

SQAB



Society for the Quantitative Analyses of Behavior

San Antonio



38th Annual Meeting, May 21 - May 23, 2015
Henry B. Gonzalez Convention Center (San Antonio, Texas)

The Society for the Quantitative Analyses of Behavior (SQAB) was founded in 1978 by M. L. Commons and J. A. Nevin to present symposia and publish material which bring a quantitative analysis to bear on the understanding of behavior. This International Society holds its annual meeting in conjunction with the Association for Behavior Analysis International (ABAI). Talks at SQAB focus on the development and use of mathematical formulations to: characterize one or more dimensions of an obtained data set, derive predictions to be compared with data, and generate novel data analyses.

You can retrieve more information about SQAB at our website: www.sqab.org

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Welcome to SQAB 2015

Thursday Evening, May 21 – Room 102 A/B (street level)
1st Poster Session, Cash Bar & Registration (5:00-8:00 pm)

(Poster abstracts begin on page 12)

Friday, May 22 – Room 103 A/B (street level)

7:00-8:30 am Registration, Coffee & Pastries

8:30 am President's Introduction
 Timothy Shahan
 Utah State University (USA)



Quantitative Analysis of Behavior

8:45-9:20 am How Neuroscience Benefits the Quantitative Analysis of Behavior
 John W. Donahoe
University of Massachusetts/Amherst (USA)

Behavior analysis, which was identified by Skinner as a branch of biology, has mutually beneficial relations with neuroscience. Here, I first describe the general nature of the relation between these two branches of biology and how behavior analysis differs from artificial intelligence and computer science in this respect. Then, I identify several specific areas of productive interchange between behavior analysis and neuroscience, both with regard to experimental analysis and to scientific interpretation. In experimental analysis, these include the reinforcement process (including conditioned reinforcement) and the design of neural networks. In scientific interpretation, these include the formation of equivalence classes, the acquisition of verbal behavior, and the understanding of memory (specifically, remembering). Some within our field regard neuroscience as providing “only mechanism” but both subdisciplines of biology would profit from a co-operative interchange.

9:20-9:55 am The Utility of Behavior Economics in Understanding Obesity: Expanding the Animal Model
 Erin B. Rasmussen
Idaho State University (USA)

Animal models of obesity are numerous and diverse in terms of identifying neural and peripheral mechanisms that are specifically related to obesity; however, they are limited when it comes to behavior. The standard behavioral measure in most animal models is food consumption in a free-feeding environment. While easy and cost-effective for the researcher, the free-feeding environment omits some of the most important features of obesity-related food consumption—namely, properties of food availability, such as effort and delay to food. Studies from behavior economics expand behavioral measures by identifying and more fully characterizing specific behavioral mechanisms that are relevant to food availability. First, economic demand analysis allows researchers to understand the role of effort in food procurement, and how physiological and neural mechanisms may play a role in effort-related food procurement. Second, studies on delay discounting contribute to a growing literature that shows that sensitivity to delayed food- and food-related outcomes is likely a fundamental process of obesity. Together, these processes expand the animal model in a manner that better portrays how environmental factors influence obesity-related food consumption.

9:55-10:30 am Extending Unified-Theory-of-Reinforcement Neural Networks to Steady-State Operant Behavior
 Nick Calvin
Emory University (USA)

Unified theory of reinforcement neural networks were developed 20 years ago to test the hypothesis that operant and respondent learning may occur via the same neural mechanisms. These networks have shown conditioning during operant reinforcement simulations, but their steady-state operant behavior has not been assessed to date. To evaluate the steady-state behavior of these networks, computer simulations were run to measure their behavior in an operant chamber. The quantitative law of effect and comparison equations were fitted to the observed rates of target behavior and reinforcement. Prior to these simulations, a genetic algorithm was used to determine ideal parameter values for the neural networks. The genetic algorithm defined fit neural networks as those that maximized the number of obtained reinforcers while also minimizing the number of responses. The behavior of the evolved neural networks was well described by the quantitative law of effect, but with patterns in the residuals.

10:30-10:55 am Break - Refreshments

10:55-11:30 am “Reinforcing” Properties of Water in the Schedule-induced Drinking Situation
Ricard Pellón
National Distance Education University (Spain)

A series of recent studies from our laboratory add to some preceding literature on the potential role of water (in addition to food) as a positive reinforcer in the schedule-induced drinking situation, thus suggesting that adjunctive behaviors might have motivational properties that make their engagement a preferable alternative. I will review some of these experiments on conditioned reinforcement and concurrent chains. However, adjunctive behaviors might have a different functionality (making their engagement motivational, “reinforcing”) so that they permit a better time adjustment under temporal schedules. We are currently collecting data on different aspects of this general function and I will present the advancement that we have achieved so far.

