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## #149 Paper Session

5/24/2009

9:00 a.m. - 9:50 a.m.

North 224 A

CBM

### Diverse Applications of Behavior Analysis

Chair: Charles Gilpin (Missouri State University)

**A Review of the Current Executive Functioning Interventions for Individuals Diagnosed with Traumatic Brain Injury.** (Applied Behavior Analysis) JULIA KAY WAID-EBBS (BRRC, NFL/SG Veterans Administration)

**Abstract:** Traumatic Brain Injury has been referred to as the signature wound of the Iraqi War. Soldiers that have experienced a TBI in battle frequently have difficulty with subtle deficits such as executive functioning once they return home. Selecting the appropriate intervention to improve functioning can be difficult since few interventions are evidence based. Therefore, a review of the current published executive functioning interventions will be presented. Aspects of each intervention such as target behaviors, active components of treatment and outcomes will be critiqued. As a result recommendations of how to select appropriate interventions for executive functioning behaviors will be made.

**Analysis of Setting Events Questionnaire (ASEQ).** (Applied Behavior Analysis) JOHN KOSMOPOULOS (JK Behaviour Consultation & Education Services, York Central Hospital & Humber College)

**Abstract:** The Analysis of Setting Events Questionnaire (ASEQ) is a multi-itemed rating scale designed to determine the degree of relationship or the level of association between specific problem behavior and various physiological, social, environmental and motivational variables. The ASEQ was developed to be wide-ranging, user-friendly and versatile in its breadth so that it may be utilized across ages (i.e., children, adolescents, adults), settings (i.e., home, school, community, etc.), behaviors (e.g., tantrums, SIB, property destruction, etc.) and diagnoses (e.g., autism, dual diagnosis, mental health, etc.) A single or inter-observer administration of the ASEQ yields quantitative and qualitative results for the possible remediation, modification and further investigation of endorsed setting events. The ASEQ is also a "two-in-one" assessment tool given that the results also provide a means of determining the probable function (s) for the target behavior (i.e., attention, escape, tangible, sensory I - physical, sensory II - alone / non-social) with the ASEQ-FS (function subscale). The latest results suggest that the ASEQ continues to evince great psychometric properties (e.g., reliability and validity) and social validity for its use.

## #150 Invited Presenter

5/24/2009

9:00 a.m. - 9:50 a.m.

West 301 AB

DDA; Applied Behavior Analysis

### JABA and the Impact Factor

Chair: Joel Eric Ringdahl (University of Iowa)

CATHLEEN C. PIAZZA (Munroe-Meyer Institute)

**Abstract:** Scientific journals such as the *Journal of Applied Behavior Analysis* (JABA) face many challenges currently and in the coming years. The advent of the electronic age has resulted in the proliferation of journals that compete with JABA; thus authors have more outlets for their publications. One factor that may affect whether authors submit to a given journal is the journal's impact factor, which is a number that is calculated based on how frequently a journal's articles from the previous 2 years are cited. The impact factor

for JABA has been on a downward trend in recent years. Reasons for this decline in JABA's impact factor will be discussed as well as potential strategies for improving the impact JABA has on the field.

## #151 Invited Presenter

5/24/2009

9:00 a.m. - 9:50 a.m.

West 301 CD

OTH; Applied Behavior Analysis

### **Mainstream Behavior Analysis: Eight Decades of Applications and Growing**

Chair: William L. Heward (Ohio State University)

CHARLES MERBITZ (Chicago School of Professional Psychology)



Charles T. Merbitz, Ph.D., BCBA, is currently Chair of the Department of Applied Behavior Analysis at the Chicago School of Professional Psychology. Since 2004, when he began the ABA Program, the Department has grown to over 100 graduate students and seven faculty members. Dr. Merbitz has 35 years of experience in applications of scientific methods to learning, including the design and implementation of effective school programs in both Regular and Special Education, service delivery as a school psychologist, federally-supported researcher in rehabilitative medicine, and university professor. Dr.

Merbitz has a national reputation in the rehabilitation and behavioral communities for research involving objective process measures for relating interventions to outcomes and outcome measures. Dr. Merbitz has published numerous articles, chapters and two books, and has served as reviewer for NIDRR (the National Institute of Disability and Rehabilitation Research) and the journals *Stroke*, *Archives of Physical Medicine and Rehabilitation*, *Behavior Research Methods Instruments and Computers*, *Journal of Precision Teaching*, and *The Behavior Analyst*. He served on the Board of Directors of the American Association of Spinal Cord Injury Psychologists and Social Workers, for whom he helped write SCI treatment standards. He currently serves ABAI as Coordinator of the Education Board.

**Abstract:** As of 2008 it has been 80 years since the publication of *Behavior of Organisms* began the Experimental Analysis of Behavior, and 50 years since the inception of JABA inaugurated the field of Applied Behavior Analysis (ABA). In these few decades the field has grown tremendously, both in the numbers of professionals identifying themselves as practicing or teaching ABA, and in the range of problems and issues that are addressed successfully by mainstream behavior analysis. However, ABA frequently remains conspicuous by its absence in discussions of human problems and their solutions, in both professional and popular discourse. One perspective on this information gap is that as some other helping disciplines continue to define themselves in the light of postmodernism, ABA professionals have strengthened the commitment to natural science and selectionism. Nonetheless, ABA continues to grow, and as this brief survey of the field shows, the range of successful applications, training venues, and opportunity in ABA is striking. As a field ABA seems poised for even further dramatic expansion.

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## #152 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 120 BC

AUT/EAB; Applied Behavior Analysis

### **Stimulus Control in Autism: Translational Research and Practice**

Chair and Discussant: Travis Thompson (University of Minnesota)

**Abstract:** This symposium bridges laboratory research on stimulus control in autism spectrum disorders and animal models, to language intervention to generalization of skills of children with autism in natural environments. McIlvane's presentation reviews recent translational research directed at such challenges of

autism spectrum disorders as excessively narrow stimulus control. It will in part draw on animal models describing a unique approach especially relevant for effective intervention strategies for persons with autism and related disorders. Sundberg builds on Skinner's analysis of verbal behavior to provide an empirical foundation for distinctions between motivating operations (MOs) and stimulus control (SD). Such analyses may reveal a targeted response, such as a mand for information, may actually be under the control of an SDs (tact). Such an analysis can lead to more effective language assessment and intervention for persons with autism. Robert Koegel will discuss failure to respond to relevant cues during discrimination training. Koegel et. al. study examined the role of individualized orienting cues that gain the child's attention in facilitating first-word acquisition among children with autism. Using orienting cues increased correct responding to verbal models and subsequent word acquisition.. This symposium is co-sponsored by the Practice and Science ABAI Boards.

**Translational Behavior Analysis: From Laboratory Research to Intervention for Persons with Autism Spectrum Disorders.** WILLIAM J. MCILVANE (University of Massachusetts Medical School)

**Abstract:** Laboratory research on basic learning processes with nonhuman and human populations has led to principles that have been applied with success in developing interventions for persons with autism and related neurodevelopmental disorders. Processes in the domains of stimulus control have been especially relevant, supplementing longstanding strength in behavior analytic analyses of reinforcement processes. As behavioral research continues to evolve, so do opportunities for translating resulting knowledge for intervention purposes. To take advantage of such opportunities, the challenge is to render the evolving knowledge accessible to clinicians, educators, and others involved directly in intervention. With this goal in mind, this presentation will review recent translational behavioral research directed at challenges of autism spectrum disorders and related neurodevelopmental disorders. I will focus on certain promising conceptual and empirical advances that have not as yet exerted strong influence on intervention practice. I will consider also how animal models can be used to accelerate translational research efforts, describing a unique approach to modeling that may be especially relevant for translation into effective intervention strategies for persons with autism and related disorders.

**Verbal Behavior: A Bridge between the Conceptual, Experimental, and Applied Areas of Behavior Analysis.** MARK L. SUNDBERG (Sundberg and Associates)

**Abstract:** Skinner's (1957) conceptual analysis of verbal behavior guides our understanding of complex human behavior (e.g., thinking, memory, epistemology, language acquisition). The experimental analysis of behavior provides an empirical foundation for many of the basic concepts presented by Skinner, such as the distinction between motivating operations (MOs) and stimulus control (SD). These conceptual and experimental analyses have led to practical applications, as predicted by Skinner when he wrote, "the formulation is inherently practical and suggests immediate technological applications at almost every step" (1957, p. 12). The current paper will suggest that these components of behavior analysis work together well with verbal behavior. For example, a common problem faced by many individuals with autism is the establishment of unwanted sources of stimulus control. Often these sources of control are revealed in rote or defective verbal responses that can impede verbal development. A functional analysis conducted in the manner suggested by Skinner (1957) may reveal that a targeted response such as a mand for information, which should be under the control of MOs, may actually be under the control of SDs. An experimental analysis of the sources of control can separate the independent variables, thus leading to more effective language assessment and intervention for persons with autism.

**Using Motivational Orienting Cues to Facilitate First-Word Acquisition in Non-Responders with Autism.** ROBERT L. KOEGEL (University of California, Santa Barbara), Larisa Shirotova (University of California, Santa Barbara), Lynn Kern Koegel (University of California, Santa Barbara)

**Abstract:** Research has documented that 10- 25% of children with autism fail to develop speech, even with the most effective interventions. One area that may inhibit acquisition of first words in this subgroup is a failure to respond to relevant cues during discrimination training. Using a multiple baseline design, this study examined whether identifying individualized orienting cues that gain the child's

attention would facilitate first-word acquisition in such children. The results showed that using orienting cues increased both correct responding to verbal models and subsequent word acquisition. Theoretical and applied implications of child attention as they relate to expressive verbal communication are discussed. Implications of generalization of verbal skills taught to children with autism spectrum disorders to natural environments will be discussed. Theoretical interpretations will be explored.

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## #153 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 124 B

AUT/EDC; Applied Behavior Analysis

### **Ongoing Empirical Investigations of Precision Teaching with Students and Adults with Autism**

Chair: Donna L. Sloan (Rutgers University, Douglas Developmental Disability)

Discussant: Charles Merbitz (Chicago School of Professional Psychology)

**Abstract:** Precision Teaching with rate building procedures is one method that holds promise as an efficient and effective means of instruction for younger and older learners with autism. These papers represent pilot research that examines the effects of frequency building. This research also compares the effects of various procedural aspects of frequency-building procedures as well as begins to investigate the comparative effectiveness to other ABA techniques.

**A Comparison of Discrete Trial Instruction Plus Maintenance to Discrete Trial Instruction Plus Rate Building: A Pilot Study.** MARLENE COHEN (Rutgers University - DDDC), Meredith Bamond (Rutgers University), Christopher Manente (Rutgers University, DDDC), Mary Jane Weiss (Rutgers University)

**Abstract:** The outcomes of precision teaching with rate building (stability, endurance, application and retention or SEAR) have been empirically validated. The question then becomes whether these outcomes are specific to rate building or if the outcomes can be empirically validated through typical maintenance procedures. This pilot study, will examine SEAR outcomes for two sets of spelling words taught to accuracy using discrete trial instruction. One set is kept on weekly maintenance while the other is taught to fluent rates. SEAR outcomes are compared and will be demonstrated. Direction for future research will also be discussed.

**The Effects of Precision Teaching Frequency Building of Language Component Skills on the Performance of Language Composite Skills in Adolescents and Adults with Autism.** MARY SENS AZARA (Rutgers University, DDDC), Marlene Cohen (Rutgers University - DDDC), Donna L. Sloan (Rutgers University, Douglas Developmental Disability)

**Abstract:** Each year more and more learners are aging out of school programs and moving into adult programs. More needs to be done to provide least restrictive and quality services for these adults. Precision teaching with frequency building procedures is one method that holds promise as an efficient and effective means of instruction for older learners. This research is proposed as an attempt to extend previous clinical demonstrations of the profound impact of Precision Teaching with frequency building procedures on the functional use of fine motor skills, into the realm of language skill acquisition. Previously, pilot research in this area has indicated results similar to those of fine motor skill studies, when implementing frequency building of verbal language components. Preliminary results indicate the application to new, untaught skills has a cumulative effect of more rapid acquisition of related language skills. Using a multiple baseline design, this research continues to explore whether instruction of component language skills would end when minimum frequency aims are initially achieved, or if continuing instruction of component skills to higher frequencies enhances performance of language composite skills. The proposed research will examine the cumulative effect of frequency building of three component skills on performance of a single composite skill.

**The Academy for Precision Learning: Using Applied Behavior Analysis to Enhance a Private Elementary Inclusion Program.** ALISON L. MOORS (Academy for Precision Learning)

**Abstract:** This paper will present the results of the inaugural year for a private elementary program specializing in applying the teaching methodologies from the field of Applied Behavior Analysis to an inclusive education program. The Academy for Precision Learning is for students ages Kindergarten-5th grade whose cognitive abilities range from general education to learning disabled to moderately autistic. The presentation will focus on the educational model implemented as well as the necessary components for its success. Data will be presented to illustrate student progress on nationally normed achievement tests, curriculum based measurement probes and daily practice on individualized education plans.

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**#154 Symposium**

5/24/2009

9:00 a.m. - 10:20 a.m.

North 124 A

AUT/EDC; Applied Behavior Analysis

**Investigating Variables Related to Procedural Integrity and Remediation of Staff Behavior**

Chair: Bethany L. McNamara (New England Center for Children)

**Abstract:** One of the hallmarks of applied behavior analysis is its analytic approach to problems. Analytic has been described as finding a functional relation between the manipulated events and behavior. Treatment integrity is defined as the degree to which the independent variable is implemented as prescribed in the treatment protocol. This symposium addresses the issues of treatment integrity and begins to investigate the variables responsible for maintaining staff behavior. In the first study reinforcement was delivered with varying levels of integrity during a visual-visual match-to-sample task. Preliminary results suggest that lower rates of procedural integrity of programmed consequences did not interfere with skill acquisition for typical adults. The second study evaluated a training procedure for increasing teachers' treatment integrity when implementing a student's problem behavior program. The results suggest that video self monitoring may successfully remediate low levels of treatment integrity. The third study was successful at increasing levels of treatment integrity in the context of a discrete trial using a treatment package consisting of video and consultation. The final study conducted an experimental analysis of adult delivered reprimands. The results of this study suggest that teacher delivered reprimands were maintained by negative reinforcement through immediate termination of the problem behavior.

**Varying Procedural Integrity Levels in the Delivery of Programmed Consequences during Visual-Visual Match-to-Sample Tasks.** JACQUELINE NICOLE POTTER (The New England Center for Children), Shawn E. Kenyon (NECC), Paula Ribeiro Braga-Kenyon (NECC)

**Abstract:** The delivery of programmed consequences is a vital part of learning in the applied setting. Procedural integrity is a measure of how the independent variables are implemented and is an important component of behavior analytic application and research. Procedural integrity related to the delivery of programmed consequences has not yet received much attention in the literature. This study examined the effects of 100% and 44% levels of procedural integrity of the delivery of the programmed consequences on a visual-visual discrimination training using a progressive point prompt delay procedure (i.e., 0 seconds, 3 seconds, and 5 seconds). To date, six participants, who were newly employed as teachers at a residential school that serves children with developmental disabilities participated in the study. Three 3-stimuli classes containing visual symbols were used and presented on a computer utilizing a Power Point program. Visual-visual relations among some stimuli were initially trained using different levels of procedural integrity regarding the delivery of the programmed consequences. Tests for the emergence of new, not directly trained relations were then conducted. Preliminary results suggest that lower procedural integrity levels with regards to the delivery of programmed consequences did not interfere with skill acquisition of stimulus relations.

**The Effects of Video-Self Monitoring for Increasing the Procedural Integrity for One Student's Behavior Management Plan.** AMY CONSTANTINE (New England Center for Children), Bethany L. McNamara (New England Center for Children)

**Abstract:** Functional relations are detected through systematic manipulations of the independent variable and evaluating its' effect on the dependent variable. Therefore when evaluating the efficacy of a student's behavior program it is important that the program is conducted with a high level of treatment integrity. The purpose of this study was to evaluate a training procedure for increasing treatment integrity of teachers when implementing a student's clinical program for problem behavior. Four teachers who worked at a residential school for children with developmental disabilities served as participants. Video tapes of the participants during baseline revealed low procedural integrity of one student's behavior program implementation. This program targeted motor stereotypy through response interruption and redirection combined with access to competing items. Phase one of the intervention involved the distribution of management guidelines on the student's program to the entire team of teachers. Procedural integrity increased slightly for two participants but remained the same or decreased for the other two. During the treatment phase participants were videotaped working with this student and were asked to score their procedural integrity using a procedural integrity tool. The use of video-self monitoring showed an increase in procedural integrity as compared to traditional phases of staff training.

**Increasing Treatment Integrity for Discrete Trial Teaching Using Video Performance Feedback Consultation.** MICHAEL NEAL SAUNDERS (Westfield State College), Patrick F. Heick (May Institute), Shannon Kay (May Institute), Roger M. Tudor (Westfield State College)

**Abstract:** A multiple baseline design across participants was used to assess the effectiveness of a video performance feedback consultation model to improve treatment integrity for staff implementation of a discrete trial teaching program that targeted tacting skills. Four direct care staff and one client at a day habilitation program participated in this investigation. All baseline and intervention phase sessions were videotaped for review during consultation sessions, to assess correct implementation of teaching steps, and for inter-rater reliability. Immediate improvements in treatment fidelity were made from baseline to intervention phases across all staff.

**An Experimental Analysis of Negative Reinforcement Contingencies for Adult-Delivered Reprimands.** JONATHAN R. MILLER (University of Houston-Clear Lake), Dorothea C. Lerman (University of Houston-Clear Lake)

**Abstract:** Previous research indicates that caregiver reprimands can function as reinforcers for problem behavior. Some studies suggest that reprimands are maintained by negative reinforcement due to immediate reductions in problem behavior; however, this has not been demonstrated empirically. Such contingencies may affect accurate implementation of behavioral interventions. More research is needed to examine the variables controlling behavior associated with procedural integrity. The purpose of this study was to conduct an experimental analysis of adult-delivered reprimands in a laboratory setting. Undergraduate and graduate students enrolled in a special education class participated in simulated teaching sessions with an experimenter who role-played as an individual with developmental disabilities. The effects of two conditions on the frequency of adult-delivered reprimands were examined in a reversal design. During the Escape condition, the experimenter exhibited problem behavior (e.g., self-injury, property destruction) on a fixed-time (FT) schedule. Contingent on reprimands, problem behavior ceased until the next scheduled occurrence. During the Extinction condition, the experimenter exhibited problem behavior on the same schedule; however, reprimands no longer resulted in escape. Results suggested that reprimands were maintained by negative reinforcement through immediate termination of problem behavior. The findings also demonstrated the utility of conducting this type of analysis in the laboratory.

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## #155 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 125

AUT/EDC; Applied Behavior Analysis

### **Investigating Ancillary Treatments for Children with Autism: An Analysis of Sensory Integration Treatments and Oral-Motor Exercises**

Chair: Cecilia McCarton (The McCarton Center)

Discussant: Erik A. Mayville (Connecticut Center for Child Development)

**Abstract:** Many children with autism receive a variety of interventions in addition to ABA intervention. Sensory integration therapy and oral motor exercises are two very commonly used approaches. This symposium will address the evidence basis for these interventions, and will present data from systematic analyses of the impact of these approaches. The first paper is a review of the existing literature on sensory integration and oral motor exercises as interventions for children with autism. The second paper presents data from several students on the use of sensory integration to reduce self-stimulatory behaviors. Single case studies examined the use of a sensory diet and swinging in reducing muscle tensing and the use of non-contingent visual stimulation in reducing aberrant eye movements. These therapies were ineffective in reducing these behaviors. The third paper addresses the use of a systematic oral motor exercise protocol to produce short and long-term changes in dexterity, sound production, and other outcomes of such instruction. The results will be interpreted in the context of using ABA to systematically evaluate the impact of ancillary treatments for individual learners, as well as the need to share negative results with the broader professional community.

**A Review of the Research Regarding the Efficacy of Sensory Integration Training and Oral Motor Exercises with Persons with Autism Spectrum Disorders.** THOMAS L. ZANE (The Center for Applied Behavior Analysis at The Sa), Mary Jane Weiss (Rutgers University)

**Abstract:** Children diagnosed with Autism Spectrum Disorder (ASD) often exhibit stereotypic behaviors such as rocking, spinning, hand flapping, and excessive movements at a frequency higher than children who are not diagnosed. Sensory Integration Therapy (SIT), is, according to Jean Ayres, "...a clinical frame of reference for the assessment and treatment of persons who have functional disorders in sensory processing." Generally speaking, the theory is that human behavior is contingent on brain function; errors in brain functioning result in dysfunctional behavior or pediatric developmental problems including sensory dysfunction. Consequences of this dysfunction include problems in sensory discrimination, perception, proprioception, tactile discrimination, visual perception, and vestibular processing. SIT is frequently used with children with autism to reduce these behaviors. Similarly, (non-vocal) oral motor exercises are often done to build sound and speech production. However, a review of the published research on the effectiveness of SIT and oral motor exercises indicates a clear lack of experimental research supporting the effectiveness of such procedures. The research that has been published has been flawed due to research design and methodological confounds. The proposed presentation will review the published literature on SIT and oral motor exercises and critique it against the criteria for quality evidence of effectiveness.

**Investigating the Effects of Sensory Integration Therapy in Decreasing Self-Stimulatory Behavior.** CAROLYN SNIEZYK (Crossroad Center), Teri VanEpps (Crossroad Center)

**Abstract:** The purpose of the current study was to investigate the effectiveness of various sensory integration therapies in reducing self-stimulatory behaviors. Single case studies examined the use of a sensory diet in reducing muscle tensing, the use of swinging in reducing muscle tensing, and the use of non-contingent presentation of visual stimulation in reducing inappropriate eye movement. A licensed Occupational Therapist was responsible for creating procedures designed to reduce target behaviors. The participants were between the ages of three years and six years. Procedural reliability and inter-rater

reliability measures met acceptable criteria. The sensory integration therapies were ineffective in reducing the targeted self-stimulatory behaviors.

**Evaluating the Impact of Oral Motor Intervention for Children with Autism: An Analysis of Short-Term and Long-Term Outcomes.** LAURA PRESTIA (The McCarton School), Mary Jane Weiss (Rutgers University), Ivy J. Feldman (McCarton School), Jacquelin A. Hickey (The McCarton School), Cecilia McCarton (The McCarton Center)

**Abstract:** Oral motor interventions have been used with children with autism for addressing deficits in sound and speech production. The data have been poor regarding the impact of such approaches, yet they remain commonly practiced in programs for children with autism. Often, the manner in which such intervention is done is not systematic, and the guidelines for how to best implement such approaches are unclear. This paper presents a very systematic and methodical approach to the implementation of an oral motor exercise protocol, and identifies short and long-term outcomes presumably associated with progress in oral motor skills. The effects of this protocol on building endurance for the exercises and on sound and speech production will be presented across several learners

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## #156 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 126

AUT/Applied Behavior Analysis

## Motivational Procedures for Improving Communication Skills in Individuals with Autism Spectrum Disorders

Chair: Whitney Ann Ence (University of California Santa Barbara)

**Abstract:** This symposium will explore motivational interventions for improving a variety of communicative skills in children with ASD. These studies were all conducted within the context of multiple baseline designs across behaviors and participants. Specifically, the first study examined the effect of initiation training on peer socialization for children with Asperger's Syndrome in a free play setting at school. Results showed that social facilitation alone led to gains during intervention that were not generalized and initiations training plus social facilitation led to generalized gains. The second study investigated the effects of recasting with and without a contingency placed on the correct production of the target linguistic structure in order to improve language skills. Results established the need to provide contingent reinforcement for imitating the recasted phrase in order to improve acquisition and generalization of target linguistic structures. The third study utilized an organizational framework to improve conversational skills by limiting extraneous details the children provided. The study showed positive results by improving the ability to appropriately limit extraneous details generalizing to new partners. The fourth study examined the use of video self-management to improve nonverbal pragmatic behavior during social conversation. Results indicated that the intervention was successful in improving nonverbal pragmatics and results maintained at follow-up and during generalization probes.

**Improving Generalized Peer Socialization in School Setting Using Initiations Training.** Lynn Kern Koegel (University of California, Santa Barbara), ANJILEEN K SINGH (University of California, Santa Barbara), Sarah Kuriakose (UC Santa Barbara), Robert L. Koegel (University of California, Santa Barbara)

**Abstract:** Children with Autism Spectrum Disorders (ASDs) have difficulties interacting socially with peers, especially in unstructured play settings. Generalized peer social engagement and initiations were targeted in two participants (one child with autism and one with Asperger's Syndrome). In the first phase of the study, social facilitation techniques led to gains during intervention but failed to generalize outside of the intervention sessions. In the second phase, the children were provided with training for play and social initiations training. Following this phase, the children demonstrated generalization in both social

engagement and initiations. The results are discussed in terms of the theoretical implications for incorporating initiations into social interventions.

**Improving Acquisition of Target Language Skills in Children with Autism.** Lynn Kern Koegel (University of California, Santa Barbara), GREGORY LYONS (UCSB Koegel Autism Center), Robert L. Koegel (University of California, Santa Barbara)

**Abstract:** The literature suggests that recasting linguistic structures for children with autism may be an effective instructional strategy. However, the literature is not clear about specifying the type of contingency while implementing recasting. Although recasting results in the acquisition and generalization of target linguistic structures in children without autism, this study questions whether recasting, which according to common practice does not require a correct-response contingency, is effective for children with autism. Within the context of a multiple-baseline design across participants and behaviors, this study examined the effects of recasting with and without a contingency placed on the correct production of the target linguistic structure. Specifically, during the recast-only condition the children were not required to produce the target linguistic structure. However, during the recast-with-contingency condition participants were required to repeat the target linguistic structure. Acquisition and generalization of target linguistic structures were measured. Results demonstrated the need to provide contingent reinforcement when recasting in order to improve acquisition and generalization of target linguistic structures in children with autism

**Improving Appropriate Conversation with Children with Asperger Disorder Through the use of a Social Conversational Framework.** Robert L. Koegel (University of California, Santa Barbara), WHITNEY ANN ENCE (University of California Santa Barbara), Lynn Kern Koegel (University of California, Santa Barbara)

**Abstract:** Individuals with Asperger Disorder have high cognitive and linguistic abilities; however, despite their social motivation, they remain socially vulnerable due to their challenges acquiring appropriate social skills. At times, their circumscribed interests can interfere with social conversations as these individuals have difficulty time restricting their explanations to appropriate amounts of detail which over time can lead to deleterious effects such as peer isolation. To target this deficit, a multiple baseline design was implemented across participants to examine children with Asperger Disorder could learn to limit their extraneous conversational detail and improve organization through the use of treatment package consisting of a visual conversational framework combined with self-management. Combination of a visual cue and self management was chosen as the intervention as self-management has been shown to increase independence and individuals with Asperger Disorder have a relative strength in processing visual information. The study showed positive results by improving the ability to appropriately limit extraneous details, increase organization of thoughts, and generalized to new conversational partners. The positive results of the study discuss the importance of teaching appropriate conversation and implications this may have to future peer friendships.

**Improving Pragmatics in Children with Autism: The Use of Video Self-Management.** Robert L. Koegel (University of California, Santa Barbara), KATIE LEVINGER (University of California, Santa Barbara), Rosy Fredeen (UCSB Autism Research & Training Center), Lynn Kern Koegel (University of California, Santa Barbara)

**Abstract:** Individuals with Asperger Disorder have high cognitive and linguistic abilities; however, despite their social motivation, they remain socially vulnerable due to their challenges acquiring appropriate social skills. At times, their circumscribed interests can interfere with social conversations as these individuals have difficulty time restricting their explanations to appropriate amounts of detail which over time can lead to deleterious effects such as peer isolation. To target this deficit, a multiple baseline design was implemented across participants to examine children with Asperger Disorder could learn to limit their extraneous conversational detail and improve organization through the use of treatment package consisting of a visual conversational framework combined with self-management. Combination of a visual cue and self management was chosen as the intervention as self-management has been shown to increase independence and individuals with Asperger Disorder have a relative strength in processing

visual information. The study showed positive results by improving the ability to appropriately limit extraneous details, increase organization of thoughts, and generalized to new conversational partners. The positive results of the study discuss the importance of teaching appropriate conversation and implications this may have to future peer friendships.

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## #157 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 227 A

AUT/VRB; Service Delivery

### **A Comparison of Methods to Improve the Mand, Tact and Echoic Repertoires in Children with Autism**

Chair and Discussant: Kelle M. Wood Rich (Central Texas Autism Center, Inc.)

**Abstract:** This symposium will present a single case study of a male child with Autism. This child had significant difficulties acquiring and retaining tacts of common objects and pictures of common objects, improving intelligibility of vocal mands and improving overall intelligibility in the echoic repertoire. The child attended a private ABA clinic in Austin, Texas 6 hours per week. Therapy was conducted by a BCABA and a therapist with a Master's in Special Education soon sitting for her BCBA. Therapy was supervised by a BCBA.

To improve the acquisition and retention of tacts, two methods were compared. Echoic to tact transfers and a manual sign with vocal prompt. Three tact stimuli were taught in sets of three in an alternating treatment design with each method in a random order. Aims were set for 1 minute timings of correct/incorrect and acquisition and retention data were taken across 9 sets.

To improve the intelligibility of the student's manding repertoire, specifically two targets that had a strong history of reinforcement, two methods were compared. Trials were conducted using a manual sign plus a vocal prompt and differential reinforcement. Then mand trials were run using Kaufman and Kasper's Sign and Say kit. This kit provided sound shell syllables to shape articulation within the mand. Data was taken each session on percentage of adult form mands at item and most frequently used sound shell syllables. Acquisition rates and intelligibility were compared.

To improve intelligibility within the echoic repertoire, two procedures were compared in an alternating treatment design. This replicated a symposium presented by Dr. Vince Carbone at ABAI, Atlanta, 2006. A traditional verbal imitation program was run where the child was presented with the adult form of a word three times using differential reinforcement to select out the best approximation or the adult form word. Then using the same pattern of words (CVCV, CVC, VCV), Kaufman's Speech Praxis Kit was used to provide sound shell syllable break downs also using differential reinforcement. The two methods were compared to see which one resulted in the fastest acquisition rate.

### **A Comparison of Two Procedures to Improve the Acquisition and Retention Rate of the Tacting Repertoire in a Child with Autism.** MICHELLE TEWS (Central Texas Autism Center), Megan Dare (Central Texas Autism Center)

**Abstract:** This symposium will present a single case study of a male child with Autism. This child had significant difficulties acquiring and retaining tacts of common objects and pictures of common objects. The child attended a private ABA clinic in Austin, Texas 6 hours per week. Therapy was conducted by a BCABA and a therapist with a Master's in Special Education soon sitting for her BCBA. Therapy was supervised by a BCBA.

To improve the acquisition and retention of tacts, two methods were compared. Echoic to tact transfers and a manual sign with vocal prompt. Three tact stimuli were taught in sets of three in an alternating treatment design with each method in a random order. Attempts were made to make sure each stimulus

was comparable in their form and familiarity. Aims were set for 1 minute timings of correct/incorrect and acquisition and retention data were taken across 9 sets over several months.

**A Comparison of Two Methods to Improve the Intelligibility of Vocal Mands in a Child with Autism.** MICHELLE TEWS (Central Texas Autism Center), Megan Dare (Central Texas Autism Center)

**Abstract:** This symposium will present a single case study of a male child with Autism. This child had significant difficulties improving intelligibility of vocal mands. The child attended a private ABA clinic in Austin, Texas 6 hours per week. Therapy was conducted by a BCABA and a therapist with a Master's in Special Education soon sitting for her BCBA. Therapy was supervised by a BCBA. To improve the intelligibility of the student's manding repertoire, specifically two targets that had a strong history of reinforcement, two methods were compared. Trials were conducted using a manual sign plus a vocal prompt and differential reinforcement. Then mand trials were run using Kaufman and Kasper's Sign and Say kit. This kit provided sound shell syllables to shape articulation within the mand. Data was taken each session on percentage of adult form mands at item and most frequently used sound shell syllables. Acquisition rates and intelligibility were compared.

**A Comparison of Two Methods to Improve the Intelligibility of Echoics in a Child with Autism.** MEGAN DARE (Central Texas Autism Center), Michelle Tews (Central Texas Autism Center)

**Abstract:** This symposium will present a single case study of a male child with Autism. This child had significant difficulties improving overall intelligibility in the echoic repertoire. The child attended a private ABA clinic in Austin, Texas 6 hours per week. Therapy was conducted by a BCABA and a therapist with a Master's in Special Education soon sitting for her BCBA. Therapy was supervised by a BCBA. To improve intelligibility within the echoic repertoire, two procedures were compared in an alternating treatment design. This replicated a symposium presented by Dr. Vince Carbone at ABAAI, Atlanta, 2006. A traditional verbal imitation program was run where the child was presented with the adult form of a word three times using differential reinforcement to select out the best approximation or the adult form word. Then using the same pattern of words (CVCV, CVC, VCV), Kaufman's Speech Praxis Kit was used to provide sound shell syllable break downs also using differential reinforcement. The two methods were compared to see which one resulted in the fastest acquisition rate.

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**#158 Paper Session**

5/24/2009  
9:00 a.m. - 10:20 a.m.  
North 226 C  
AUT

**Teaching Social and Play Skills**

Chair: Carmen L. Hall (Campus Alberta Applied Psychology)

**Generalizing Social Skills Outside the Classroom: A Peer-Mediated Approach for Students with Autism.** (Applied Behavior Analysis) CARMEN L. HALL (Thames Valley Children's Centre), Charmaine Chadwick (Thames Valley Children's Centre)

**Abstract:** Generalizing social skills for students with Autism Spectrum Disorder (ASD) continues to be a challenge in schools. A program was developed using a peer-mediated approach with a class-wide social skills training component and a structured recess activities component. The structured recess activities were led by older student facilitators and available for all students to participate in. Recess activities provided an environment for the student with ASD to generalize skills learned in the classroom with mediation from same-age trained peers. Twelve schools participated in a program evaluation in various conditions. Trained observers tracked 6 social communication skills of 12 students with ASD across 3 situations throughout the school year. Measures also included office referral tracking forms, satisfaction questionnaires, and focus groups. Results demonstrated significant increases in social communication

skills, peer initiations toward the student with ASD, and high satisfaction with the peer-mediated component of the program. Moderate effects were seen in the maintenance of the social skills, generalization to other environments, and reductions in office referrals. Focus group respondents also highlighted the need for both components of the program. The program has demonstrated the importance of providing environmental supports to promote social skill generalization for students with ASD.

