

SEABA 2011

Invited Addresses

(Last Updated 9/13/11)

The Zoo and You:

Why behavior analysts should be interested in zoological institutions.

Christina Alligood, *Disney World*

In recent years, several authors have argued that zoos should be interested in behavior analysis (e.g., Maple 2007, Bloomsmith et al. 2007). But why should behavior analysts be interested in zoos? Modern zoological institutions place a growing emphasis on animal welfare, with goals including encouraging species-typical behavior, introducing novel sensory stimulation, and providing opportunities for choices within animal environments. In pursuit of these goals, zoos have recruited experts in specialized areas such as nutrition, pathology, endocrinology, aquatic medicine, and water chemistry. Although behavioral outcomes are central to animal welfare goals, the roster of experts at a given zoo rarely includes a behavior analyst. In this presentation, I will discuss the influence of behavior analysis on current practices at zoological institutions, including some examples of training and environmental enrichment at Disney's Animal Kingdom®. I will also suggest some ways in which the zoo setting presents golden opportunities for applications of behavior analysis.

The Law of Effect: Time to repeal.

Michael Davison, *University of Auckland*

Experimental, applied, and the practice of, behavior analysis are strongly characterized by their reliance on the notion of reinforcers and the behavior-strengthening effects of the process of reinforcement. However, rational thought shows that the Law of Effect was never a good idea; and both historical and recent empirical results demonstrate its failings. In particular, evidence that suggests that behavior is strengthened by its consequences is clearly misleading. I will review a wide range of evidence and suggest an alternative approach that may understand behavior better, and which would allow us to make links with associative conditioning, evolutionary and comparative psychology, and even with topics in cognitive psychology.

What Does Behavior Analysis Have to Offer in the Fight Against Obesity?

**Sungwoo Kahng, Nicole Hausman, Alyssa Fisher
*Kennedy Krieger Institute, Johns Hopkins University School of Medicine,
and University of Maryland - Baltimore Co.***

Approximately 2/3 of the adults and 1/3 of children living in the United States are overweight or obese. Obesity is associated with an increased risk for a variety of medical problems such as diabetes, heart disease, and high blood pressure as well as psychosocial

problems such as poor academic performance, social isolation, and depression. Medical costs alone for obesity related problems are estimated at \$147 billion per year. Although multiple factors (e.g., genetics, environment, etc.) influence whether or not someone becomes overweight or obese, behavioral factors play a prominent role given that a positive energy balance (energy intake is greater than energy expenditure) leads to weight gain. Behavior analysts are uniquely positioned to help address obesity-related behaviors given the abundance of research knowledge on changing the most challenging behaviors. The purpose of this presentation is to provide an overview on obesity. Two studies, one comparing methods of teaching portion size discrimination and another evaluating the effects of nutritional feedback on restaurant ordering will be presented as a means of fostering more behavior analytic involvement in obesity research and treatment.

Obtaining Emergent Relations with Children with Autism

Tiffany Kodak, *Munroe-Meyer Institute, University of Oregon*

There are a variety of procedures that have been shown to produce emergent relations in individuals with developmental disabilities. Using procedures that establish emergent relations in this population is important to increase the efficiency of academic instruction. It may be possible to increase instructional efficiency further by combining several of these procedures. I will present two studies in which I embedded a teaching strategy called instructive feedback into a stimulus equivalence preparation to increase the efficiency with which emergent relations were obtained. The A-B relations were trained using match-to-sample procedures with B-C relations embedded in trials via instructive feedback. Results indicated that targets presented during instructive feedback were acquired in half the number of sessions as the match-to-sample (MTS) stimuli. In addition, all of the participants acquired the untrained relations. Because stimuli presented in the MTS format required considerable time to master, I conducted a second evaluation during which I remove the MTS training trials and conducted stimulus pairings. That is, I simply held up pictures or words and stated the name of the item on the card. The child was not required to respond, and reinforcement was not provided for responding. I conducted baseline sessions throughout the evaluation to determine the point at which participants acquired the target stimuli and other, untrained relations. The results of three participants showed that all stimuli presented during stimulus pairings were mastered, and these participants acquired all of the untrained relations as well. The results will be discussed in relation to the theories that may account for the emergence of untrained relations, and I will discuss how to incorporate these procedures into skill-acquisition programs to increase instructional efficiency.

