

Analysis of Gambling Behavior

Volume 2

Article 11

2008

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Charles A. Lyons
Eastern Oregon University, clyons@eou.edu

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Recommended Citation

Lyons, Charles A. (2008) "Commentary - Seeming To Gamble: Commentary on Fantino And Stolarz-Fantino's "Gambling: Sometimes Unseemingly; Not What It Seems";" *Analysis of Gambling Behavior*. Vol. 2 , Article 11.

Available at: <https://repository.stcloudstate.edu/agb/vol2/iss2/11>

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COMMENTARY

SEEMING TO GAMBLE: COMMENTARY ON FANTINO AND STOLARZ-FANTINO'S "GAMBLING: SOMETIMES UNSEEMLY; NOT WHAT IT SEEMS"

Charles A. Lyons
Eastern Oregon University

Those interested in analyzing the field of activities and contexts that comprise gambling will welcome the assessment of Fantino and Stolarz-Fantino. Their recognition that behavior analysts are uniquely prepared to contribute to our understanding of gambling, and by extension to other sorts of "addictive" disorders as well, echoes what the researchers and theorists involved in this journal have been proclaiming for more than a decade. The added voices of Fantino and Stolarz-Fantino will certainly improve on our efforts to disseminate that message.

I suspect that we all agree about the importance of understanding the basic processes and variables involved. As Fantino and Stolarz-Fantino note in their discussion of the sunk-cost effect, the salience of contingencies is central to the initiation and persistence of gambling. By design, gambling teaches players to tolerate loss. A history of intermittent reinforcement undoubtedly contributes to persistence in betting, as does the conditioned reinforcing effect of the "near miss" (in which losing in certain ways actually strengthens rather than weakens play). One task we face is to make our analyses as relevant for the larger scientific community as those of our more physiologically-oriented colleagues. A

recent assessment of the neural activity triggered by near-miss stimuli during slot machine play (Clark, Lawrence, Astley-Jones, & Gray, 2009) is only the latest of a series of papers on the brain correlates of gambling that appeal to the wider interest in neurological than environmental variables. As we demonstrate the practical value of our approach, perhaps behavioral explanations will find a more positive reception.

The analysis is also one that, like all self-control issues, concerns discounting of value as a function of time or probability, as well as choice between competing activities. If it is true that the unit of gambling could be defined as the string of losses that culminate in a win (Rachlin, 1990), then gambling involves both variable probabilities and variable delays – and there is some reason to think that these have opposite effects on the discounting of rewards (Green, Myerson, & Ostaszewski, 1999). In their analysis, Fantino and Stolarz-Fantino make an interesting and important observation about the form of discount functions across different commodities: the steepest discounting occurs with perishable commodities that serve a direct metabolic function, with shallower discounting for commodities that serve an exchange function (e.g., money). The analysis of discounting among gamblers remains incomplete, the authors note, partly due to questions about the conditions under which we get different degrees of discounting.

Address Correspondence to:
Charles A Lyons
Department of Psychology
Eastern Oregon University
La Grande, Oregon 97850
E-mail: clyons@eou.edu

Among the most important of these conditions requiring clarification is debt, which has not yet been adequately modeled in our methods. As an establishing or motivating operation, debt is clearly related to steeper temporal discounting, chasing of losses, and lower risk aversion, but it remains an elusive factor for experimental analysis. We simply cannot allow subjects in our studies to encounter the significant financial consequences that define actual gambling, let alone pathological gambling. As the authors note, humans are widely held to be risk-averse rather than risk-prone in the “real” world. In the analogues of the laboratory, however, subjects cannot (for ethical reasons) incur any net loss or fall into debt, and so there is no meaningful risk to a wager. That is an important problem for any analysis of gambling based on risk aversion and discounted value; what we study in an experiment may only *seem* like gambling.

Fortunately, we have clever colleagues and powerful techniques, and progress is being made toward a comprehensive behavioral model. Our experimental analyses should eventually be as strong as our conceptual analyses of gambling. Fantino and Stolarz-Fantino suggest several areas for future research: the salience of gambling contingencies, differences between players and non-players, the effects of instructions, and other social, emotional, and verbal influences, all part of the “rich tapestry” of controlling variables. A few more might be specified. Comparisons of different games in terms of “addictive” potential could add to our understanding. And beyond the analysis of individual wagers, we have yet to turn our attention to the other form of gambling, the one that professionals play. For them, gambling is very much a prediction of what other people will do; the behavior called *bluffing* plays no part in the analysis of slot machines, video poker, or the Powerball lottery. In “real”

poker, one can win with the worst hand at the table. We have much to do.

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