**Investigating the Generalization of a Play Scripts on Symbolic Play for Children Diagnosed with Autism Spectrum Disorder.** (Applied Behavior Analysis) NANCY J. CHAMPLIN (Autism Concepts, Inc.), Brandon McFadden (Autism Concepts, Inc.)

**Abstract:** Children with autism spectrum disorders lack skills in generating ideas for spontaneous play and may lack the mental representation and language competencies for symbolic play. Research states that children with autism have deficits in the frequency and complexity of different symbolic sequences (Guralnick & Hammond, 1999). Children can be taught symbolic play using a script-fading procedure (Krantz & McClannahan, 1993). This investigation studied the generalization of teaching symbolic play using a script fading procedure with novel play scripts. Participants included 3 boys, ages, 3.8-4.7, diagnosed with autism. The participants were taught an initial play script using a script fading procedure. Generalization of the procedure was evaluated across three acquisition scripts for each participant. Data were collected on the motor actions and appropriate vocalizations for each of the play parts. The study showed the participants were able to generalize appropriate motor actions with toys and simultaneously engage in appropriate vocalizations for each of the novel play scripts. A more rapid acquisition of appropriate play and language competency across novel play scripts with the use of the script fading procedure was identified.

**The Significance of Teaching Relay Races in the Classroom to Children with Autism.** (Applied Behavior Analysis) IMRAN A KHAN (The Chicago School of Professional Psychology), Steven J. Ward (Whole Child Consulting)

**Abstract:** This study will address the effects of teaching children diagnosed with Autism to participate in relay races to increase their social responding and awareness within groups. Participants will be taught to race within a team against a clock, occasioning opportunities to increase joint focus; showing interest in the behaviors of others; attention shifting; observing the behavior of others; as well as cheering on others' behavior.

Data will be collected on the number of players participating in the timed race, the action required of the players, the number of responses made during the race, and the number of prompts each player needed during the race.

Learners will practice attending visually to each other, coordinating physical exchanges of items with one another. Relay races will also give participants the opportunity to monitor and repair the actions of their partners, as necessary.

We are predicting that teaching relay races to students will teach them to attend to their peers and increase their interactions as a team player.

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## #159 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 222 C

CBM/Applied Behavior Analysis

## Applications of Applied Behavior Analysis in Post-Acute Brain Injury Rehabilitation

Chair: Chris Persel (Centre for Neuro Skills)

**Abstract:** The Centre for Neuro Skills (CNS) is a three-site post-acute inpatient rehabilitation program for individuals with acquired brain injuries. Founded in 1980, CNS provides comprehensive therapy, community reintegration and integrated behavioral programming for this complex population. In order to provide the highest quality behavioral care possible for clients, obtaining data to assist with making clinical decisions is imperative. The first study addresses challenges surrounding the consistency of staff data collection and focuses on improving the frequency of staff data collection behaviors. The following three studies review unique clinical applications of applied behavior analysis interventions for challenging behaviors of individuals with acquired brain injuries within a CNS program. The focus of these studies is on therapy-staff implemented ABA interventions that were shown successful at improving behaviors of adolescent and adult clients. Generalization, maintenance, and effects of the interventions are addressed.

**Want to Win the Lottery? Using a Lottery to Improve Staff Data Collection.** JESSICA THOMPSON (Centre for Neuro Skills), Heather A. Moore (Centre for Neuro Skills), Chris Persel (Centre for Neuro Skills)

**Abstract:** Inconsistent data collection by staff members can lead to difficulties in making accurate, effective, and beneficial decisions regarding the behavior of clients. This study investigated the use of a lottery system implemented to increase the data collection behaviors of staff at two large multidisciplinary traumatic brain injury rehabilitation clinics. Raffle cards were distributed to clinic staff members observed spontaneously and independently engaging in data collection related behaviors. One weekly winner was drawn from the previous week's cards at a weekly meeting of all clinic staff. Monthly "bonus" drawings were also conducted the last week of each month in which all cards for the month were included and both the staff who was observed and the staff who delivered the card were able to choose a prize. Winning staff for all drawings could choose from a variety of 4 randomly available prizes. The prizes available varied from week to week. Changes in data collection behaviors following implementation of the staff lottery were experimentally assessed using a multiple-baseline across sites design. Results showed that the staff lottery was effective at increasing data collection as the average percentage of data collected prior to the lottery was 26% as compared to 65% following lottery implementation. Maintenance of these results was demonstrated. Findings suggest that lotteries may be a cost effective and time efficient method of increasing specific desired staff behaviors.

**Effective Use of Social Positive Reinforcement in Decreasing Maladaptive Behaviors of a Young Adult with Significantly Impaired Short-Term Memory Due to an Acquired Brain Injury.** HEATHER A. MOORE (Centre for Neuro Skills), Chris Persel (Centre for Neuro Skills)

**Abstract:** This study evaluated the use of social positive reinforcement with a client with impaired short-term memory as a result of an acquired brain injury. The participant was a 19-year-old male client in a post-acute brain injury rehabilitation program who engaged in maladaptive behaviors including elopement, motor and verbal perseverations, and attempts to obtain food regardless of circumstances. A comprehensive treatment plan was designed. This treatment plan was implemented and used a picture chart that had multiple pieces that were provided contingent on appropriate behavior. He was then provided food contingent on successfully earning all the pieces to complete the picture. The data collected suggest that implementation of this program produced pronounced reductions in all maladaptive behaviors. Dramatic increases in appropriate behaviors in both the rehabilitative therapy and community environment were also observed. Maintenance of the new behaviors was demonstrated. Clinical implications for treatment and implications for future research are discussed.

**Effective Use of a Token System in Decreasing Physical Aggression and Self-Injurious Behavior in an Adolescent with an Acquired Brain Injury.** HEATHER A. MOORE (Centre for Neuro Skills), Chris Persel (Centre for Neuro Skills)

**Abstract:** Following traumatic brain injury individuals often engage in severe physically aggressive behaviors. In an attempt to maximize the possible benefits of their therapy, it's important to decrease interfering maladaptive behaviors. This study investigated the use of a token system with a 13- year-old male client in an inpatient post-acute brain injury rehabilitation program. The treatment plan implemented utilized a DRO 15-minute program in which points were earned contingent on the absence

of physical aggression and self-injury. The points were later redeemable for snacks at pre-determined snack times. The data collected suggest that implementation of this program produced dramatic reductions in the maladaptive behaviors and the need for physical restraint. Generalization to other settings and maintenance of the skills was demonstrated.

**Use of a Self-Monitoring Procedure to Improve Social Behaviors of an Adult with an Acquired Brain Injury.** CHRIS PERSEL (Centre for Neuro Skills), Jessica Thompson (Centre for Neuro Skills), Heather A. Moore (Centre for Neuro Skills)

**Abstract:** Social difficulties have been noted as a common behavior problem exhibited by individuals recovering from traumatic brain injury. The lack of ability to self-monitor interactions can interfere with personal relationships, vocational pursuits and community reintegration. This study investigated a structured self-monitoring program to aide in the reduction of inappropriate social behavior of a 48-year-old traumatically injured adult male. Inappropriate social behaviors displayed included excessive talking, perseveration on topics, interrupting others and exaggerated recall of facts. While the self-monitoring program was originally designed to be a clinical application used to help this client, findings from the investigation have potential implications for future research and client treatment. The two-phase self-monitoring program implemented initially included self-monitoring followed by delayed feedback during counseling sessions. Problem behavior was unchanged. Modifications were made including immediate constructive and positive feedback each hour. Inappropriate social behavior decreased and cooperation in therapy improved. Generalization, maintenance and implications for treatment and future research are discussed.

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## #160 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 222 AB

CBM/VRB; Applied Behavior Analysis

### **Research and Treatment in the Context of Valued Living**

Chair: Stephanie L. Nassar (University of Mississippi)

**Abstract:** Contemporary contextual-behaviorism defines values as “freely chosen, verbally constructed consequences of ongoing, dynamic, evolving patterns of activity, which establish predominant reinforcers for that activity that are intrinsic in engagement in the valued behavioral pattern itself” (Wilson, Sandoz, Kitchens, & Roberts, under review). Valued living as measured by the Valued Living Questionnaire (VLQ) is positively correlated with social functioning, mental health, and quality of life, and negatively correlated with psychological distress and experiential avoidance (Wilson et al., under review). This symposium includes a conceptual paper on values and valued living. It also presents findings from several studies examining the Valued Living Questionnaire (VLQ), values-centered writing, and the development of the Valued Living Questionnaire-II (VLQ-2).

**Values in ACT: A Technical and Clinical Analysis.** KELLY G. WILSON (University of Mississippi), Kate Kellum (The University of Mississippi), Emily Kennison Sandoz (University of Mississippi)

**Abstract:** Acceptance and Commitment Therapy (ACT) asks of individuals a difficult thing – to step willingly into the pain with which they have struggled and notice what has kept that struggle alive. In this way, ACT focuses on loosening the grip of aversive control, allowing for the emergence of new sources of appetitive control and the expansion of the client’s behavioral repertoire. A shared sense of values, as well as the vulnerabilities that accompany it, directs and dignifies this difficult work of therapy. This paper will offer a technical behavioral definition of values, an exploration of the intimate relationship between values and vulnerabilities, and suggestions for the facilitation of valued living for our clients and for us.

**Values as Indicators for Reasons for Living: Correlations Between The Valued Living Questionnaire (VLQ) and Reasons For Living (RFL) Questionnaire.** RACHAEL C. HOWARD (The University of Mississippi), Kelly G. Wilson (University of Mississippi), Kate Kellum (The University of Mississippi), Stephanie L. Nassar (University of Mississippi)

**Abstract:** This study investigates the relationship between self-reports on the Valued Living Questionnaire (VLQ) and Reasons for Living (RFL) questionnaire in a sample of college students from a large southeastern public university. Specifically, this study examines how personal values play a role in consideration of suicide by comparing reasons listed for not committing suicide on the RFL with endorsements on the VLQ.

**Values-Centered Writing: Explorations Within The Expressive Writing Paradigm.** STEPHANIE L. NASSAR (University of Mississippi), Kelly G. Wilson (University of Mississippi), Kate Kellum (The University of Mississippi), Maureen Kathleen Flynn (University of Mississippi)

**Abstract:** Over the past two decades, researchers have provided evidence to suggest that individual's physical and mental health improve after writing about deeply emotional experiences (Baikie & Wilhelm, 2005; Pennebaker, 1997). More recently, researchers have explored the impact of writing about important personal values. Values-centered writing has shown to decrease defensiveness to self-threatening information (McQueen & Klein, 2006; Sherman et al., 2000) as well as increase positive other-directed feelings, such as love and connection (Crocker et al., 2008), and grades of African American students (Cohen et al., 2006). This study had two purposes. The first purpose was to compare the effects of writing about deeply emotional experiences with the effects of writing about important personal values on measures of psychological well-being. The second purpose was to examine whether writing about values in conjunction with writing about a deeply emotional event would enhance self-reported psychological well-being. Participants completed questionnaires on psychological well-being, were randomly assigned to writing conditions, and participated in three consecutive 15-minute writing sessions. Participants returned one week and one month after writing to complete questionnaires on psychological well-being.

**Improving Measurements of Valued Living: Validation of the Valued Living Questionnaire-II (VLQ-2).** MAUREEN KATHLEEN FLYNN (University of Mississippi), Kelly G. Wilson (University of Mississippi), Kate Kellum (The University of Mississippi), Emily Kennison Sandoz (University of Mississippi)

**Abstract:** This study examined the psychometric properties of the Valued Living Questionnaire-II (VLQ-2), an updated version of the therapeutic measure, the Valued Living Questionnaire (VLQ), used in the practice of Acceptance and Commitment Therapy. The VLQ assesses the importance of ten valued living domains and consistency of action towards these valued domains. The VLQ-2 expands on the VLQ by assessing additional aspects related to the ten valued living domains. The aspects related to the valued domains contained in the VLQ-2 include, the possibility that something meaningful could happen in the domain, current importance of the domain, overall importance of the domain, recent action in the domain, satisfaction level with recent action in the domain, and level of concern that the domain will not progress as desired. Participants in this study filled out the VLQ-2 and additional measures of pathology, psychological flexibility, and purpose in life on two separate occasions to assess the reliability and validity of the VLQ-2.

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## #161 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 131 A

CSE/DDA;Theory

### **Behavior Analysis and the Legal System: Three Perspectives on a Wrongful Death Case and the Aftermath**

Chair: Jon S. Bailey (FSU, BMC, FABA)

Discussant: Gina Green (San Diego State University)

**Abstract:** This symposium will present three perspectives on a wrongful death case that was recently settled in Florida: The mother of the client who died, the attorney who represented the family, and the behavior analyst who was the expert witness for the plaintiffs. The issues concern the selection and training of the staff that were responsible for carrying out the behavior program and the supervision required to properly implement a behavioral program in the community. Our attorney will explain the legal and ethical implications and responsibilities for our field.

#### **“My Favorite Person.” JENNIFER JENNINGS GLOVER (Mother)**

**Abstract:** Ms. Glover will present the background on her son who was diagnosed with Prader-Willi Syndrome (PWS) as a child, the difficult decision for placement in a group home specializing in PWS as a teen and subsequently died several years later as a young adult in this facility which presented itself as a specialized behavioral treatment program for individuals diagnosed with PWS. Ms. Glover will conclude with the aftermath due to this tragic event.

#### **The Behavior Analyst as an Expert Witness in a Wrongful Death Case: What We Have to Offer the Legal System. JON S. BAILEY (FSU, BMC, FABA)**

**Abstract:** Dr. Bailey will describe his role as an expert witness and some of the behavioral issues that were central to the case including issues of training of staff, design of the behavioral program, and the proper implementation and monitoring of the behavioral program, the failure of which resulted in the death of the client.

#### **A New World of Rights for Vulnerable Clients Today. DEAN LEBOEUF (Brooks, LeBoeuf, Bennett, Foster & Gwartney, PA)**

**Abstract:** Mr. LeBoeuf will address issues relevant to behavior analysts who are concerned with clients right to treatment under state statutes in Florida and other states. This Prader-Willi wrongful death case appears to open the door to litigation which holds treatment facilities responsible for providing proper care, treatment, and supervision. Advice for behavior analysts who wish to protect clients in their facilities will be provided.

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## #162 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 129 A

DDA/CBM; Service Delivery

### **Advances in Dieting and Other Healthy Lifestyle Behaviors for Adults with Developmental Disabilities**

Chair: Charles Steve Holburn (Institute for Basic Research)

Discussant: Joseph E. Spradlin (University of Kansas)

**Abstract:** Individuals with developmental disabilities (DD) have poorer health than the general population, including greater risks of diabetes, heart disease, elevated blood pressure and cholesterol, depression, and obesity. With respect to the obesity, the rates in individuals with DD have been estimated as high as 45.2% for males and 50.3% for females. Over a decade ago, Pope (1992) noted that individuals with developmental disabilities are often overlooked when it comes to health promotion, and more recently, Frey, Temple, and Stanish (2006) observed inadequacies in the quality and quantity of available health information for such individuals. Nonetheless, a body of literature is emerging that demonstrates how the health of individuals with developmental disabilities can be influenced by their participation in structured health enhancement programs. One approach to health improvement is to identify an individual's health issue and treat that particular problem. Two presentations in this symposium used this approach in describing successful methods of weight reduction. Another approach to improved health is a general educational approach with follow up support in any number of identified areas. One presentation in this symposium used this approach in developing and implementing a general health curriculum. The presentations will be discussed in light of the growing interest in health improvement for individuals with developmental disabilities.

**Health Education for Support Staff and the Health Advocacy Program: A Curriculum for Adults with Developmental Disabilities.** CHRISTINE CEA (New York State Institute for Basic Research), Charles Steve Holburn (Institute for Basic Research)

**Abstract:** Individuals with intellectual disabilities (ID) have poorer health than the general population, including greater risks of diabetes, heart disease, elevated blood pressure and cholesterol, obesity, and depression. We developed and assessed the Health Advocacy Program (HAP, Holburn, Cea, Gordon, 2005), a twenty-lesson multimedia curriculum to improve the health and well-being of individuals with intellectual disabilities on Staten Island. In piloting the HAP in day-program classrooms throughout New York City, we found that individuals with ID demonstrated increased health knowledge and health advocacy skills, but many were unable to apply this information in their group homes due to factors such as limited access to healthier food choices, insufficient opportunities for exercise, and inadequate modeling by home support staff. We are now (a) implementing the HAP in group homes; (b) teaching home support staff about healthy lifestyle practices and methods to enhance residents' health advocacy, and (c) facilitating organizational improvements that foster healthier lifestyles. Accordingly, we are now piloting a complementary Supporting Healthy Lifestyles Curriculum for support staff.

**Clinic-Based Evaluation of the 5-3-2 Diet for Overweight Adults with Developmental Disabilities.** RICHARD R. SAUNDERS (University of Kansas), Muriel D. Saunders (University of Kansas), Joseph Donnelly (Weight Management Center), Bryan Smith (Weight Management Center), Debra Sullivan (Weight Management Center), Brianne Guilford (Weight Management Center), Brian Erickson (Weight Management Center), Mary Rondon (Weight Management Center)

**Abstract:** We recently completed an analysis of the effectiveness of the 5-3-2 diet with adults with DD living in the community. The diet emphasizes 5 servings of fruits and vegetables, 3 protein shakes, and 2 low-calorie entrees daily. Some participants were seen monthly by project staff in a clinic-like setting at a community employment agency. Their food preferences were color coded in the colors of a stoplight, and the participants were prompted to emphasize green (low calorie) over red (high calorie) items when meal planning, shopping, and selecting snacks. Frozen low-calorie entrees (e.g., Smart Ones, Lean Cuisine) were encouraged for portion control. Participants received cash incentives for tracking intake and for recording steps walked, according to a project-provided pedometer. Monthly 24-hour intake recalls were analyzed for total calories and nutritional balance. Participants were supported on the diet for 6 months and then followed on a maintenance protocol for 6 months. We report on the results from 36 individuals who enrolled and attempted to follow the diet. The majority of the participants lost weight, with average weight loss near 3 lbs per month. Issues related to the clinic approach will be contrasted with those from the in-home intervention.

**Home-Based Evaluation of the 5-3-2 Diet for Overweight Adults with Developmental Disabilities.** MURIEL D. SAUNDERS (University of Kansas), Richard R. Saunders (University of Kansas), Joseph Donnelly (Weight Management Center), Bryan Smith (Weight Management Center),

Debra Sullivan (Weight Management Center), Brianne Guilford (Weight Management Center), Brian Erickson (Weight Management Center), Mary Rondon (Weight Management Center)

**Abstract:** Obesity rates in individuals with DD have been estimated as high as 45.2% for males and 50.3% for females. Recently, we completed an analysis of the effectiveness of an approach to weight loss by adults with DD living in the community. In one phase, participants were seen monthly in their residences by project staff. Their food preferences were color coded in the colors of a stoplight, and the participants were prompted to emphasize green (low calorie) over red (high calorie) items when meal planning, shopping, and selecting snacks. Frozen low-calorie entrees were encouraged for portion control. On colorful pictorial tracking forms, participants recorded daily intake. At monthly meetings with project staff, participants received cash for green-food intake, double cash when weight loss was at least 1 BMI, and received cash for steps walked, according to a project-provided pedometer. Participants were supported on the diet for 6-12 months and then followed on a maintenance protocol for 6 months. We report on the results from 46 individuals. The presentation will include data on waist circumference reductions, weight loss, and participant satisfaction survey data. The majority of the participants lost weight, with average weight loss near 3 lbs per month.

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## #162a Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 120 A

DDA/AUT; Applied Behavior Analysis

### Examining Prompting Procedures During Skill Acquisition

Chair: William H. Ahearn (The New England Center for Children)

Discussant: Wayne Fisher (Munroe-Meyer Institute, UNMC)

**Abstract:** Applied behavior analysts have a rich history of teaching socially important behavior to individuals with developmental disabilities and autism. Response prompting, reinforcement, generalization, and maintenance have all been extensively studied to identify best teaching practices. This symposium will examine a number of issues related to prompting responses during skill acquisition. Each paper focuses on a different aspect of learning during skill acquisition. The first paper, presented by Laura Grow, explores the system of least prompts for teaching behavior chains and describes how such procedures are at risk for treatment integrity failures in naturalistic settings such as a classroom. The second paper, presented by Genevieve Fentress, compares the “no-no” prompting procedure to most-to-least prompting for teaching skills to children with autism. In the third paper, presented by Tiffany Kodak, four aspects of learning conditional discriminations (reinforcement, response prompting, attending, and exposure to sample stimuli) are examined. The distinguished former editor of JABA, Wayne Fisher, will serve as the discussant.

**An Evaluation of the Effects of Treatment Integrity Failures on Acquisition during Instruction using the System of Least Prompts.** LAURA L. GROW (Western Michigan University), James E. Carr (Western Michigan University), Kristin V. Gunby (Kinark child and family services), Shaireen M. Charania (Kinark child and family services), Christina Gonsalves (Kinark Child and Family Services), Inas A Ktaech (Kinark Child and Family Services), April Kisamore (Western Michigan University)

**Abstract:** Teaching procedures such as the system of least prompts may be at risk for treatment integrity failures in naturalistic settings such as a classroom. Two studies have systematically assessed the impact of treatment integrity failures on the acquisition of new skills (Holcombe, Wolery, & Snyder, 1994; Noell, Gresham & Gansle, 2002). In the present study, we compared the acquisition and maintenance of response chains taught using a perfectly implemented system of least prompts and a flawed system of least prompts (i.e., addition of multiple verbal prompts and failure to follow through with more intrusive prompts). Four children, aged 6 to 9, participated in the study. An adapted alternating treatments design was used to compare the efficiency of learning during the system of least prompts and the flawed system of least prompts. Results were consistent with those obtained in previous studies in that the perfectly

implemented and flawed prompting procedures were effective in teaching new skills for all participants. However, the perfectly implemented treatment required fewer trials to mastery for 3 of the 4 children.

**A Comparison of the “No-No Prompt” and Most-To-Least Prompting Methods for Teaching Basic Skills to Children with Autism.** GENEVIEVE M FENTRESS (University of Houston-Clear Lake), Dorothea C. Lerman (University of Houston-Clear Lake), Laura Harper-Dittlinger (University of Houston – Clear Lake)

**Abstract:** We investigated two prompting techniques commonly used to teach individuals with developmental disabilities. With most-to-least (MTL) prompting, skills are introduced and simultaneously paired with the most intrusive prompt necessary to achieve a correct response. Prompts are gradually faded over time. With the “no-no prompt” technique (NNP), the initial instruction is presented up to two times before a prompt is delivered. Although MTL prompting reduces the frequency of errors, this method may delay skill mastery by restricting opportunities for independent responding. Three children with autism participated. Combined multielement and multiple baseline designs were used to compare the teaching outcomes for each prompting method. Rate of skill mastery, frequency of errors, levels of problem behavior, and session length were examined for each method, along with the generalization and maintenance of skills. Although the NNP method resulted in faster skill acquisition, MTL prompting was associated with fewer errors, lower levels of problem behavior, and shorter session durations. In addition, skills taught via MTL prompting showed better maintenance and generalization effects than skills taught via the NNP technique.

**Functional Assessment of Language Deficits: Linking Assessment and Treatment.** TIFFANY KODAK (Munroe-Meyer Institute, University of Nebraska Medical Center), Wayne Fisher (Munroe-Meyer Institute, UNMC), Andrea Clements Stearns (Munroe-Meyer Institute, University of Nebraska Medical Center), Kelly J. Bouxsein (UNMC)

**Abstract:** Conditional discriminations are building blocks for the development of working vocabulary and language. Four function-based procedures for teaching conditional discriminations to individuals with ASD that have empirical support in the extant literature include: (a) using an empirically-identified reinforcer to increase motivation, (b) adding an extra-stimulus prompt to guide correct responding (i.e., errorless learning), (c) insuring that the individual is attending to the relevant characteristics of the sample or comparison stimuli through reinforcement of a differential observing response, and (d) repeatedly presenting each sample stimulus in isolation (i.e., in blocks of trials) until criterion-level performance is achieved. Each of these procedures has been shown to be effective with some individuals with autism, however, it is not clear which procedure should be selected for an individual who fails to acquire discriminations during typical instruction. Therefore, it is important to determine when these four specialized treatments should be used. The purpose of the evaluation was to refine and validate a rapid assessment for (a) identifying the function of a child’s poor performance on conditional discrimination tasks and (b) selecting the intervention from the four approaches described above that is functionally related to the child’s performance.

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## #163 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 128

DDA/AUT; Applied Behavior Analysis

### **Evaluation of Antecedent-based Interventions for Problem behavior Maintained by Social Reinforcement**

Chair: Eileen M. Roscoe (New England Center for Children)

Discussant: Richard G. Smith (University of North Texas)

**Abstract:** Because consequent-based interventions (e.g., extinction) may not always be practical, it is important to evaluate antecedent-based interventions either alone or as additional enhancements to

consequent-based manipulations. This symposium will include three papers describing various refinements or extensions of antecedent-based interventions for treating problem behavior maintained by social positive or social negative reinforcement. The first paper, delivered by Stephen Walker, will present data evaluating the immediate and subsequent effects of NCR (attention), while the schedule is systematically faded, for a participant with attention-maintained problem behavior. The second paper, delivered by Jill Harper, will discuss data evaluating a series of antecedent-based interventions, including vicarious reinforcement, conditioning of social interaction as a reinforcer, and stimulus fading, for treating problem behavior maintained by social avoidance. The third paper, delivered by Lynlea Longworth, will review data comparing the relative effects of NCR without extinction, using maintaining reinforcers versus arbitrary reinforcers, for reducing problem behavior maintained by social reinforcement. Rick Smith will serve as discussant and will highlight potential contributions, concerns, and future directions, associated with each of the papers presented.

**Immediate and Subsequent Effects of Fixed-Time Delivery of Reinforcement on Problem**

**Behavior Maintained by Attention.** STEPHEN F. WALKER (University of North Texas), Joseph D. Dracoby (University of North Texas), Richard G. Smith (University of North Texas), Lauren A. Cherryholmes (AdvoServ), Bailey Devine (University of North Texas), Nicole G. Suchomel (University of North Texas), Claire Anderson (University of North Texas), Jessica Hobbs (University of North Texas)

**Abstract:** A functional analysis indicated that access to attention was the probable maintaining variable for problem behavior exhibited by a woman with developmental disabilities. The effects of fixed-time (FT) attention were evaluated using a three component, mixed schedule of reinforcement. In components 1 and 3, FR1 (attention) was in effect for problem behavior; in component 2 attention was delivered according to FT schedules. Initial FT values began with continuous attention, and were faded to FT 7 min. Results showed suppression of problem behavior during the second component across FT values, as well as lower response measures in the 3rd (FR1) component relative to the 1st (FR1) component. Implementation of the FT schedule across components resulted in increases in problem behavior relative to previous implementations of the FT treatment. Therefore, an analysis of potential effects of the FR1 components on responding during the FT component was conducted.

**Assessment and Treatment of Problem Behavior Maintained by Social Avoidance.** JILL M. HARPER (University of Florida), Brian A. Iwata (University of Florida), Erin Camp (University of Florida)

**Abstract:** Problem behavior maintained by social-negative reinforcement typically involves escape from a specific type of social interaction—the presentation of task demands. Some individuals, however, may exhibit a more general form of social avoidance in which problem behavior occurs in the presence of a wider range of social interactions. Although social avoidance might be inferred from unusual response patterns during a functional analysis, it can be confirmed directly. This study involved the assessment and treatment of problem behavior maintained by social avoidance. Three participants exhibited high rates of problem behavior during the play or demand conditions of an initial functional analysis. A subsequent analysis was then conducted in which problem behavior produced escape from social interaction that did not include the presentation of any demands. A series of interventions was then implemented, which included vicarious reinforcement (via peer modeling), conditioning of social interaction as a reinforcer, and stimulus fading

**Noncontingent Reinforcement: A Comparison of Arbitrary and Maintaining Reinforcers**

LYNLEA J. LONGWORTH (New England Center for Children), Eileen M. Roscoe (New England Center for Children), Nancy A. Perhot (New England Center for Children), Gesell Gavidia (New England Center for Children)

**Abstract:** Although noncontingent reinforcement (NCR) has been found effective for treating socially-maintained problem behavior, it is unclear whether NCR is effective in the absence of extinction and when reinforcers, other than those maintaining problem behavior, are delivered. The purpose of this study was to compare the relative effects of NCR without extinction, using maintaining reinforcers versus arbitrary reinforcers, for reducing problem behavior maintained by social reinforcement. Four

individuals, diagnosed with autism spectrum disorder, whose problem behavior was maintained by either attention ( $n = 2$ ) or by escape from demands ( $n = 2$ ) participated. Pre-assessments were conducted to ensure that the arbitrary reinforcer used functioned as a reinforcer for an arbitrary response, but did not maintain problem behavior. NCR using the maintaining reinforcer involved response independent delivery of either attention or escape, whereas NCR using the arbitrary reinforcer involved response independent delivery of the arbitrary reinforcer (an edible). During both types of NCR, extinction was not in effect. Results suggest that, for most participants, NCR using the maintaining reinforcer may be more effective than NCR using an arbitrary reinforcer.

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## #164 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 132 BC

DEV/OBM; Applied Behavior Analysis

### Observation and Assessment in Dementia Care Settings

Chair: R. Mark Mathews (University of Sydney)

**Abstract:** People with dementia in residential care rarely engage in daily life activities, however, their inappropriate or aggressive behavior can create problems for direct care staff. This symposium includes four data-based presentations on observation and assessment strategies conducted with dementia-care residents and direct care staff. The first study provides a five-year longitudinal analysis of the effects of a popular environmental and staff training intervention on engagement and problem behaviors exhibited by dementia care residents in two Michigan nursing home units. The second study provides an evaluation of physical environmental changes using similar behavioral observation strategies in a nursing home in Sydney, Australia. The third presentation provides a meta-analysis of published findings of an alternative observational strategy used in 91 residential care facilities. The final presentation examines caregiver's acceptability ratings of with a range of behavioral, pharmacological, and sensory interventions designed to reduce the incidence of problem behaviors in persons with dementia.

**Longitudinal Analysis of Staff Training in the "Eden Alternative" on Engagement of Residents in Dementia Care.** R. MARK MATHEWS (University of Sydney), Linda A. LeBlanc (Western Michigan University), Allison A. Jay (Western Michigan University), Jonathan C. Baker (Western Michigan University), Brian J. Feeney (Western Michigan University)

**Abstract:** The Eden Alternative is an increasingly popular approach to making nursing facilities more home-like environments. Opportunities for residents to interact with and care for a wide range of plants, animals, birds, and even children is viewed as a means of improving the quality of life of nursing home residents and their care providers. Direct care staff from two dementia care units participated in Eden training; both programs received certification. Five years of observational data were collected using behaviour maps to record resident engagement (both appropriate and inappropriate) and affect (positive, neutral, or negative). Staff behavior and voice tone during interactions with residents were similarly collected. Prior to the Eden immersion training, residents were appropriately engaged during 71% of observations in unit A and 60% in unit B. During the first year after immersion training engagement increased to 85% in each unit. Lower levels of engagement (50% in unit A and 30% in unit B) during the following year. Additional Eden training in 2006 and 2007 results in small increases in engagement in one unit, but the increases were short-lived and an overall decline in engagement was observed.

**Pre and Post-Occupancy Evaluation of Dementia Care Cottages.** RON SMITH (University of Sydney), R. Mark Mathews (University of Sydney)

**Abstract:** Persons with severe dementia rarely engage in activities. New dementia cottages were designed to provide a more home-like environment for nursing home residents, with the intent of promoting independence and activity. Fifty-eight, high care residents of a traditional-style dementia care facility moved to new, purpose built, dementia-specific cottages, with 15 residents in each cottage. Resident

behavior was directly observed using both behavior maps and time sampling observation procedures. Observational data were analysed by the percentage of time residents were engaged, not engaged, or distressed. Resident affect and activity were also noted whenever residents were observed to be appropriately engaged. Resident engagement increased by 44% ( $t = 2.65$ ;  $p < .05$ ) and levels of distress declined by 50% ( $t = -2.37$ ;  $p < .05$ ) after the relocation. Two forms of environmental assessment were also conducted; results showed that the newly built cottages provided greater levels of privacy, comfort, choice, and personalisation. Family satisfaction with the environment, food, and staff also increased. The smaller, restraint-free, home-like environment provides residents with more independence, privacy, and choice. The move has resulted in more frequent engagement and fewer problem behaviors. This environment could provide a model for increasing activity in dementia facilities.