The F-word in model-building and behavior analysis

Elizabeth Kyonka, *West Virginia University*

Like “preferring, choosing, discriminating and matching,” (Skinner, 1950), ‘freedom’ could be considered a dirty word for radical behaviorists. However, statistical freedom is an essential component of any scientific advancement, even when the science does not involve statistical analyses. All scientific advancement can be construed as decisions about which

among competing models provides the best description of obtained data. Regardless what techniques are used to evaluate the models, the scientist must decide how to balance the tradeoff between freedom and fit. Moreover, when characterizing patterns of behavior, all equally 'good' fits are not equal: the model that is the least wrong is not necessarily the same as the model that is most often correct. Using patterns of responding generated by pigeons in peak interval schedules as an example, I will discuss criteria for model selection, graphical and statistical techniques for evaluating models, and the roles of fit, freedom and decision making in the advancement of behavior-analytic science.

Letta Meta Make Ya Betta!

Timothy Ludwig, *Appalachian State University*

Dr. Ludwig is currently serving editor of the *Journal of Organizational Behavior Management* and is the past President of the Organizational Behavior Management Network. He is the author of dozens of scholarly articles that empirically document the successes of methods to improve safety and quality in industry through behavior-based solutions. His books include *Intervening to Improve the Safety of Occupational Driving* which reviewed 10 years of behavior-based safety in the product delivery industry and *Behavioral Systems: Understanding Complexity in Organizations* which presented contributions from 15 top scholars and practitioners in the field of Behavior Systems Analysis. His upcoming books include *Best-in-Class Safety* which benchmarks how companies with the best safety records succeed and *Ticklish Safety Tales: Stories with a Purpose* which draws on his experience working internationally with safety programs. Dr. Ludwig serves on the Cambridge Center for Behavioral Studies' Behavioral Safety Accreditation Board that reviews best-in-industry safety practices and offers independent, objective feedback on safety programs.

Drug-cue associative learning in animal models of drug addiction

Ronald See, *Medical University of South Carolina*

Learned associations that occur during drug addiction can later manifest as trigger factors in relapse to renewed drug-seeking and drug-taking behavior. The process of conditioned-relapse has been successfully modeled in animals with a history of chronic drug self-administration and subsequent withdrawal, followed by renewed drug-seeking using conditioned stimuli previously paired with the abused drug. This lecture will present the behavioral paradigm and the corticostriatolimbic neural circuitry that underlies the learning and retrieval of drug-cue associations that mediate compulsive drug-seeking.

Malignant Side-Effects of Null-Hypothesis Significance Testing (NHST)

Marc Branch, *University of Florida*

Despite decades of irrefutable argument indicating that null-hypothesis significance testing (NHST) provides essentially no useful information, that approach to data analysis and its dictates about experimental design continue unabated and as the dominant approach. Statistical significance is frequently (or almost uniformly) required for

publication in psychology (except in a few limited domains like psychophysics and behavior analysis). Even those who recognize that significance testing provides, for all practical purposes, no useful information about either the reliability or generality of research findings, a prevailing view is that NHST is at least benign. In this presentation, I begin by reiterating the irrefutable arguments because survey data indicate that most practicing behavioral scientists remain unaware of them. I then summarize other deleterious effects of NHST, here called “side effects” to illustrate how NHST has blocked the development of psychology as a cumulative and effective science, and has (inadvertently, I hope) resulted in a diversion from the stated goals of the field, or at least in the development of two differentiable, but usually conflated, subject matters. That is, I argue that instead of benign it has been malignant. I conclude by suggesting that NHST be de-emphasized (or even jettisoned) as an approach, and offering an alternative set of tactics.

Market Failure and The Malign Hand

John Staddon, *Duke University*

Reinforcement theory has been applied experimentally to several aspects of human behavior, usually with limited success. Rewards are small and in normal life the contingencies involved are hard to specify. But in financial markets the rewards are large and the contingencies, financial ‘products’ as they are called, quite well defined. Financial markets are said to be ‘efficient’ and operate according to Adam Smith’s *invisible hand*. But markets often fail, most notably in 2008 in the US and around the world. Many processes contribute to market failure and I call them collectively the *malign hand*. I show how thinking of market behavior as adaptation to particular kinds of reinforcement contingencies (rather than ‘rational’ outcome maximizing) can make sense of market failure in the US mortgage market. I conclude with four rules that might prevent financial crises in the future.

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