11:30-12:05 An Expectancy-Based Decision Model for Choice in Concurrent Chains
Randolph C. Grace
University of Canterbury (NZ)

According to the cumulative decision model (CDM; Grace & McLean, 2006; Christensen & Grace 2010), choice in concurrent chains is predicted as the aggregate result of ‘decisions’ in which delays to reinforcement are judged as short or long relative to a criterion. Here I describe a generalization of the model in which decisions are made based on overall value or reward expectancy, defined as the ratio of reinforcement magnitude and delay. The resulting model provides an excellent quantitative account of studies on choice between outcomes that differ in delay and magnitude (self-control), as well as reinforcement probability. If the criterion depends on the informativeness of the terminal-link stimuli, the model explains signalling effects in probabilistic reinforcement, suboptimal choice for unreliable outcomes, and preference for multiple vs mixed schedules, and how these are modulated by initial-link duration. The model predicts the magnitude effect in delay discounting (Grace, Sargisson & White, 2012) and explains failures to find it in other nonhuman studies (e.g., Oliveira, Green & Myerson, 2014). The model predicts a reverse magnitude effect in probability discounting corresponding to human data (Green, Myerson & Ostaszewski, 1999), which is confirmed in two experiments with pigeons, showing that a single process can account for delay and probability discounting with nonhumans. Behavioural attraction in concurrent chains may provide a model for the evolutionary origins of learned value or utility in decision making.

12:05-1:45 pm

Lunch

The SQAB Executive Committee will meet during lunch



1:45-2:20 pm Discriminating Reinforcers in Time and Space
Sarah Cowie
University of Auckland (NZ)

Both the response-reinforcer and stimulus-reinforcer relation are important in discrimination learning; differential responding requires a minimum of two discriminably-different stimuli and two discriminably-different schedules of reinforcement. When elapsed time is a discriminative stimulus for the likely availability of a reinforcer, choice over time may be modeled by an extension of the Davison and Nevin (1999) model that assumes that choice deviates from the local reinforcer ratio because the animal makes a range of estimates of times associated with obtained reinforcers, and thus incorrectly discriminates the stimulus-reinforcer relation. The addition of a parameter representing error in discriminating the response-reinforcer relation enhances the ability of this model to describe responding on temporal-discrimination tasks. Timing, like other conditional discriminations, is choice under the joint discriminative control of elapsed time and differential reinforcement, and understanding the role of differential reinforcement is critical to understanding control by elapsing time.

2:20-2:55 pm Stimulus Control in Sensorimotor Decisions
Pablo Covarrubias & François Tonneau
Universidad de Guadalajara, (México) and Universidade Federal do Pará, (Brasil)

Most analyzes of stimulus control in behavior analysis have focused on the rate at which a single behavioral unit (say, key pecking) is emitted in the presence of different stimuli. With the exception of a handful of reports on spatial variability during reinforcement and extinction, the spatial properties of behavior and the extent to which they show discrete or continuous generalization patterns have been little studied. Here we report new analyzes of spatial behavior in a sandbox variant of the Piagetian A-not-B task, a task implemented with (Study 1) and without (Study 2) visual feedback. The child's response during testing consisted of searching for an object buried in a sandbox, and thus allowed measurement of behavior along a continuous spatial dimension. In Study 1, the response distribution observed in testing was multimodal with two main peaks centered around A and B. In Study 2, the response distribution in testing showed only one peak intermediate between A and B. We discuss the theoretical implications of these findings for cognitive psychology as well as behavior analysis.

2:55-3:15 pm Break-Refreshments

3:15 pm It's Time to Go: Saccadic Latencies and Choice Models
Laurent Madelain
Université Charles-de-Gaulle Lille III (France)

Saccades are voluntary eye movements used to acquire the retinal image of an object on the fovea, the high-acuity region of the retina. Saccadic reaction time is usually short and the appearance of a target in the visual field typically elicits saccades with a latency averaging 200 ms. The study of saccadic latency provides a useful quantitative tool for studying choices: First, it appears that this figure is surprisingly long when compared with the neural delays associated with visual and motor processing; Second, saccadic latencies are highly sensitive to reinforcement contingencies and may be experimentally manipulated quite easily. I will review some experimental data indicating that saccade reaction time depends on the functional consequences of eye movements and evidence that reaction time may follow the matching law when using concurrent temporal reinforcement schedules.

