

## 第6回 MEE SEMINAR

### MATHEMATICAL ECOLOGY & EVOLUTION

2009年9月29日(火) 14:40~16:10

明治大学生田キャンパス第二校舎A館：A207

小田急小田原線 「生田駅」から徒歩10分

又は「向ヶ丘遊園」駅北口から「明治大学正門前」行きバスで10分終点下車

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September 29, 2009, 14:40~16:10

Meiji Univ. Ikuta campus A207

# Spatial dynamics of costly spite and cooperation by conformist transmission

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#### Abstract:

Consider a population of players involved in a two-strategy multi-player game. Each player copies the behavior of another player more likely when its payoff is smaller (social learning). The learning is skewed so that they tend to conform to the majority (conformist transmission). Frequency dynamics of the strategy is derived as a generalized replicator equation. When the effect of conformism is strong, the fixation to either strategy is locally stable. We study the outcome of spatial game where players randomly migrate, play a game locally and perform learning locally, based on the theory of traveling wave solution in a scalar reaction diffusion equation. By applying the result to spatial public goods game, we show not only that cooperation is less adaptive evolve under stronger conformist transmission but also that spite behavior that decreases the other players' payoff by paying cost evolves. Such spite behavior does not evolve when conformism is weak or absent. The result suggests that conformism might decrease the population average payoff and even promote evolutionary suicide.

**参加自由です。皆様のお越しをお待ちしております。**

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