**Meta-analysis of Dementia Care Mapping.** RON SMITH (University of Sydney), R. Mark Mathews (University of Sydney)

**Abstract:** Dementia Care Mapping (DCM) has become a popular tool in the direct observation of people with dementia. Participants are observed in 5-minute intervals for a total of six hours. After each interval, the resident is assigned a mutually-exclusive code (from a predetermined list) based on their behavior. An affect score, ranging from -5 to +5, is also recorded for each interval. A meta-analysis was conducted on the results of 26 published journal articles that reported DCM results. In total, DCM observations of 2,360 participants with dementia in 91 different facilities (including day care centres, hospital wards, dementia units, and residential facilities) were included in the analysis. Published studies reported a wide variety of different DCM measures, however, key variables included in the meta-analysis were the percentage of time that each behavior code was observed and average affect scores. Composite scores of appropriate (high potential for well-being) and inappropriate (low potential for well-being) were computed. Results of the meta-analysis will be reported and both strengths and weaknesses of this observational tool will be discussed

**Acceptability of Interventions to Staff in Long-Term Care Settings for Older Adults: Comparing Ratings and Hierarchical Selection** JONATHAN C. BAKER (Western Michigan University), Linda A. LeBlanc (Western Michigan University)

**Abstract:** Older adults and their caregivers generally prefer behavioral interventions over medications in treatment acceptability studies. However, previous studies primarily examined acceptability ratings, which did not force the responder to select between treatment options. Additionally, recent advances in behavioral treatment technologies and other treatments previously presented to raters create a need to revisit treatment acceptability for older adults. The present investigation examined treatment acceptability of behavioral, pharmacological, and sensory interventions using a treatment acceptability rating scale, treatment selection rankings, and direct report of treatments used. Sixty staff from nursing homes in the Midwest who actively participate in treatment decisions for older adults with dementia who engage in aggression were recruited. Participants saw a video vignette and completed an internet-based treatment acceptability rating and ranking of each of the treatments. One-way ANOVAs indicated no statistically significant differences in ratings between treatments. Pearson-Product Moment Correlations indicated only medication ratings and rankings were significantly related. Neither ratings nor rankings were correlated with treatment use. Implications for treatment acceptability ratings as evidence for treatment adoption of behavioral interventions from both a practical and conceptual perspective, as well as directions for future studies will be discussed.

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## #165 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 226 AB

EAB/IPC; Experimental Analysis

**Science Board Translational Series: History and Current Status of Translational Research in Behavioral Economics**

Chair and Discussant: Gregory P. Hanley (Western New England College)

**Abstract:** Basic and applied research interdependence has always been a hallmark of the field of behavior analysis. The continuance of this interdependence is important because it increases the odds that basic research will be relevant and applied research will be effective. Translational researchers may be considered the mediators of this relationship, with one foot firmly planted on the ground in basic area and the other firmly planted in the applied area. This symposium will provide an opportunity for three leading translational researchers to highlight some important conceptual and empirical developments in the rich translational area of behavioral economics, which is a subfield of behavior analysis in which the principles of microeconomics are used to understand responding in both experimentally-controlled and ecologically-valid conditions.

**Behavioral Economics in the Clinic: Translational Research on Substitutability, Demand, and Unit price in the Treatment of Behavior Disorders.** ISER GUILLERMO DELEON (Kennedy Krieger Institute), Michelle A. Frank (Kennedy Krieger Institute), Mandy M. Triggs (Kennedy Krieger Institute), Abbey Carreau (Kennedy Krieger Institute), Meagan Gregory (University of Florida), Melissa J. Allman (Kennedy Krieger Institute/Hopkins)

**Abstract:** Behavior analysts have increasingly applied economic concepts towards understanding issues of social significance in areas such as consumer choice, gambling, and substance abuse. We present a translational progression of studies that apply economic concepts in work with individuals with developmental disabilities, culminating in demonstrations of their implications for the treatment of behavior disorders. Initial laboratory investigations revealed greater elasticity of demand given unit price increases when available alternatives were functionally similar (i.e., functionally similar alternatives were more substitutable). In subsequent clinical studies, this general theme was extended towards: (a) examining the benefits of considering relative substitutability when arranging interventions for behavior disorders, and (b) examining how the analyses required to identify these relations can be made practical and practicable in applied settings.

**Preliminary Analyses of Price Manipulations: Commodity Type and Cost-Benefit Constituents.** JOHN C. BORRERO (University of Maryland, Baltimore County), Christopher E. Bullock (University of Nebraska Medical Center), Michelle A. Frank (Kennedy Krieger Institute), Nicole Lynn Hausman (Kennedy Krieger Institute)

**Abstract:** Basic behavior analysts, and more recently applied behavior analysts, have recognized that constructs from traditional economic research may inform, and in some cases, improve upon characterizations of “stimulus value.” This has been accomplished by an elegant synthesis between economic principles and behavior analytic methods. In this presentation, preliminary data from a human operant laboratory will be reported. One goal of this research was to determine the extent to which college students would respond in accord with prevailing price manipulations in a three choice (concurrent) schedule arrangement (i.e., selecting the alternative with the lowest price). A second goal of this research was to determine whether differential responding could be detected as a function of commodity type (video segments vs. points). A final goal of this research was to determine whether differential responding could be detected based on how cost and benefit constituents were progressively altered (in one case cost increased, while the benefit component remained fixed, in the other case, cost was fixed, while the benefit component decreased). Results will be discussed in terms of the implications of unit price and related to relevant applied literature.

**Behavioral Economics in the Lab: Delay Discounting, Drug Taking, and Pathological Gambling.** GREGORY J. MADDEN (University of Kansas), Adam T. Brewer (University of Kansas), Patrick S. Johnson (University of Kansas), Jonathan W. Pinkston (University of Kansas), James H. Woods (University of Michigan)

**Abstract:** Economists have long studied how behavioral consequences lose their value as they are delivered after longer and longer delays; a process referred to as “delay discounting.” While economists took a top-down, rational-choice approach to discounting, behavioral scientists took a bottom-up, inductive approach to the topic. The result of the latter is the discovery of regularities in delay

discounting which may be observed across a number of species (including humans). The quantitative particulars of this seemingly universal discounting process will be explained in an easy-to-follow fashion. Next, we will outline empirical findings (some of them from our lab) suggesting nature, nurture, and pharmacological factors affect delay discounting. Finally, we will summarize how these factors may predispose (or simply dispose) individuals toward drug-taking and gambling.

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## #166 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 228

EAB/Experimental Analysis

### **Experimental Analysis of Spatial Navigation**

Chair: Derek A. Hamilton (University of New Mexico)

**Abstract:** The talks presented in this symposium represent a broad range of contemporary research on spatial navigation in humans and non-human animals. Each of the four speakers will present data that highlight the various sources of stimulus control and behavioral processes involved in a particular navigation task, and, where relevant, will address individual differences in sources of control and associated behaviors. A major goal of this symposium is to emphasize basic behavioral research aimed at identifying interoceptive and exteroceptive sources of control, characterizing basic behavioral processes involved in navigation, and investigating the interaction between sources of control. The study of navigation has been of considerable significance throughout the history of experimental psychology and has been central to contemporary research on the biological bases of learning, memory and cognition, however, it has been noticeably underrepresented in the area of behavior analysis. Thus, an additional goal is to motivate discussion amongst behavior analysts regarding the application of behavior analytic principles to the study of navigation and related behaviors.

**Movement Organization and the Control of Navigation by Self-Movement Cues.** DOUGLAS WALLACE (Northern Illinois University), Shawn Winter (Northern Illinois University), Jenny Raines (Northern Illinois University)

**Abstract:** Spatial orientation is essential for the survival of an animal; therefore, it is not surprising that animals have evolved the ability to use multiple sources of information to maintain spatial orientation. Previous work has demonstrated that, in the absence of environmental cues, animals use self-movement information to return to a previously visited location or dead reckon. During dead reckoning based navigation an inverse relationship has been observed between linear and angular speeds. It is possible that this movement organization is critical for processing of self-movement cues. This talk will present data from human and rat studies demonstrating that disruptions in the relationship between angular and linear speed are predictive of errors in dead reckoning based navigation. This work provides the foundation for future research using molecular descriptions of behavior to investigate cognitive processes involved in spatial navigation.

**Egocentric and Allocentric Search in a Water Maze as a Function of Training Distance and Predictiveness of Environmental Cues.** CAROLINA TAMARA (Indiana University), Joe Leffel (Indiana University), William D. Timberlake (Indiana University)

**Abstract:** Four water maze experiments with rats tested the relative amount of egocentric vs. allocentric search as a function of near vs. far training distance, and the type and predictiveness of environmental cues. In Experiments 1 and 2, after training from a start location fixed with respect to both predictive landmarks and background cues, Near group rats expressed egocentric and allocentric search equally, while Far group rats primarily showed allocentric search. In Experiment 3, after training either with predictive landmarks or stable background cues. Near group rats expressed only egocentric search, while Far group rats were again primarily allocentric. In Experiment 4, after training with unpredictable environmental cues, Near and Far group rats both expressed strong egocentric search. We conclude that

allocentric relative to egocentric search in the water maze is an increasing function of both training distance and predictive environmental cues present. To express allocentric search, Near groups required predictive landmarks and background cues, while Far groups expressed allocentric search with only one cue type present.

### **Interaction Between Geometric and Non-geometric Cues in Human Spatial Navigation.**

EDWARD REDHEAD (University of Southampton), Matthew Parker (University of Southampton)

**Abstract:** Studies of human navigation in a virtual watermaze task (Redhead & Hamilton, 2007) illustrate that a visible goal (platform) disrupts learning about the platform's location relative to other visible landmarks. Such cue competition is similar to that observed in typical associative learning experiments. Alternatively, learning is not disrupted by a visible platform when the spatial cues were provided by the environment's shape. These results could be explained if geometric cues are impervious to disruption by other types of cues or are more salient than non-geometric cues. A series of experiments examined the relative salience of geometric and landmark cues. During training the cues were presented in compound such that both cue types could control navigation to the platform. In the test stage the cues were re-arranged so that navigation controlled by shape would result in navigation to one location, whereas navigation controlled by landmarks would result in navigation to a different location. When a hidden platform was used in training the landmarks influenced navigation more than the shape of the pool, whereas the opposite was observed when the platform was visible. The implications of these results will be discussed in terms of how geometric and non-geometric cues interact with the demands of the task.

### **Sequential and Relational Features of Stimulus Control in Human and Rodent Spatial**

**Navigation.** DEREK A. HAMILTON (University of New Mexico), Travis Johnson (University of New Mexico), Edward Redhead (University of Southampton), Steven Verney (University of New Mexico)

**Abstract:** A growing body of literature demonstrates that rodent navigation that is controlled by visual stimuli primarily involves the selection of a particular direction of movement based on the available cues, rather than navigation to a precise spatial location. Results consistent with this emphasis on directional responding over place navigation have also been demonstrated in humans navigating in virtual environments. This presentation will review the literature concerned with characterizing the relative contributions of direction and place to behavior in standard laboratory navigation tasks. Emphasis will be placed on interactions between apparatus cues that provide a proximal but ambiguous source of control with respect to spatial locations and distal visual cues that are capable of disambiguating spatial locations. It is generally agreed that navigation to a particular place is supported by the latter because the goal's location can be determined based on its fixed spatial relationship to the available distal cues. Two alternative possibilities that account for the predominance of directional navigation over place navigation will be discussed; 1) that navigation involves sequential and separate processes controlled by room and apparatus cues, respectively, and 2) that navigation involves conditional discriminations in which subjects respond to the apparatus in terms of distal "spatial" cues.

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## **#167 Symposium**

5/24/2009

9:00 a.m. - 10:20 a.m.

North 225

EAB/CBM; Experimental Analysis

### **Response-Reinforcer Dependency: Research and Application**

Chair: Carlos Cançado (West Virginia University)

**Abstract:** The effects of altering the response-reinforcer dependency in different research contexts and with different species are analyzed, with a focus on the relations between basic and applied findings. Cançado, Kuroda, Dickson, Elcoro and Lattal, manipulated in both ascending and descending orders, the proportion of response-dependent reinforcement over pigeon's key-pecking maintained by multiple fixed-time-variable-time schedules of reinforcement. Defulio, Donlin, Wong and Silverman, compared the effects of long term

clinical interventions arranging abstinence-dependent employment or employment only on the relapse of cocaine use in methadone patients and comparatively assessed its effects on drug relapse prevention. St. Peter-Pipkin, Alo and Brosh analyzed the effects of different response-reinforcer dependencies on treatment integrity, using human operant and applied procedures that employed concomitant schedules of reinforcement. The authors will discuss their results in light of basic schedule research as it can inform application. Finally, Samaha and Vollmer present results of several studies with rats in which response acquisition and maintenance were assessed by manipulating the probability of reinforcement dependent on the occurrence and non-occurrence of behavior. The four presentations stress the importance of understanding the behavioral effects of altering the response-reinforcer dependency and the implications of integrating basic and applied findings on this research topic.

**Effects of Response-Reinforcer Dependency on Variable- and Fixed-Interval Responding.**

CARLOS CANÇADO (West Virginia University), Toshikazu Kuroda (West Virginia University), Chata A. Dickson (West Virginia University), Mirari Elcoro (Armstrong Atlantic State University), Kennon A. Lattal (West Virginia University)

**Abstract:** Manipulating the proportions of response-dependent reinforcement can differentially influence operant behavior previously maintained under conditions of complete response-reinforcer dependency. Previous studies have shown that response rates are directly related to the arranged proportion of response-dependent reinforcement. The effects of different response-reinforcer dependencies on responding maintained by different schedules of reinforcement have been less well investigated. In the present experiment, two pigeons each were exposed either to multiple fixed-interval – fixed-interval (FI FI) or to variable-interval–variable interval (VI VI) schedules of reinforcement before exposure to multiple fixed-time – variable-time (FTVT) schedules. In this phase, the proportion of response-dependent reinforcement was systematically varied across conditions, but was kept constant across schedule components within the same condition. Specifically, the proportion of response-dependent reinforcement was varied first in an ascending (0% to 100%) and then in a descending order (100% to 0%). Response rates were directly related to the proportion of response-dependent reinforcement in both schedule components and were generally higher under the VT component. In some cases, FT response rates were higher and did not vary systematically with different proportions of response-reinforcer dependency. The results are discussed in the light of characteristics of FI and VI schedules performance.

**Extending the Principle of Response Dependency to the Problem of Cocaine Addiction: A Randomized Controlled Trial.** ANTHONY L. DEFULIO (Johns Hopkins University School of Medicine), Wendy Donlin (University of North Carolina Wilmington), Conrad J. Wong (Johns Hopkins University School of Medicine), Kenneth Silverman (Johns Hopkins University)

**Abstract:** Cocaine addiction is a difficult to treat, long-term chronic condition. Contingency management has been effective in promoting cocaine abstinence, but has usually been applied in short-term interventions. A practical vehicle for long-term application of contingency management to cocaine addiction is required. In this study, we evaluated the therapeutic workplace, in which access to employment was contingent upon drug-free urines, as a long-term treatment for cocaine addiction. After a six month pre-randomization phase, participants who initiated abstinence, acquired basic skills, and consistently attended the workplace were invited to one year of employment. These participants were randomly assigned to abstinence-contingent employment (AE) or employment only (EO). Both groups provided frequent urine samples. Accessing the workplace depended on urinalysis results for the AE group, but was independent of urinalysis results for the EO group. AE participants provided more cocaine-negative samples than EO participants (87% vs. 53%;  $p < 0.001$ ). This presentation features data showing patterns of drug abstinence, HIV risk behaviors, attendance, and retention over time. The study shows that employment-based abstinence reinforcement can be an effective long-term intervention to prevent relapse in refractory, cocaine-addicted methadone patients.

**Effects of Treatment Integrity Failures on Time-Based Treatment Schedules: A Translational Approach.** CLAIRE ST. PETER PIPKIN (West Virginia University), Raquel Alo (The Continuous Learning Group), Ellen Nicole Brosh (West Virginia University)

**Abstract:** Time-based reinforcement schedules are commonly used as a treatment for problem behavior. Although procedures for time-based schedules are typically straightforward, they may not be consistently implemented as designed. This inconsistent implementation may include response-dependent reinforcer deliveries. In basic research studies, concomitant time-based and interval schedules sometimes result in response maintenance, but the effects are dependent on the particular schedule values. This suggests that any type of response-dependent reinforcer delivery might result in compromised treatment effects. We examined this possibility using human operant and applied research procedures. Nonclinical participants engaged in responding that was analogous to problem behavior during reinforcement conditions that varied from completely response dependent to completely response independent. Results showed that concomitant schedules typically produced maintained responding, suggesting that certain types of treatment integrity failures, including intermittent response-dependent reinforcer delivery, are detrimental to treatment outcome. Additionally, these outcomes underscore how the results of basic research can inform application.

**Acquisition and Maintenance when Reinforcers are Presented Following both the Occurrence and Omission of Behavior.** ANDREW L. SAMAHA (Utah State University), Timothy R. Vollmer (University of Florida)

**Abstract:** Five experiments were conducted examining the acquisition and maintenance of lever pressing in rats using a preparation where reinforcers were arranged following both the occurrence and nonoccurrence of behavior within an interval. The first experiment showed that contingency values that did not promote acquisition in experimentally naïve rats did maintain lever pressing after the animals had been exposed to powerful positive contingencies. Experiment two replicated this finding but suggested that early exposure to a negative contingency (where responding results in a decrease in the probability of a reinforcer delivery) potentially disrupted the sensitivity to weak positive contingencies. A third experiment attempted to isolate the effects of negative contingency exposure within individual subjects, but the results were equivocal. The fourth experiment assessed contrast and interaction effects when contingencies were alternated using a multiple schedule. The fifth experiment examined changes in behavior as the consequence for responding shifted from increasing to decreasing the probability of a reinforcer delivery. Results showed that rates of responding varied as a function of contingency strength. Results of the experiments will be discussed in terms of implications for the acquisition and maintenance of both desired and undesired human behavior.

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## #168 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 227 BC

EAB/Experimental Analysis

### **Emerging Topics in the Analysis of Gambling Behavior**

Chair: Jessica L. Fouch (Southern Illinois University)

Discussant: Charles A. Lyons (Eastern Oregon University)

**Abstract:** Gambling is one of the most prominent behaviors in today's society. With that comes the necessity for focus on a better understanding of the variety of behaviors in which gamblers may engage, and novel topics which develop as a result. Therefore, the present symposium is organized to address these emerging topics (along with others) and provide insight to the future of an analysis of gambling behavior.

**Testing the Concurrent Validity of the Gambling Function Assessment.** JEFFREY N. WEATHERLY (University of North Dakota), Joseph Miller (University of North Dakota), Mark R. Dixon (Southern Illinois University), Amanda Parker (Chicago Education Project), Ashley Kuland (University of North Dakota)

**Abstract:** Concurrent validity of the Gambling Functional Assessment (GFA; Dixon & Johnson, 2007) was assessed by comparing its performance versus the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987) in two nonclinical adult samples from two different U.S. cities. In the first sample, the correlations between GFA total scores and its four content scores with SOGS scores were promising, with the content score relating to the consequence of Escape yielding the highest correlation. Scores on the Escape consequence again performed well in the second sample, where the SOGS-defined base rate of pathological gambling was high. The results suggest that the GFA content area of escape shows promise at classifying pathological versus non-pathological gamblers.

**Within Session Changes in Responding during Simulated Slot Machine Play.** DANIEL H. SUTICH (University of Nevada, Reno), Patrick M. Ghezzi (University of Nevada)

**Abstract:** The study of simulated slot machine play is still in its infancy and yet the future appears promising for this type of research and for gambling research more generally. One line of research not yet undertaken is the study of habituation as it applies to gambling behavior. Habituation has been shown to affect responding in many other areas and is a process that presumably is present during slot play as well. The first group played on a simulated slot machine program designed to recreate conditions under which habituation is likely to occur. The second group played under conditions where habituation was not likely to occur. Results indicate that habituation can affect the duration of slot machine play.

**Examining Effects of Different Types of Information on Slot Machine Play.** NICHOLAS MUIKER LIK (Southern Illinois University), Mark R. Dixon (Southern Illinois University), Adam D. Hahs (Southern Illinois University)

**Abstract:** Problem gambling may be maintained by rules, and contradicting the beliefs about the games may decrease gambling behavior. Many treatment approaches ascribe to this belief, and provide information about the social and psychological problems associated with gambling and why problem gamblers should seek treatment. Despite the wealth of information regarding the social and financial costs of gambling, the American Gaming Association reported gross revenues of \$90,930,000,000 in 2006. The question arises as to whether simply providing information about psychosocial issues related to gambling is enough to reduce gambling behavior. The current study assessed the effects of providing psychoeducational information from leading treatment sources such as Gamblers Anonymous versus providing accurate information about the independence of turns and the diminishing returns on the number of trials played and number of credits bet on a slot machine task per session. University students

were recruited for the study, and were assigned to one of the following information conditions: control (no information), psychoeducational, independence of turns, diminishing returns, or both independence of turns and diminishing returns. The results and implications of the study will be discussed.

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## #169 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 122 BC

EDC/VRB; Service Delivery

### **Evidence-Based, Empirically Supported, Best Practice: What Does It All Mean?**

Chair: Ronnie Detrich (Wing Institute)

Discussant: Janet S. Twyman (Headsprout)

**Abstract:** The evidence-based practice movement has resulted in a proliferation of terms, which are often used interchangeably. This has resulted in confusion for both the consumer of services and for researchers trying to identify and validate effective practices. The fundamental assumption informing all of these terms is that effective practices are best identified through scientific research. The challenge is to validly identify practices that are most likely to be effective based on the research evidence. Three general approaches have emerged: a consensus expert panel, identification and validation of principles and broad strategies, and identification and validation of specific procedures. Different terms have been used by different professional organizations to describe these approaches. The lack of specificity can create the impression that the evidence-based practice movement is another fad without substance and result in consumers and decision makers ignoring attempts to base interventions on scientific evidence. The purpose of this symposium is to describe the range of approaches to the challenge of identifying effective practices, to discuss the strengths and limitations of each approach, and to review various terms that are commonly used.

### **Best Practice Guidelines: Standing on the Shoulders of Giants?** RONNIE DETRICH (Wing Institute)

**Abstract:** In the evidence-based practice movement one of the primary goals is to provide guidance to practitioners and clients about how to best proceed with a specific problem. Among the approaches for guiding practitioners and clients are best practice guidelines, which are formulated by experts in a particular area who make recommendations regarding assessment and intervention practices with respect to a particular problem or population. The assumption is that these experts have a broad knowledge of the research literature and can make informed, coherent statements about best practices. The success of a best practice workgroup depends on how the panel of experts is constructed. If the panel is drawn too narrowly then the resulting guidelines may not reflect knowledge of all of the relevant research and approaches to a population or problem. If the panel is drawn too broadly then the widely variant perspectives make it difficult for the panel to reach consensus on what constitutes best practices. One of the benefits of best practice guidelines is that they serve a social validity function for various interventions. This is important when the evidence-based approach validates an intervention that is more intrusive than other evidence-based interventions for a particular problem or population.

### **Research Based Principles: What Practice Can't Do Without.** TRINA D. SPENCER (Utah State University)

**Abstract:** Research based principles of behavior provide practitioners with powerful strategies for constructing effective interventions. These principles are based on an enormous, systematic and diverse literature that has developed across many decades. Effective applications of these principles to specific problems have been empirically demonstrated in thousands of published studies. In Baer, Wolf, and Risley's (1968) terms, Applied Behavior Analysis should be conceptually systematic as this allows the behavior analyst to adapt interventions to the unique needs of a particular client in a particular context while staying within a thoroughly research based framework. This approach has been called the scientist-practitioner model (Barlow & Hayes, 1984). The primary advantage of using this method of deriving

effective practices is that practitioners have the freedom and skill to make inferences and generalizations from research findings to construct individualized interventions. However, this approach is not without limitations; to use this approach effectively practitioners must have a high level of conceptual skill and extensive applied experience. In addition, the validation of principles remains one step removed from the validation of specific interventions. A variety of terms are used to refer to this approach, such as scientifically-based, research-based, and empirically-supported.

**Evidence-Based Interventions – Validating Specific Interventions.** TIMOTHY A. SLOCUM (Utah State University)

**Abstract:** There is broad consensus that scientific research should inform practice; however, there are numerous strategies that might be employed to strengthen the relationship between research and practitioner behavior. One alternative is to attempt to scientifically validate specific interventions. This approach takes the ‘intervention’ as the unit of analysis. An operationally defined intervention is validated by identifying scientific research that demonstrates specific positive outcomes for a particular population of clients in specific contexts. Validated interventions are often referred to as evidence-based interventions, evidence-based practices, or empirically validated interventions. The strength of this approach is its specificity and the relatively objective nature of the validation process. The main limitations of this approach are the ‘flip sides’ of its strengths. As a function of its specificity, this approach minimizes our ability to generalize research findings to different, but related problems; it does not recognize the validity of broad principles. Its highly operationalized validation processes leave little room for judgment about the research base, which can result in errors in the validation process (false positives and false negatives). Leading examples of this approach include the What Works Clearinghouse, SAMHSA’s National Registry of Evidence-based programs and practices, and the National Autism Center’s National Standards Project.

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## #170 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 121 BC

EDC/DDA; Applied Behavior Analysis

### **Teaching Academic Skills to Grade-level Standards via Systematic Instruction for Students with Significant Cognitive Disabilities**

Chair: Fred Spooner (UNC Charlotte)

Discussant: Diane Browder (University of North Carolina, Charlotte)

**Abstract:** Since the passage of NCLB (2002) and reauthorization of IDEA (2004), the focus on teaching academic content (reading, math, and science) to all students, including those with significant cognitive disabilities has significantly increased. One of the key components in this process is knowledge and application of academic grade-level standards. Once understood, teaching academic content through instructional techniques documented as an evidence-based practice (e.g., systematic instruction) is important. The purpose of this symposium is to present evidence as to how grade-level content can be taught to students with significant cognitive disabilities. The first study, presented by Pam Mims, examined the effects of least-to-most prompt system on the number of independent responses to comprehension questions during a story-based lesson for students with severe intellectual disabilities and visual impairments via a multiple probe across materials (i.e., books) design, replicated across two students. The second investigation, presented by Bree Jimenez, assessed the effects of a treatment package (multiple exemplar training, time delay, and self directed learning prompt) via a multiple probe design across science concepts for three students. The third presentation examined effects of time delay and teacher directed graphic organizer on the vocabulary and knowledge with students with significant cognitive disabilities and autism

**Increasing Participation and Comprehension of Students with Significant Cognitive Disabilities and Visual Impairments During Shared Stories.** PAMELA MIMS (University of North Carolina-

Charlotte), Diane Browder (University of North Carolina, Charlotte), Joshua Baker (UNC Charlotte), Angel Lee (UNC Charlotte), Fred Spooner (UNC Charlotte)

**Abstract:** The purpose of this study was to examine the effects of least-to-most prompt system on the number of independent responses to comprehension questions during a story-based lesson for students with severe intellectual disabilities and visual impairments. The experimental design used was a multiple probe across materials (i.e., books) design, replicated across 2 students with significant intellectual disabilities. The dependent variable was the number of correct independent responses to comprehension questions when involved in a story-based lesson. The independent variable was the use of least-to-most prompt system. Results indicated a functional relationship between the independent and dependent variable. For example, during baseline, student 1 correctly answered a mean of 1 comprehension question out of 10 on book one. After the intervention, responses increased to a mean of 9. Similar results were found across all three books and for student 2 as well. Results of this study add to the lack of data-based studies on increasing the comprehension skills of students with significant intellectual disabilities and visual impairments during a literacy activity

**Secondary Science Concept Generalization and Student-Directed Learning with Students with Developmental Disabilities.** BREE JIMENEZ (UNC Charlotte), Diane Browder (University of North Carolina, Charlotte), Ginevra Courtade (West Virginia University)

**Abstract:** The purpose of this study was to investigate the effects of a treatment package including multiple exemplar training, time delay, and a self directed learning prompt (KWHL chart (what I Know, what I Want to know, How will I find information, what I Learned) a problem solving technique) on students' ability to complete an inquiry lesson independently and generalize to untrained materials. To evaluate the effect of the treatment package, a multiple probe across science concepts was used (within participant replication) with between participant replications for the three students with significant cognitive disabilities who received the group lesson. The primary dependent variable was the student's ability to perform all steps of the science lesson without teacher assistance. Most steps required communicating about the materials and concepts of the lesson. Task analytic assessment was used to measure this variable. Students were taught to self-direct a 12-step task analysis to complete inquiry lessons in chemistry and physical science. All three students were able to show mastery across materials, science concepts, and instructional settings. The results suggest that students with significant cognitive disabilities can be taught how to self-direct science learning within special education settings, as well as inclusive science educational settings

**Teaching Science Concepts Using Graphic Organizers to Students with Autism Spectrum Disorder.** VICKI F. KNIGHT (UNC Charlotte), Fred Spooner (UNC Charlotte), Diane Browder (University of North Carolina, Charlotte)

**Abstract:** The purpose of this study is to determine the effects of constant time delay (CTD) and a teacher directed graphic organizer on the vocabulary comprehension and conceptual knowledge with students with significant cognitive disabilities and autism. Using a multiple probe across participants design, researchers selected three middle school students with autism and significant cognitive disabilities (IQ <55). Researchers used CTD to teach vocabulary and multiple exemplars of a graphic organizer to teach the concept of "convection." A functional relationship exists between the constant time delay and graphic organizer intervention and the increase in science vocabulary terms and conceptual awareness of "convection." For example, one student with significant cognitive disabilities and autism increased his science vocabulary and concepts from a mean baseline of 3.3 to 12.4 after intervention; another student increased his science terms and comprehension from 2.6 to 10.4 post intervention. Results suggest that students' ability to generalize from one graphic organizer to the next indicates that students acquired concepts versus memorizing facts. This study contributes to the literature by providing preliminary evidence that research-based strategies, such as CTD and graphic organizers can be used to teach science vocabulary and concepts to students with significant cognitive disabilities and autism

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## #171 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 122 A

EDC/N/A; Service Delivery

### **Morningside Academy: What's New?**

Chair: Joanne K. Robbins (Morningside Academy)

**Abstract:** This symposium is one in an ongoing, annual series that provides updated information and data on the Morningside Model of Generative Instruction, and its application in our Morningside Academy laboratory school. In our lab school, we investigate promising curricula or instructional procedures, measure their effectiveness, and revise our curriculum and instruction protocols as the data suggests. All presentations describe teacher designed and implemented procedures. Presentation #1 by Reilly and Stretz investigates interventions designed to strengthen student learning skills to increase performance outcomes. Presentation #2 by Isbell, Ganzeveld, Vu, Wolfson & Johnson describes a blending of two decoding programs to maximize their effectiveness and generativity. Presentation #3 by Landau, Lybarger, Wolfson & Robbins describes improvements to our thinking and problem solving program, TAPS. Presentation #4 by Delgado describes improvements in our reading comprehension program.

**Providing Explicit Feedback on Daily Report Cards and Classroom Wall Charts to Promote Self-Recording of Active Learning Behaviors.** JENNIFER REILLY (Morningside Academy), Adam G. Stretz (Morningside Academy)

**Abstract:** Typical methods at Morningside for motivating students to improve their academic performance include the teacher giving immediate specific feedback for target behaviors on a daily report card and publicly displaying academic performance of each student in the classroom. This proves to be a successful system for many of our learners, but for some, explicit teaching of target skills on the report card seem necessary. A self-recording tracking sheet that identifies specific active learning behaviors has been developed for at-risk students to recognize specific behaviors necessary for learning to occur. These behaviors have been grouped by levels on a continuum that increases the level of responsibility for the student to interact with instruction. Data have been collected over the past two years suggesting a correlation of numbers of years gained on national Reading Comprehension measures and the Level of Active Behavior demonstrated by students. Using performance data from wall charts, students are identified as at-risk for not making academic gains. For these students specific active learning behaviors are targeted, explicitly taught and monitored by both students on their tracking sheet and teachers on the daily report card. This inquiry attempts to examine the effectiveness of the self-recording tracking sheet of active behaviors in improving academic performance for at-risk learners.

**How to Blend Instructional Programs: Integrating Two Multisyllabic Decoding Programs to Maximize Application and Generativity.** SHILOH ISBELL (Morningside Academy), Sarah E Ganzeveld (Morningside Academy), Michael P. Wolfson (Morningside Academy), Kent Johnson (Morningside Academy)

**Abstract:** The program, "Reading Excellence: Word Attack & Rate Development Strategies (REWARDS)," by Anita Archer, is a widely used decoding program at Morningside Academy. It has been very efficacious in teaching struggling readers the basics of sounding out words by knowing word parts and vowel combinations. However, it does not include explicit instruction on how to blend sounds and word parts together and accent particular word parts to form conventional-sounding words. "Word Workout," a program developed by Nancy K. Lewkowitz, does instruct learners on how to pronounce multisyllabic words with the correctly stressed syllables, but it assumes students have already acquired knowledge of word parts and vowel combinations. This presentation will (a) describe the two strategies, (b) how they are blended at Morningside to make bigger gains than either program alone would accomplish, (c) data on the effectiveness of incorporating Lewkowitz' procedures with Archer's, and (d) data showing generativity of the mastered skills in new reading contexts.

**Talk Aloud Problem Solving (TAPS): Defining Problems and Aims.** HALEY LANDAU (Morningside Academy), Erica Lybarger (Morningside Academy), Michael P. Wolfson (Morningside Academy), Joanne K. Robbins (Morningside Academy)

**Abstract:** Previously the focus of instruction in our Talk Aloud Problem Solving classes centered on the reasoning or problem solving component of the talk aloud process. This year, we provided a sequence of instruction that began by requiring students to identify the problem-to-solve. By looking at both abstract logic problems and everyday situations in life, we required students to examine situations, ask questions, and define the problem prior to practicing the repertoires required of the successful talk aloud reasoning process. The same language used by teachers to analyze conceptual learning, such as "attribute," "example", and "nonexample" were taught to the students during logic games such as those using attribute blocks; Mastermind; Bagels, Pico, Fermi; followed by the 20 Questions game and then Suchman Inquiry scenarios to build the yes/no question-generating repertoires. We grouped and regrouped students based upon their rates of acquiring these skills. This year, we introduced problem types in a track sequence rather than by unit. We will share data on rates of problem solving for problem types (analogy, Venn diagram, deductive reasoning) as a first step in identifying mastery rates or Aims for TAPS. A live demonstration of TAPS will be provided.