3:50-4:25 pm

Introducing a Method for Quantifying the Allocation of Attention: The Results Reveal Commonalities with Quantitative Aspects of Choice
Gene M. Heyman, Katherine Grisanzio, & Victor Liang
Boston College (USA)

We tested if attention allocation and choice shared common features in analogous procedures. This test requires a method for measuring attention allocation on a scale that varies from 0.0 to 1.0 (as is the case for choice), but no such scale was available. We solved this problem with an equation that models the experimental procedure and whose solution is a measure of the allocation of attention. The procedure is analogous to two-armed bandit choice procedure. Subjects were asked to attend to one of two simultaneous, adjacent, small, briefly presented stimuli. (The average exposure time was 125 msec, and each stimulus subtended a visual angle that was less than $0.95 \times 0.43^\circ$.) On the basis of fixed probabilities, one stimulus is the correct one. When the probabilities differ, the rational policy is to attend always to the stimulus that is most likely to be correct and to guess on those trials that the most likely cue is not correct. In contrast, probability matching predicts that attention allocation will match the probabilities that the stimuli provide the correct answers. Approximately 67% of the subjects deviated from the “matching rule” in the direction of the rational choice predictions, and close to 90% attended the more likely stimulus on more than 50% of the trials. In addition to providing a measure of attention allocation, the model estimates (1) the rate of correct guesses and (2) predicts the relationship between attention allocation and response times. The results were consistent with these predictions.

5:00 pm

Business Meeting – All SQAB members are welcome - Room 103 A/B (street level)

6:30-9:00 pm

2nd Poster Session & Cash Bar, Room 102 A/B (street level) (6:30-9:00 pm)



8:30-9:05 am The Pharmacology of Effort-Related Choice Behavior in Rodents: Drugs, Depression, and Individual Differences
John Salamone
University of Connecticut (USA)

It was suggested for many years that drugs that interfere with dopamine (DA) transmission alter the “rewarding” impact of primary reinforcers such as food. Research and theory related to the functions of mesolimbic DA have undergone a substantial conceptual restructuring, with the traditional emphasis on hedonia and primary reinforcement yielding to other concepts and lines of research. This presentation is focused upon the involvement of nucleus accumbens DA in effort-related choice behavior. From a behavioral economics perspective, the effects of accumbens DA depletions and antagonism on food-reinforced behavior are highly dependent upon the work requirements of the instrumental tasks. DA-depleted rats show a heightened sensitivity to response costs, especially ratio requirements, and interference with accumbens DA transmission exerts a powerful influence over effort-related choice behavior. Rats with accumbens DA depletions or antagonism reallocate their instrumental behavior away from food-reinforced tasks that have high response requirements, and show increased selection of low reinforcement/low cost options. Antidepressant drugs that facilitate DA transmission, or interact with DA systems, can reverse the effects of DA depletions and increase selection of high effort alternatives. Studies of the brain systems regulating effort-based processes may have implications for understanding psychopathological symptoms such as psychomotor retardation, fatigue or anergia in depression and other disorders.

9:05-9:40 am Choice as a Determinant of Vulnerability and Recovery in Addiction
Richard J. Lamb, David R. Maguire, Brett C. Ginsburg, Jonathan W. Pinkston,
& Charles P. France
University of Texas Health Science Center at San Antonio (USA)

Addiction may be viewed as choice governed by competing contingencies. Thus, discounting of delayed rewards influences addiction vulnerability because of competition between relatively immediate gains, e.g. intoxication, versus relatively remote gains, e.g. family stability. Factors modifying delay sensitivity can be modeled pre-clinically. For instance, increased delay sensitivity is a characteristic of adolescence in humans and animals. Similarly, genetic factors influence delay sensitivity in humans and animals. Recovery from addiction may also be viewed as choice behavior. Thus, reinforcing alternative behavior facilitates recovery because reinforcing alternative behavior increases the frequency of engaging in them rather than using drugs. How reinforcing alternative behavior influences recovery can be modeled pre-clinically. For instance, relapse risk decreases as abstinence duration increases, and this decreasing risk can be modeled in animals using choice procedures. In summary, addiction can be conceptualized as a problem of choice and this conceptualization increases the translational utility of animal models.

