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Jan Rychtar* (rychtar@uncg.edu), Department of Mathematics and Statistics, UNCG, Greensboro, NC 27402, and **Mark Broom**, Department of Mathematics, University of Sussex, Brighton, England. *Mathematical models of kleptoparasiting behavior.*

Kleptoparasitism is the stealing of food by one animal from another. This has been modeled in various ways before, but all previous models have only allowed contests between two individuals. We design and analyze a model of kleptoparasitism where individuals are allowed to fight in groups of more than two, as often occurs in real populations. We find the equilibrium distribution of the population amongst various behavioral states, conditional upon the strategies played and environmental parameters, and then find evolutionarily stable challenging strategies. We find that there is always at least one evolutionary stable strategy, but sometimes there are two or more, and discuss the circumstances when particular ESSs occur, and when there are likely to be multiple ESSs. (Received September 16, 2008)