**Combining the Power of Fluency, The Standard Celeration Chart, Reading Comprehension Strategies, Delayed Prompting, and Essay Writing.** MARIANNE DELGADO (Morningside Academy)

**Abstract:** This paper explores the combination of frequency measures and delayed prompting notation in the scoring of essay questions on reading comprehension tests. Problems occur when trying to gather data and measure growth on rubric scored essays alone, most important of which is distinguishing between students fluent in a skill and those needing much time, prompts and practice to reach a criterion answer. Acquiring sub-skills for discussing reading comprehension and practicing to fluency will be charted and explained. I will outline a new system of using the celeration chart to measure fluency, words per minute with a variable floor; independent learning skills, with a documentation of how often a teacher needs to prompt for criterion answer; and tracking growth on specific reading strategies, with essay questions geared towards target strategies taught in class. Several case studies and celeration charts of individual students' progress throughout a school year will document the effectiveness of the system.

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## #172 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 121 A

EDC/OTH; Applied Behavior Analysis

## Recent Advances in Treatment Integrity Research

Chair: Florence D. DiGennaro Reed (Melmark New England)

**Abstract:** Treatment integrity refers to the extent to which an intervention is implemented as designed and is an area of research that has increasingly become more common. This symposium highlights four talks that share recent advances in treatment integrity research. The first talk presents findings from a retrospective analysis of archived data to examine temporal patterns of data collection. In the second presentation, the effect of individualized video training alone and in combination with performance feedback on the integrity of behavior plan implementation will be shared. Next, the impact of types of integrity failures (e.g., errors of commission and omission) on academic behavior of students will be presented. The symposium concludes with a talk that presents results of an investigation of a variation to the DRA procedure that might be useful when high treatment integrity is not possible given clinical concerns. Presenters will discuss implications of their findings in educational and clinical settings.

**Behavioral Assessment of Treatment Integrity Data Collection: Considerations Regarding Temporal Sequencing.** DEREK D. REED (Melmark New England), Daniel Mark Fienup (The May Institute), Gary M. Pace (The May Institute)

**Abstract:** With rising interest in the role of treatment integrity on student outcomes, research has primarily focused on isolating the techniques and procedures necessary to improve staff's acquisition and maintenance of adequate levels of integrity. Despite increasing numbers of publications on this topic, there is little discussion of the variables surrounding the collection of integrity data. Using an archived database of logged integrity checks at a residential school for children with brain injury, we sought to examine the degree to which integrity data collection conformed to the best practices of general behavioral assessment (due to the use of an archival data source, reliability measures were not possible) with respect to temporal sequencing. Moreover, due to the agency's goal of collecting integrity on each student per month, we sought to whether the sequencing of integrity checks scalloped in conformity to fixed-interval responding. Results indicated that 50% of the staff exhibited scalloping in their collection of integrity data. We discuss the possible stimulus control and reactivity on the part of the teachers being observed when integrity checks are conducted in scalloped patterns. We conclude with a discussion on possible procedures to support the distributed collection of integrity data in applied setting.

**Effects of Video-training on Treatment Integrity of Behavior Support Plans.** FLORENCE D. DIGENNARO REED (Melmark New England), Robin Coddling (University of Massachusetts Boston), Cynthia N. Catania (Melmark New England), Helena L. Maguire (Melmark New England)

**Abstract:** A number of studies have examined ways to promote accurate behavior support plan implementation and have generally shown that teachers require ongoing support and performance feedback to maintain high levels of accuracy. These studies have focused on follow-up strategies to address poor treatment implementation and questions regarding how best to train teachers initially remain unanswered. The purpose of the present study is to examine the effects of individualized video-training (IVT) on the accurate implementation of behavior support plans in a setting that treats individuals with significant behavior problems. Using a multiple baseline design across 3 teachers, findings revealed that IVT improved treatment integrity above baseline levels; however, teacher performance remained variable. The addition of verbal performance feedback (PF) increased treatment integrity to 100% across 3 consecutive sessions for all participants. Performance was maintained at a one-week follow-up probe. Social validity data suggested that teachers found the IVT+PF the most acceptable procedure.

**An Evaluation of Integrity Failures during Token Economies.** ALLISON TETREAU (West Virginia University), Claire St. Peter Pipkin (West Virginia University), Timothy R. Vollmer (University of Florida), Shari Marie Winters (West Virginia University)

**Abstract:** Token economies are empirically supported behavior management systems, but may be implemented imperfectly by teachers. Although research has examined the effects of incorrect implementation (treatment integrity failures) on differential reinforcement in general, little is known about the effects of treatment integrity failures during token economies. In the current study, we examined the impact of errors of commission (unscheduled reinforcers are delivered) and omission (scheduled reinforcers are not delivered) on academic behavior maintained by token economies with 6 typically developing students. Students were exposed to baseline, a token system with full integrity (implemented perfectly) and reduced levels of integrity with both errors of omission and commission in a multiple-baseline-across-participants design. During reduced integrity phases, the system was implemented correctly 50% of opportunities, because this level seemed to be possibly detrimental to differential reinforcement interventions in previous research. Effects of token systems were not detrimentally affected by implementation at 50% treatment integrity (with either omission or commission). These findings suggest that token systems may be recommended when levels of treatment integrity are a concern.

**Parametric Evaluation of the Differential Reinforcement of Alternative Behavior Procedure**. ELIZABETH S. ATHENS (ABA Learning Centre), Timothy R. Vollmer (University of Florida)

**Abstract:** Differential reinforcement of alternative behavior (DRA) is a commonly used treatment for problem behavior. Usually with DRA, problem behavior is placed on extinction while an alternative, more appropriate behavior, is reinforced. In some cases, however, the targeted problem behavior is too disruptive or dangerous to place on extinction. In such cases, DRA cannot be implemented with consistent treatment integrity. The purpose of the current study, therefore, is to evaluate a variation of the DRA procedure that did not include an EXT component and was designed to provide more immediate, longer duration, and higher quality reinforcers for appropriate behavior relative to reinforcers for problem behavior. To do this, we differentially manipulated the parameters of reinforcement along several dimensions. Specifically, for the appropriate response (relative to the inappropriate response) we made a) reinforcement following this behavior more immediate b) the duration of reinforcement greater c) increased the quality of reinforcement. The effects of these isolated manipulations became clinically valid when a combination of each favored appropriate behavior in the final manipulation. Under such final manipulations, differential reinforcement effects were obtained with individuals who engaged in socially reinforced severe problem behavior. The procedure is conceptualized as differential reinforcement insofar as reinforcement parameters differentially favored appropriate behavior.

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## #173 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 221 C

OBM/CSE; Applied Behavior Analysis

### **Bringing Out the Best in Employees with Performance Management**

Chair: Jessica Tomasi (T-Squared Solutions)

Discussant: Ken Wagner (ADI: The Human Performance Company)

**Abstract:** Customer service is becoming more important to businesses as the economy becomes more service oriented and less manufacturing oriented. Companies are required to do more to sell their products and services in order to compete and survive in the current cutthroat global market. The implementation of Performance Management techniques can greatly improve staff performance without significantly increasing overhead expenses. The current session shares three successful Performance Management applications conducted in business settings. Two of the studies are set in restaurant franchises popular in the southeastern United States. The third study is set in the jewelry department of an international retail outlet.

**Platinum Performance: Improving Employee Behaviors at a Retail Jewelry Store.** Lindsay Kay Street (Florida State University), ANNA BRASFIELD (Florida State University), Jon S. Bailey (FSU, BMC, FABA)

**Abstract:** The purpose of this study was to increase appropriate and timely greeting, as well as smiling behaviors, handshake and name exchange behaviors, and percentage of time spent engaged in appropriate behaviors. The setting of the study was in a jewelry store at a large department store. Observation sessions were taken 5 days a week for 40 minutes. Baseline data shows relatively low performance for all behaviors. Task clarification, group graphic feedback, group reinforcers, and individual graphic feedback were used for three targeted behaviors. With each intervention phase of the study, an improvement was seen in each of the targeted behaviors. Percentage of customers that were greeted upon entrance to the department increased from 48% during baseline to 98% in the last intervention phase. Percentage of time that employees spent engaged in standing in the proper greeting location increased 89%.

**Service with a Side of PM: An Application in the Restaurant Industry.** ANN SAKSEFSKI (Florida State University), Marco D. Tomasi (SAIC)

**Abstract:** The present study evaluated the effects of task clarification, public posting in the form of group graphic feedback, and daily verbal feedback as an intervention to increase customer service

behaviors and on-task engagement of dining room tasks in a college town restaurant. The dependent variables in this study were customer greeting that included two behaviors, a hello and smile, up-selling specific items when customers were at the cash register, and engagement in dining room tasks. A modified multiple baseline design across behaviors was used to evaluate the effectiveness of task clarification, biweekly graphic feedback and daily verbal feedback as a three component intervention package. All target behaviors increased as a result of task clarification procedures, but they increased more during the intervention using biweekly group graphic feedback and daily verbal feedback.

**The Power of Feedback: Improving Performance at a Small Restaurant Franchise.** JENNIFER L. WALTERS (Florida State University), Marco D. Tomasi (SAIC)

**Abstract:** An intervention consisting of prompts, graphic feedback, and social reinforcement was evaluated to increase customer greeting and cleaning behaviors at a local restaurant. Greeting behaviors included eye-contact and verbal greetings, and cleaning behaviors included table cleaning and sweeping. Prompts for greeting behaviors consisted of signs and verbal reminders, while prompts for cleaning behaviors consisted of manager and co-worker verbal prompts as well as signs. Graphic feedback was displayed twice a week and paired with manager praise. A multiple baseline across behaviors design was used to evaluate the effects of the intervention. Results revealed that the intervention package was effective in increasing greetings, eye-contact, and table cleaning.

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## 174 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 221 AB

OBM/N/A; Service Delivery

### **Implementing Electronic Medical Record Systems: Organizational Benefits, Challenges, and Solutions**

Chair: Jean Pavlov (NorthCare Network)

**Abstract:** Electronic medical record (EMR) systems are an important emerging development in behavioral and physical health care, and are being rapidly implemented in Michigan's public mental health system. Selecting, implementing, and supporting EMR systems presents a multitude of opportunities to apply OBM principles and practices, although time and agency resource limitations often impose constraints and compromises. These processes are discussed from several perspectives. General EMR benefits related to controlling-reducing costs, improving productivity, and enhancing service quality are outlined. Recent collaborative efforts in Michigan are described, including efforts to more effectively harness technology and support change management within large agencies. A four-county agency implementation effort is presented with reference to Six Sigma principles, highlighting the outcomes resulting from employing a subset of these principles. The impacts of EMR implementations are discussed from a clinician perspective, referencing productivity, quality, and adherence to standards, as well as exploring shifts in clinician and administrator behavior required to successfully implement an EMR. Finally, OBM principles applied to a regional EMR implementation spanning all of Michigan's upper peninsula are outlined.

**Realizing the Benefits of Electronic Health Records: Michigan's Collaborative Efforts.** JEREMY NELSON (Afia Health)

**Abstract:** Informed by national health care trends and In pursuit of increased quality, efficiency, and productivity, a number of Michigan mental and physical health agencies were early adopters of electronic health records. Pioneering efforts in the state were heavily based on public-private partnerships and interagency collaboration. Collaboration was, in part, driven by a need to overcome information technology limitations resulting from funding and resource challenges. These early endeavors prompted new organizational perspectives on the role of information technology and the need to intelligently manage large organizational changes. Successful electronic medical record implementations have produced significant benefits at all organizational levels. As these systems become more prevalent,

fundamental changes in health care are likely to emerge, prompting additional organizational adjustments and challenges. As information becomes more accessible, consumers will become more informed and will demand further increases in quality and efficiency. Clinical and administrative staff will be challenged to reassess how they interact with consumers. Organizational behavior management principles and techniques, often applied informally in many implementation efforts to date, hold significant promise for assisting agencies attempting to effect and manage change on the way to responding to new consumer demands.

### **Integrating and Adapting OBM Practices in a Public Agency EMR Implementation Effort.**

JEAN PAVLOV (NorthCare Network)

**Abstract:** Bridging the gap between theory and practice, private and public sector management, this presentation covers the needs analysis, procurement and implementation of an electronic medical record (EMR) at a rural community mental health agency in Michigan. Many performance management systems, such as Six Sigma, require the kind of financial investment and employee commitment not typically found in public agencies; however variations on systems of this type can be implemented successfully, bringing order to the integration of large-scale, enterprise systems such as an EMR. The changing nature of managing a public health system due to increasing contractual demands dependent upon information management is reviewed within the context of the decision to purchase an EMR. Demonstrated success using performance management tools earlier at the agency on smaller projects is outlined. Finally, a comparison of the ideal application of a Six Sigma methodology in this scenario versus what was actually accomplished, how it was done and the resulting impact is discussed in detail.

### **Clinician and Clinical Administrator Perspectives on Successful EMR Implementations.**

RALPH L. OLSON (Pathways Community Mental Health) , Kathy Dettling (Livingston County Community Mental Health)

**Abstract:** Electronic medical record (EMR) systems present unique challenges and benefits viewed from clinician and clinical administrator perspectives. Clinical staff commonly possess long-established patterns of behavior related to clinical work as well as its associated administrative functions that require significant adjustment in shifting from moving from paper to electronic records. In addition to playing central roles in assisting clinical staff make necessary adjustments, clinical administrators must also participate in selecting, implementing, and managing organizational changes prompted by an EMR. EMR selection and implementation processes, in particular, bring into sharp focus differences in clinical and administrative perspectives. Successfully reconciling these markedly divergent repertoires has been a critical organizational task on the way to realizing benefits inherent in an EMR. Behaviors and processes central to agency successes are discussed from a behavior analytic perspective, and examples are enumerated at executive, project management, clinical administrative, and clinician levels. Practice improvements facilitated by EMR implementations at a clinical service level are also presented.

### **Capitalizing on Combined Resources and Experience: Regionalizing an Electronic Medical Record.**

Jean Pavlov (NorthCare Network) , JEREMY NELSON (Afia Health)

**Abstract:** Capitalizing on combined resources and experience, this segment examines the opportunities for increasingly integrating OBM methods to standardize processes and measures throughout a decentralized rollout of an EMR system, both regionally within Michigan and within other state systems. The use of process maps, relationship maps and job models to communicate EMR organizational impact is illustrated. Identification of critical-to-process measures and the need to manage upstream supporting measures is described. Iterative EMR product development aligned with target population need, as evaluated through user and developer feedback loops, is investigated. Anticipated challenges and strategies in adapting the system to accommodate dynamic state regulatory requirements as well as ongoing fundamental changes in the healthcare field, changes in the way providers relate to consumers, changes creating a growing scrutiny of healthcare information in general, is discussed. Overall, this presentation addresses how, in our opinion, a controlled EMR implementation across numerous, typically unrelated public institutions can achieve a higher quality solution, at lower cost, when actively managed using a common toolset.

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## #175 Symposium

5/24/2009

9:00 a.m. - 10:20 a.m.

North 120 D

OTH/Applied Behavior Analysis

### **Stimulus Control and the Development of Complex Behavior in Domestic Canines**

Chair: Russell W. Maguire (Simmons College)

Discussant: Michael J. Cameron (Simmons College)

**Abstract:** The purpose of this symposium is to demonstrate the generalization of stimulus control procedures to domestic canines within applied settings. In all three studies the subjects were domestic canines (e.g., pet dogs) and the studies were conducted in applied settings (e.g., homes and a shelter for abandoned animals). The Burke, Maguire and Cameron study replicated and extended the work of Bright, Maguire and Cameron (2008). This study taught a canine conditional discriminations (identity and arbitrary matching-to-sample performances) that then set the occasion for the emergence of symmetrical and possibly transitive relations that documented the formation of stimulus classes, and possibly classes of equivalent stimuli, in animals. The Bright, Maguire and Cameron study employed respondent conditioning techniques to decrease barking in a shelter to increase adoptability of animals. The third study (Lovejoy, Maguire and Cameron) used errorless instructional procedures (e.g., delayed prompt procedure) to teach a canine to run an obstacle course. The results documented rapid and durable acquisition of a sequence of skills. The combined results of these studies demonstrated the systematic nature of applied behavior analysis and generalization of stimulus control procedures across species.

#### **Canine Responding During and After Matching-to-Sample Training.** SALLY BURKE (Simmons College)

**Abstract:** The purpose of this study was to assess for the emergence of symmetrical matching-to-sample relations, and the formation of stimulus classes with a female German Shepherd. The subject was initially taught to identity match-to-sample using colors (e.g., black and white) and objects. The subject was then taught conditional discriminations (matching objects-to-color). Following this training the symmetrical stimulus-stimulus relations (sample-comparison reversibility) were assessed in the absence of reinforcement. The results indicated that the subject was able to demonstrate symmetry but not transitivity (although additional data regarding this aspect of the study are currently being collected). There is limited documentation of non-human subjects demonstrating the emergence of symmetrical and transitive performances, indicative of the formation of equivalence classes, and there are no known findings for the canine species. The present results add to this body of knowledge and are discussed in terms of how to train and assess for the equivalence phenomenon.

#### **Acquisition of an Obstacle Course Sequence by a Domestic Canine via Errorless Instruction**

JENNIFER A. LOVEJOY (Simmons College)

**Abstract:** A good deal of animal training relies exclusively upon differential reinforcement of correct responses (i.e., correct response are reinforced and incorrect response go unreinforced). Although this approach has successfully established a myriad of skills across many species it can, at times, result in lengthy training, frequent errors and even failure to acquire the targeted skill. The purpose of the present study was to combine an errorless procedure (delayed prompt) with forward chaining to teach a naïve domestic canine a three-step obstacle course sequence. Once the initial step was acquired the next step in the sequence was introduced, again taught via delayed prompt. Finally, the third step was added and it too was acquired with few or no errors. The results indicated rapid acquisition of the individual steps as well as the combined sequence with few or no errors. Further, control generalized to novel trainers without additional training. The results are discussed in terms of the effect errors have on the development of inappropriate and competing forms of stimulus control.

**Pavlov's Shelter Dogs: Transferring Control of a Conditioned Stimulus to Elicit More Adoptable Behavior.** TERRI M. BRIGHT (Simmons College)

**Abstract:** Often, the decision of whether or not to adopt a dog from a shelter is influenced by the immediate environment. The level of barking in a shelter can be intimidating to visitors and have a negative impact on the adoptability of individual animals. This experiment took place in a large, urban, "open-admission" Shelter, where dogs' adoptions are largely dependent upon their appeal to visitors who walk onto the adoption floor. In an attempt to decrease noise and increase adoptable behavior, the sound of a "bear" bell was repeatedly paired with a food reward, until an anticipatory response (i.e., the absence of barking) was observed in the dog upon hearing the bell. This behavior was maintained across thinned schedules of reinforcement. The control was then transferred to a bell hung on the door to the Adoption Room. Data documented the control of the bell over the dogs' behaviors as well as an increased rate of adoptability. The results are discussed in terms of the applied significance of the study.

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**#176 Panel Discussion**

5/24/2009  
9:00 a.m. - 10:20 a.m.  
North 129 B  
TBA/EDC; Theory

**Professional Development Series: Dissemination - Spreading the Word without Sounding the Alarm!**

Chair: W. Joseph Wyatt (Marshall University)

SUSAN G. FRIEDMAN (Utah State University)  
BOBBY NEWMAN (Room to Grow)  
PAUL CHANCE (Dissemination Special Interest Group)  
W. JOSEPH WYATT (Marshall University)

**Abstract:** While students are often provided training on how to conduct research or provide treatment to diverse populations and, in some programs, how to teach others, there is little to no education on how to disseminate behavior analysis to the public at large. Although the needs to conduct research and provide behavior analytic services are being fulfilled, the need to educate our society of these very things appears to be neglected. One cultural barrier to the acceptance of our science is the discomfort exhibited when behavior scientists utilize technical terminology and ideas that clash with the prevailing non-scientific explanations of behavior. This panel brings together a collection of experts who have consistently engaged in dissemination efforts towards those outside of the field. These discussants will provide ways in which students and recent graduates can engage in spreading behavior analysis while overcoming these barriers.

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**#177 Symposium**

5/24/2009  
9:00 a.m. - 10:20 a.m.  
North 131 BC  
TPC/OBM; Theory

**Behavioral Contingencies and Metacontingencies: Levels of Analysis, Intervention and Assessment**

Chair: Thomas C. Mawhinney (University of Detroit Mercy)

**Abstract:** Determining the level of analysis to use when describing, assessing and changing cultural practices and their colligative (aggregate) consequences presents a problem for those who would assess cultural phenomena conceptually and practically. Papers by Glenn and Houmanfar address conceptual issues regarding, respectively, establishing the means by which lines of fracture among behavioral and cultural contingencies and dynamics of behavioral and cultural contingencies involving emergence may be determined. The importance of these conceptual vantage points is reflected in a paper by Dagen and Alavosius. They focus attention on assessment of behavioral and cultural contingencies involving conflicting

interlocking contingencies among motorists and bicyclists when sharing public roadways. They then explore potential large and small scale interventions aimed at changing interlocking contingencies among motorists and bicyclists. Mawhinney employs both published and hypothetical performance data to illustrate how formal organizational leaders might monitor colligative consequences of formal organizational practices and change them via OBM type interventions. These presentations should provide insights regarding the ongoing conceptual development of behavior analytic vantage points on and the interplay among behavioral level and cultural level contingencies, metacontingencies, and the practical implications of these vantage points on development of interventions aimed at changing practices and related metacontingencies

**Lines of Fracture and Levels of Analysis.** SIGRID S. GLENN (University of North Texas)

**Abstract:** The locution different levels of analysis has been applied to somewhat different kinds of conceptual problems. Sometimes the “different levels” are within a scientific domain (e.g. molar vs. molecular analyses in behavior analysis, or whole organism vs. molecular biology, or classical vs. quantum mechanics). Sometimes “different levels” refers to the different domains themselves (e.g. biology vs. behavior analysis and biology vs. physico-chemistry; or behavior analysis vs. cultural analysis). The pragmatic interest of scientists is usually to establish the lines of fracture that result in classifications that work in their scientific explanation of phenomena in the domain they are investigating. However, the phenomena studied in the various scientific domains are substantively related, and apparently came into existence in a particular, and possibly requisite, historical order; therefore the boundaries of the various scientific domains are fuzzy. This paper explores, within the context of this general perspective, the fuzzy boundaries between biological and behavioral domains and between operant and cultural domains, and argues for non-reductionist theories in each domain, based on clearly defined units of analysis. It also suggests a meta-theoretical language for all three domains.

**Emergence & Metacontingency: Points of Contact and Departure.** RAMONA HOUMANFAR (University of Nevada, Reno), N. Joseph Rodrigues (University of Nevada, Reno), Todd A. Ward (University of Nevada, Reno)

**Abstract:** The behavioral contingency and the metacontingency describe phenomena at different levels of analysis, the former at the individual level, the latter at the group or cultural level. The relationship between these levels is similar to the relationship between the physiological and the psychological levels of analysis. Simply stated, behavior is not simply the sum of physiological activity, but is rather more than or qualitatively different from physiological activity. We believe this emergent relationship may be crucial to distinguishing phenomena at different levels of analyses. The term ‘emergence’ is used in several ways within behavior analysis. Some uses suggest that novel behavior or more complex behavior is emergent upon simpler behavior. The term is also used to suggest that molar patterns of behavior emerge from molecular contingencies of reinforcement. For others, the term is reserved for describing connections between levels of analysis. Our aim in this paper is to contribute to an understanding of the phenomenon of emergence in the interdisciplinary interaction between behavior analysis and sociology or anthropology. In presenting this analysis, we examine the utility of interdisciplinary concepts such as metacontingency and discuss the points of contact and departures between behavior analysis and cultural analysis throughout this process.

**Interlocking Behavioral Contingencies to Plan Cultural Change.** JOSEPH CHARLES DAGEN (University of Nevada, Reno), Mark P. Alavosius (University of Nevada, Reno)

**Abstract:** Transportation preferences in the United States are shifting away from fuel-thirsty SUVs to more economical automobiles and bicycles. This is driven by the rising cost of fuel, concerns with global warming, desire for increased fitness, and other influences. As an increasing number of bicyclists share the roadway with motorists, attention must be given to the safety of these bicyclists. Media reports suggest that collisions and conflicts between cyclists and motorists are increasing. In attempting to curtail perfunctory government responses to the increasing prevalence of bicyclist injuries and fatalities, consideration is given to the systems and interlocking contingencies necessary to support wide scale change of cultural practices. This paper discusses the feasibility of creating more powerful community and government conglomerates that might influence the safe adoption of new transportation practices.

Designing interlocking contingencies and functional data systems to power and evaluate them are proposed as the pragmatic foundation for planned cultural change.

**Behavioral Contingencies and Metacontingencies in a Microcosm: Levels of Analysis, Intervention and Assessment.** THOMAS C. MAWHINNEY (University of Detroit Mercy)

**Abstract:** Data from a study by Mawhinney and Fellows-Kubert (1999), viewed from a behavior analyst's vantage point, included prima facie evidence of counter control (Skinner, 1953) by two members of one shift. The dysfunctional behavior of the two "deviants" persisted during a lottery-based performance incentive intervention that produced dramatic performance increases among other organizational members, but only belatedly by the two deviants. Had the two shifts been two independent organizations, the one with deviants would have perished while the other would have survived. This is because there was a performance quota that had to be met for both groups to avoid termination of their employment. These data are used as a vehicle for discussing implications of metacontingency assessment and change at multiple levels of analysis by treating the two shifts as elements of an organizational microcosm. In so doing, this paper addresses a recommendation by Mawhinney and Fellows-Kubert (1999); they suggest positive and negative side-effects of behavior based organizational interventions be assessed at multiple levels of analysis.

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**#178 Symposium**

5/24/2009

9:00 a.m. - 10:20 a.m.

North 127

VRB/TBA; Applied Behavior Analysis

**Research on Developmental Interventions: Advancing Listener and Speaker Capabilities in Students with Developmental Disabilities.**

Chair: JoAnn Pereira Delgado (The Fred S. Keller School)

**Abstract:** A series of papers will be presented on research based protocols and tactics that functioned to induced listener and speaker capabilities in students with developmental disabilities. The first two papers tested the effects of two specific early developmental interventions (conjugate reinforcement for observing faces and auditory matching) on early observing and listener responses. In the third paper, the authors implemented an intensive tact procedure to increase the number of independent vocal verbal behavior emitted by students in the non-instructional setting. The final paper tested the effects of physical contact as an establishing operation on students' correct responding and stereotypy. All of the studies demonstrated a functional relationship between the intervention and an increase in the number of objectives achieved by students and overall correct responding. Additionally, the interventions provided a means of advancing the students to higher levels of verbal development.

**Conditioning Reinforcement for Eye Contact on Rate and the Acquisition of Learning Tasks.**

Dolleen-Day Keohane (Columbia University Teachers College & CABAS), R. Douglas Greer (Columbia University Graduate School and Teachers College), JACQUELINE MAFFEI-LEWIS (Columbia University Teachers College)

**Abstract:** The experimenters tested the application of conjugate reinforcement during eye contact programs and changes in the numbers of objectives met and learn units to criterion across verbal behavior, listener, speaker, and all programs. Conjugate reinforcement can be defined as continuous reinforcement contingent upon the target behavior. The design of this study was a multiple probe design with a time delay across children and behaviors. The participants in this study were three five year old males, one eight year old male, and one four year old male who were diagnosed with autism spectrum disorders or developmental disabilities. The dependent variables of this study was the learn units to criterion across listener programs, speaker programs, and across all programs. The independent variable was the acquisition of face/voices as conditioned reinforcement for visual observing. The results showed

that conjugate reinforcement with touch and without touch was an effective procedure to increase eye contact, and subsequently decreased the learn units to criterion and increased objectives met.

**The Effects of an Auditory Matching Procedure on Listener Responding in Students with Autism.** R. Douglas Greer (Columbia University Graduate School and Teachers College), VICTORIA STERKIN (Teachers College Columbia Univ.)

**Abstract:** Using a delayed multiple probe across behaviors and participants design, we tested the effects of the auditory matching procedure on listener responses. Four students diagnosed with autism between the ages of five and six were participants in the study. Prior to the study, the learn unit was used to teach discrimination of two-dimensional stimuli; however, learn units to criterion was very high. As a replication of Speckman-Collins, Park, & Greer (2007), it was hypothesized that as the discrimination of target and non-exemplar auditory stimuli increased in difficulty (ex: words with similar phonemes) listener responding would increase and the listener half of naming would emerge. Following the implementation of the auditory matching procedure with words with similar phonemes learn units to criterion decreased for all students, and the listener half of naming emerged.

**The Effects of Daily Intensive Tact Instruction on Increase in Spontaneous Speech in Non-Instructional Settings.** R. Douglas Greer (Columbia University Graduate School and Teachers College), LIN DU (Teachers College, Columbia University)

**Abstract:** We replicated a study by Pistoljevic & Greer (2006) to determine the effects of an intensive tact training procedure on the numbers of pure tacts, mands, sequilics, and conversational units emitted by three students in non-instructional settings. All participants were diagnosed with developmental disabilities and functioned at the listener/speaker level of verbal behavior. Five-minute probes were conducted in three non-instructional settings: the toy area, the table during snack or play, and the hallway. The tact training procedure consisted of increasing the daily learn units presented to each student by 100 tact learn units. The results showed a functional relationship between the tact training and an increase in the number of pure tacts, mands, sequilics, and conversational units emitted by participants in the non-instructional settings.

**The Effects of Pre-session Reinforcement on Correct Responding, Independent Mand, and Stereotypy of Two Elementary School Students.** R. Douglas Greer (Columbia University Graduate School and Teachers College), JINHYEOK CHOI (Teachers College, Columbia University), Jennifer Longano (Teachers College Columbia University), Lisa Gold (Teachers College, Columbia University)

**Abstract:** The purpose of this study was to replicate the findings of Park, Delgado and Choi (2008), where we tested the effects of pre-session reinforcement as an establishing operation to increase students' correct responses to learn unit presentations. We also tested the effects on the number of independent mands and stereotypy. The participants were six and seven year old male students diagnosed with autism who attended a self-contained classroom that employed the CABAS® system of education. We employed a multi-element design (alternating treatment followed by an AB design). The independent variable included the instructor providing playful physical contact to the student every ten learn units. The results showed that playful physical contact was effective in increasing correct responses and the number of independent mands. Furthermore, the results showed that the participants' stereotypy decreased as a result of the establishing operation, in which playful physical contact served as a reinforcer.

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## #179 Symposium

5/24/2009

9:30 a.m. - 10:50 a.m.

North 132 A

TPC/AUT;Theory

### **Conceptual Investigations in Behavioral Theory and Philosophy**

Chair: Jonathan J. Tarbox (Center for Autism and Related Disorders, Inc.)

Discussant: Denis P. O'Hora (National University of Ireland, Galway)

**Abstract:** Empirical research provides the data that construct the foundation of the science of behavior analysis. However, conceptual analysis, integration, and systemization of principles, assumptions, and theories is a prerequisite to the meaningful use of such data. That is, without a coherent conceptual system, any science can descend into confusion and eclecticism. This symposium consists of three papers which attempt to clarify, rework, or otherwise systematize concepts in behavior science. The first paper attempts a radical behavioral conceptual analysis of the behavior/environment interactions which may stand behind the constructs of “executive functions” in general psychology and discusses practical implications for intervention in autism. The second paper reassesses the concept of function in behavior science. The third paper analyzes the concept of conjugate reinforcement and discusses how it may be useful in application to intervention for children with autism. The symposium will conclude with a discussion by Dr. Denis O'Hora.

**“Executive Functions” and Autism: A Radical Behavioral Conceptual Analysis and Research Review.** JONATHAN J. TARBOX (Center for Autism and Related Disorders, Inc.), Dennis Dixon (Center for Autism and Related Disorders), Adel C. Najdowski (C.A.R.D., Inc.), Doreen Granpeesheh (Center for Autism and Related Disorders, Inc.)

**Abstract:** “Executive functions” are said to be the brain mechanisms which control goal-directed behavior. Constructs commonly discussed in the field of executive function include working memory, short-term memory, attention, inhibition, planning, self-awareness, and problem solving. The frontal lobe of the brain is often cited as the location of these functions and research has clearly demonstrated that damage to this area of the brain produces decrements in these functions. There is no doubt that healthy functioning of the frontal lobe of the brain is necessary for executive functions, however, executive functions, like all constructs which refer to behavior/environment interactions, are simply names for what people do. Thus, a behavioral account may have much to recommend it, both in parsimony and in practicality. Specifically, if executive functions are actually behavioral repertoires, then the principles of behavior may well inform how we can understand and manipulate them. In this talk, we review research on assessment and intervention in executive functions in autism and find that a significant amount of research has been conducted on the former and very little on the latter. Further, we propose a behavioral conceptual analysis of the behaviors labeled executive functions by the general psychological community. The analysis presented here suggests practical ways in which to measure and intervene upon these repertoires, and provides directions for future research.

**The Concept of Function in the Analysis of Behavior.** Linda J. Hayes (University of Nevada, Reno), MITCH FRYLING (University of Nevada, Reno)

**Abstract:** Scientific terms can be subject to great misuse, including their being used inappropriately or inconsistently within scientific disciplines. The result of this is confusion within both individual scientific disciplines as well as the field of the sciences more generally. Some terms are particularly central to happenings within scientific systems and the larger scientific community. The concept of function is one of those terms. This paper will examine the concept of function within behavior analysis, and describe implications related to the validity and significance of behavior analysis as a scientific system.

**The Principle of Conjugate Reinforcement in Early and Intensive Behavioral Interventions: Implications for Treatment.** SVEIN EIKESETH (Akershus College)

**Abstract:** The use of conjugate reinforcement was pioneered by Lindley in the late 1950. Later it was used to study infant behavior, and conjugate reinforcement has been considered important for both social and automatic reinforcement. In conjugate reinforcement, some property of a reinforcer varies systematically with some response property, as when magnitude of praise and tangibles increase with the quality of the child's response. The current paper describes how the principle of conjugate reinforcement may be used effectively during desecrate trial teaching and national environment teaching.