9:40-10:15 am Social Choice for One: On the Rationality of Inter-Temporal Decisions
Fabio Paglieri
Institute of Cognitive Sciences and Technologies (Italy)

This talk will outline how formal tools from social choice theory can be used to model rationality in individual intertemporal decision making, and why this provides an essential frame of reference for descriptive theories. Behavioral scientists rightly criticize normative economic models for lack of attention to empirical data. However, the opposite attitude, i.e. building descriptive theories without attention to normative principles, is equally problematic. Consider the widespread tendency to interpret a preference for immediate gratification in intertemporal choice as indicative of poor self-control, thus as a lapse in judgment, if not an outright irrationality. Upon reflection, a tacit assumption becomes apparent: the overall utility of opting for the larger and later reward must be superior to the overall utility of choosing the smaller and sooner prize. Such overall utilities depend on what temporal horizon is considered: only the two instants when each choice option becomes available, or a longer interval, possibly comprising the whole lifespan? The first solution is clearly arbitrary, whereas the second challenges the alleged superiority of the LL option: both common-sense and experimental evidence suggest many circumstances in which sacrificing short-term gratification in view of future gains is not a utility-maximizing strategy. Social choice theory has the tools to make sense of these conflicting intuitions.

10:15-10:35 am Break - Refreshments

10:35-11:10 am Choosing to Fail? Factors Effecting Escalation & Persistence in Decisions
Donald Hantula
Temple University (USA)

Individual learning histories can trap people into failing policy decisions. Research shows that feedback akin to variable interval reinforcement contingencies, is a necessary condition for repeated failure. The variability itself can serve as a motivating operation for information search which then leads to increased persistence in information sparse situations. Earlier theories of policy decision-making have posited that the commitment of resources to failing ventures (persistence) and increases during failing ventures (escalation) are forms of pathology themselves- instances of “irrational” behavior. Under these assumptions, very little attention was paid to temporal or sequential factors that may have led to these phenomena. A synthesis of behavioral and economic research and theory along with computational modeling shows instead that such persistence and escalation is a rational response to decision dilemmas characterized by equivocality and repeated feedback. Further, while Bayesian reasoning is promoted as a perfectly rational account of decision making algorithms simulated individual learning histories and a Bayesian updating process of expected success or failure. Results of 1,000 computer simulations revealed that escalation and persistence emerged for most learning histories and the perfectly rational Bayesian escalates policy decisions.

11:10-11:45 am A Quantitative Signature of Change in Delay Discounting: Translational Processes
Warren K. Bickel
Virginia Tech Carilion Research Institute (USA)

Scientific Interest in changing delay discounting has been increasing. An important scientific question is whether regularities can be observed when delay discounting or other measures of the impulsivity-self control continuum are changed? We have recently reanalyzed several of our studies and 25 other research reports where delay discounting or other measures of impulsivity were changes via an intervention. Generally, the results show change in these measures to be rate dependent; that is, an orderly inverse relationship between the baseline measure of delay discounting and the change in that behavior following an intervention. Collectively, these results suggest that rate dependence may function a generalized change process operative across different measures of impulsivity-self control, diverse interventions, and diverse set of research subjects (e.g., animals and humans).

11:45 am Joseph V. Brady Impactful Research Award
Presented by Gregory Madden
Utah State University (USA)

11:50 am Closing Remarks
Timothy Shahan
Utah State University (USA)



SQAB Preeminent Tutorials will be held in 103 AB(CC) in the Henry B. Gonzalez Convention Center as part of the annual meeting of the Association for Behavior Analysis International

1:00-1:50 pm

Eric Jacobs

Southern Illinois University

SQAB Tutorial: $B = f(O, E)$: Implications of Quantitative Models of Behavior for Translational Research and Practice

Chairperson: Todd McKerchar, *Jacksonville State University*

Quantitative models of behavior are precise and succinct descriptions of functional relationships between behavior and environmental events. The purpose of this tutorial is to foster an appreciation of how quantitative models of behavior can be used to guide conceptually systematic analyses of behavior. The intended audience is academic applied behavior analysts and practicing board certified behavior analysts who are curious to learn how quantitative models of behavior can inform research and practice, but who may be a bit intimidated by the mathematics or may see quantitative models as too esoteric to inform solutions to socially significant behavioral problems. We will review examples from the literature on choice and decision-making, consumer demand analyses, matching theory, and other topics in order to demonstrate how quantitative models of behavior can be useful in framing questions about behavior and generating solutions to practical problems.

