COMMENTARY

VERBAL RELATIONS AND THE BEHAVIOR ANALYSIS OF GAMBLING

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Photographs of rats pressing levers and people pressing the "spin" button on slot machines are commonly juxtaposed in textbook and media portrayals of behavior-analytic approaches to gambling. Such portrayals appear to explain the lure and persistence of gambling in direct-contingency terms by appealing solely to the operating schedule of reinforcement. It is perhaps understandable then, that these portrayals may leave the lay community and researchers from other disciplines with the impression that behavior analysis has already "solved" gambling and moved its research attention elsewhere.

Weatherly and Dixon's article is, therefore, an attempt to update such portrayals and to provide a contemporary behavior-analytic account of gambling. Their scholarly account shows that behavior analysis has emphasises more than just direct-contingency processes. The feature of Weatherly and Dixon's model that we wish to comment on is their emphasis on verbal behavior as the missing mechanism

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or process in previous behavioural accounts of gambling. We are in complete agreement with the authors on this point, and suggest that the traditional emphasis on directcontingency accounts was based, at least in part, on the strategic assumptions governing operant research and by the prevailing definition of verbal behavior (Dymond, Roche, & Barnes-Holmes, 2003). Both factors may have hampered the growth of the experimental analysis of gambling.

Weatherly and Dixon do not functionally define what it is that they refer to by "verbal", "rules", or "verbal behavior". In view of the importance that verbal behavior plays in Weatherly and Dixon's argument, a functional definition of verbal events is essential. Although a detailed analysis of this issue is beyond the scope of the present commentary, both Skinner's (1957) definition of verbal behavior and the resulting account of rules as mere discriminative stimuli may actually have hampered research on gambling because they are too broad (Dymond, O'Hora, Whelan, & O'Donovan, 2006; O'Hora & Barnes-Holmes, 2001). For example, the Skinnerian definition of verbal behavior includes all responses on gambling tasks:

> Our definition of verbal behavior incidentally includes the behavior of experimental animals where reinforcements are

supplied by an experimenter or by an apparatus designed to establish contingencies which resemble those maintained by the normal listener. The animal and experimenter comprise a small but genuine verbal community (1957, footnote 11, p. 108).

Employing Skinner's definition, it appears that many kinds of gambling behavior include "verbal behavior". Thus, researchers who seek to apply Skinner's taxonomy to gambling actually return to where they started: in the nonhuman, direct-contingency, and lab. If Weatherly and Dixon's account is to avoid the pitfalls of the past, then a new approach is needed to analyse and understand the role of verbal behavior in gambling.

Research on derived relational responding provides a modern functional-analytic definition of verbal stimuli as stimuli that acquire some of their functions by virtue of participation in relational frames. Functionally defining verbal behavior in this way allows for an empirical investigation of the intriguing possibility that, for verbally able humans, all gambling is verbal activity. By this we mean that many of the events that induce and maintain gambling are "discriminative-like", or verbally constructed, and that the behavioral processes involved differ from those seen with nonhumans. We see future research on gambling progressing in tandem with research on derived relational responding. While nonhuman research still has a role to play, it is in the arena of human operant behavior that the key research advances are needed.

Gambling may initially come under the control of apparent discriminative stimuli such as instructions or self-statements but, as Weatherly and Dixon themselves admit, if this is the case, then "their influence should be open to change through the consequences experienced by the gambler following the rule". Likewise, talk-based therapy for pathological gambling that directly challenges the content of self-verbalizations should be uniformly effective. The misery and debt that

result from a gambling problem suggests that this simply does not happen. Direct-acting contingencies of reinforcement and punishment do not stop people from risking all their worldly possessions on the roll of a dice.

Weatherly and Dixon's account highlights that behavior analysis needs a fresh approach to understanding the role played by verbal behavior in the analysis of gambling. Only further empirical research will show whether or not an approach based on verbal behavior as derived relational responding will prove useful in the behavior analysis of gambling.

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