## #180 Invited Presenter

5/24/2009  
10:00 a.m. - 10:50 a.m.  
West 301 AB  
BPH

### **Biobehaviorally-Based Drug Abuse Prevention**

Chair: Jesse Dallery (University of Florida)

THOMAS H. KELLY (University of Kentucky)



**Dr. Thomas H. Kelly** is the Robert Straus Professor and Vice-Chair of the Department of Behavioral Science in the College of Medicine at the University of Kentucky, Professor of Psychiatry and Psychology, and Scientific Director of the Center for Drug Abuse Research Translation. He also serves as the Director of Research Education, Training and Career Development for the Center for Clinical and Translational Science. He is a clinical behavioral pharmacologist examining drug-behavior interactions and assessing biobehavioral factors associated with individual differences in drug abuse vulnerability.

**Abstract:** Sensation seeking is a behavioral trait characterized by frequent exposure to novel, complex, ambiguous and emotionally intense stimuli and by a tendency to take risks to obtain such stimulation. High sensation seekers initiate drug use at an earlier age, use drugs at a higher rate, and develop more problems with drug-taking behavior than low sensation seekers. This presentation will examine biobehavioral factors associated with drug abuse vulnerability and sensation seeking status and the application of these factors for enhancing drug abuse prevention efficacy. I will discuss an interdisciplinary series of studies utilizing neurobiology, preclinical and clinical behavioral pharmacology (e.g., drug self-administration, psychopharmacology), clinical neuroimaging (e.g., functional magnetic resonance imaging, electroencephalography), and community-based prevention (public service announcements). Clinical behavioral pharmacology studies indicate that stimulant drugs engender enhanced behavioral responses, including drug self-administration, among high sensation seekers. Neurobiology and preclinical behavioral pharmacology studies suggest that differences in drug self-administration are associated with biological differences in the mesocorticolimbic dopamine system. Public service announcements targeted to high sensation seekers using high sensation-value media platforms enhance prevention efficacy. Clinical imaging studies suggest differential brain responses to high sensation value stimulus materials in mesocorticolimbic regions and may be associated with the efficacy of high sensation value public service announcements. Behavioral pharmacology studies also suggest that activities and stimulus materials high in sensation value can be used to alter the behavioral effects of drugs of abuse. Overall, research suggests that biobehavioral studies can be used to develop and enhance targeted and tailored drug prevention interventions.

## #181 Invited Presenter

5/24/2009  
10:00 a.m. - 10:50 a.m.  
West 301 CD  
EAB

### **Mainstream Behavior Analysis: Do We Need to Go Back to Meet the Future in the 21st Century?**

Chair: Todd L. McKerchar (Jacksonville State University)

T. V. JOE LAYNG (Headsprout)



**Dr. Joe Layng** co-founded Headsprout and serves as the company's Senior Scientist where he led the scientific team that developed Headsprout's patented Generative Learning Technology. Joe is the chief architect of the company's Headsprout® Early Reading program and its new Headsprout® Reading Comprehension program, both based on this technology. His current efforts include, developing Internet-based generative learning strategies for rapidly establishing complex intellectual-skill repertoires with children; completing a consequential contingency analysis of emotions & emotional behavior, including a contingency analytic framework.

**Abstract:** Whereas there has been considerable advancement in the past several years in the application of applied behavior analysis to the treatment and education of the developmentally delayed, often overlooked is the importance of behavior analysis to other areas of human well being. It has been asserted that just as natural selection can help us understand the evolution of biological complexity over long periods of time without a directing hand, consequential selection can help us understand behavioral complexity over a lifespan, also without a directing hand. Unfortunately, however, we find from time-to-time well meaning behavior analysts resorting to explanations which are not primarily based upon consequential selection, particularly when language or verbal behavior is the topic. This presentation will examine how a modern, nonlinear, behavior analysis, can extend the science of consequential selection to the understanding of, and building interventions for, complex areas of individual, social, and societal importance without resort to explanations that are divorced from consequential governance. The presentation will begin with a framework for analyzing complex consequential relations, the concept of contingency, and build from there to show its relevance to our understanding of human choice, emotions, and intellectual complexity. It will present the case for a new mainstream, and relevant, behavior analysis that has the analytical and programmatic power to help tackle the important problems confronted in a modern world.

## #182 B. F. Skinner Lecture Series

5/24/2009  
10:30 a.m. - 1120  
West 301 AB  
TPC/ Theory

### **The Complementary Nature of Coordination Dynamics**

Chair: Ted G. Schoneberger (Stanislaus County Office of Education, Modesto, CA)

J. A. SCOTT KELSO (Florida Atlantic University)



**Dr. Scott Kelso** was born in Derry, Northern Ireland and received his undergraduate education at Stranmillis University College Belfast and the University of Calgary, Alberta, graduating with the Ph.D. degree from the University of Wisconsin, Madison in 1975. He taught at the Universities of Iowa and Connecticut and was a Staff Scientist at Haskins Laboratories before moving to Florida Atlantic University in 1985 where he founded the Center for Complex Systems and Brain Sciences. Dr. Kelso has received numerous awards for his research on the coordination dynamics of brain and behavior, including most

recently the Pierre de Fermat Laureateship and the Docteur Honoris Causa Degree from the Republic of France and the University of Toulouse. He is a Fellow of AAAS, APA and APS and the author of *Dynamic Patterns: the Self-Organization of Brain and Behavior* (The MIT Press, 1995), *Coordination Dynamics* (with V. K. Jirsa) published by Springer in 2004 and *The Complementary Nature* (with D.A. Engström) published by MIT Press in 2006 (ppbk released March, 2008). A recent invited piece "Coordination Dynamics" will appear in *Encyclopedia of Complexity and System Science* (2009).

**Abstract:** Despite all the successes of contemporary neuroscience in alleviating the many neuropsychiatric and neurological diseases that afflict us, we--us human beings--have not changed in any fundamental sense. Wars, poverty, rape, violence, fear, greed, power, etc. seem to permeate modern life just as they have for centuries. What can we do to change that, to change ourselves? Changing human nature as a goal of scientific understanding is a tall order. Nevertheless, improving our understanding of how the brain works may help illuminate human behavior and open up new ways to promote peace and tolerance. Recent research and modeling of brain coordination dynamics has revealed a novel metastable mode of brain functioning in which the well-known tendencies of specialized brain regions to express their autonomy (segregation) coexist with tendencies for individual regions to work together as an integrated system. Integration ~ segregation is just one of many complementary pairs (denoted by the squiggle (~) symbol) to emerge from a deeper understanding of the brain's coordination dynamics. The squiggle exposes a basic truth: both complementary aspects and their dynamics are required for an exhaustive account of how the brain works. Though it may be anxiety provoking, this view of the brain potentially frees us from the instinct to dichotomize and the ubiquitous tendency to polarize. It shows us how contraries can be reconciled, promotes the logic of 'both and' and may help erase the artificial boundaries we have erected in all walks of life.

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## #183 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 227 A

AUT/DDA; Applied Behavior Analysis

### **Assessment and Intervention for Children with Autism**

Chair: Mark F. O'Reilly (University of Texas at Austin)

Discussant: David M. Richman (University of Illinois)

**Abstract:** Children with autism exhibit distinctive behavioral profiles that may require adaptations to traditional assessment and intervention strategies to maximize educational outcomes and reduce behavioral excesses. In this symposium we review several recent interventions that have been designed to teach play, social skills, and assess challenging behavior for children with autism.

**Teacher-Implemented Social Stories™ in General Education Settings.** JEFFREY MICHAEL CHAN (University of Texas at Austin), Mark F. O'Reilly (University of Texas at Austin), Nigel Pierce (University of Texas at Austin), Sonia Denise Baker (University of Texas at Austin), Pamela White (University of Texas at Austin)

**Abstract:** Social Stories™ are one of the most commonly-used interventions for children with autism (Green et al., 2006). While there is a rapidly-growing literature base of Social Stories research, much of the work has focused on students who are in special education resource settings; the current study examines the use of Social Stories with students in inclusive general education settings. Partnerships were formed with school district administrators and participants were identified by the district autism specialist. Six students diagnosed with autism spectrum disorders participated and teachers identified target behaviors that were related to social functioning, communication skills, or self-help skills. Teachers were trained to compose Social Stories according to Gray's (1995) model and they presented the stories either on paper or using a computer-based format. Data were collected on participants' behaviors as they occurred in inclusive general education settings.

**Functional Analysis of Challenging Behavior of Children with Autism.** TONYA NICHOLE DAVIS (Baylor University), Mark F. O'Reilly (University of Texas at Austin), Mandy J. Rispoli (University of Texas at Austin), Russell Lang (University of Texas at Austin), Wendy A. Machalicek (Portland State University)

**Abstract:** We conducted analogue functional analyses of 10 children who were diagnosed with autism and who exhibited challenging behavior. Each child was exposed to 10 sessions of each of 5 analogue conditions (alone, attention, demand, tangible, play). Individual participant multiple baseline designs were used to demonstrate experimental control. Patterns of challenging behavior indicated that behavior was automatically reinforced for 8 of the 10 participants and multiply controlled for the other 2 participants. These results are compared to other studies and an argument for a distinctive profile of challenging behavior for children with autism is suggested.

**Teaching Play Skills to Children with Autism.** RUSSELL LANG (University of Texas at Austin), Mandy J. Rispoli (University of Texas at Austin), Wendy A. Machalicek (Portland State University), Mark F. O'Reilly (University of Texas at Austin)

**Abstract:** Children with autism often experience substantial delays in the development of play behavior. Deficits in play behavior can further exacerbate the social and communication delays experienced by children with autism and make play an important area for early intervention. Motivating operations influence the value of reinforcers and have been shown to enhance the effectiveness of interventions and teaching procedures for individuals with developmental disabilities. The purpose of this project is to evaluate the effectiveness of a MO component added to an intervention designed to increase the play skills of 5 children with autism. Two interventions were compared in an alternating treatment design. One intervention utilized systematic manipulation of motivating operations in conjunction with a standard research based play intervention. The comparison intervention was identical except the effects of potential putative motivating operations was ignored. Results suggest that the MO intervention decreased stereotypy and challenging behavior while increasing the acquisition of functional play skills. Symbolic play skills were not acquired in either intervention.

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## #184 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 126

AUT/DEV; Applied Behavior Analysis

### **Meaningful Differences: The Prequel**

Chair: Nicole Suchomel (University of North Texas)

Discussant: Rebecca P. F. MacDonald (The New England Center for Children)

**Abstract:** The purpose of this symposium is to present data from a pilot observational system for infant social behavior. The observation system is being designed to capture the emergence of imitation, joint attention, and responsiveness to social stimulation in infants. Infants 1-30 weeks of age were observed in their homes playing with their mothers as part of a longitudinal study. Five mother-infant dyads were observed once per week for twelve weeks, during a ten-minute play session. The observation methods were based on methods described in the infant literature (e.g., Bakeman & Adamson, 1984; Kokkinaki & Kugiumutzakis, 2000) and on the methods described by Hart and Risley (1999). It is hoped that the data from the observation system will help inform and assess the effectiveness of infant and toddler interventions in ASD. In particular, it is hoped that the observation system will help interventionists evaluate intervention procedures and refine shaping methods to increase social responding in infants and toddlers with ASD. Three components of the data collection and analysis will be presented and Dr. Rebecca McDonald, an expert in early intervention in autism, will discuss the preliminary findings.

### **Observing Typical Infant Imitation to Inform Infant Interventions in ASD.** CARLEY

WALTENBURG (University of North Texas), Nicole Suchomel (University of North Texas), Kellyn Joi

Johnson (University of North Texas), Lashanna Brunson (University of North Texas), Jesus Rosales-Ruiz (University of North Texas), Shahla S. Ala'i-Rosales (University of North Texas)

**Abstract:** The primary objective of this portion of the recording system was to observe the development of imitative behaviors in typically developing infants and how reliably and consistently these behaviors can be measured in an infant's natural environment. Observations were coded based on the topography of the mother's and infant's behavior that included facial movement, motor movement, object movement, and vocalizations.

**Observing Typical Infant Joint Attention to Inform Infant Interventions in ASD.** NICOLE SUCHOMEL (University of North Texas), Carley Waltenburg (University of North Texas), Samantha Nelson (University of North Texas), Lashanna Brunson (University of North Texas), Jesus Rosales-Ruiz (University of North Texas), Shahla S. Ala'i-Rosales (University of North Texas)

**Abstract:** The primary concern for this portion of the system was how attention-seeking behaviors developed in typically developing infants and how reliably and consistently these behaviors can be measured in an infant's natural environment. Observations were coded using a state-based format that included person engagement, object engagement, supported joint engagement, coordinated joint engagement, and unengaged. Child behaviors of reaching, grabbing, and manipulating objects were coded as well as all child and adult vocalizations.

**Observing Typical Parent Responsiveness to Inform Infant Interventions in ASD.** SHAHLA S. ALA'I-ROSALES (University of North Texas), Nicole Suchomel (University of North Texas), Carley Waltenburg (University of North Texas), Samantha Nelson (University of North Texas), Lashanna Brunson (University of North Texas), Kellyn Joi Johnson (University of North Texas), Jesus Rosales-Ruiz (University of North Texas)

**Abstract:** In addition to measures of imitation and joint attention, parent responsiveness was also recorded. This included coding of parent physical gestures, vocalizations, play actions, positioning and affect that occurred immediately following infant motor, imitation, attention and vocal responses during the naturalistic home observations.

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## #185 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 124 B

AUT/EDC; Applied Behavior Analysis

### **Adolescents and Young Adults with Autism – Expanding Opportunities through Behavior Analysis**

Chair: Michele D. Mayer (HMEA)

**Abstract:** While a rich literature base describing program models exists for young children with autism, there is no evidence that these models designed for early intervention result in positive outcomes for adolescents and young adults with autism. A quick review of the Expanded Academic Index yielded 45 articles that incorporated adolescents and autism in the keywords. Of these, very few studies actually targeted skills for acquisition. The paucity of research with this population is startling when one considers that these students are still entitled to educational and transitional services. This symposium will present four data-based studies involving adolescents and young adults with autism where behavior analysis was instrumental in improving behavioral control and skill acquisition leading to expanded community activities. In the first study, component and parametric analyses were used to decrease vocally disruptive behavior. The second study focuses on increases in community activities as a result of a reduction in spitting behavior. The third study describes how a good behavior badge led to reductions in dangerous behavior and concomitant increases in opportunities to sample work. The final study examines increases in opportunities to respond as a result of decreases in physical aggression.

**Evaluating the Components of an Intervention Package Designed to Reduce Vocally Disruptive Behavior.** Robert L. Shapiro (HMEA/Simmons College), MICHELE D. MAYER (HMEA), Stefanie A Salome (HMEA), Kara Muirhead (HMEA), Janice R. Bolton (HMEA), Jason Coderre (HMEA)

**Abstract:** Vocally disruptive behavior, such as screaming and abusive language, has been addressed in geriatric populations through introduction of artificial sound such as white noise. However, its use has not been documented with other populations, and its relative effectiveness based on intensity and combination with other components of a treatment package has not been reported. This study investigated the effectiveness of a white noise intervention package on vocally disruptive behavior in a teenaged boy with autism. Using a multiple treatment reversal design, it was determined that the white noise intervention was necessary and sufficient for decreasing this behavior. Further, by conducting a parametric analysis it was possible to reduce the decibel level of the white noise to socially acceptable levels without sacrificing treatment effectiveness. Ultimately, gains made in behavioral control led to an increase in the intensity and diversity of academic programming, and served as the key element in the ability of this young man to explore a transition to a more inclusive academic setting.

**An Antecedent-Based Intervention to Reduce Spitting and Increase Community Opportunities** JASON CODERRE (HMEA), Robert L. Shapiro (HMEA/Simmons College), Michele D. Mayer (HMEA), Janice R. Bolton (HMEA), Stefanie A Salome (HMEA)

**Abstract:** Spitting, while not inherently dangerous, nonetheless serves as a substantially limiting factor for accessing the community, especially in relation to social and vocational activities. Employers may be hesitant to hire a worker who is spitting; likewise, peers may be reluctant to include in social events a person who is frequently spitting. This study investigated spitting behavior that appeared to be maintained by automatic reinforcement in an adolescent with autism. Previous attempts to reduce this behavior were not effective and the student needed to wear a towel around his neck to absorb the saliva. Through the use of behavior chain analysis, it became apparent that spitting was preceded by a distinctive facial expression. By implementing a redirection procedure when this expression was observed, it was possible to reduce the spitting to below baseline levels. As the student's behavior improved, the redirection procedure was modified to make it less conspicuous. The resulting reduction in spitting afforded increased opportunities for community-based activities, and the behavior reduction was maintained in these novel settings.

**Using a Good Behavior Badge to Reduce Dangerous Behavior and Increase Community-Based Vocational Opportunities.** Robert L. Shapiro (HMEA/Simmons College), JANICE R. BOLTON (HMEA), Stefanie A Salome (HMEA), Jason Coderre (HMEA), Michele D. Mayer (HMEA)

**Abstract:** The good behavior badge is an intervention that combines elements of a response cost procedure with differential reinforcement. By pairing the good behavior badge with identified reinforcing items or activities, the badge itself acquires reinforcing properties, and in turn, its removal contingent upon the emission of maladaptive behavior, serves to reduce the future probability of this behavior. In this study, the good behavior badge was used to reduce a range of dangerous behavior, including physical aggression, bolting, and falling forcefully to the floor, in a young adult with autism. When the targeted behaviors were occurring, the student's ability to access his community was severely limited. With the introduction of the good behavior badge, decreases in targeted behavior occurred to the extent that exploration of a diversity of vocational options was possible. Data are presented on the change in a variety of behaviors targeted for decrease, as well as, on the acquisition of a range of vocational skills.

**Increasing Opportunities to Respond through Improved Predictability of Staff Response to Physical Aggression.** STEFANIE A SALOME (HMEA), Robert L. Shapiro (HMEA/Simmons College), Michele D. Mayer (HMEA), Janice R. Bolton (HMEA), Jason Coderre (HMEA)

**Abstract:** Changes in routine are a typical part of everyday life. For many students with autism, however, even the simplest changes can result in increases in maladaptive behavior. During occurrences of maladaptive behavior, diminished opportunities to respond occurs as educational programming ceases while the student attempts to regain self-control. In this study, physical aggression warranting restraint

occurred as a result of the introduction of new educational programming. Because first instances of physical aggression were not always of sufficient intensity to meet criteria for emergency physical restraint, there was little predictability of staff response to the physical aggression. By restructuring the intervention for physical aggression such that any instance, regardless of intensity, resulted in a physical hold, physical aggression was reduced to below-baseline levels, as was the frequency of physical restraint itself. As a result, opportunities to respond to educational instruction increased, leading to improved learning outcomes. Data are presented on the change in behavioral presentation, as well as, on the variety of academic programs that were available before and after this intervention.

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## #186 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 124 A

AUT/EAB; Applied Behavior Analysis

### **Teaching Perspective-Taking to Children with Autism**

Chair: Adel C. Najdowski (C.A.R.D., Inc.)

**Abstract:** A defining feature of autism is delayed development in socialization. One aspect of socialization which is often delayed is a child's ability to understand the perspectives of others. Successful social skills often depend on one's ability to take the perspectives of others so it appears that this may be one area in need of intervention in treatment programs for children with autism. This symposium begins with a literature review of studies which have attempted to improve perspective-taking in children with autism and proceeds with three studies which attempted to teach some aspect of perspective-taking to children of this population.

#### **Teaching Perspective-Taking to Children with Autism: A Review of Research.** ADEL C.

NAJDOWSKI (C.A.R.D., Inc.), Amy Caveny (Center For Autism and Related Disorders, Inc.), Jonathan J. Tarbox (Center for Autism and Related Disorders, Inc.)

**Abstract:** This literature review summarizes and critiques published studies which have attempted to improve perspective-taking abilities in individuals with autism. Much research has been published that has demonstrated deficits in perspective-taking in the autism population but few good quality studies have been published on improving such skills. Areas in need of additional research are discussed and specific directions for such research are suggested.

**Relational Frame Theory and Teaching Foundational Perspective-Taking to Children with Autism.** EVELYN GOULD (Centre for Early Autism Treatment), Stephen Noone (University of Wales, Bangor), Jonathan J. Tarbox (Center for Autism and Related Disorders, Inc.), Denis P. O'Hora (National University of Ireland, Galway)

**Abstract:** An inability to take the perspective of another appears to lie at the root of the social and communicative difficulties in children with Autism. However, few research findings have been clearly translated into effective clinical interventions. A Relational Frame Theory (RFT) account may provide a promising alternative to the traditional "Theory of Mind" (ToM) approach. A procedure adapted from RFT, was used to teach gaze-following in three autistic children, aged 2 to 5yrs. This is thought to be an early constituent behaviour of broader perspective-taking skills. A multiple baseline across participants evaluated its effectiveness. All children failed to demonstrate gaze-following during baseline. Intervention resulted in two participants demonstrating match-to-sample relations indicative of following eye-and face-gaze, and the third demonstrating gains after an additional error correction procedure was introduced. Generalisation of skills to a more natural environment was limited for all participants. The mixed results observed across participants highlight the complexity of developing effective interventions. Findings must be interpreted with caution, however, the study may provide a starting point for new insights and the development of effective perspective-taking interventions for children with Autism.

**Teaching Children with Autism to Identify what Others Can Feel and Hear.** CATHERINE MINCH (Center For Autism and Related Disorders, Inc.), Adel C. Najdowski (C.A.R.D., Inc.), Jonathan J. Tarbox (Center for Autism and Related Disorders, Inc.)

**Abstract:** In this study, we taught children with autism sensory perspective taking. Specifically, we used a multiple baseline across children to teach participants to identify what others could hear and what they could feel, depending on what auditory and tactile stimuli were present in their environment. Generalization probes were included and generally indicated that stimulus generalization was produced by the training procedure. All treatment procedures were implemented as a regular part of the clients' everyday therapy routine and all sessions took place in the children's homes.

**The Effects of Teaching Situation-Based Emotions on Perspective Taking.** LOUISE A. MCHUGH (University of Wales Swansea), Alina Olteanu Bobarnac Daniela (Swansea University), Phil Reed (University of Wales Swansea)

**Abstract:** Many individuals with autism spectrum conditions (ASC) have difficulty recognizing emotions in themselves and others. In a multielement design, the effects of teaching children with ASC to tact situation-based emotions (i.e., "happy", "sad", "angry", and "afraid") on perspective taking was examined. Three children (3 males) participated in the study. Theory of mind was measured using four tasks (i.e., the Sally-Anne task, the M&M task, the Hide & Seek task, and a test for relational perspective-taking). The results indicated significant increases in tacting situation-based emotions. To evaluate the generalization of training, novel video stories were employed that depicted the trained emotions. The findings indicated generalization of situation-based emotional tacting to the novel video stories. In addition, the findings provided evidence that training on situation-based emotions did not produce concurrent (untrained) improvements in perspective-taking.

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## #187 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 125

AUT/Applied Behavior Analysis

### Measurement Issues in the Behavioral Treatment of Autism

Chair and Discussant: Gerald E. Harris (Texas Young Autism Project)

**Abstract:** Applied Behavior Analysis relies on data, but the confidence one has in data depends on how that data is obtained. This symposium presents data-based information about the application of measures often used in ABA research and intervention in the area of autism. The first presentation examines the correspondence and components of several of the most commonly used measures of language in children with autism. How these measures compare to each other and the implications for reporting and interpreting scores from these measures is presented. The second presentation offers findings from a relatively large sample group comparison study concerning the utility of a low-cost, widely used behavior report measure (CBCL) as a predictor of outcome in children receiving an ABA intervention. The third presentation provides data from a large sample of children with autism who were administered the Weschler Intelligence Scale prior to beginning ABA treatment and after one year of treatment. Normative data by age group are presented and a case is made for using population specific norms when reporting and interpreting intelligence change scores for children with autism. Together, these presentations give significant new information relevant to research and treatment in the area of ABA for children with autism.

**Content Analysis of Tests Commonly Used to Assess Language in Children Diagnosed with Autistic Disorder.** Catriona Cullum (Texas Young Autism Project), TREA DRAKE (Texas Young Autism Project), Gerald E. Harris (Texas Young Autism Project)

**Abstract:** Results from 107 children with autism, each assessed with four commonly used language and communication tests, indicate that, although results across assessments were highly correlated, age

equivalent scores on the various tests differed by as much as two years for some children. These results suggest that although the tests are all language and/or communication assessment instruments, they may not be measuring the same underlying construct.

Variables thought to affect the scores of children diagnosed with AD taking these four major language and communication instruments were then examined with respect to test format and content. Specifically, a content analysis was conducted to examine the receptive and expressive language content areas, as well as other areas of language structure (language precursors, semantics, structure, integrative/complex language).

It was found that two of the assessments sampled a wide variety of language content areas while the other two focused on a much narrower sample of language components. Implications for clinical service to children with autism are discussed, including not using these tests interchangeably and interpreting results based on the specific components of language actually measured.

**ABA Outcome Utility of the CBCL for Children with Autism.** GERI MARIA HARRIS (Texas Young Autism Project), Gerald E. Harris (Texas Young Autism Project)

**Abstract:** The Child Behavior Checklist (CBCL) is one of the most widely used measures of child behavior and is relatively quick and inexpensive to administer. Previously presented research on a sample of children with autism has shown the CBCL to have very good inter-parental reliability, a strong correlation of specific CBCL scales with the diagnostic criteria for autism, and potential usefulness as a treatment outcome measure. The present study examined the predictive utility of diagnostically relevant subscales (Pervasive Developmental Problems and Withdrawn) of the CBCL. Participants were 209 young children with autism who received ABA intervention for one year and their mothers. Data included CBCL scores and I.Q., obtained before the onset of treatment and after one year of ABA treatment. A Cross-Lagged Panel Correlation analysis of the data was then conducted. Results show that pretreatment CBCL subscale scores are significantly predictive of post-treatment I.Q. scores. Implications for research and clinical use are discussed.

**Revised Normalizations for the WPPSI-III For Use with Children with Autism: Reliability across Samples.** WENDY J. NEELY (Texas Young Autism Project), Gerald E. Harris (Texas Young Autism Project)

**Abstract:** Accurately assessing cognitive abilities of children with autism is integral to designing and evaluating behavioral interventions. The Wechsler Preschool and Primary Scale of Intelligence (3rd Ed.) is generally considered to be the “gold standard” of intelligence tests for preschool age children, however, the published normalization tables were developed based on a sample of children from the general population. Children with Autism who receive ABA early intervention frequently achieve developmental and cognitive gains at a slower rate than the general population, resulting in standard scores often appearing to decrease, rather than reflect progress actually made. The use of norms specifically developed for the autism population would allow a more accurate presentation and interpretation of changes in cognitive functioning.

Previous research presented WPPSI-3 norm tables, developed from pre-treatment administrations of the WPPSI-3 to nearly 500 children with Autism, to provide a basis for interpretations of a child's test scores relative to other children with Autism. In the present study a sample of 216 WPPSI-3 test scores from children with Autism, who had received ABA treatment for one year, were examined for consistency with the norms developed from the original sample. Implications for use of these special population norms are also discussed.

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## #188 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 120 BC

AUT/EAB; Applied Behavior Analysis

### **Science Board Translational Series: The Science and Practice of Discrete-Trial Training**

Chair and Discussant: Kathryn Saunders (University of Kansas)

**Abstract:** Discrete-trial training is widely used to teach early language skills to children with autism and other developmental disabilities. These procedures were developed within longstanding translational-research programs targeted at understanding basic principles of stimulus control. The three talks will underscore the scientific basis for instructional programming, and illustrate contemporary lines of research that will lead to refined teaching procedures. Kathryn Saunders will present a component analysis of arbitrary matching to sample, a procedure that often is used in receptive-language instruction. She will analyze common teaching procedures (e.g., delayed prompting), with the goal of illustrating why some procedures are more effective than others. Next, Carol Pilgrim will describe two promising lines of research from her laboratory. One procedure facilitates the acquisition of arbitrary matching by first ensuring accurate thematic matching. The other line of work, directly from the animal laboratory, involves differential-outcomes procedures. To wrap things up with a new way of conceptualizing the problem of seemingly identical procedures that vary in their effectiveness, William McIlvane will present the concept of “joint abstraction.” He will describe two laboratory research programs that apply this concept to studies of stimulus control in individuals with severe intellectual disabilities and in nonhuman primates.

#### **Why Some Procedures for Teaching Arbitrary-Matching-to-Sample Are More Effective Than Others.** KATHRYN SAUNDERS (University of Kansas)

**Abstract:** The arbitrary-matching-to-sample-procedure is often used in teaching receptive-language and other skills to students with autism and other developmental disabilities. For example, a child might be taught to select, from a choice pool of 2 or more pictures, the picture that goes with a spoken word. As another example, matching procedures are used to teach relations between photos and objects. In this talk, I will present a component analysis of arbitrary-matching teaching procedures, trace the roots of the analysis to basic laboratory research, and show how this analysis helps predict which teaching procedures will be effective, and why. The component analysis will be applied to commonly used teaching procedures such as delayed prompting. Two procedures that establish arbitrary matching by ensuring acquisition of its components will be described.

#### **Strategies for Generating Arbitrary Match-to-Sample Performances** CAROL PILGRIM (University of North Carolina - Wilmington)

**Abstract:** Although critical to a number of functional skill-training programs, arbitrary match-to-sample (MTS) performances have proven a challenge for many participant populations. This talk will include data from a series of studies involving young typically-developing children as participants. In each case, the target performance was a three-choice arbitrary match-to-sample task involving unfamiliar nonrepresentational line drawings. Study 1 shows the facilitative effects of a programmed instruction series involving identity MTS training, thematic MTS training (matching nonidentical stimuli from a common category or functional grouping), and arbitrary MTS training. Study 2 shows the facilitative impact of adding class-specific reinforcers to the MTS training procedures (choosing B1 given A1 produced Reinforcer 1, while choosing B2 given A2 produced Reinforcer 2, etc). Study 3 shows the emergence of arbitrary MTS performances following simple discrimination training with class-specific reinforcers (choosing A1, B1, or C1 from a group of distractor stimuli produced Reinforcer 1, while choosing A2, B2, or C2 produced Reinforcer 2, etc.). Collectively, these results may provide some directions to explore in applied settings when discrete-trial procedures fail to produce the targeted discriminations.?

**Modeling “Joint Abstraction” in Conditional Discrimination Procedures.** WILLIAM J. MCILVANE (University of Massachusetts Medical School)

**Abstract:** This paper will introduce the concept of “joint abstraction” as an adjunct to the concept of “joint attention” that is important in the development of communicative repertoires (and deficit in neurodevelopmental disorders such as autism). Joint abstraction refers to the presence and/or degree of joint control by stimulus features or dimensions in dyads such as those involving an experimenter and a research participant, a therapist and a client, or a teacher and student. In each case, one member of the dyad (e.g., the experimenter) endeavors to arrange a programmed contingency (implicitly or explicitly) designed to influence the behavior of the other member (e.g. the research participant). A high degree of joint abstraction means that the dyad member who arranges the programmed contingency and the other member who responds to the contingency both attend to the same stimulus features/dimensions (or features/dimensions positively correlated with them). In the first part of the presentation, I will review the theory behind the concept of “joint abstraction.” Thereafter, I will discuss two programs of translational research, one with humans with severe neurodevelopmental disabilities and the other with nonhuman primates, each of which has been designed to increase the level of joint abstraction between members of dyads in modeling naturally occurring processes in the development of joint attention.

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**#189 Paper Session**

5/24/2009  
10:30 a.m. - 11:50 a.m.  
North 226 C  
AUT

**Altering Problem Behavior**

Chair: Giovambattista Presti (IULM University, Milan / IESCUM, ABA Italian Chapter)

**“Odi et Amo”:** Teaching Manding to Drive Attention and to Manage Aversive Situation in Autistic Children. (Applied Behavior Analysis) GIOVAMBATTISTA PRESTI (IULM University, Milan / IESCUM, ABA Italian Chapter), Cristina Copelli (IESCUM, ABA Italian Chapter), Lorenzo Todone (IESCUM, ABA Italian Chapter), Rita Nasi (IESCUM, ABA Italian Chapter), Raffaella Giannattasio (IESCUM, ABA Italian Chapter), Alessia Messina (IESCUM, ABA Italian Chapter), Paolo Moderato (IULM University, Milan / IESCUM, ABA Italian Chapt)

**Abstract:** Development of a verbal behavior repertoire is a major goal of interventions for children with developmental disabilities. We evaluated the effectiveness of manipulating different establishing operations (EO) for functional discriminated mands in autistic children. The purpose of the study was to evaluate two different training procedures on the acquisition of a manding repertoire to drive attention and to remove aversive situations. Both trainings required the children to utter “Come” (in Italian “Vieni”) to request for a reference adult to approach them, and “Go away” (in Italian “Via”) to halt and manage aversive situations. There are several dimensions in the contingencies of reinforcement that may affect the probability of the emission of these particular response classes. EOs might be different in these two mands and they are reinforced by a socially relevant action in the first case (come), and by an action in the opposite direction in the second case (go away).

Trainings differed in the way the two mands were taught. In the first condition mands were presented in the same session within a multiple exemplar training procedure. In the second procedure the “go away” mand was taught first and when mastering criteria emerged the second mand “come” training began. Our hypothesis was that the amount of generalization could be higher when alternating the two mands rather than when the two were taught separately, the second after having acquired the first repertoire. This was not always true. We examined additional mechanisms that affected which member of a manding response class would be emitted under specific stimulus conditions and how these manding repertoires could be best taught and generalized.