2:00-2:50 pm

Howard Rachlin and William M. Baum

Stony Brook University / University of California, Davis

SQAB Tutorial: The Molar View of Self-Control

Chairperson: Lenny Green, *Washington University*

A problem in self-control arises when an organism chooses between one activity strongly induced by short-term reinforcers and a second activity weakly induced by long-term reinforcers but more beneficial in the long term. The short-term strongly induced activity is called impulsivity, and the long-term weakly induced activity is called self-control. Impulsivity and self-control have usually been studied as they affect discounting: delay discounting, probability discounting, and social discounting. Although discounting affords measures of impulsivity relative to self-control, discounting as a representation of real-world choice is unrealistic, because discounting applies only to discrete events like receiving a sum of money or a cigarette. Real-world consequences like good health or sobriety occur over long periods of time, not at specific moments. A more realistic, molar, view of impulsivity and self-control takes them as bad and good habits extended in time. Seen this way, a good or bad habit may be described as a conflict of timeframes: Consequences evaluated in a short timeframe are opposite to consequences evaluated in a long timeframe. The molar view may be more useful than discounting for treatment—that is, discouraging bad habits and encouraging good habits.

3:00-3:50 pm

John Staddon*Duke University*

SQAB Tutorial: AB&L Revisited: Whither adaptive behavior and learning?

Chairperson: Dave Palmer, *Smith College*

The talk is a walk through a list of topics that came up as I revised a thirty-year old book on adaptive behavior and learning. What has changed and what has not? What endures and what principles can we now rely on?

4:00-4:50 pm

Christina Alligood*Disney's Animal Kingdom® Science Operations*

SQAB Tutorial: To Infinity and Beyond: Why zoos and other “nontraditional” settings are important to the future of behavior analysis

Chairperson: Lindsay Mehrkam, *University of Florida*

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, and some reasons that “nontraditional” settings in general are important to the future of behavior analysis.



May 21st Thursday evening session from 5-8 pm. The session will be held in Room Room 102 A/B (street level), Henry B. Gonzalez Convention Center (San Antonio, Texas).

1. Pigeons' Demand and Choice for Variable Magnitude versus Constant Magnitude Reinforcers
Vanessa Minervini (University of Florida), Marc N. Branch (University of Florida)
2. Behavioral Effects of Mefloquine on Schedule-Controlled Responding II
Alexis E. Crump (Allegheny College), Brianna Fowler (Allegheny College), and Rodney D. Clark (Allegheny College)
3. Behavioral Effects of Mefloquine II: Effects of GABAA and GABAB Antagonists
Elizabeth Sever (Allegheny College) Daniel Daurgherty, (Allegheny College) Adam Brandner (Allegheny College) and Rodney D. Clark (Allegheny College)
4. Learning Interference in Down Syndrome Described by a Neurocomputational Model
Ángel E. Tovar (Universidad Nacional Autónoma de México), Alvaro Torres-Chávez (Universidad Nacional Autónoma de México)
5. Making Time for Nature: Visual Exposure to Natural Environments Lengthens Time Perception and Reduces Impulsivity
Meredith S. Berry (University of Montana, Utah State University), Meredith A. Repke (University of Montana), Norma P. Nickerson (University of Montana), Kerry E. Jordan (Utah State University), & Amy L. Odum (Utah State University)
6. Impulsivity, Sensitivity to Delay, and Sensitivity to Amount in an Animal Model of ADHD
Vladimir Orduña & Maryed Rojas-Leguizamón (Universidad Nacional Autonoma de Mexico)
7. Resurgence of Alcohol Seeking: Effects of Length of Exposure to Extinction Plus Alternative Reinforcement
Shandy A. Nelson, Andrew R. Craig, Rusty W. Nall, Paul J. Cunningham, Charles C. J. Frye, & Timothy A. Shahan (Utah State University)
8. Time is of the Essence: Information Theory and Temporal Contingency
Andrew R. Craig (Utah State University), Timothy A. Shahan (Utah State University), & C. R. Gallistel (Rutgers University)
9. Within-Session Resurgence Following Different Reinforcement Rates for Target and Alternative Behavior
James E. Cook & Kennon A. Lattal (West Virginia University)
10. Transitional Validity of Generalized Essential Value in Exponential Demand
Brent A. Kaplan (University of Kansas), Amel Becirevic (University of Kansas), Joshua Harsin (University of Kansas), Derek D. Reed (University of Kansas), Peter G. Roma (Institutes for Behavior Resources and Johns Hopkins University School of Medicine), and Steven R. Hursh (Institutes for Behavior Resources and Johns Hopkins University School of Medicine)
11. Quantifying Greatness: a Multi-level Analysis of the Matching Law Applied to Professional Basketball
Bryan T. Yanagita (University of Kansas), Amel Becirevic (University of Kansas), Chris J. Cintron (University of Kansas), Josh Harsin (University of Kansas), & Derek D. Reed (University of Kansas)
12. Evaluation of Sensory Reinforcement in Rats when Primary Reinforcers are Delayed
Luanne H. Hale, Alexandria C. Darden, & David P. Jarmolowicz
13. But it's Safe Sex! Effects of Condom Availability on Delay and Probability Discounting of Sexual Partners
Shea M. Lemley (University of Kansas), Daniel Parkhurst (University of Kansas), Michael J. Sofis (University of Kansas), and David P. Jarmolowicz (University of Kansas)
14. Effects of multiple DRL intervals on human timing performance
Kathryn L. Kalafut (Dickinson College), Alissa L. Meister (Dickinson College), & David M. Freestone (New York University)
15. How rats learn a DRL interval
Alissa L. Meister (Dickinson College), Kathryn L. Kalafut (Dickinson College), and David Freestone (New York University)

