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Commentary - The Important Contingencies In Gambling Are Seldom Clear: Avoiding The Rational Choice Trap

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COMMENTARY

THE IMPORTANT CONTINGENCIES IN GAMBLING ARE SELDOM CLEAR: AVOIDING THE RATIONAL CHOICE TRAP

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Fantino and Stolarz-Fantino ask how clear the contingencies are in a standard gambling situation, and suggest that when contingencies are made clear, both people and pigeons will choose in a "rational" manner appropriate to the constraints imposed by the prevailing contingencies. But, then they note that human decision making is not terribly rational or logical. Gambling regulations specify that parameters such as payout amount and odds of winning be clearly communicated to gamblers; gambling guidebooks, tip sheets and websites are readily available. Yet, gambling abounds, and problem gambling affects 2.3% of the USA adult population. Nearly four out of five US adults report having gambled. Of those, 12.2% of frequent gamblers become problem gamblers while 4.3% become pathological gamblers. Pathological gamblers report annual losses up to $5,000 (Kessler et al., 2008). Clearly, many people are not choosing rationally. Fantino and Stolarz-Fantino suggest that answers may be found in the gambler's head or in the gambler's social milieu. Or, in other words, we could be rational, we may indeed want to be rational, but the buzzing in our heads and buzzing by our fellow creatures around us are holding us back. And with that we step right into the jaws of the rational choice trap.

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Rational choice theory has dominated economics and discourse about decision making for decades. Herrnstein (1990) points out, rational choice theory may be an excellent prescriptive theory (how we should behave), but fails as a descriptive theory (how we actually behave). We argue that it also fails as a prescriptive theory, largely because rational choice theory ignores our evolved, naturally selected decision processes, and privileges a cognitive calculus as the central decision mechanism. Rational choice theory may be a better prescription for industrial automatons than for evolved biological organisms. As long as it is assumed that humans *should* or *do* want to be "rational" in this classical manner, our attempts to understand and ameliorate problem gambling will remain trapped.

Consider first the problem of probability. Although probabilities involved in games of chance are easily accessed, stated probabilities do not seem to exert much control over our behavior. It could be the buzzing in our heads that interferes with calculations. Or, it could be that the rational representation of probabilities in terms of odds is not how our species has come to understand probability. Cosmides and Tooby (1996) have shown that when decision problems are expressed in terms of probabilities, we choose "irrationally." But when the same problems are expressed as frequencies (occurrences over time) we seem to get it right most of the time. Why should a seemingly simple verbal adjustment make such a difference? *Homo sapiens* evolved learning about probabilities by

sitting on a rock, watching prey gambol down different sides of a valley, noting the number that went in each direction, and choosing where to hunt based on these observations. We didn't perform the calculus of probabilities with sticks in the sand. Taking this analysis a step further, it may be that we are much more sensitive to amount, and count, than we are to probability; but ironically the contingencies of gambling are expressed in terms of probability! Lyons and Ghezzi (1995) provide some excellent field evidence here, showing that wagers in state lotteries are largely insensitive to changes in probability but are very sensitive to changes in amount of payout. The contingencies may be clear to a calculator, but not to most humans.

Consider second the problem of delay. All real gambles are delays; the one-shot stated probability type problems that seem ubiquitous in the literature are minimally informative at best. No real person gambles once, and never before or never hereafter, based on stated probabilities, except in a modern cognitive psychology laboratory. Gambling is either used in the progressive tense (indicates ongoing action) or perfect progressive tense (indicates action that started in the past, continues in the present, and will be completed at some time in the future), implying repeated plays over time. Once time enters the analysis, delay is only seconds behind. It is a good bet that delay discounting may have much more to do with gambling than we suspect. For example, consider the 'near miss' effect in video poker (in which cards close to those needed for a win appear in the display). These cards appear on nearly every play, much more immediately than any wins, and are implicated in the especially entrapping nature of this game (Parke & Griffiths, 2004). Does the 'near miss' serve as a sufficient fairly immediate conditioned reinforcer to maintain high levels of play despite heavy losses? As another example, the 'illusion of control' and other 'irrational' thinking found in gambling (e.g., self statements about winning) may also serve as fairly immediate conditioned reinforcers that maintain play. Humans are not very sensitive to the passage of time without the aid of external stimuli (DiClemente & Hantula, 2003); thus it is not surprising that the modern casino is bereft of clocks, and windowless; like a trap.

We wager that answers to the puzzles posed by problem gambling lie somewhere at the intersection of amount, probability, delay, and personal reinforcement history, not trapped inside gamblers' heads. Indeed, it is only when we stop viewing problem gambling as a costly violation of self-interest and start viewing it as the product of a complex interplay of naturally selected adaptations will we successfully avoid the enticing jaws of the rational choice trap.

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