**Reducing Behaviors among Children with Autism Using a DRO and Token Economy Treatment Package.** (Applied Behavior Analysis) LEAH C. GONGOLA (Youngstown State University)

**Abstract:** Recently, there has been insistence that evidence-based methods be used when working among children with autism and challenging behaviors (Horner, Carr, Halle, McGee, Odom, & Wolery, 2005). The purpose of this study was to extend the evidence-based literature on reinforcement protocols when diminishing behaviors. The DRO with an embedded token economy treatment package explored the efficacy of scripted instruction among two school-aged participants with autism. A whole interval DRO procedure was utilized with interresponse times determined on a weekly basis to enhance feasibility for applied practitioners. If a target behavior occurred during the interresponse time, an interval reset application was applied and scripted instruction was verbally administered.

Results found that upon application of the treatment package, target behaviors significantly reduced while the embedded token economy, on a three-to-one ratio, was found to maintain near zero rates of target behaviors. Treatment integrity was monitored throughout the intervention with data supporting the ease in application for applied practitioners. The DRO with an embedded token economy was found to be efficacious for reducing target behaviors and maintaining near zero rates among children with autism in a special education classroom; holding potential as a simplistic, reinforcement-based treatment option.

**The Effectiveness of Behavioral Intervention for Aggression in Children with Autism.** (Applied Behavior Analysis) Francine Dimitriou (The Cleveland Clinic Center for Autism), Aletta Sinoff (The Cleveland Clinic Center for Autism), TRAVIS HAYCOOK (Cleveland Clinic Center for Autism)

**Abstract:** One challenging behavior exhibited by children with autism is aggression. In a center-based, applied behavior analysis school for children with autism, 29 formal behavior reduction plans were implemented to treat aggressive behavior in 29 students, ranging in age from eight through 22 years. The study was evaluated through Cox Regression, with the success of the plans being determined by the display of the targeted behavior at a rate of  $< 1.0$  occurrences per day. The plan was determined to be unsuccessful if the criterion success rate was not achieved within 130 days of treatment.

Of the 29 behavior plans implemented, 20 plans achieved the targeted success criterion in an average of 40 days of implementation. This represents an overall success rate of 68.97% of plans implemented. Of the remaining 9 plans, an additional 5 plans achieved the targeted success criterion in 150 days.

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## #190 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 222 AB

CBM/CSE; Applied Behavior Analysis

### Measuring Processes of Change in Acceptance and Commitment Therapy

Chair: Amanda C. Adcock (University of North Texas)

Discussant: John Tanner Blackledge (Morehead State University)

**Abstract:** Empirical and theoretical support for Acceptance and Commitment Therapy (ACT) has pushed for creative measurement of change processes posited in ACT. Several attempts at measuring ACT processes in the traditional manner has resulted measures with unstudied or questionable psychometric properties. Therefore, a variety of research teams have begun to create more specific measures of ACT process variables. This symposium will present psychometric data for three different measures of processes of change in ACT. Specifically, a measure of the believability of thoughts in anxiety disorders that has strong psychometric properties, the Believability of Anxious Thoughts and Feelings Questionnaire (BAFT; Eifert & Forsyth, 2005), will be described. Also in the realm of acceptance of thoughts or feelings and committed action, the Stories Willingness and Action Measure for Children and Adolescents (SWAM-C/A; Larson & Murrell, 2007) will be presented for the first time. A measure of a more difficult construct to measure, the flexibility of

valuing, will also be presented for the first time, the Meta-Valuing Measure (MVM; Adcock, LaBorde, & Murrell, 2008). Thus, three newly constructed measures of ACT consistent process variables will be presented and discussed.

**The Believability of Anxious Thoughts and Feelings Questionnaire (BAFT): Psychometric Properties and Future Directions.** KRISTIN N. HERZBERG (State University of New York - Albany), Sean Sheppard (SUNY - Albany), John P. Forsyth (University at Albany, SUNY), Georg H. Eifert (Chapman University)

**Abstract:** Cognitive fusion, the tendency for people to buy into the literal meaning of unpleasant thoughts and feelings, may play an important role in the etiology and maintenance of anxiety disorders and figures prominently in third generation behavior therapies such as Acceptance and Commitment Therapy (ACT). Within ACT, contexts that support cognitive fusion may foster excessive struggle with private content (e.g., thoughts, feelings). The literature to date suggests that ACT defusion strategies may reduce the believability of unwanted thoughts and feelings. Nonetheless, there exists no validated self-report measure of cognitive fusion. The aim of this presentation is to describe a newly developed measure of cognitive fusion, The Believability of Anxious Thoughts and Feelings Questionnaire (BAFT; Eifert & Forsyth, 2005). The BAFT, along with several other measures of anxiety and emotion regulation, was administered to 437 healthy undergraduates at University at Albany, SUNY. Data on the psychometric properties of the BAFT will be presented, including an exploratory factor analysis yielding a 30-item, one-factor solution with excellent internal consistency ( $\alpha = .95$ ), and convergent validity with other relevant measures. Our findings suggest the BAFT to be a useful preliminary measure for the assessment of cognitive fusion and its relation to other anxiety-related constructs.

**Stories: A Revision of the Willingness and Action Measure for Children and Adolescents (WAM-C/A).** CHRISTINA M. LARSON (University of North Texas), Amy Murrell (University of North Texas)

**Abstract:** Willingness to remain in contact with one's emotions and committed action are two foci of Acceptance and Commitment Therapy (ACT), making their assessment an integral part of therapy. However, there is currently no psychometrically strong measure of these processes in children. While developmentally appropriate, the original Willingness and Action Measure for Children and Adolescents (WAM-C/A; Greco, Murrell, & Coyne, 2004) does not demonstrate good validity in either normative or clinical samples. This study utilized The Story Version of the Willingness and Action Measure for Children and Adolescents (SWAM-C/A; Larson & Murrell, 2007). The SWAM-C/A consists of vignettes modeled after the WAM-C/A items and popular children's stories and questions designed to assess experiential acceptance. Results collected from elementary students in the North Texas area supported the relationship between the SWAM-C/A and measures of experiential avoidance (AFQ-Y) and mindfulness (CAMM). Factor analysis did not result in a two factor model but did indicate the presence of several distinct willingness and action factors. These results support the need for continued work on measurement of willingness and action in youth.

**The Meta-Valuing Measure: Theory and Psychometrics.** CICELY TARAVELLA LABORDE (University of North Texas), Amanda C. Adcock (University of North Texas), Amy Murrell (University of North Texas)

**Abstract:** The main outcome of Acceptance and Commitment Therapy (ACT) is evidence of flexible behavior in valued directions. Data from a sample of undergraduates suggested a model of flexible valuing (Adcock, Murrell & Woods, 2007), or valuing many different life areas in a fluid manner. However, the results obtained cannot be clearly parsed or explained since, as of now, there is no psychometrically strong measure of flexible valuing. There are two ACT-consistent measures of valuing, but both of these require clients to identify values within domains and do not assess valuing more broadly. These measures do not capture information about flexibility with respect to the client's valuing process – respondents report on pliance or living consistently with their own values, both of which are important but limited, as they are in reference only to specific domains. The need for a measure of flexible valuing as a key process of ACT led us to create the MetaValuing Measure which is independent

of specific values domains. Psychometric data of the MVM collected from a large undergraduate sample will be presented. The University of North Texas Institutional Review Board approved the project.

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## #191 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 222 C

CBM/TPC; Applied Behavior Analysis

### **Stigma and Prejudice: Applying Contextual Behavior Science to a Global Problem**

Chair: Lindsay B. Fletcher (University of Nevada, Reno)

**Abstract:** Skinner aimed to scale a science of behavior to the most important issues of our time. In an age when wars are common and weapons of mass destruction are just in reach, our capacity for harming each other and the earth is terrifying. Stigma is the process of objectification and dehumanization based on participation in verbal categories. This process allows people to treat each other as less than human and may be applied to virtually any category of person as well as to oneself. The pervasiveness of this way of relating to others is not limited to those who behave in overtly prejudiced ways. We are all participants in a society that reinforces stigmatizing language and behavior. Recently, behavioral scientists have become more focused on stigma. This symposium represents a sample of the diverse ways that stigma may be addressed by behavioral psychologists that extend beyond the arenas that clinical psychology traditionally occupies.

#### **Generalized Prejudice: Testing a Relational Frame Theory Account of Prejudice and Stigma.**

MICHAEL LEVIN (University of Nevada-Reno), Roger Vilardaga (University of Nevada, Reno), Jason Lillis (VA Palo Alto Healthcare System), Steven C. Hayes (University of Nevada, Reno), Jacqueline Pistorello (University of Nevada, Reno), Jason Brian Luoma (Portland Psychotherapy Clinic, Research, & Training Center, PC)

**Abstract:** The negative impact of stigma and prejudice on society is vast, affecting countless numbers of groups. Proposed solutions often involve targeting prejudiced attitudes and behaviors towards very specific groups through approaches such as multicultural training. However, the broad prevalence and generativity of stigma and prejudice suggests such attempts are unlikely to be successful. From a Relational Frame Theory Perspective (RFT; Hayes, Barnes-Holmes & Roche, 2001), stigma and prejudice can be understood as a common product of human's capacity to derive arbitrary relations among events. The ability to relate and evaluate people based on arbitrarily derived categories is part of the same behavioral repertoire that allows humans to engage in a broad range of effective behaviors such as problem solving and analogical reasoning. Furthermore, the context in which such verbal behavior occurs, such as how one relates to these thoughts, is essential to consider as it can significantly alter the impact of verbal behavior on subsequent overt behavior.

The current study proposes to examine this RFT account of prejudice and stigma using data from an internet-based survey conducted with 200 college students. We will be presenting data on how various stigma/prejudice measures relate as a means of testing whether stigma represents a common psychological process that occurs across groups. Furthermore we will explore the impact of related processes such as experiential avoidance, authoritarianism, psychological rigidity, and mindfulness on the relationship between prejudiced attitudes and subsequent behavior.

#### **Prosocial and Coercive Repertoires and the Evolution of Caring Societies.** ANTHONY BIGLAN (Oregon Research Institute)

**Abstract:** This paper will review the biological, evolutionary, epidemiological, and behavioral evidence about prosocial and coercive behavior. It will argue that it is useful to think in terms of two broad classes of behavior: Prosocial and Coercive. It will briefly review evidence on the role of coercive family processes in the development of aggressive social behavior and depressive behavior and their sequelae, including substance abuse and risky sexual behavior. It will then review evidence about a set of prosocial,

self-regulatory behaviors that both contribute to young people's successful development and play a key role in the success of groups. The evidence points to the need to increase the prevalence of nurturing environments that are marked by high rates of positive reinforcement, low levels of aversive stimulation, and high levels of psychological acceptance. I will sketch the implications of this analysis for the further evolution of a society that sees to the wellbeing of every member.

**Assessment and Values-Based Multicultural Training: Measuring the Effectiveness of ACT in Increasing Multicultural Engagement and Competence among Psychology Faculty and Graduate Students.** ANGELA ENNO (Utah State University), Mike P. Twohig (Utah State University), Melanie Domenech-Rodriguez (Utah State University)

**Abstract:** The Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists (APA, 2003) charge educators and practitioners to infuse diversity into all professional activities, including graduate training. Potential barriers to implementation include trainees' thoughts of failure; and fear of making mistakes, offending someone, or appearing racist. This study evaluates an intervention designed to increase multicultural competency and engagement in teaching, applied training, activation of students, inclusion of minority students, and the addressing of multicultural issues within the Combined-Integrated Doctoral Program at Utah State University. Faculty and graduate students will participate in a training seminar which combines multicultural competency training with ACT, focusing on: 1) noticing thoughts and feelings that interfere with behaving in culturally competent ways; 2) noticing and accepting the presence of these thoughts and feelings without responding to or fighting them; and 3) helping individuals engage in actions that are consistent with their values instead of letting the "fearful" or "anxious" thoughts and feelings guide their actions. The effectiveness of the intervention will be assessed using pre, post, and follow-up measures to evaluate multicultural engagement, ethnocultural empathy, multicultural knowledge and awareness, and interpersonal reactivity, as well as the ACT processes of willingness and acceptance.

**Acceptance and Commitment Training for the Hiring Process: An Analogue Study.** COLISHA AMOS (University of Mississippi), Robert C. Martin (University of Mississippi), George A Ball (University of Mississippi), Emily Kennison Sandoz (University of Mississippi), Jonathan Weinstein (University of Mississippi), Kate Kellum (The University of Mississippi), Kelly G. Wilson (University of Mississippi)

**Abstract:** When employers engage in the process of hiring new employees, unintentional racial biases have been shown to affect the decision-making process (Bertrand & Mullainathan, 2004; Hosoda, Stone, & Stone-Romero, 2003). If an intervention is able to help employers make fairer decisions, then employees will be more likely to be selected based upon their individual merit rather than extraneous factors. The current study examined the impact of a brief (15 minutes) Acceptance and Commitment Training, Equal Employment Regulatory Practices Training, or no training (15 minutes spent reading an article on Mississippi tourism) on undergraduates' rankings of racially distinct but otherwise equivalent mock resumes.

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## #192 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 224 A

CBM/OTH; Applied Behavior Analysis

### **Treating Obesity: Basic Research to Clinical Intervention.**

Chair: Tiffany N. Newman (SIU- Carbondale)

Discussant: Matthew P. Normand (University of the Pacific)

**Abstract:** Obesity raises concerns because of its implications for health over the long term, and obese individuals are more likely to experience health risks such as hypertension, osteoarthritis, coronary artery disease, diabetes, and stroke. In 2006, the Center for Disease Control estimated that approximately 33% of all

men and women and 16% of all children in the United States were obese. There is an obvious need for behavior analytic services related to health and lifestyle changes, but few behavior analysts have become invested with researching and treating obesity. Despite the high prevalence of obesity in the general population, only eight articles that specifically deal with obesity have been published in JABA since 1972. This symposium intends to present some current basic conceptualizations of obesity and unhealthy eating, and current clinical applications of behavior analysis to treat overweight individuals. A basic account of food preference and stimulus equivalence class formation will be presented, and it will be followed by a presentation on behavior analytic treatments for overweight children at the Kennedy Krieger Institute, as well as a presentation on family-based intervention programs for obesity among adolescents and young adults with Down Syndrome that are being conducted at the Shriver Center in Massachusetts.

**Teaching Healthy Food Choices through Stimulus Equivalence.** BECKY L. NASTALLY (Southern Illinois University), Nicholas Mui Ker Lik (Southern Illinois University), Mark R. Dixon (Southern Illinois University), Michael Bordieri (Southern Illinois University Carbondale), Adam D. Hahs (Southern Illinois University), Brooke Diane Walker (SIU Carbondale)

**Abstract:** Many popular weight loss programs incorporate psycho-educational components in order to assist people in changing their eating habits to make healthier choices. Little data exists on the utility of these components and it remains to be an empirical question whether failing to make healthy choices is actually a skill deficit. Therefore, the purpose of this study was to develop equivalence classes across types of foods, body images, and levels of physical activity. Participants were asked to make choices about which stimuli they preferred as well as which were healthier before and after match-to-sample (MTS) training and testing phases. The results of participants with a low body mass index (BMI) were compared with those who had a high BMI and implications of including psycho-educational material in weight management programs were discussed.

**Childhood Obesity: Implications for Behavior Analysts.** NICOLE LYNN HAUSMAN (Kennedy Krieger Institute), SungWoo Kahng (Kennedy Krieger Institute), Alyssa Fisher (Kennedy Krieger Institute), Emily D. Shumate (Kennedy Krieger Institute and The Johns Hopkins Un), Kaitlin Coryat (Kennedy Krieger Institute), Ayla Harris (Kennedy Krieger Institute)

**Abstract:** An estimated 40% of children in the United States are currently overweight or obese (BMI > 85th percentile for age, height, and gender). Family-based, behavioral weight management programs have been shown to be effective in the treatment of obesity among children and are well-respected within the research community (Epstein, Wing, Koeske, Andrasik, & Ossip, 1981). Currently, we are evaluating the efficacy of a clinical weight management program for overweight children ages 5-13 and their families. The Healthy Kids program is based on the Traffic Light eating plan and includes additional treatment components such as self-monitoring, contracting, goal-setting, and feedback (Epstein, Masek, & Marshall, 1978). Preliminary results suggest that 56% of children who complete the program are successful in achieving weight loss of between 1 and 14 lbs. Children who are successful in achieving weight loss generally display a high level of adherence to various treatment components. However, additional research is warranted to explore the underlying behavioral mechanisms contributing to obesity and lack of adherence in an effort to increase overall treatment efficacy. Thus, childhood obesity presents a unique opportunity for behavior analysts to focus on the antecedents and consequences of unhealthy behavior that may contribute to the obesity epidemic.

**Family-Based Behavioral Weight Loss Intervention for Adolescents and Young Adults with Down Syndrome.** RICHARD K. FLEMING (Shriver/UMass Medical School), Elise A. Stokes (Shriver Center/UMass Medical School), Carol Curtin (University of Massachusetts Medical School), Linda Bandini (Shriver Center/UMass Medical School), James Gleason (Shriver Center/UMass Medical School), Renee Scampini (Shriver Center/UMass Medical School), Melissa C. T. Maslin (Shriver/UMass Medical School), Charles Hamad (UMASS Medical School)

**Abstract:** Obesity is a significant problem facing persons with intellectual disabilities (ID) (US Department of Health & Human Services, 2002). Family-based behavioral interventions have been reasonably effective in promoting weight loss among typically developing children (Young et al., 2007).

Health U. is an ongoing randomized controlled trial (RCT) that addresses the need to replicate this research with adolescents and young adults with Down syndrome. Procedural components are described, and data are presented on changes in weight, BMIz, body fat (bioelectrical impedance), physical activity (accelerometry), dietary behavior and knowledge acquisition. Challenges are addressed, particularly the need for procedures that will better promote long-term maintenance of weight loss.

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## #193 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 131 A

CSE/OTH; Applied Behavior Analysis

### **Applied Behavior Analysis Applications in Sports and Health**

Chair: Victoria Fogel (University of South Florida)

**Abstract:** This symposium will consist of four papers discussing recent research on the use of ABA procedures to increase sport performance in the natural environment. Eva Boyer will discuss procedures for improving gymnastic skills with competitive gymnastics. Victoria Fogel will speak on the effects of a treatment package on skill acquisition of a golf swing with a novice golfer. Joseph Dagen will discuss his research on improving the performance of skilled swimmers. Finally, Victoria Fogel will talk about evaluating college fitness programs.

**Expert Video Modeling with Video Feedback to Enhance Gymnastics Skills.** EVA BOYER (ABA Learning Centre), Raymond G. Miltenberger (University of South Florida), Catherine Batsche (University of South Florida), Victoria Fogel (University of South Florida)

**Abstract:** The effects of combining expert video modeling with video feedback as an adjunct to standard coaching techniques were analyzed in this study. The participants were four 7-10 year old female competitive gymnasts. During the intervention, after the gymnast performed a specific gymnastics skill she viewed a video segment showing an expert gymnast performing the same skill and then viewed a video replay of her own performance of the skill. Next she was presented with a side-by-side slow motion video freeze frame comparison of her performance with that of the expert model. Finally the gymnast viewed the expert video clip and the video replay of her own performance of the skill again at normal speed. The effect of expert video modeling with video feedback on gymnastics skill performance was evaluated within a multiple baseline across behaviors research design. Three different gymnastics skills were analyzed and the results showed that all gymnasts demonstrated improved performance following exposure to the intervention.

**Teaching a Golf Swing through Behavioral Procedures: Evaluating the Efficacy of TAGTeach.** VICTORIA FOGEL (University of South Florida), Timothy M. Weil (University of South Florida), Heather Burris (University of South Florida)

**Abstract:** Seven training sessions were conducted utilizing the methodology of TAGteach to teach a novice golfer the components of a straightforward classic golf swing. The participant was a woman in her early thirties. A multiple baseline design across five skill sets, which comprise a class straightforward golf swing, was employed to evaluate the effectiveness of TAGteach. The use of TAGteach, which utilizes several behavioral procedures (prompting, shaping, fading, forward chaining, bridging stimulus/conditioned reinforcer and differential reinforcement) as well as the TAGteach phraseology (what you want; using the phrase, "The tagpoint is...", and avoiding the use of I and you) and TAGteach procedures (tagpoint, three try rule, value added tagpoint, BID, point of success, peer tagging, focus point, and personalized tagpoint), resulted in significant skill acquisition in 4 out of the 5 skill sets. This treatment package also demonstrated that skills taught on one club generalized when using a club in which no training occurred. In addition, the participant considered TAGteach to be a socially acceptable and an effective method for teaching a golf swing.

### **Improving the Performance of Skilled Athletes with Feedback, Self-talk, and Self-Monitoring.**

JOSEPH CHARLES DAGEN (University of Nevada, Reno), John Austin (Western Michigan University)

**Abstract:** The purpose of this study was to assess the effects of graphic and verbal feedback coupled with self-talk and self-monitoring procedures on freestyle swimming flip turns in an ABAC design across three swimmers. Graphic and verbal feedback produced no measurable improvement, while self-monitoring and self-talk coupled with graphic and verbal feedback reduced times by as much as .7 seconds. The results of this study suggest that self-talk and self-monitoring procedures can improve the performance of skilled swimmers. Implications, theoretical considerations, and future research directions are briefly explored.

### **Firecracker Fitness and Exercise is My Medicine: Evaluating College Fitness Programs.**

VICTORIA FOGEL (University of South Florida), Raymond G. Miltenberger (University of South Florida), Anne Friesel (University of South Florida), Nakreshia Causey (University of South Florida), Heather Burriss (University of South Florida)

**Abstract:** An assessment of an eight week traditional campus recreation fitness program was conducted. Data were collected on 128 college students and staff participants. The fitness program utilized a raffle drawing system to reward attendance, specialized group exercise classes, and specialized workshops on health, fitness, and self-management strategies to increase participation in the exercise program. In addition, an evaluation of the behavioral workshop on exercise behavior was conducted on six participants through a multiple baseline design across participants. Data showed that 50% of participants dropped before the program started and another 27% dropped by the third week for the overall fitness program. Data showed that the behavioral workshop had no significant effect on the exercise behavior of the six participants. Limitations of this program and recommendations for an improved behavioral fitness program will be discussed.

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## **#195 Symposium**

5/24/2009

10:30 a.m. - 11:50 a.m.

North 120 A

DDA/AUT; Applied Behavior Analysis

### **Functional Analysis and Treatment of Problem Behaviors Associated with Specified Syndromes/Genetic Disorders**

Chair: Patricia F. Kurtz (Kennedy Krieger Institute)

Discussant: Travis Thompson (University of Minnesota)

**Abstract:** Functional analyses and interventions derived from such analyses have shown great utility in addressing a range of severe problem behaviors exhibited by individuals with intellectual disabilities. Increasingly, researchers are focusing on applications of functional analysis to behaviors characteristic of distinct clinical conditions. In this symposium, three papers demonstrating the application of experimental analysis procedures to problem behaviors associated with defined syndromes or genetic conditions will be presented. The first paper describes the assessment and treatment of four participants who exhibited behavior problems associated with 22q13 deletion syndrome. The second paper summarizes data from a literature review of functional analysis outcomes for individuals with autism spectrum disorders, and reports outcomes of behavioral function among individuals with and without autism spectrum disorders. The final presentation describes treatment outcomes for young children with problem behavior who received functional communication training. Functional analysis and treatment outcomes are compared across groups of participants with developmental delay, autism spectrum disorder, and specified genetic syndromes. Travis Thompson will serve as the discussant.

### **Functional Analysis and Treatment of Problem Behavior Associated with Phelan-McDermid Syndrome.** MICHAEL A. LIND (Kennedy Krieger Institute), Patricia F. Kurtz (Kennedy Krieger

Institute), Danielle Gureghian (Kennedy Krieger Institute), Julia T. O'Connor (The Kennedy Krieger Institute)

**Abstract:** Phelan-McDermid, or 22q13 deletion syndrome, is a microdeletion syndrome characterized by global developmental delay, absent to severely delayed speech, hypotonia, and minor dysmorphic features. It is common for individuals with this syndrome to exhibit “autistic-like” behaviors including poor eye contact and stereotyped behaviors, as well as behavioral difficulties such as habitual mouthing and chewing. To date, no studies have examined the assessment and treatment of problem behavior in a group of patients specifically identified with 22q13 deletion syndrome. In this presentation, four cases will be presented, each demonstrating successful assessment and treatment of problem behaviors for a child with the syndrome. Children ranged with regard to age (4 to 14 years), level of functioning, syndrome characteristics, and presenting problem behaviors. For all children, functional analyses identified social and non-social variables maintaining problem behaviors, and treatments were derived based on identified functions. Collectively, case presentations will highlight the utility of applied behavior analytic techniques in addressing core behavioral issues related to 22q13 deletion syndrome.

**A Review Comparison of Functional Analysis Outcomes in Children with and without Autism Spectrum Disorders.** Iser Guillermo DeLeon (Kennedy Krieger Institute), JOHN M. HUETE (Kennedy Krieger Institute), David M. Richman (University of Illinois), Abbey Carreau (Kennedy Krieger Institute), Mandy M. Triggs (Kennedy Krieger Institute), Michelle A. Frank (Kennedy Krieger Institute), Melissa J. Allman (Kennedy Krieger Institute/Hopkins)

**Abstract:** Experimental demonstration of controlling relations between environment and behavior has been a hallmark of behavior analytic intervention for persons with autism since its inception in the 1960's. Assessment technologies for this purpose have evolved since then, with much attention devoted to determining the controlling variables of problem behavior. A number of such experiments have included persons with autism as subjects, where hypotheses for variables controlling problem behavior have included variables both related and unrelated to core autistic symptomatology. Here, we present data from a retrospective literature review with an emphasis on functional analysis experiments that have included persons with autism. Our primary purpose was to determine whether, and how, patterns of behavioral functions differ for individuals with and without a diagnosis along the autism spectrum. Some primary observations include: 1) despite core deficits related to social attachment, individuals diagnosed with autism did not appear to be less sensitive to attention as a maintaining variable for problem behavior, and 2) individuals diagnosed along the autism spectrum were more likely than their counterparts without the diagnoses to display problem behavior maintained by tangible reinforcers and idiosyncratic or atypical contingencies. These and other results are discussed in relation to possible interactions between core autistic symptomatology and the variables that give rise to and maintain behavior problems in such individuals.

**Effects of Long-Term FCT Across Subgroups of Children Displaying Destructive Behavior.** John F. Lee (University of Iowa), Jay W. Harding (University of Iowa), DAVID P. WACKER (University of Iowa), Wendy K. Berg (University of Iowa)

**Abstract:** In this study, young children with developmental disabilities who displayed destructive behaviors (self-injury, aggression, property destruction) received functional communication training (FCT) in their homes. Treatment was conducted in a two-step process: (a) functional analysis and (b) FCT. The functional analysis was conducted within a multielement design and FCT within a reversal design. FCT was conducted for at least 6 months for each participant. Participants were divided into three groups matched by age, function of destructive behavior, and level of developmental disability: (a) developmental delay only (n = 17), (b) autism spectrum disorder (n = 11), and (c) other specified (e.g., Dandy-Walker syndrome, fragile X) genetic syndrome (n = 7). Treatment outcomes were compared across groups by evaluating four dependent variables (percentage of 6-s intervals of destructive behavior, independent manding, social interactions, and task completion) during baseline (extinction or relevant FA condition) and the final three treatment sessions. Interobserver agreement was assessed on 33.5% of the sessions and averaged over 95% across dependent variables. Mean percentages of all dependent variables

were highly consistent across all subgroups. These results suggest that treatment matched to function may reduce any subgroup differences that were present prior to treatment.

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## #196 Paper Session

5/24/2009

10:30 a.m. - 11:50 a.m.

North 129 A

DDA

### **Treatment of Problem Behavior Exhibited by Individuals With Developmental Disabilities**

Chair: John Stokes (May Institute)

**Training Athletic Performance to Decrease Challenging Behavior: The Use of a Changing Criterion Design to Increase Running Distance and Decrease Tantrum Behavior.** (Applied Behavior Analysis) JOHN STOKES (May Institute), Gina Tacconi Morre (May Institute), Lisa McKee (May Institute)

**Abstract:** In the field of human services, utilizing effective training methods for developing and monitoring staff work performance is critical to the maintenance of a high quality of life for individuals served. The same principles that used for increasing work skills can also be used to increase the skills used for most sports. The purpose of this study was to examine the effects that a changing criterion would have on athletic performance of two students. The effects of using athletic activity as a reinforcers to increase adaptive behavior and decrease tantrum behavior was also investigated. In this study two student one diagnosed with Autism and one diagnosed with fragile X were exposed to a changing criterion design to train both subject to run a 5k-road race and decrease tantrum behavior to near zero levels. Sessions occurred over a 16 week period. Access to running was provided contingent upon days without tantrum behavior. Greater distances run were reinforced with access to tangible reinforcers. Results indicated an increase in desired athletic performance and a decrease in challenging behavior for both subjects. Each Subject was trained to criterion then participated in an actual 5 k race. Results demonstrated that skill performance was maintained. Inter-observer agreement on the dependent variable was collected during 30% of the sessions and averaged 94.65% (graphs available upon request).

**Decreasing Inappropriate Touching and Sexual Behavior Using a Token Economy.** (Applied Behavior Analysis) ASHLEY TOMAKA (Human Development Center, Inc.), Stephani Fauerbach (Human Development Center, Inc.)

**Abstract:** A token economy was used to reduce the sexually inappropriate behaviors of a man diagnosed with Mental Retardation living in a group home. Token economy programs have been found to be effective in environments outside of institutional settings and their use has been expanded across populations and behaviors. LeBlanc, Hagopian, and Maglieri (2000) used a token economy to reduce inappropriate social and sexual behavior in an adult male with developmental disabilities. The researchers were able to demonstrate the effectiveness of the treatment and maintain appropriate behaviors. The current study aimed to extend the research by using a token economy on fixed intervals to decrease inappropriate sexual behaviors and increase replacement behaviors. An ABAB design was used and the intervention was successful in reducing inappropriate touching and sexual behavior. The success of the treatment can also be measured by the increase in replacement behavior and the subject's move to a less restrictive community home. This case study illustrated how a simple token economy can make a great impact in a person's life and in the community while contributing to the literature in the expanding field of treating sexual offenders diagnosed with Mental Retardation.

**Functional Analysis of Low Mood in the Clinical Management of Self-Injury.** (Service Delivery) SANDY TOOGOOD (Wales Centre for Behaviour Analysis, School of Psy), Foteini Midoucha (ProCare Wales), Lisa Kovacs (ProCare Wales), Andreas Paris (NBP), Ruth Coppell (ProCare Wales)

**Abstract:** A young person with intellectual disability and autism presented longstanding self-injurious behaviour. Descriptive assessment identified task avoidance and accesses to tangibles as potential reinforcers. The rate of self-injury reduced after staff implemented enrichment, skills teaching, differential reinforcement and functional communication training procedures. The lower rate of responding did not maintain.

Episodes of self-injury correlated with low mood. We devised a multi-phase treatment plan that combined behavioural + pharmacological interventions. We used experimental and descriptive analyses to assess up to four treatment combinations within an A-B1-A-B2-A-C-A-D design.

During treatment phases B1 and B2 (Risperidone) the rate of self-injury did not differ markedly from baseline functional analysis. There was a marked reduction in self-injury in treatment phase C (Fluoxetine). Similar results were apparent in descriptive data. We did not withdraw treatment on ethical grounds.

For some, low mood may function as an establishing operation for self-injury when other environmental stimuli are also present. In such cases, combining behavioural and pharmacological treatments may provide an effective treatment option. Both experimental and descriptive procedures were required. Assessing intervention effects is justified against a lifetime of self-injury.

**Differential Reinforcement of Other Behavior to Reduce Socially Inappropriate Behaviors in an Adult with Down Syndrome.** (Applied Behavior Analysis) TAIRA LANAGAN (Center for Autism and Related Disorders), Katharine Gutshall (Center for Autism and Related Disorders)

**Abstract:** Differential reinforcement of other behavior (DRO) has been demonstrated to reduce various topographies of problem behavior within multiple populations (Andrews, 1988; Cowdery, Iwata, & Pace, 1990; Hegel & Ferguson; Taylor, Hoch, & Weissman, 2005). The current study dealt with an adult with Down syndrome who displayed two socially inappropriate behavioral excesses: one or both hands on throat that prohibited engagement in daily activities and excessive coughing. The purpose of the current study was to reduce these behavioral excesses by usage of DRO. Starting at an interval of 10 seconds, the interval was successfully increased to 30 minutes. Treatment was originally conducted in a clinical setting. Once treatment gains were observed, the treatment was generalized to the participant's assisted living placement. An immediate and significant decrease was seen in both behaviors upon introduction of treatment.

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## #197 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 132 BC

DEV/Applied Behavior Analysis

### **Preparing for the Aging Tsunami: Behavior Analysis of Problems in Late Life**

Chair: Christina G. Garrison-Diehn (University of Nevada, Reno)

**Abstract:** Advances in medical technology coupled with the aging of the baby-boomer generation will produce the largest population of older adults society has seen, with projections of 80 to 90 million Americans over the age of 65 by 2050. The behavior analytic community would be wise to increase attention toward issues of late-life in preparation for this "aging tsunami." This symposium focuses on behavior analytic approaches to problems in late life. The papers describe a variety of strategies for promoting behavioral health of older adults including: promoting choice to reduce depression in nursing home residents; an analysis of the effects of gambling on activity level and well-being of nursing home residents; evaluation of the adaptation of a skills training protocol to remove barriers to effective caregiving in high risk families; and an individualized intervention to promote behavioral health strategies in older persons with diabetes. The goal of this symposium is to illustrate the variety of areas behavioral analytic strategies are relevant for promoting behavioral health in late life.

