Frontiers of Entrepreneurship Research

Volume 37 | Issue 9
CHAPTER IX. STRATEGY

Article 13

6-10-2017

FREEZE OR FLEE? APPLYING NATURALLY OCCURRING SURVIVAL-RESPONSE ALGORITHMS TO ENTREPRENEURIAL ACTION AND OUTCOMES (INTERACTIVE PAPER)

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Recommended Citation
Ortiz-Hunt, Avery and Lerner, Daniel A. (2017) "FREEZE OR FLEE? APPLYING NATURALLY OCCURRING SURVIVAL-RESPONSE ALGORITHMS TO ENTREPRENEURIAL ACTION AND OUTCOMES (INTERACTIVE PAPER)," *Frontiers of Entrepreneurship Research*: Vol. 37 : Iss. 9 , Article 13.
Available at: https://digitalknowledge.babson.edu/fer/vol37/iss9/13

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INTERACTIVE PAPER

FREEZE OR FLEE? APPLYING NATURALLY OCCURRING SURVIVAL-RESPONSE ALGORITHMS TO ENTREPRENEURIAL ACTION AND OUTCOMES

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Principal Topic

Despite the extensive use of naturally-occurring, fitness-based algorithms in a wide range of disciplines, nothing has been presented to-date that leverages this modeling technique in entrepreneurship. This omission is unfortunate because few domains are more relevant to natural selection-inspired models than the survival of new organizations. In nature, an organism has three choices when confronted by a predator: fight, freeze, or flee. In competitive markets, new organizations face a similar set of survival choices. Turning to entrepreneurship, we ask: when should an entrepreneur freeze or flee in response to a threat? And, what does nature prescribe regarding these two strategies? We delve into this issue by testing a naturally occurring survival response algorithm drawn from observations of vulnerable organisms (*Sylvilagus floridanus (SF),* the Eastern Cottontail rabbit) responding to predatory threats. Our core prediction is that deviations from the strategy prescribed by nature will, on average, result in a higher rate of firm mortality.

Method

Our study derives an algorithm for fleeing or freezing from 21,740 observations of SF responding to the threat of passing predators. The videotaped observations, which were part of an IRB-approved study conducted by the U.S. Department of Fish and Wildlife Conservation at a large, research-oriented state university, were obtained from cameras located across an uninhabited 800-acre site. The algorithm/model, predicting which strategic action was adaptive, was then applied to a population of 1,416 market entrants located in the Western United States, 1986–2015. The dependent variable was firm survival, which was assessed through both a logistic regression and a Cox Proportional Hazard model.

Results and Implications

The results suggest that organizations have a higher probability of survival when they respond to threats in a fashion consistent with the algorithm derived from the naturally occurring observations of SF (all $p < .05$). However, there is evidence of a slight positive bias for electing to freeze; that is, entrepreneurial firms that freeze even when the algorithm prescribes fleeing experience higher survival rates than strictly adhering to the flee prescription. Our findings offer fascinating insights for scholars and practitioners into survival response actions and outcomes.

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