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## Game theory's role in role-playing

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### Abstract

Green (*International Journal of Forecasting*, 18, 321–344) considers one method of testing the predictive value of game theory for conflict situations, and finds that role-playing does better. I discuss a second method, one that combines game theory and role-playing. This method has already been used with success to solve practical business problems. I argue game theory will have to play a critical part if role-playing is to be reliable for forecasting conflict outcomes. Existing research that combines game theory and experimental economics holds important lessons for the design of role-playing exercises. © 2002 International Institute of Forecasters. Published by Elsevier Science B.V. All rights reserved.

*Keywords:* Game theory; Role-playing

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### 1. Introduction

If I needed advice on building a rocket, I wouldn't ask a physicist. I would ask an engineer. Physics is critical to a successful launch. But to build a rocket, you also need to know something about material science, chemistry, and so on. It is the engineer who synthesizes the necessary knowledge for practical use. In the same way, if I wanted to forecast a real-world conflict, I wouldn't ask the advice of a game theorist. Strategic behavior, the object of game theory, is surely important, but so too psychology, institutional factors, and so on.

But then, for conflict situations, who is the equivalent of the engineer? One answer would

be domain experts; we might, for instance, forecast political conflicts using politicians. The Green (2002) study suggests an intriguing alternative, another way of combining the knowledge necessary to obtain a forecast: role-playing. Unlike myself (a game theorist and an experimental economist), Green conceives of role-playing and game theory as competing methods:

Role-playing and game theory depend on contrasting assumptions about modeling conflict situations. Those who adopt a game theoretic approach must assume that the complexity of a conflict can be radically reduced without losing predictive validity. The role-play approach, on the other hand, incorporates complexity and emotion into a simulation (Table 1 and Fig. 1).

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Table 1  
Solution to simulation experiment 9.3

Report 1:	The histogram of the sampling distribution of the median looks like a normal distribution.				
Report 2/3:	Statistic	Theoretical mean	Observed mean	Theoretical standard deviation	Observation standard deviation
	Mean	100	99.9017	8.3333 <sup>a</sup>	8.2345
	Median	100	99.6683	10.4416 <sup>b</sup>	10.1993
Report 4:	The experimental sampling distributions are reasonable approximations of the theoretical sampling distributions. Both sampling distributions are normal, but the median has a larger spread than the mean.				

<sup>a</sup>  $25/\sqrt{9}$ .

<sup>b</sup>  $\sqrt{1.57*25/\sqrt{9}}$ .

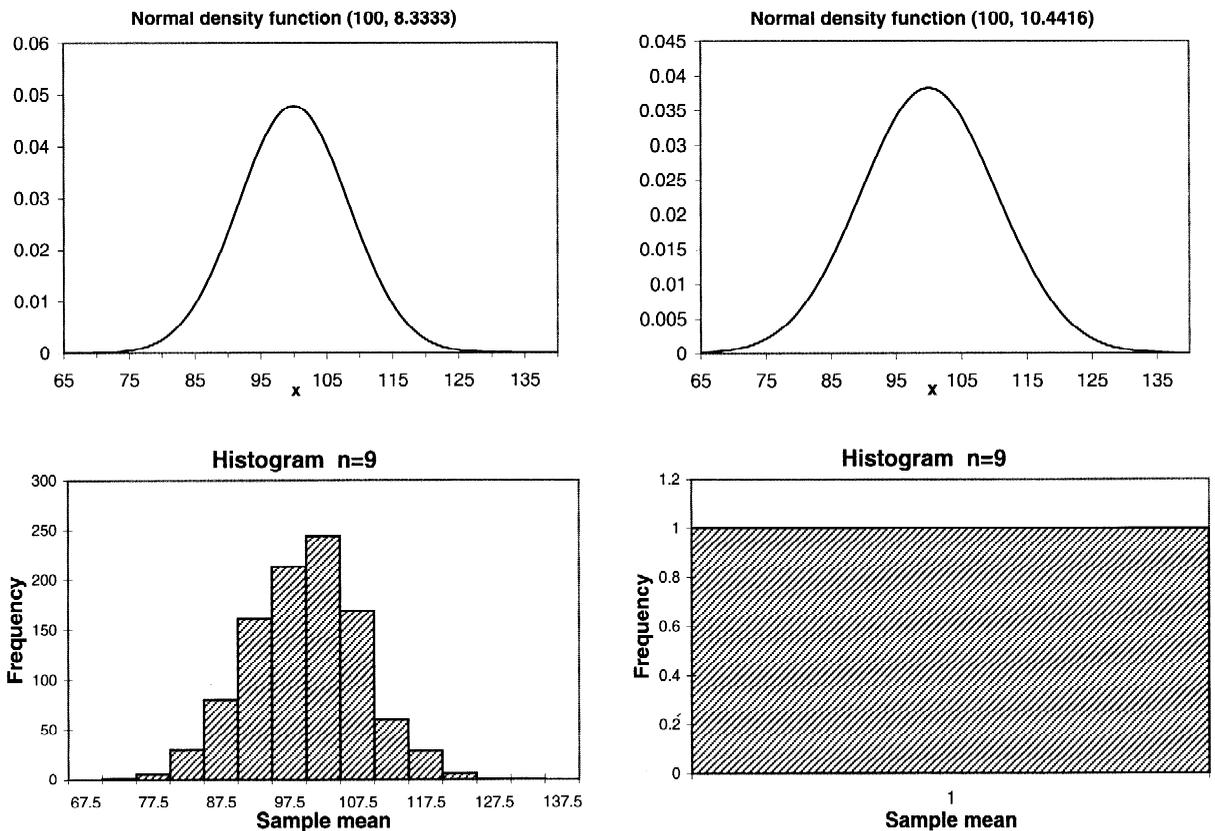


Fig. 1. Solution to Simulation Experiment 9.3.

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