16. A Modern Comparison of the Competitive- and Direct-Suppression Models of Punishment
Bryan Klapes (Emory University), Jack J McDowell (Emory University)
17. Probability of Reinforcement and Resurgence in a Discrete-Trial Procedure
Shun Fujimaki (Keio University / Japan society for the promotion of science), Natsumi Goto (Keio University), Takayuki Sakagami (Keio University)
18. Is there an interaction among socioeconomic status and amount effects on delay and probability discounting of money?
Cesar Corona, Jaramy Diaz, & Raul Avila (National Autonomous University of Mexico)
19. Delay Detectability at Short Delays in Pigeons
Eric J. French (Central Michigan University), Andrew T. Fox (University of Kansas Medical Center), and Mark P. Reilly (Central Michigan University)
20. Local analysis of Persistence and Relapse via Reinstatement
Stuart M. McGill (University of Auckland NZ), John Y.H Bai (University of Auckland, NZ), Gigi Lee (University of Auckland, NZ), Jonas Chan (University of Sydney, Australia), Paul M. Corballis (University of Auckland, NZ), Sarah Cowie (University of Auckland, NZ), Douglas Elliffe (University of Auckland, NZ), Christopher A. Podlesnik (Florida Institute of Technology, Melbourne, FL, USA), Joshua Bensemann (University of Auckland, NZ)
21. Is a Probabilistic Choice Really a Delayed Choice? Discounting of Repeated Gambles
Ariana Vanderveldt (Washington University), Brian Katz (Washington University), Leonard Green (Washington University), & Howard Rachlin (Stony Brook University)
22. Delay Discounting of gains and losses outcomes By marijuana users, cocaine users and controls
Diana Mejía (National Autonomy University of México), Leonard Green (Washington University in St. Louis), Joel Myerson (Washington University in St. Louis), Silvia Morales (National Autonomy University of México), & Javier Nieto (National Autonomy University of México)
23. Male African-American Alcoholics Discount Delayed Gains More Steeply Than Either Female African-American Alcoholics or Propensity-Score Matched Controls
Carissa van den Berk-Clark (Saint Louis University School of Medicine), Joel Myerson (Washington University), Leonard Green (Washington University), Richard A. Grucza (Washington University School of Medicine)
24. Consumer Maximization of Utilitarian and Informational Reinforcement in Brand Choice: Predictors of Individual Differences in Utility Level
Jorge M. Oliveira-Castro (University of Brasilia), Gordon R. Foxall (Cardiff University)
25. Discounting in Impulsive and Risky Choice with Humans
Matthew L. Locey
26. Operant discrimination by amount of responses
Francis Mekkass (University of Lille 3), Jean-Claude Darcheville (University of Lille 3), Laurent Madelain (University of Lille 3) and Laurent Ott (university of Lille 3)
27. Analysis of Change Points when Reinforcer Rate and Magnitude Change Unpredictably
Daniel Bell-Garrison (West Virginia University), Elizabeth G.E. Kyonka (West Virginia University)
28. Interrelationships between delay, probability and effort discounting
Erica E. Hanson (Oregon Health & Science University), Carly S. Levine (Oregon Health & Science University), Kirigin A. Elstad (Oregon Health & Science University), Suzanne H. Mitchell (Oregon Health & Science University)

End of First Poster Session

May 22nd Friday evening session from 6-9 pm. The session will be held in Room 102 A/B (street level), Henry B. Gonzalez Convention Center (San Antonio, Texas).