**Promoting Choice: A New Treatment for Depression in Nursing Home Residents.** CLAIR RUMMEL (University of Nevada, Reno), Jane E. Fisher (University of Nevada, Reno)

**Abstract:** Estimates of the likelihood that an older person will spend time in a nursing home during their lifetime are 30% for men and 50% for women. A significant challenge in the care of elderly persons within nursing homes is the high prevalence rate of psychological problems, especially depression. The central goal of this study was to evaluate a brief new treatment for depression in nursing home residents based on the following two components: 1) behavioral activation in which individualized schedules of preferred activities were created and implemented, 2) integration of opportunities for residents to make choices about how they allocate their time. A multiple baseline across participants design was used to evaluate the effects of the intervention on the activity level and mood of three nursing home residents. Outcome measures included direct observation of activity participation, participants' self report of mood and depressive symptoms, and medication changes. Results indicated an increase in observed activity participation and positive affect across all three participants. Two participants experienced a decrease in depressive symptoms. Results of this study indicate that increasing access to preferred activities through the use of idiographic activity schedules and increased opportunities for choice is both beneficial for residents and practical.

**Gambling in the Elderly: Risk or Benefit.** Mark R. Dixon (Southern Illinois University), JESSICA L. FOUCH (Western Michigan University)

**Abstract:** Over the past 10 years or so increasing reports have been emerging in the popular press that gambling may in fact have positive side-effects for the elderly. It has been documented that the elderly who gamble have larger social networks and have later onset of degenerative diseases than those whom do not gamble. Regardless of positive side-effects, gambling can become problematic for anyone, including the elderly and lead to great financial and psychological loss. This presentation will examine the utility of allowing individuals living in long-term care facilities for the elderly to have the opportunity to gamble on a regular basis. A computerized slot machine as well as table games were introduced into the residence and subsequent resident activity and psychological factors were assessed. It appears that when monitored for overuse / abuse, the introduction of gambling related activities in nursing homes may have positive impact for many residents.

**Removing Family Barriers to Implementing Behavioral Care Plans.** CLAUDIA DROSSEL (University of Nevada, Reno), Jane E. Fisher (University of Nevada, Reno)

**Abstract:** When training family members to implement behavioral plans, barriers to adherence are ubiquitous. In our work with family members of elderly individuals with dementia, we anecdotally observed that the failure to implement recommended behavioral strategies correlated with caregivers' avoidant behavior patterns (e.g., wishful thinking) and depressed behavior (e.g., reported loss of hope). We hypothesized that low interpersonal effectiveness, marked by deficient coping and self-care skills, might pose a barrier to effective care-giving and implemented an eight-week Dialectical Behavior Therapy (DBT) skills training protocol, modified to promote strategies for effective communication with persons with dementia. DBT skills training establishes the repertoires necessary for managing severe psychological distress. In a pretest-posttest design and without experimental control, the effects of DBT skills training on self-reported depressed behavior, avoidant coping, burnout, self-care, and caregiver burden were assessed to explore the development of an intervention that may increase adherence. Data from a convenience sample of 20 caregivers, some of whom were elder protective services cases, suggest that such skills training could present a time-efficient and practical intervention to break down barriers to active participation in treatment planning and implementation.

**Using Behavior Analysis to Extend Current Models of Diabetes Management in Older Adults.** LEILANI FELICIANO (University of Colorado, Colorado Springs), Mary E Steers (University of Colorado at Colorado Springs), Allison A. Jay (University of Colorado at Colorado Springs), Sarah Anderson (University of Colorado, Colorado Springs)

**Abstract:** Chronic diseases are common amongst older adults and the prevalence increases with age. Type II diabetes is one of the most common chronic diseases in the U.S. affecting 1/5 elders, and thus represents an important target for intervention. Nonadherence with medical recommendations is a concern for all medical patients including older adults. Even with serious chronic conditions such as diabetes few elders fully adhere to treatment regimens, despite demonstrating sufficient knowledge of treatment procedures. The high prevalence of diabetes and associated medical complications in elders suggests simple education and diet recommendations may not be enough. Prior research has indicated that psychosocial interventions can improve the psychological and physical well being of patients with chronic medical conditions. However, adequate diabetes management requires a high degree of individual self-management strategies. Community dwelling elders need easy to manage, individually tailored interventions that consider the unique environmental factors relevant for their diet and health behaviors. Thus, an individualized home-based consultation approach (IHBC) may prove useful for community dwelling elders with type II diabetes. This study investigates whether participation in IHBC results in better diabetes related outcomes than a health education group alone in low income older adults with type II diabetes.

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## #198 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 226 AB

EAB/Experimental Analysis

### **Temporal Organization of Behavior and Delayed Reinforcement**

Chair: Rogelio Escobar (West Virginia University)

**Abstract:** The effects of delayed reinforcement on a single operant response have been widely studied after Skinner's first demonstration (1938). Nowadays, most behavior analysts agree that delayed reinforcement decreases the rate of the operant response. Increasingly, the interest in recent studies on delayed reinforcement has shifted from the unitary operant towards more complex forms of responding and more complex distributions of reinforcers. In the present symposium four studies concerning the effects of delayed reinforcement on the distribution of responses or choice over time will be presented: Bridi and Lattal determined the effects of signaled and unsignaled delays of reinforcement on short interresponse times. Elcoro and Lattal explored the effects of resetting and non-resetting delays on the temporal distribution of responding on a fixed-interval schedule. Escobar and Lattal made reinforcement contingent on a temporal pattern of responding to subsequently explore the effects of signaled delays on such shaped patterns. Andrade and Hackenberg determined the effects of the temporal distribution of reinforcers on choice between sequences of delayed reinforcers. By exploring the effects of delay on complex patterns of behavior the results of these four studies broaden the knowledge of behavior under delayed reinforcement.

### **Contingency and the Effect of Signaled Brief Delays of Reinforcement on Responding.**

MORGAN S. BRIDI (West Virginia University), Kennon A. Lattal (West Virginia University)

**Abstract:** Key-pecking was established under an immediate-reinforcement differential-reinforcement-of-high-rate (DRH) schedule in which only short interresponse times (<0.5 sec) were reinforced. In subsequent conditions a brief (0.5s) delay of reinforcement was added to the DRH schedule, either signaled (by blackout, tone, or keylight color change) or unsignaled. Delay signaled by blackout tended to decrease responding relative to the immediate reinforcement baseline. The tone and keylight color change signals were more variable, and increased responding slightly or did not change it. The unsignaled delay condition increased response rates. The characteristics of the functional response unit changed based on the delay used in each condition. These results run counter to those reported by some experimenters in the past, but are aligned with other data indicating that unsignaled delays change the functional response unit while signaled delays disrupt it.

**Effects of Delay of Reinforcement on Temporal Control.** MIRARI ELCORO (Armstrong Atlantic State University), Kennon A. Lattal (West Virginia University)

**Abstract:** Four pigeons were trained on fixed-interval (FI) 60-s schedules of reinforcement. Two types of delays of reinforcement were tested. One delay was programmed as a fixed-time (FT) schedule and the other as a differential-reinforcement-of-other-behavior (DRO) schedule. Three delay durations: 0.5, 1 and 10 s were examined. Effects of these delays on temporally-controlled responding were evaluated by measuring response rates and quarter-life values. Response rates tended to increase with 0.5-s delays and responses rates and QL values decreased with 10-s delays (with FT and DRO schedules). Delay gradients were calculated based on response rates and QL values. Effects of delay of reinforcement have been mostly examined using fixed-ratio and variable-interval schedules, but little is known about their effects on FI schedules.

**The Effects of Delayed Reinforcement on Shaped Behavioral Patterns.** ROGELIO ESCOBAR (West Virginia University), Kennon A. Lattal (West Virginia University)

**Abstract:** Different schedules of reinforcement produce widely known patterns of responding within the inter reinforcement interval. It can be argued that the patterns of responding are the result of the contiguity between some responses and reinforcement delivery. It is also possible to shape a particular temporal pattern of responding with a schedule in which the delivery of food is contingent upon the extent to which the temporal pattern of responding within a 4-s trial conforms to a criterion pattern. The occurrence of such patterns apparently challenges the fact that contiguity is an essential aspect of conditioning. However, in such case the response selected for reinforcement is the temporal pattern of responding and as such it may be sensitive to the effects of delayed reinforcement. The present experiment explored such possibility shaping two response patterns: a scalloped and a constant-response pattern in 3 pigeons. A signaled delay of reinforcement was added between the end of the 4-s trial and reinforcer delivery. The results support the fact that the lack of response-reinforcer contiguity notably decreases the rate of responding.

**Choice, Delays, and Number of Reinforcers: An Analysis of Intertemporal Choice in Pigeons.** LEONARDO F. DE ANDRADE (University of Florida), Timothy D. Hackenberg (University of Florida)

**Abstract:** When choosing between sequences of reinforcers distributed over time, pigeons' preferences are strongly controlled by the delay to the first reinforcer in the sequence. The extent to which the delays to subsequent reinforcers in a sequence control choice is still largely unknown. By comparing choices between sequences of reinforcers delivered at the same overall rate but at different temporal patterning, the present experiment was aimed at assessing pigeons' sensitivity to selectively delayed reinforcers in a sequence. Across phases of the experiment, the sequences consisted of either 2, 3, or 4 food reinforcers, but always included the same number and overall rate of food reinforcers across blocks of sessions (conditions) within a phase. Timed from the choice moment, the delay to an individual reinforcer in a sequence was selectively manipulated while maintaining constant the delay (s) to the other reinforcers in the sequence. In this way, sensitivity to a particular delay within a reinforcer sequence was assessed across phases, with repeated reversals conducted across conditions within a phase. Preferences were systematically related to the first, second, and sometimes the third reinforcer in sequence of reinforcers spanning 10-60 s. The results are broadly consistent with models of temporal discounting expanded to include the impact of sequences of delayed reinforcers acting in parallel from the time of the choice.

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## #199 Paper Session

5/24/2009  
10:30 a.m. - 11:50 a.m.  
North 228  
EAB

### Choice I

Chair: Carlos F. Aparicio (University of Guadalajara-CUCS-Neuroscience)

**The Stay/Switch Model: Topographically Different Responses and Two Pairs of Stay and Switch Schedules.** (Experimental Analysis) JAMES S. MACDONALL (Fordham University), Jacqueline McMahon (Fordham University)

**Abstract:** The stay/switch model views concurrent choice as consisting of two pairs of choices, one pair at each alternative where one chooses to stay at the current alternative or switch from it. Research shows this model describes data when A) rates of reinforcers for staying at and switching from each alternative varied and B) magnitudes of reinforcers varied. The present experiment extends the model by showing it describes data obtained when topographically different response are at each alternative. Rats chose between pressing a lever and pushing a flap with their nose. The rates of reinforcement for staying at and switching from each alternative varied. When using symmetrical pairs of stay and switch schedules the data were described by the generalized matching law, but there was a bias towards the lever. When using asymmetrical and symmetrical pairs of schedules, the stay/switch model described these data, but with a bias towards the lever.

**Preference Pulses: Extinction Type, Duration, and Reinforcement Probability.** (Experimental Analysis) MICHELLE E. BANICEVICH (University of Auckland), Michael C. Davison (University of Auckland), Douglas Elliffe (University of Auckland)

**Abstract:** Preference pulses are short-term and often extreme changes in choice following reinforcement, often towards the just-reinforced alternative in a two-alternative choice procedure. While initially interpreted as a local effect of the last reinforcer location, recent research reported pulses towards the not-just-reinforced response. Increasing blackout duration (an extinction procedure signalled by the offset of all experimental stimuli) creates pulses that are increasingly nondifferential towards the richer (as opposed to the most recent) alternative. This was attributed largely to the corresponding change in the probability of reinforcement immediately after the timed extinction period (blackout). In a series of experiments on two-alternative choice in pigeons, using variable interval schedules, we examined the effect on preference pulses of timed extinction periods after reinforcement, using two methods of signalling extinction (blackout and light-flash) and a range of extinction durations. Explanations of the probability of reinforcement following extinction were examined further, as well as the effects of timed extinction itself.

**Relative Rate and Amount Affect Local Preference at Three Difference Time Scales.** (Experimental Analysis) CARLOS F. APARICIO (University of Guadalajara-CUCS-Neuroscience), William M. Baum (University of California, Davis)

**Abstract:** We investigated preference in transition as food-rate ratio provided by two levers changed across seven components within daily sessions and food-amount ratio changed across phases. Phase 1 arranged a food-amount ratio of 4:1 (the left lever delivered four pellets and the right lever one pellet); Phase 2 reversed it to 1:4, and in Phase 3 it was 3:2. Preference was described well by the generalized matching law. Estimates of sensitivity to food-amount ratio were around 1.0 and were independent of rate ratio. Analysis across food deliveries within rate-ratios showed that the effect of a small amount was diminished by the presence of a large amount. Local analysis showed that post-food visits following a large amount were disproportionately longer than following a small amount. Continuing food deliveries from the same source tended to make visits less dependent on relative amount, but a discontinuation reinstated dependence on relative amount. Preference pulses following food deliveries revealed a tendency toward dependence on absolute amount with continuing deliveries and toward dependence on relative amount following discontinuations. The larger and longer preference following a switch to a larger amount confirmed that local preference depends on relatively extended variables even on short time scales.

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## #200 Paper Session

5/24/2009  
10:30 a.m. - 11:50 a.m.  
North 225  
EAB

### Stimulus Classes

Chair: Ana Carolina Sella (Federal University of Sao Carlos)

**Transitivity and Compound Stimuli in Pigeons.** (Experimental Analysis) NORA GIEZEK (University of Lille), Kennon A. Lattal (West Virginia University), Jean-Claude Darcheville (University of Lille)

**Abstract:** This experiment examined effects of single and compound stimulus training on emergent transitivity in the pigeon. Compound stimuli were presented side by side in a three-key operant chamber. Two pigeons achieved high accuracy (80% or greater) in A-B and B-C baseline discrimination training. Three classes of color and shape stimuli were used. During training, for the first class, responses to both single and compound stimuli were reinforced; for the second class, responses to single stimuli were extinguished and compound stimuli were reinforced; and for the third class, responses to single stimuli were reinforced and compound stimuli were extinguished. Both pigeons had high accuracy on unreinforced A-C transitivity test trials for the first and the second class of stimuli but not for the third class. Baseline accuracy for the first class of stimuli decreased dramatically across testing sessions whereas it remained at 100% for the second class. These results show that, in pigeons, emergent transitive responding can occur after simple discrimination training with compound stimuli.

**Matching-to-Sample and Paired-Stimulus Procedures in the Formation of Derived Equivalence Relations.** (Experimental Analysis) JENNIFER M. KINLOCH (University of Waikato), T. Mary Foster (University of Waikato, New Zealand), James McEwan (University of Waikato)

**Abstract:** To date, only two published studies have compared the effectiveness of the matching-to-sample and paired stimulus procedures in facilitating the formation of derived equivalence relations (Clayton & Hayes, 2004; Leader & Barnes-Holmes, 2001). This paper reports the results of a series of experiments that extended this research. The initial experiments were based on Experiment 1 of a study by Leader and Barnes-Holmes (2001). Experiments 1-4 resulted in few or none of the participants reaching the equivalence criterion, and no clear differences in the effectiveness of the two procedures. These results failed to confirm the findings of Leader & Barnes-Holmes (2001). Experiment 5 assessed the effect of doubling the number of training trials with each procedure, while Experiment 6 assessed the effect of the addition of instructions that specified the task required. A quick overview of the results of Experiments 1-4 will be followed by a discussion of the results of Experiments 5 and 6, and one further experiment.

**Stimulus Class Formation and Transfer of Ordinal Functions in Deaf Children.** (Experimental Analysis) ANA CAROLINA SELLA (Federal University of Sao Carlos), A. Celso Goyos (Fed. Univ. of S. Carlos), Domitila Gonzaga (Federal University of Sao Carlos), Juliana Consoni (Federal University of Sao Carlos)

**Abstract:** Traditional teaching procedures are not producing satisfactory written performances in deaf children in Brazil. Since word ordering is an important part of learning a written language, the main goal of this study was to investigate if after establishing four stimulus classes among familiar printed words, the participants would show transfer of ordinal functions after being trained in only one sequence. Two children took part in this study that had two phases. The first phase was comprised of 17 steps: a sequence pre test; a conditional discrimination pre test; AC, BC and AC/BC training; baseline, symmetry and transitivity testing of these relations. The same was repeated to relations involving DC. When matching to sample training was over, Phase 2 was started: a second sequence pre test was presented to the participants. If they showed less than 50% of correct responses, sequence training was presented.

First, the sequence A1?A2?A3 was trained with a visual model, then, without the model. After that, tests of function transfer were conducted. Both participants showed transfer of function to new stimuli. The results suggest that this procedure can be used to produce generative word-ordering behavior in deaf children.

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## #201 Paper Session

5/24/2009

10:30 a.m. - 11:50 a.m.

North 227 BC

EAB

### **Pavlovian Conditioning**

Chair: J. James Tomash (Swansea University)

#### **Pavlovian-to-Instrumental Transfer (PIT) in Humans Following Reinforcer Devaluation.**

(Experimental Analysis) MELISSA J. ALLMAN (Kennedy Krieger Institute/Hopkins), Alexander W. Johnson (Johns Hopkins University), Iser Guillermo DeLeon (Kennedy Krieger Institute), Peter C. Holland (Johns Hopkins University), Michael F. Cataldo (Kennedy Krieger Institute)

**Abstract:** In basic studies of reinforcer-specific PIT, cues are paired with different outcomes (Pavlovian; C1-O1, C2-O2), and different responses are each associated with one of the outcomes (instrumental; R1-O1, R2-O2). It is typically observed that Pavlovian cues that are predictive of specific outcomes bias response choice toward actions associated with those same outcomes (e.g., C1:R1>R2), despite the fact the stimulus and response have never been directly paired (hence the term PIT). Using a stock-market paradigm, we examined the ability of adults to associate particular symbols, and responses, with particular outcomes. During the first test stage, individuals showed a preference to emit a response associated with the same outcome as that predicted by the presented stimulus, i.e., a reinforcer-selective PIT effect. Following this, the value of one of the outcomes was reduced, and on a second test stage, this had the effect of attenuating responses to stimuli that were associated with the devalued outcome. This finding is in contrast to that seen in rodent studies, and suggests that humans represent both the nature of the outcome and its value during reinforcer-specific transfer. These results are discussed in terms of the ability of reward-paired cues to direct both adaptive and maladaptive behavior.

**Blocking of Conditioned Taste Avoidance Induced by Wheel Running: New Findings from the Laboratory.** (Experimental Analysis) W. DAVID PIERCE (University of Alberta), Donald C Heth (University of Alberta)

**Abstract:** Conditioned taste avoidance (CTA) is a well-established consequence of pairing a flavor with emetic agents such as lithium chloride or radiation. Recently, another class of events involving physical activity (e.g., wheel running or swimming) has been shown to induce avoidance by rats of novel tastes (e.g., Heth & Pierce, 2007; Salvy, Pierce, Heth, & Russell, 2003). Converging lines of evidence suggest that CTA induced by physical activity is associative in nature (Boakes & Nakajima, in press). Activity-based CTA depends upon the opportunity to run, the duration of access to the wheel, is decreased by pre-exposure to wheel running, and is stronger when the activity follows the taste than when it precedes it. In other words, activity-based CTA depends on parameters of the US (e.g., wheel running) that are similar to those of traditional conditioning preparations. Our presentation details previous research on CTA induced by wheel running and outlines our new research program based on associative blocking of this conditioning.

**Classically Conditioning a SCR to Deception and Components of Deception.** (Applied Behavior Analysis) J. JAMES TOMASH (Swansea University), Phil Reed (University of Wales Swansea)

**Abstract:** The present experiment tested whether subjects acquire a more reliable conditioned skin conductance response to their own active deception, presentation of false statements, or to their acknowledgement of the presentation of false statements. A classical conditioning paradigm was used,

with skin conductance serving as the CR, and electrical shock as the UCS. Subjects were presented with a series of true and false statements. One third of the subjects simply observed the statements and the UCS followed either all true statements, or all false statements. Another group of subjects was presented with the UCS on all false or all true statements following their key-press response to whether the statement was true or false. The final third of the subjects were asked to respond deceptively on half of the statements, and the UCS followed either all the deceptive or all truthful responses. Results are pending, and will be ready for presentation in January, 2009. The results are expected to help clarify specific behavioral processes underlying the polygraph, and it's ability to detect conditioned responses on deceptive answers. By behaviorally analyzing the different components of deception as a conditioned stimulus, this study should suggest improvements in the underlying methodology of lie-detection.

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## #202 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 121 A

EDC/Applied Behavior Analysis

### **Effects of Self-Monitoring on Teaching Behaviors**

Chair: Natalie Allen Williams (Weber State University)

**Abstract:** Many evidence-based instructional practices have been identified (e.g., Hofmeister & Lubke, 1990; Rosenshine & Stevens, 1986; Wolery, Ault, & Doyle, 1992), but if they are not implemented correctly they are often ineffective (Belfiore, Fritts, & Herman, 2008). Thus, it is important for pre-service and in-service teachers to ensure they are implementing practices correctly. Self-monitoring has been shown to be effective for many behaviors, including increasing classroom participation (Atkinson et al., 1975), increasing use of praise statements (Kalis, Vannest, & Parker, 2007), decreasing inappropriate classroom behavior (Webber, et al., 1993), and increasing accuracy of discrete trial instruction (Belfiore, et al., 2008). The purpose of this symposium is to present findings from four studies using self-monitoring with either pre-service or in-service special education teachers. Three studies used video-based self-monitoring and one used a self-monitoring checklist. Dependent variables included praise statements, opportunities to respond, corrective feedback, student engagement, and implementation of a token economy system.

### **Effects of Self-Monitoring on Use of Effective Instructional Practices.** KAREN D. HAGER (University of Kentucky), Belva C. Collins (University of Kentucky)

**Abstract:** We used a multiple baseline across behaviors design replicated across participants to examine the effects of video-based self-monitoring on student teachers' use of effective instructional practices. Participants were student teachers in their final special education student teaching placement. They were placed in elementary and secondary classrooms for students with moderate to severe disabilities. After taking baseline data, we set target criteria for praise rate, opportunities to respond, and student engagement. Student teachers videotaped lessons daily and at the end of the school day viewed the video to collect and record data on the target behaviors. Rate data were collected on both praise statements and opportunities to respond, and momentary time sampling was used to measure student engagement. Student teachers collected and graphed data each day. Generalization and maintenance of these behaviors were measured by the researchers. The effects of self-monitoring of these behaviors on student teacher performance will be presented.

### **The Effects of Video-Based Self-Monitoring and Data-Based Decision Making Procedures on Pre-Student Teacher Instructional Behaviors.** MELINA ALEXANDER (Weber State University), Natalie Allen Williams (Weber State University)

**Abstract:** We examined the effects of video-based self monitoring and data-based decision making on pre-service teachers rates of opportunities to respond and praise in a practicum placement. Pre-service teachers video-taped their teaching experiences during a practicum placement in a secondary class for students with mild/moderate disabilities. Pre-service teachers were instructed on data collection

procedures and told to take daily data on their video-taped lessons. After practicum experience, each day, pre-service teachers collected data on the number of opportunities to respond and/or the number of praise statements. After data collection they completed a data based decision making record. The data based decision record consisted of a graphical display of the data (opportunities to respond and praise rates), an analysis of the quality of praise or opportunities to respond, and a plan for maintenance or improvement. Bi-weekly conferences were held with supervisors in order to discuss performance. Results of pre-service teacher video-monitoring and data-based decision making will be shared. A discussion of challenges and future video-monitoring use will follow.

**Watch this! Using Video Feedback During Post-teaching Conferences with Pre-service Teachers.** MICHELE M. NOBEL (Antioch University McGregor)

**Abstract:** Pre-service teaching candidates videotaped their performance teaching 10-minute mini-lessons while preparing for student teaching. Candidates and their Campus Supervisor viewed their lessons and scored videotapes for opportunities to respond, praise statements, and corrective feedback. Post-teaching conferences were conducted to share data and provide opportunities for candidates and the supervisor to discuss results and plan for retention or remediation of teaching skills. Presenter will share results from two pre-service teaching candidates and discuss benefits, challenges, and future directions for using video feedback during student teaching supervision.

**Effects of Self-Monitoring Checklist on Accurate Implementation and Subsequent Effectiveness of a Behavior Management Procedure.** SUMMER FERRERI (Michigan State University), Joshua Plavnick (Michigan State University)

**Abstract:** We examined the effects of a self-monitoring checklist on staff implementation of a token economy system and on changes to academic readiness behaviors of two students in a public, early childhood special education classroom. A teacher and two paraprofessionals were trained to implement a token economy procedure for one student with autism and another student with a speech and language impairment, both of whom engaged in severe problem behaviors. A multiple baseline across staff showed an improvement in token economy implementation when the self-monitoring checklist was used. A multiple baseline across students demonstrated increased engagement in academic readiness behaviors when staff used the checklist. Results suggest that self-monitoring can be an effective method for increasing the accuracy with which staff implement a token economy system and that student outcomes can be effected by the accuracy with which an intervention is implemented.

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## #203 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 122 A

EDC/Applied Behavior Analysis

### **Producing Generative Outcomes, Part 2: From Practice to Research**

Chair: Kerri L Kaelin (University of Nevada, Reno)

Discussant: Henry S. Pennypacker (University of Florida)

**Abstract:** Applied behavior analysis emphasizes the need for producing generative outcomes of interventions. However, empirically validated methods for producing generalized effects are scarce. The current symposium will outline three studies in which critical variables for the production of generative repertoires were identified. Specifically, the first study will describe how increasing frequency on a visual discrimination task produced a generalized rapid naming repertoire in young learners. The second study will compare a frequency-building versus a practice-only procedure on the emergence of a generalized decoding repertoire. The final study will illustrate the generative effects of a frequency-building procedure on derived relational responding. Studies will be discussed with respect to applied interventions guiding the design of controlled studies. The implications of each study on the development of best practice guidelines will be offered.

**An Investigation of Rapid Automatic Naming as a Generalized Operant.** KERRI L KAELIN (University of Nevada, Reno), Kimberly Nix Berens (Center for Advanced Learning, Inc.), Patrick M. Ghezzi (University of Nevada)

**Abstract:** Traditional education uses Rapid Automatic Naming (RAN) to identify future reading problems with children. However, performance on RAN assessments is treated as an immutable trait. Conversely, from the perspective of behavior analysis, it is more useful to view RAN as operant behavior that can be strengthened through contingencies of reinforcement. An A/B multiple-probe design with two constant-series controls was used evaluate if RAN functions as generalized operant behavior. Specifically, preschool participants of normal development received training on one set of RAN skills while participating in probe sessions on an untrained set. Across experimental participants, an increase in times celerations occurred on the targeted task. Furthermore, effects were seen on untargeted tasks after implementation of the Precision Teaching intervention across all experimental participants. Generally, less robust effects occurred on probe tasks for the practice and probe control participant where little to no effects were observed for the probe-only participant.

**Establishing the Role of Building Skills to High Frequencies on Outcome Performance.** MOLLY HALLIGAN (University Nevada, Reno), Kimberly Nix Berens (Center for Advanced Learning, Inc.), Patrick M. Ghezzi (University of Nevada)

**Abstract:** Traditional education implements procedures based on theories that have not empirically demonstrated successful educational achievement. Precision teaching, an area of behavior analysis, has analyzed techniques leading to robust learning outcomes through the use of a sensitive measurement tool. Unfortunately, the majority of findings are based on clinical rather than empirical studies. The current study examines the necessity of responding at high rates in producing robust learning outcomes. An A/B multiple probe design with yoked controls across participants was used. The participants were randomly assigned to either a frequency-building training condition or a practice-only training condition. Results are evaluated with respect to celerations and degrees of variability within and across participants for training, retention, distraction, frequency checks and probe performance.

**Building the Fluency of Derived Relational Responding: Frames of Coordination and Opposition.** NICHOLAS M. BERENS (UNR/CAL, Inc.), Kimberly Nix Berens (Center for Advanced Learning, Inc.), Steven C. Hayes (University of Nevada, Reno)

**Abstract:** Reading fluency has been strongly correlated with reading comprehension. However, for some individuals, increasing reading rate does not improve reading comprehension. It is posited that these individuals are lacking critical language skills. Relational Frame Theory posits that arbitrarily applicable derived relational responding is a critical behavioral target in the understanding of human language and cognition. In the context of the academically important task of vocabulary building, the current investigation explored procedures that increase the rate of derived relational responding. Procedures involved the establishment of base rates of derived relational responding across multiple sets of synonyms and antonyms. Subsequently, sets were isolated and the rates of the mutual and combinatorially entailed derived relational responses were strengthened. Correlated increases in the rate of derived relational responding in untargeted sets were noted.

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## #204 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 121 BC

EDC/AUT; Applied Behavior Analysis

## Addressing the Challenges of Autism: Functional Approaches to Social Skill Development

Chair: Jennifer M. Asmus (University of Wisconsin-Madison)

Discussant: Todd G. Kopelman (University of Iowa - Hospitals and Clinics)

**Abstract:** Promoting social skills acquisition and peer interaction constitute primary educational goals for most elementary, middle, and high school children with ASD. Presently there is limited empirical guidance available to educators on how to most effectively and efficiently tailor intervention strategies to meet the highly individualized social and behavioral needs that characterize this segment of the school population. This symposium will focus on functional approaches to social skill acquisition for children and teens with autism spectrum disorders and other developmental disabilities. First, Lindsay Stangeland and Bridgid Carbo will present on a methodology to identify environmental variables and activities that would increase the conversations between children with disabilities and same-aged peers. Jennifer Copeland will present on extending peer training to improve social interactions to older teens with disabilities. Finally, Sara Christianson will present on an application of descriptive and structural analyses to the examination of social interaction and communication for early elementary students with autism spectrum disorders. Todd Koppelman will discuss the papers in terms of their strengths and limitations as well as directions for future work.

**Matching Learner Needs to Social Skill Instruction.** Jennifer E. Copeland (Melmark), LINDSAY STANGELAND (Grant Wood Area Education Agency/St. Cloud State University), Brenda J. Engebretson (University of Iowa), David P. Wacker (University of Iowa)

**Abstract:** Research is needed to identify effective programs for teaching social skills to children with autism. The majority of social skills curricula available to teachers of children with autism do not account for the individual contingencies that have shaped the interactions children have with their peers. In the current study, we attempted to identify two things; environmental variables that would motivate individual students to use appropriate speech with their peers, and therapeutic classroom activities that could be employed to facilitate more skillful conversations among same-age peers. Four special education students ranging from pre-school to fourth grade participated in a series of test conditions in which same-age, neurotypical peers were trained to deliver programmed consequences. Access to social attention, preferred tangible items, brief escape from conversational demands, and time alone away from peers were contingent upon any utterance of speech. Each test condition was scored according to utterances of appropriate and inappropriate speech. Results defined individual deficit and strength areas for each student. A shaping program was then designed for each student by matching learner needs with individualized instruction. Inter-observer agreement ranged from 73% to 89% with a mean of 80% agreement across all participants and behaviors.

**Matching Peer Qualities to Social Skill Instruction.** JENNIFER E. COPELAND (Melmark), Bridgid Carbo (Melmark), Lindsay Stangeland (Grant Wood Area Education Agency/St. Cloud State University), David P. Wacker (University of Iowa)

**Abstract:** Copeland et al. (2006) showed that students with disabilities could be trained by their peers to engage in therapeutic social interactions. To extend our previous research, we implemented the same analysis procedures with three older students with limited verbal abilities, ranging from 17-20 years old. Each individual's behavior was previously evaluated via functional analysis. We selected peers to serve as communication partners during a series of sessions in which the target students could request the consequence that had previously reinforced the most frequent occurrences of communication. Three different peer groups were selected according to age, IQ and verbal skills. Peer groups evoked differentiated responses from each student. Variances of behavior were observed in peer enthusiasm and the qualities of peer-delivered reinforcement. Treatment consisted of daily 10-minute sessions with the most productive peer using individualized procedures for each student. Inter-observer agreement ranged from 67% - 100% with a mean of 93% during 30% of sessions across all behaviors and participants.

**Use of Descriptive Assessment and Structural Analysis to Evaluate Social Behavior in Children with Autism** SARA CHRISTIANSON (University of Wisconsin-Madison), Jennifer M. Asmus (University of Wisconsin-Madison), Laura Mulford (University of Wisconsin-Madison), Julie A. Horner (University of Wisconsin-Madison), Cara Vaccarello (University of Wisconsin-Madison)

**Abstract:** There is little empirical guidance for educators in identifying appropriate individualized interventions to improve prosocial behaviors of children with Autism Spectrum Disorder (ASD). Interventions targeting social skills are typically selected without systematic assessment procedures. Applied behavior analysis (ABA) procedures, specifically descriptive assessment and experimental analysis, have been effective at identifying antecedents and consequences that maintain challenging behaviors in children with ASD. With the assessment information, interventions are developed that target the function of the problem behavior and are therefore effective at reducing or eliminating the target behavior. The purpose of the current study was to adapt descriptive assessment and structural analysis methods typically used to treat challenging behaviors to examine the antecedent variables that maintain appropriate social behaviors with three early elementary aged students with ASD. A case example will be presented highlighting the antecedent variables in the natural environment that promoted positive, peer-related interactions and how they were identified. Data was collected on target and peer prosocial initiations, responses, and sustained social interactions. IOA was collected on at least 25% of sessions and agreement exceeded 85% across measures.

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## #205 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 122 BC

EDC/AUT; Applied Behavior Analysis

**The Use of Single-Subject Research Designs in Identifying Evidence-Based Practices** Chair: David W. Test (UNC Charlotte)

Discussant: Timothy A. Slocum (Utah State University)

**Abstract:** There is a growing interest in classroom practices that have a strong scientific basis (often called evidence-based practices). Based on the assumption that the use of evidence-based practices will improve student outcomes, both IDEA and NCLB now require schools to use evidence-based practices. While a variety of sources for identifying and disseminating evidence-based practices have recently emerged, so far most ignore single subject research designs as a possible source of evidence. Therefore, the purpose of this symposium will be to describe two projects that have developed review systems for identifying evidence-based practices using single-subject research designs. This symposium will provide an overview of the issues and compromises involved in developing evidence-based practice guidelines using single-subject research designs, as well as current outcomes from the National Autism Center's identification of evidence-based practices for students with autism and the National Secondary Transition Technical Assistance Center's guidelines for identifying evidence-based practices for secondary transition. Participants will leave with knowledge of two systems that use single-subject research designs to identify evidence-based practices and examples of evidence-based practices in the areas of autism and secondary transition.

