delivering the same expected payoff.

Referente

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