1. Effects of the Opiates Morphine and Oxycodone on Sensitivity to Reinforcement Amount
William D. Fetzner, Christine E. Hughes, & Raymond C. Pitts (University of North Carolina Wilmington)
2. Effects of Dorsal-Hippocampal Lesion on the Variable-Interval Performance of Rats
Paula Overby, Carter W. Daniels, J. Bryce Ortiz, Cheryl D. Conrad, & Federico Sanabria (Arizona State University)
3. Within-session changes in fixed-interval performance
Carter W. Daniels & Federico Sanabria (Arizona State University)
4. Clock-Speed or Response-Threshold? A New Hypothesis about the Effects of Nicotine on Interval Timing
Christine C. Herrera, Carter W. Daniels, & Federico Sanabria (Arizona State University)
5. The Monty Hall Dilemma: Pigeons, Probabilities, and Prizes
Joshua Bensemann, Ludmila Miranda-Dukoski, John Y. H. Bai, Stuart Michael McGill, & Stephanie Gomes-Ng (University of Auckland)
6. Competing Control by Brief Food and Non-Food Stimuli
Stephanie Gomes-Ng, Sarah Cowie, Michael Davison, & Douglas Elliffe (University of Auckland)
7. Intoxication in a Rewarding Environment as a Risk Factor for Alcohol Misuse
Jennifer R. Laude & Mark T. Fillmore (University of Kentucky)
8. The Balloon Analogue Risk Task (BART) and Behavioral Correlates in Pigeons
Aaron P. Smith & Thomas R. Zentall (University of Kentucky)
9. Differences in Resistance to Extinction Between Single and Multiple Schedules May Be Related to Testing Conditions
Kaitlyn O. House, Andrew R. Craig, Paul J. Cunningham, & Timothy A. Shahan (Utah State University)
10. Physical and Cognitive Effort Discounting: Tests of Discounting Models
Wojciech Białaszek & Pawel Ostaszewski (SWPS, University of Social Sciences and Humanities, Poland)
11. Further Investigation of the Effects of Mands on Instructional Control
Jason M. Hirst, Amy J. Henley, Florence D. DiGennaro Reed, Amel Becirevic, & Derek D. Reed (University of Kansas)
12. Resurgence of Response Duration in Humans
Rodrigo Benavides (Universidad Marista de Mérida) & Rogelio Escobar (Universidad Nacional Autónoma de México)
13. How does a stimulus take discriminative control over saccadic adaptation?
Sohir Rahmouni, Jérémy Jozefowicz, & Laurent Madelain (University of Lille)
14. When is Less Better than More?
Jacob Case, Jasmine Luong, & Thomas Zentall (University of Kentucky)
15. A Comparison of Hypothetical and Real Rewards: The Effects of Response Effort and Monetary Rewards on Self-Control
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16. A Fist Full of Quarters: The Effects of Outcome Unit Framing On Delay Discounting
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17. Is the method to obtain discounting functions a parameter of the correlation among temporal, probabilistic and social discounting?
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18. Effects of magnitude of outcome on delay discounting in healthy-weight, overweight, and obese individuals
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19. Does Height Matter? IRT Distributions at Different Lever Heights
Ángel Andrés Jiménez, Felipe Cabrera, Denisse Ochoa, & Saul Rubio (University of Guadalajara)
20. Effects of d-Amphetamine on Performance in a Titrating Delayed Matching-to-Sample Task in Pigeons
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21. Impulsivity and Tobacco Use: Discounting of Qualitatively Different Outcomes in Non-Smokers, Cigarette Smokers, and Smokeless Tobacco Users
Jonathan E. Friedel, William B. DeHart, Charles C. J. Frye, Ann Galizio, & Amy L. Odum (Utah State University)
22. The Mathematical Principles of Reinforcement in Concurrent Schedules
Travis R. Smith (Southern Illinois University Carbondale), Eric J. French (Central Michigan University), & Eric A. Jacobs (Southern Illinois University Carbondale)
23. Body Weight as a Motivating Operation for Screen Peck Responses in AutoShaped Hens
Surrey M. K. Jackson (University of Waikato), Lewis. A. Bizo (University of New England), T. Mary Foster (University of Waikato), & James, S. McEwan (University of Waikato)
24. Suboptimal choice: A unit-price analysis
Jay Hinnenkamp & Gregory Madden (Utah State University)
25. Extending the Validity of Discounting Tasks Measuring Half-Amounts
David J. Cox & Jesse Dallery (University of Florida)
26. Quantifying Efficacy of Workplace Reinforcers: A Behavioral Economic Approach to Organizational Behavior
Amy J. Henley, Florence D. DiGennaro Reed, Brent A. Kaplan, & Derek D. Reed (University of Kansas)
27. Persistence of target responding following signalled alternative reinforcement
Vikki J. Bland (University of Auckland), John Y.H. Bai (University of Auckland), Jane Fullerton (University of Auckland), & Christopher A. Podlesnik (Florida Institute of Technology).
28. When Cues Deceive: Timing with Cued, Uncued, and Miscued Intervals
Shrinidhi Subramaniam & Elizabeth G. E. Kyonka (West Virginia University)
29. Inter-aggregate-product-time distribution as a function of differential reinforcement of temporally spaced aggregate products
Marcelo B. Henriques (Universidade Federal de Goiás and Universidade de Brasília), Maria Clara G. Souza (Universidade Federal de Goiás), Vanessa Navarini (Universidade Federal de Goiás), & João Claudio Todorov (Universidade de Brasília)
30. Behavioral adjustment using food or water as reinforcement in rats
Darcy Martínez (Universidad Veracruzana-CEICAH), Carla González (Universidad Veracruzana-CEICAH), Sandino Peralta (Universidad Veracruzana-CEICAH) & Mario Serrano (Universidad Veracruzana-CEICAH)