### **Issues in Using Single-Subject Research to Identify Evidence-Based Practices in Autism.**

SUSAN WILCZYNSKI (National Autism Center)

**Abstract:** As the number of students with autism continues to grow, it is important that practitioners use evidence-based practices that will assist students in achieving successful in-school and post-school outcomes. This presentation will describe the process used to develop the Scientific Merit Rating Scale developed by the National Autism Center that uses single-subject research designs for identifying evidence-based practices in the field of autism. Participants will leave with an understanding of the issues surrounding the development of the Scale, variables used in the scale, and a preliminary list of evidence-based practices in autism education.

### **Issues in Using Single-Subject Research to Identify Evidence-Based Practices in Secondary Transition.** DAVID W. TEST (UNC Charlotte)

**Abstract:** Adult outcomes for students with disabilities continue to be dismal. As a result, educators need a set of evidence-based practices that can be implemented to improve the chances of postschool success

for all students with disabilities. This presentation will describe the review process developed by the National Secondary Transition Technical Assistance Center (NSTTAC) that incorporates single-subject research designs into the system for identifying evidence-based practices in the field of secondary transition. Participants will leave with an understanding of the issues surrounding developing the NSTTAC evidence-based practices review criteria and variables used to identify evidence-based practices.

**From Research to Practice and Back Again.** VALERIE MAZZOTTI (NSTTAC/UNC Charlotte), April L. Mustian (NSTTAC/UNC Charlotte)

**Abstract:** As evidence-based practices are identified, it is critical that the research-to-practice gap is bridged so that practitioners can have the most current knowledge of “what works”. This presentation will provide participants with examples of the products developed by the National Secondary Transition Technical Assistance Center to disseminate evidence-based secondary transition practices once they are identified, including Practice Descriptions and Research to Practice Lesson Plan Starters. Finally, participants will leave with a list of research studies needed to establish new evidence-based practices and upgrade existing evidence-based practices in the area of secondary transition.

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## #206 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 221 AB

OBM/CSE; Applied Behavior Analysis

### Applications in OBM

Chair: Michael C. Clayton (Youngstown State University)

Discussant: Thomas C. Mawhinney (University of Detroit Mercy)

**Abstract:** This symposium presents three applied studies using OBM procedures to 1) increase the cleanliness of supermarket restrooms using task clarification, checklists, consequences 2) increase the cleanliness of university restrooms using prompts and feedback and 3) increase upselling of selected menu items in a casual dining restaurant using feedback, prompts, and reinforcement.

### The Use of Prompts and Feedback to Increase Up-Selling in a Casual Dining Restaurant.

CECELIA R. MADERITZ (Youngstown State University), Michael C. Clayton (Youngstown State University)

**Abstract:** Profit margins in the service industry are thin and anything that can increase sales, even slightly, is beneficial to the organization. Up-selling is one way to increase profits by prompting a customer to buy a little more product or service or to upgrade a final purchase. The present study sought to evaluate the effects of feedback, prompts, and positive reinforcement on the performance of restaurant servers tasked with up-selling several menu items in a casual dining restaurant. A combination multiple baseline and reversal design was used to evaluate intervention effects. Results are discussed in terms of the relative effectiveness of the different independent variables on each of the identified menu items.

**Effects of Task Clarification, Checklists, and Performance Contingent Consequences on Supermarket Restroom Cleanliness.** JENNIFER H. REINOVSKY (Furman University), Jeanine Plowman Stratton (Furman University)

**Abstract:** Neglecting performance-related issues pertaining to restroom cleanliness can represent a large profit loss, especially for industries held to higher cleanliness standards by customers, like the foodservice industry. This performance improvement project was concerned with supermarket restroom cleanliness. Participants were service clerks (n = 6) responsible for supermarket restroom maintenance and cleaning. The dependent variable for this study was the percentage of restroom cleanliness. Cleaning tasks were behaviorally defined and presented in a checklist consisting of 139 tasks weighted according to

importance. These items were broken into two task groupings: large surface area tasks and smaller surface area tasks. The intervention included task clarification, task checklist (antecedent prompting), and performance contingent consequences. After large surface area task clarification and checklist prompt posting, total restroom cleanliness improved 16%. Restroom cleanliness increased an additional 7% after task clarification and prompt posting for the smaller surface area tasks. Total restroom cleanliness improved 30% upon introduction of performance contingent consequences. Interobserver agreement data were collected for 25% of the total sessions and averaged 92% agreement.

### **The Use of a Prompts and Feedback to Increase the Cleanliness of Restrooms on a College Campus** MICHAEL C. CLAYTON (Youngstown State University)

**Abstract:** The current study used two kinds of prompts as well as feedback to increase the cleanliness of men's restrooms on a college campus. The first intervention used a sign prompting closer proximity to the urinal and the second intervention presented a target combined with feedback. A multiple baseline across settings design was used to evaluate the effect of the interventions. Both types of prompts were effective in increasing restroom cleanliness and a follow-up probe showed that the effects were sustained for some time thereafter.

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#### **#207 Paper Session**

5/24/2009  
10:30 a.m. - 11:50 a.m.  
North 221 C  
OBM

#### **Successful Interventions from the Field**

Chair: Tania Paulina Rodríguez Pérez (Monterrey Technological Institute Campus Estado de México)

**Increasing Work Performance on Governmental Employees Through Shaping, Team Building and Self-Management Programs.** (Applied Behavior Analysis) Hugo Ricardo Calzontzi Infante (Monterrey Technological Institute Campus Estado de México), TANIA PAULINA RODRÍGUEZ PÉREZ (Monterrey Technological Institute Campus Estado de), Uriel Gerardo Salinas Aguilar (Monterrey Technological Institute Campus Estado de México), Ana Catalina Colín Sánchez (Monterrey Technological Institute Campus Estado de México), Ana Cristina Guido García (Monterrey Technological Institute Campus Estado de México), Aixa Lanett Powell (Monterrey Technological Institute)

**Abstract:** Governmental offices are the biggest enterprises and every citizen is an actionist of them. It is important to focus on governmental worker's performance. The main objective was to increase work performance on male and female job and employment advisors, around 33 to 50 years old, through a three-module cognitive and behavioral programs (Team building, shaping and self-management). Participants' work performance was assessed by the administration of a behavioral interview; self-monitoring records, number of reports delivered on time and with the required specifications, and speed on processes.

The sampling was non-probabilistic and intentional: three Mexicans and a Uruguayan presenting low levels of work performance, such as delivery of incomplete reports, lack of teamwork and inadequate attitude toward clients.

Research design was Quasi-Experimental, with a group design, through a multiple baseline design type ABA. Shaping was the central program, followed by two modules: Team building and Self-management applied during four weeks.

Conclusions confirmed the research hypothesis suggesting work performance increased through a three-module cognitive and behavioral program. An increase in work performance levels indicated that job and

employment advisors of the governmental office decreased the time spent on each task, giving a better service to the clients and a better organizational climate.

**Promoting Underutilized Trainers by Adapting Salespersons' Verbal Behaviors with Customers.**

(Applied Behavior Analysis) ARIEL GROSSHUESCH (Appalachian State University), Alan Chang (Appalachian State University), Ines Meier (Appalachian State University), Timothy D. Ludwig (Appalachian State University), Tiffany L. Henderson (Appalachian State University)

**Abstract:** The study was conducted at a large multinational training corporation headquartered in Taiwan. During sales calls, the sales person provided names of trainers that the company could hire. However, the majority of trainers eventually hired were only a few trainers used on a consistent basis. This was problematic for the company because these trainers were often more expensive for the clients and underutilized trainers often quit the organization. The focus of this study was to get salespersons to promote underutilized trainers for training sessions. The sales supervisor observed salesperson verbal behavior while on sales calls. A multiple baseline across salespersons design was used using daily feedback and goal setting. The intervention substantially increased sales call mentioning of underutilized trainer names as well as increased the variety of trainers hired.

**Effects of a Monetary Contingency for Attendance in Adolescent Part-Time Employees.** (Applied Behavior Analysis) MELODY BERKOVITS (Queens College and The Graduate Center, CUNY), Alicia M. Alvero (Queens College, CUNY)

**Abstract:** Several studies have implemented successful attendance interventions to reduce employee absenteeism, but few, if any, have addressed the issue of absenteeism as it applies to part-time student employees. The existing research on adolescent employees often concentrates on the effects of employment on a student's academic, social and home life. Studies have yet to focus on the effects of adolescent behavior on the work environment. This study employed an ABA reversal design including a small monetary bonus, or contingency, for attendance in part-time adolescent employees. Results indicate a 50% reduction in average group absences during the monetary contingency phase as compared to the baseline phase and a subsequent 60% increase in average group absences during the return to baseline phase as compared to the monetary contingency phase. A one-way repeated measures analysis of variance (ANOVA) found differences between phases to be significant at the .05 level. A decrease in data variability can be seen during the monetary contingency phase as compared to both baseline phases, further indicating control by the independent variable.

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## #208 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 120 D

OTH/Applied Behavior Analysis

### **Quantitative Analyses of Behavior at the Zoo**

Chair: Christy A. Alligood (Education and Science, Disney's Animal Kingdom)

Discussant: Diann Gaalema (Georgia Institute of Technology, Zoo Atlanta)

**Abstract:** Zoos have a long history of facilitating research on some of the world's most endangered species. The zoo setting provides an opportunity to study animals in semi-naturalistic environments, allowing for the development of studies that would be nearly impossible in the wild. The presentations in this symposium will describe quantitative analyses of behavior at the zoo and will focus on three areas: reproductive behavior, vocal communication, and stereotypies. The first presentation, "Behavioral predictors of copulation in captive Key Largo woodrats (*Neotoma floridana smalli*)", will highlight an analysis of reproductive behavior in an endangered species endemic to Key Largo, Florida. The second presentation, "The structure and function of the African elephant (*Loxodonta africana*) 'rumble' vocalization", will focus on methods of assessing the functions of the rumble, the most common African elephant vocalization. The third presentation, "Towards a functional, foraging-based model of stereotypic activity in captive animals", will discuss data in support of a

“foraging loop” model of stereotypy in captive animals and describe interventions arising from this model. At the conclusion of the third presentation, a discussant will provide remarks synthesizing and critiquing the research presented.

**Behavioral Predictors of Copulation in Captive Key Largo Woodrats (*Neotoma floridana smalli*).**

CHRISTY A. ALLIGOOD (Education and Science, Disney's Animal Kingdom), Anne Savage (Disney's Animal Kingdom)

**Abstract:** The development of a captive breeding program for the endangered Key Largo woodrat (*Neotoma floridana smalli*) presents special challenges due to aggressive behavior toward conspecifics, a low reproductive rate, and limited information on estrous cycles. In an effort to identify behavioral predictors of copulation, we observed 17 Key Largo woodrats prior to and during 267 male–female pairing events, 76 of which resulted in copulation. Predictors of copulation include male–female interactions at the door of the tube connecting their enclosures, raspy vocalizations, pre-mounting lordosis, and chasing. A binary logistic regression model based on pre-pairing behaviors correctly predicted the outcome of 78.7% of observed pairing events, and a similar model based on intra-pairing behaviors correctly predicted the outcome of 86.1% of observed pairing events. Behavior-based models may be useful in the management of captive breeding programs for this and other endangered species.

**The structure and Function of the African Elephant (*Loxodonta africana*) ‘Rumble’ Vocalization.**

JOSEPH SOLTIS (Education and Science, Disney's Animal Kingdom), Katherine A. Leighty (Education and Science, Disney's Animal Kingdom), Anne Savage (Disney's Animal Kingdom)

**Abstract:** The rumble is the most common African elephant vocalization, but there is no consensus concerning its categorization into structural or functional subtypes. We collected audio, GPS and video data from adult female African elephants at Disney’s Animal Kingdom. With these data, the social contexts of vocal activity, the subsequent behavior of signalers and receivers, and the acoustic structure of calls can be assessed. Two lines of evidence support two distinct functions for these vocalizations. First, elephants responded with a rumble preferentially to the rumbles of closely bonded social partners even when outside of the visual range, closely bonded animals moved closer together after such rumble exchanges, and individual identity is encoded in the acoustic structure of rumbles. Taken together, these data suggest that the elephant rumble functions as a ‘contact call’ that coordinates inter-partner movement. Second, during close distance interactions with dominant animals, subordinate elephants produced rumbles consistent with the expression of negative affect, and the production of such rumbles reduced the probability of subsequent aggression by dominant animals. These data suggest that the elephant rumble can also function as a ‘signal of submission’ toward social superiors.

**Towards a Functional, Foraging-Based Model of Stereotypic Activity in Captive Animals.**

EDUARDO J. FERNANDEZ (University of Washington), William D. Timberlake (Indiana University), James Ha (University of Washington)

**Abstract:** Behavioral stereotypes in captive animals have been defined as repetitive, largely invariant patterns of behavior that serve no obvious goal or function (Mason, 1991a; Ödberg, 1978). Stereotypes are commonly attributed to boredom and/or fear, and are typically “treated” by trying to enrich the captive environment with distracting, appealing stimuli. These stimuli often include food presented at times outside of regular feeding times, and as a result, engage species-typical foraging behaviors in the process of reducing stereotypic activity.

The present talk examines the hypothesis that many stereotyped behaviors are related to scheduled daily feeding times, and thus reflect the expression of a repeating “loop” of species-typical search behaviors related to foraging for and procuring food. The form and likelihood of behavioral stereotypes are determined by the combination of temporal and environmental cues that predict food availability. In this view, many stereotyped behaviors are repeated because they are unsuccessful in changing the stimulus conditions sufficiently to evoke and support expression of the next set of behaviors in an ecological foraging sequence. Together these data supported two conclusions: (1) individual stereotypes include repeated components of species-specific foraging behavior, and (2) providing stimuli supporting a more

complete sequence of naturally occurring foraging behaviors can reduce and/or eliminate stereotypies while supporting the expression of species and individual search behaviors. The data therefore suggest a “foraging loop” description of many appetitive-based stereotypies, as well as emphasizing interventions upon those stereotypies more specifically attending to when, where, and how captives are fed.

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## #209 Symposium

5/24/2009

10:30 a.m. - 11:50 a.m.

North 129 B

TBA/CSE; Applied Behavior Analysis

### **Look Ma, No Rats! Putting Applied Behavior Analysis to Work on a University Campus.**

Chair: Raymond O. Sacchi (Washington State University)

Discussant: Thomas A. Brigham (Washington State University)

**Abstract:** The need for more behavior analysts has been acknowledged for years. According the ABAI website, there are still many misconceptions about our field. While our numbers continue to rise, there is much work to be done in dispelling myths about behavior analysis. Many introductory psychology students believe that behavior analysts work only with pigeons and rats or, if we do work with human beings, that behavior analysis is centered on working with individuals with autism. This symposium is designed to highlight behavior analytic research at a major state university in areas outside the lab, working with the general student population. We believe that by showcasing research studies in applied areas, we can increase interest in behavior analysis among undergraduate students who are not interested in the operant chamber. Recent research studies on alcohol and binge drinking, sexual assault and victim blame, and reinforcement strategies in the classroom will be presented. Additionally, the use of new technologies to track behaviors that were previously difficult to measure will be discussed in the research presented.

**Using Text Messaging as a Tool to Monitor College Students' Drinking Behaviors.** RAYMOND O. SACCHI (Washington State University), Thomas A. Brigham (Washington State University), Kristin Onorati (Washington State University), Samantha Swindell (Washington State University), Jon Walter (Washington State University)

**Abstract:** Improper alcohol use by college students is a dangerous problem receiving much attention in today's media. Past research has shown that teaching students to calculate their own blood alcohol concentrations (BACs) reduces both quantity consumed per drinking occasion and total occasions of drinking. It has been suggested that few students in the research are actually calculating their BACs during the drinking behavior. It has been difficult to determine if that is the case. However, direct observation and other forms of monitoring could potentially change the target behavior, so we need to utilize a new technology that is familiar to the students themselves. Electronic data recording is an ever expanding field that demonstrates that it is possible to collect real-time data under conditions as close to natural as possible. At this point, most research has utilized expensive personal data assistants (PDAs) to collect information. We used text messaging to collect real-time BAC information from participants while they are consuming alcohol in natural settings, using a quick reference card to make the calculation easy.

### **The Effect of Interactive Response Systems and Extra Credit on Exam Performance.**

SAMANTHA SWINDELL (Washington State University), Thomas A. Brigham (Washington State University), Raymond O. Sacchi (Washington State University)

**Abstract:** Interactive response systems currently available enable presenters to ask questions and immediately display feedback during presentations. Three experiments examined the effects of one such system on students' performance in a psychology course using an “ABCB” design. During baseline, students attended lectures and completed an exam. In the first treatment phase, students used hand-held remotes to respond to multiple-choice questions for extra credit with class results displayed immediately. In the next phase, students continued to respond to questions and receive feedback, but did not receive extra credit points. During the final treatment phase, the extra credit contingency was reintroduced. The

specific aspects of the questions were manipulated in the treatment conditions across three studies: in study 1, two multiple-choice questions related to the current lecture were presented at the end of each lecture; in study 2, questions related to the current lecture were inserted throughout the lecture; in study 3, each lecture began with 4 questions related to the previous lecture and/or assigned reading. In the studies, we predicted that responding using the interactive system would be associated with higher exam scores and better performance on the multiple-choice questions and would be greatest when correct responses resulted in extra credit points.

**Sexual Assault on College Campuses and the Effect of Greek Enrollment on Victim/Perpetrator Blame.** KRISTIN ONORATI (Washington State University), Thomas A. Brigham (Washington State University), Raymond O. Sacchi (Washington State University), Samantha Swindell (Washington State University), Jon Walter (Washington State University)

**Abstract:** This presentation will describe a university safety study regarding issues of sexual coercion and domestic violence and how it led to interest in designing behavioral analytic research to develop programs to help decrease sexual assault on campus and increase reporting of sexual assaults to the authorities.

Sexual assault on college campuses has been a large problem in the past and continues to be a major safety issue today. Blame attributed to these sexual assault victims has been shown to have negative impacts on recovery and psychological health. As such research on the correlates of blame attribution is important and necessary for the reduction of this problem. The current study looks at the impact of sorority and fraternity involvement in attribution of blame to the victim and perpetrator in sexual assault cases. The amount of blame placed on a victim has been shown to be related to an increased risk of revictimization (self-blame), decreased likelihood of reporting the crime to police, and negative outcomes in certain aspects of recovery. Discussion will include study results and current data from the campus safety survey on sexual assault.

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## #210 Symposium

5/24/2009  
10:30 a.m. - 11:50 a.m.  
North 131 BC  
TPC/OBM;Theory

### **Behavior Analysis Concepts and Applications in Simulation-based Research**

Chair and Discussant: R. Wayne Fuqua (Western Michigan University)

**Abstract:** Simulation has become a tool used for assessment and training in many industries and settings. Simulation can take many forms and thus has been discussed in a variety of fields in various manners. This symposium will describe the use of simulation in emergency medicine, team training, and the field of behavior analysis. The first paper critically analyzes the methodology used emergency medicine simulation research. Results indicate the methods employed are less stringent than those typically applied in behavior analysis. Paper two describes the incorporation of other tools, such as instruction and feedback, with simulation in order to train teamwork behaviors. Recommendations are made for best practice in using simulation to train teams. The third paper discusses simulation research found in JABA, JEAB, JOBM, and the Psychological Record. This paper specifically focuses on human analogue experimentation. These three literature reviews show the prevalence of simulation use and the array of possible applications.

**A Review of the Use of Simulation for Team Training.** KRYSZYNA A. ORIZONDO-KOROTKO (Western Michigan University), R. Wayne Fuqua (Western Michigan University), Amy Gross (Western Michigan University)

**Abstract:** In recent years, simulation-based assessment and training has become widely used in many industries. Simulation alone is an assessment tool; however, by incorporating other variables such as feedback, simulation becomes a training method. One way in which simulation is used as a training

method is for training teams. A review of the literature indicates several researchers are using substandard methods for providing team training using simulation. Several issues that can complicate this type of training include the dynamic nature of teams, the individuals' histories with their teammates, difficulties identifying observable target behaviors, and determining whether to train behaviors individually or as a team. Suggestions are made for best practice in using simulation to train teams and for assessing these training methods.

**Evaluation of Simulation Use in Emergency Medicine: Conceptual and Methodological Issues.**

AMY GROSS (Western Michigan University), R. Wayne Fuqua (Western Michigan University), Krystyna A. Orizondo-Korotko (Western Michigan University)

**Abstract:** We describe a comprehensive literature review of emergency medicine research using simulation-based training. The literature was critically analyzed from a behavior analytic viewpoint in order to make recommendations for the improvement of emergency medicine simulation-based training and research. Results indicated that emergency medicine rarely defined specific target behaviors or standards for performance, infrequently provided validity data, and show substandard reliability measures. Given these results, we suggest methods for selecting, benchmarking, and defining target behaviors. We also recommend improved strategies for assessing validity and reliability. Furthermore, we describe the experimental designs and data analysis methods commonly used in emergency medicine research and propose alternative experimental design options frequently used in the field of behavior analysis. Additional considerations include generalization, maintenance, and social validity.

**Human Simulations in Behavior Analysis (1987-2007): What Have We Done and Where Can We Go?** TODD A. WARD (University of Nevada, Reno), Ramona Houmanfar (University of Nevada, Reno)

**Abstract:** This presentation will provide a review of JABA, JEAB, JOBM, and the Psychological Record from 1987-2007 that examines the prevalence of such research. The operational definitions used in this categorization process are derived from a formal definition of simulation-based human analogue experimentation. This definition is a product of a survey analysis from past and present editors of the four previously mentioned journals. We will also present a citation analysis that demonstrates the extent to which such experiments have actually been used in natural settings. The results obtained from the abovementioned analyses will provide a data-based discussion in the status of simulation-based research, the extent to which such research has informed existing technological applications, and point to specific areas in which behavior analysis may benefit from such an approach to experimentation.

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**#211 Paper Session**

5/24/2009  
10:30 a.m. - 11:50 a.m.  
North 127  
VRB

**Stimulus Control Procedures for Teaching Verbal Behavior**

Chair: David W. Sidener (Garden Academy)

**Joint Control and Rule-Governed Behavior: An Account of the Functional Mechanism of Contingency-Specifying Stimuli.** (Theory) DAVID W. SIDENER (Garden Academy)

**Abstract:** In a basic account of Lowenkron's model of joint control, when a self-echoic and another verbal operant, such as a tact match in topography, the match causes a self-descriptive autoclitic (e.g., "That's the one I was looking for") which then facilitates some further action, such as a selection response. Lowenkron has used this model to account for generalized relational matching to sample, delayed matching to sample, non-identity matching and rule-following. The current paper builds on this last function and offers an explanation of how the concept of joint control fits into a description of how rules may come to control behavior.

**Teaching Children with Autism How to Answer WH Questions.** (Applied Behavior Analysis)  
JOYCE C. TU (Center for Behavioral Sciences, Inc.)

**Abstract:** Some individuals with autism cannot discriminate “WH” questions. That is, when asking questions that may begin with “What/Where/When/Why/Who” but end with the same topic, they are not able to respond to these questions appropriately after years and years of training. In this study, the notion of joint control is applied when teaching Children to respond to WH questions. Two children ages 9 and 10 participated in this study. Typical discrete teaching methodology was first applied to teach WH questions. In addition, questions such as, “What does “What/Who/Where/When/Why” mean” were also taught. However, these trainings did not result in better discrimination of these questions. Joint control was then applied during training. Discrimination of these questions was increased to 80% or higher.

**Teaching Learners in General Education How to Answer WH Questions.** (Applied Behavior Analysis) MARTA LEON (Headsprout)

**Abstract:** Typically-developing learners, too, have problems answering WH questions (that is, questions asking “why”, “what”, “who”, “when”, and “where”), especially if these are presented in writing as part of reading comprehension tasks. This presentation will describe how Headsprout has designed an instructional program to teach the skills necessary to answer WH questions about written passages. Program design started with a concept analysis of each WH reading comprehension question, followed by the identification of the type of discriminations involved in responding differentially to each type of WH question. When learners answer WH comprehension questions related to written text, additional components must be taught because learners can’t rely on their existing intraverbal repertoires to correctly answer the question. Thus, learners must be able to find the answer within the text before answering the question. Representative data of learners going through the instructional program will be shown, and the implications for formative evaluation of the program will be discussed.

**Equivalence Relations and Children's Rapid Learning of Listener and Speaker Behavior.**  
(Experimental Analysis) NEIL DUGDALE (Bangor University)

**Abstract:** During their second year of life, normally-developing children become able to learn very quickly to relate words to their referents, both as listeners (e.g., hear word, select object) and as speakers (e.g., see object, say word). Through independent lines of study, cognitive psychologists and behavior analysts have each developed research protocols to examine the emergent processes underlying this phenomenon of rapid word learning. My research program combines procedural elements from both traditions (e.g., the cognitive research on fast mapping, and the behavioral research on stimulus exclusion and equivalence relations) in an attempt to advance our understanding of early vocabulary acquisition. The data generated thus far suggest that very young children can learn new vocabulary after merely a few unreinforced exposures to the novel word-object relations, and that their emergent listener and speaker behaviors can have the relational properties of equivalence. The theoretical and practical significance of the research will be briefly outlined.

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**#212 Symposium**

5/24/2009

10:30 a.m. - 12:20 p.m.

North 128

DDA/CBM; Applied Behavior Analysis

**Choice and Response Allocation in the Assessment and Treatment of Severe Problem Behavior**

Chair: Joel Eric Ringdahl (University of Iowa)

Discussant: Robert H. Horner (University of Oregon)

**Abstract:** Responding under concurrent reinforcement schedules can be conceptualized as a type of choice behavior. Such schedule arrangements have been designed to provide assessment information and successfully treat severe problem behavior exhibited by individuals with developmental disabilities. In the current symposium, three papers will be presented that discuss some current research in this area. The first paper will compare the findings of concurrent operants preference assessments with the results of functional analyses of problem behavior exhibited by young children displaying problem behavior. Results before and after FCT-based treatment will be compared. The second paper will evaluate response allocation exhibited by individuals whose problem behavior is maintained by automatic reinforcement under two different concurrent operants arrangements: (a) when multiple sources of reinforcement are available simultaneously, and (b) when multiple sources of reinforcement are available, but mutually exclusive (i.e., only one source of reinforcement can be accessed at any given time). The final paper will discuss response allocation under concurrent schedules during stimulus (demand) fading as a treatment for severe problem behavior. Rob Horner will serve as discussant for the collection of papers.

**Evaluation of Relations Between Functional Analyses and Choice Assessment Outcomes Pre- and Post- Functional Communication Training.** YANIZ C. PADILLA (University of Iowa), Jay W. Harding (University of Iowa), David P. Wacker (University of Iowa), Wendy K. Berg (University of Iowa), John F. Lee (University of Iowa), Kelly M. Schieltz (University of Iowa)

**Abstract:** We compared functional analysis (FA) and choice assessment (CA) outcomes to evaluate correspondence in variables identified that controlled child behavior (e.g., time allocation, destructive behavior, task completion) pre- and post- implementation of an FCT package. Participants were 17 children, aged 2 to 6 years, with developmental disabilities who displayed destructive behavior. All conditions were conducted in the participants' homes. Functional analyses were completed within a multielement design to evaluate the environmental variables that maintained destructive behavior. Parent attention, tangibles, and demands were manipulated during a CA within a concurrent schedules design to measure time allocation across choice options. The CA was conducted pre- and post- implementation of FCT. Interrater agreement was assessed during 30% of FA and CA sessions and averaged over 90%. FA results showed that destructive behavior was maintained by escape from demands for all participants and by access to tangibles for most. CA results pre- and post- treatment showed that most participants allocated their time to parent attention choice options even when parent attention was paired with demands. Overall, destructive behavior was lower and task completion higher during the CA demand conditions pre- and post-treatment than during the FA demand condition.

**Comparing Allocation Between Automatic Reinforcement and Alternative Stimuli During Free Operant and Concurrent Operant Arrangements.** WENDY K. BERG (University of Iowa), David P. Wacker (University of Iowa), Joel Eric Ringdahl (University of Iowa), Kelly M. Vinquist (University of Iowa), Jason M. Stricker (The University of Iowa), Anuradha Salil Kumar Dutt (University of Iowa), Jeffrey R. Luke (University of Iowa)

**Abstract:** vary on two dimensions: (a) the degree to which problem behavior would persist in the presence of alternative stimuli, and (b) the degree to which engaging in problem behavior (and gaining automatic reinforcement) would be selected to the exclusion of gaining access to alternative stimuli. To test these hypotheses, we presented participants with access to attention and preferred leisure items (alternative stimuli) within two reinforcement schedules and compared their allocation between the two available sets of reinforcers. During the first schedule, NCR, the participant had continuous access to adult attention and preferred toys and no contingencies were provided for problem behavior. During the second schedule, concurrent operants, the participant could choose gaining access to adult attention and preferred toys via one response or choose gaining access to problem behavior (automatic reinforcement) via a second response. Allocation between item engagement and problem behavior varied across participants and four patterns of results were obtained. The patterns will be discussed in regard to their implications for treatment selection. Interrater agreement data were collected for approximately 30% of the sessions and averaged at least 90% agreement.

**The Effects of the Availability of Mands During Stimulus Fading.** STEPHANIE M. PETERSON (Idaho State University), Jessica Frieder (Utah State University), Shilo Smith-Ruiz (College of Southern Idaho), Carrie M. Brower Breitwieser (Idaho State University), Stuart M Mullins (Idaho State University)

**Abstract:** Stimulus fading is an intervention procedure that consists of decreasing demands to very low levels and slowly increasing them over time. This procedure has been shown to be a successful treatment for escape-motivated challenging behavior for some individuals. However, one limitation of the procedure is that, for some individuals, bursts of problem behavior occur each time the demands are increased (Lalli, Casey, & Kates, 1995; Zarcone et al., 1994). One reason bursts may occur is that an alternative skill other than compliance, such as a mand, that is functionally equivalent to the problem behavior has not been taught. This study examined the effects of teaching a mand and making it available during a stimulus fading intervention for participants with escape-motivated problem behavior via a concurrent schedules arrangement. During the two-choice arrangement, compliance and problem behavior were reinforced on independent schedules of reinforcement, while during the three-choice arrangement, compliance, mands, and problem behavior were reinforced on independent schedules of reinforcement. Results will be presented for a sample participant. The findings will be examined in relation to matching theory, and the practical implications for intervention will also be discussed.

## #213 Tutorial

5/24/2009  
11:00 a.m. - 11:50 a.m.  
West 301 CD  
OTH; Service Delivery

### **Bringing Behavior Analysis into the Mainstream through the Private Sector**

Chair: William L. Palya (Jacksonville State University)

KIMBERLY NIX BERENS (Center for Advanced Learning, Inc.)



**Dr. Kimberly Berens** is the President and Founding Director of Center for Advanced Learning, Inc. Her work centers on using behavior analysis to produce academic transformation with a wide-range of learners. Dr. Berens currently owns and operates three private learning centers located in Reno, Carson City, and Medford, Oregon. Through these centers, Dr. Berens and her team have developed a variety of learning programs that consistently produce an average of one year's growth in 40 hours of instruction. Dr. Berens is also an experienced educational researcher who has published and presented extensively on science-based approaches to education and learning. She currently serves as an affiliated professor in the Behavior Analysis program at the University of Nevada-Reno.

**Abstract:** B.F. Skinner's theoretical writings emphasize the relevance of behavior analysis for solving complex human problems. Unfortunately, of late, applied behavior analysis has become synonymous with services for those with autism and other developmental disabilities. However, behavior analytic training allows individuals to work effectively in a wide range of areas. Moreover, being flexible in service provision is the key to a successful business model. The current paper will offer strategies and guidelines for use in starting a business in behavior analysis. Specifically, information on conducting demographic analyses, identifying community needs, and designing marketing strategies will be offered. In addition, specific practice guidelines that can be used to enhance programmatic outcomes will be discussed.

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## #214 Paper Session

5/24/2009

11:00 a.m. - 11:50 a.m.

North 132 A

TPC

### **True Beliefs and Mental Terms: Behavior Analytic Perspectives**

Chair: Jay Moore (University of Wisconsin, Milwaukee)

#### **What do Mental Terms Mean? (Theory) JAY MOORE (University of Wisconsin, Milwaukee)**

**Abstract:** The meaning of mental terms is a time-honored topic in philosophical psychology and philosophy of mind. It is also a time-honored topic in radical behaviorism. The presentation reviews how traditional (i.e., cognitive) psychology approaches this topic, including how traditional psychology conceives of the way behavioral psychology approaches this topic. The presentation then contrasts what traditional psychology says with what radical behaviorism says.

#### **Justified True Belief: A Behavioral Discussion of Epistemology (Theory) FRANK HAMMONDS (Troy University)**

**Abstract:** Edmund Gettier (1963) argued against defining knowledge as “justified true belief”. Using simple examples, he demonstrated that 1. believing a proposition to be true, 2. having justification for that belief, and 3. the proposition in fact being true, do not constitute sufficient conditions for one to be said to know the proposition. I will introduce Gettier’s argument including his original examples and others that demonstrate instances where one cannot truly be said to know something even when justified true belief exists. I will also discuss counterarguments. While “justified true belief” may not sound very behavioral, I will show that it can be accounted for and described in behavior analytic terms. I will also discuss whether, in those terms, it represents necessary and sufficient conditions for knowledge. While Gettier’s examples are convincing, a behavioral representation of justified true belief does appear to fit with a good conception of knowledge. I will also briefly discuss other views on epistemology and how they might be stated in terms useful to behavior analysts.