End of Second Poster Session





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Behavioural Processes

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Research Articles

Andrew R. Craig, Paul J. Cunningham, & Timothy A. Shahan. Behavioral momentum and accumulation of mass in multiple schedules.

Derek A. Pope, M. Christopher Newland, & Blake A. Hutsell. Delay-specific stimuli and genotype interact to determine temporal discounting in a rapid-acquisition procedure.

Carlos Pinto & Armando Machado. Coding in pigeons: Multiple-coding vs. single-code/default strategies.

Nathaniel J. Hall, David W. Smith, & Clive D. L. Wynne. Pavlovian conditioning enhances resistance to disruption of dogs performing an odor discrimination.

Francisco J. Ruiz & Carmen Luciano. Common physical properties among relational networks improve analogy aptness.

William F. Perez, Adriana P. Fidalgo, Roberta Kovac, & Yara C. Nico. The transfer of Cfunc contextual control through equivalence relations.

Erik Arntzen, Richard K. Nartey, & Lanny Fields. Enhanced equivalence class formation by the delay and relational functions of meaningful stimuli.

Rafael Diego Modenesi & Paula Debert. Contextual control using a go/no-go procedure with compound abstract stimuli.

Vanessa Minervi, Neil E. Rowland, Kimberly L. Robertson, & Thomas C. Foster. Role of estrogen receptor- α on food demand elasticity.

Announcing the 32nd Annual Meeting of the

SOUTHEASTERN ASSOCIATION FOR BEHAVIOR ANALYSIS

INVITED SPEAKERS

William Ahearn, New England Center for Children

Chana Akins, University of Kentucky

E. Scott Geller, Virginia Polytechnic Institute and State University

Iver Iversen, University of North Florida

Kimberly Kirkpatrick, Kansas State University

Mark Mattaini, University of Illinois at Chicago

Nancy A. Neef, The Ohio State University

Christopher A. Podlesnik, Florida Institute of Technology

Erin B. Rasmussen, Idaho State University



Morning Mist on the Blue Ridge Parkway © Kay Gaensler, 2012

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We are pleased to offer BACB Continuing Education Units at this year's SEABA conference. Visit www.seabaonline.org for membership, registration and hotel information.

**Thursday Evening, May 21
Room 102 A/B (street level)**

*1st Poster Session, Cash Bar & Registration
(5:00-8:00 pm)*

**Friday, May 22
Room 103 A/B (street level)**

7:00 *Registration, Coffee & Pastries*

8:30 **Timothy Shahan**
President's Introduction

Choice and Consequences

8:45 **John Donahoe**

9:20 **Erin Rasmussen**

9:55 **Nick Calvin**

10:30 *Break – Refreshments*

10:55 **Ricard Pellón**

11:30 **Randolph Grace**

12:05 *Lunch*

1:45 **Sarah Cowie**

2:20 **Pablo Covarrubias & François
Tonneau**

2:55 *Break – Refreshments*

3:15 **Laurent Madelain**

3:50 **Gene Heyman**

5:00 *Business meeting,*
Room 103 A/B (street level)

6:30 *2nd Poster Session & Cash Bar*
Room 102 A/B (street level)
6:30-9:00 pm

**Saturday, May 23
Room 103 A/B (street level)**

7:15 *Registration, Coffee &
Pastries*

8:30 **John Salamone**

9:05 **Richard Lamb**

9:40 **Fabio Paglieri**

10:15 *Break – Refreshments*

10:35 **Donald Hantula**

11:10 **Warren Bickel**

11:45 **Awards and Closing
Remarks**

Saturday Afternoon, May 23

**\int QAB Invited Preeminent
Tutorials**

1:00 Eric Jacobs

2:00 Howard Rachlin &
William Baum

3:00 John Staddon

4:00 Christina Alligood



Society for the Quantitative Analyses of Behavior