#11 Tutorial

5/23/2009
1:00 p.m. - 1:50 p.m.
West 301 CD
BPH; Experimental Analysis

Behavioral Mechanisms of Drug Action: What Are They and How Do We Identify Them?
Chair: Jesse Dallery (University of Florida)

RAYMOND C. PITTS (University of North Carolina Wilmington)

Dr. Raymond C. Pitts received his Ph.D. in Psychology from the University of Florida in 1989. After a 2-year post-doctoral fellowship in the Department of Physiology and Pharmacology at the Wake Forest Medical School, he took a job as a Research Assistant Professor in the Department of Psychology at the University of North Carolina Chapel Hill. In 1996, he moved to the Department of Psychology at the University of North Carolina Wilmington, and has been there ever since. He achieved his current rank of Professor in 2005. Dr. Pitts has served on the Editorial Boards of the Journal of the Experimental Analysis of Behavior and The Behavior Analyst, and routinely reviews for a variety of other journals, including Behavioural Processes and Psychopharmacology. His work has been supported by grants from the National Institute on Drug Abuse, and has been published in journals such as Journal of the Experimental Analysis of Behavior, Journal of Pharmacology and Experimental Therapeutics, Psychopharmacology, Behavioural Pharmacology, Behavioral Neuroscience, Behavioural Processes, and Experimental and Clinical Psychopharmacology.

Abstract: Over 50 years of research in behavioral pharmacology has provided unequivocal evidence that variables such as the environmental context, behavioral history, schedule of reinforcement, type of reinforcer, level of deprivation, and baseline response rate are powerful determinants of the behavioral effects of a variety of drugs. It has been suggested that such effects might profitably be viewed within a general conceptual framework referred to as "behavioral mechanisms " of drug action. In this tutorial, the concept of behavioral mechanisms of drug action is presented and discussed, several approaches to identifying behavioral mechanisms are reviewed, and the theoretical and applied implications of the concept are considered. It is argued that the promise of this approach has yet to be fully realized, and that this has been due, in part, to the fact that there does not appear to be an agreed upon set of operations and criteria by which a specific behavioral mechanism of a given drug effect might be identified unequivocally. It is suggested, however, that advances in the quantitative analyses of behavior may provide a set of tools that will allow us to elucidate behavior mechanisms of drug action clearly.

#12 Special Event

5/23/2009
1:00 p.m. - 1:50 p.m.
North 120 D
EAB; Experimental Analysis

SQAB Tutorial: Conditioned Reinforcement
Chair: Marc N. Branch (University of Florida)

TIMOTHY A. SHAHAN (Utah State University)

Dr. Timothy A. Shahan received his Ph.D. in Psychology from West Virginia University in 1998. He was a postdoctoral research fellow at the University of Vermont for a year, and then a Research Assistant Professor at the University of New Hampshire until 2003. He is presently an Associate Professor in the Psychology Department at Utah State University. Dr. Shahan's research focuses on conditioned reinforcement, observing/attending, behavioral momentum, stimulus control, choice, and extensions of quantitative analyses of behavior to animal models of drug taking. His research has been supported by the National Institute of Mental Health and the National Institute on Alcohol Abuse and Alcoholism. Dr. Shahan currently serves on the editorial boards of the *Journal of the Experimental Analysis of Behavior* and *The Behavior Analyst*, and also regularly serves as a grant reviewer for NIH study sections. He was the 2006 recipient of the B. F. Skinner Young Researcher Award from Division 25 of the American Psychological Association.

Abstract: The notion that stimuli associated with primary reinforcers may themselves come to function as reinforcers has served a central role in the analysis of behavior and its applications outside the laboratory. However, a long history of research has raised the possibility that stimuli associated with primary reinforces may have their effects by some other means. This tutorial will provide an overview of the concept of conditioned reinforcement, review the role of conditioned reinforcement in quantitative theories of choice, and discuss remaining questions about how putative conditioned reinforcers have their effects.

#13 Invited Presenter

5/23/2009
1:00 p.m. - 1:50 p.m.
West 301 AB
OBM; Service Delivery

Switchpoints: Culture Change that Delivered a 2:1 Return on Investment
Chair: Alicia M. Alvero (Queens College, CUNY)

JUDITH A. JOHNSON (CLG)

For more than 15 years, **Judy Johnson** has applied her expertise in behavior-based principles to help business leaders create environments that improve organizational performance through clear and well-communicated strategies via the effective use of positive reinforcement. Judy has worked with clients in a broad range of industries: pharmaceuticals, financial services, telecommunications, consumer products, manufacturing, petrochemicals, technology, automotive, engineering, transportation, shipping logistics, and retail services. She has helped organizations realize measurable improvements in customer satisfaction, quality assurance, and traditional performance indicators (revenue growth, safety, customer retention, productivity). Judy has assisted organizations by: Coaching leaders at C-level, VP-level, and operations-level to improve their communication, feedback delivery, and decision-making skills -Helping leaders execute their strategies by pinpointing key behaviors that enable successful execution - Working with senior leadership to define/implement performance metrics

(team and individual) that correlate behaviors directly with successful business results. Judy earned her Ph.D. in Applied Behavior Analysis from Western Michigan University. She also holds a Master's in Industrial and Organizational Psychology, Bachelor's in Psychology with Management, and an MBA Essentials certificate from the University of Pittsburgh's Graduate School of Business. Judy has taught university courses in Applied Behavior Analysis and conducted research on feedback, motivation, and productivity. She has authored journal articles and presented on many subjects from cross-training techniques to improving performance through feedback, teaming, and incentives.

Abstract: Global competition, changing regulations, and instability in the marketplace all create a current business climate where companies must be ready for whatever change may come. While companies in this environment would benefit from ABS, they will tend to ignore any methodology that does not add immediate value to their business. As practitioners, we will be under increasing demand to demonstrate results for our work. In her recently released book Switchpoints: Culture Change on the Fast Track to Business Success (2008), Johnson and co-authors describe how Canadian National Railway (CN) applied behavioral techniques to develop leaders, engage employees, and create a culture that delivered over a 2:1 return on their investment. Through real life stories and examples, Johnson will share how individual leaders, working with their teams in new ways, delivered profound results in a range of metrics including service, reliability, and cost reduction. Johnson will also go beyond the book to share insights into critical success factors, lessons learned, and what those lessons tell us about how behavior analysts can help companies maximize performance in the current business environment.

#14 Panel Discussion

5/23/2009
1:00 p.m. - 1:50 p.m.
North 227 A
OTH; Experimental Analysis

Professional Development Series: Bridging the Gap between Basic and Applied Research: Schedules of Reinforcement
Chair: Carlos Cançado (West Virginia University)

KENNON A. LATTAL (West Virginia University)
CLAIRE ST. PETER PIPKIN (West Virginia University)
MICHAEL PERONE (West Virginia University)

Abstract: Although ABAI members share a common interest in understanding behavior, we have a wide range of backgrounds and specific research interests. Therefore, we often find ourselves disconnected from current developments in different areas within our field. The purpose of this event is to explore current research in an area of behavior analysis from basic and applied perspectives and provide a venue for attendees to learn about research they typically may not contact. In this year's "Bridging the Gap " event, panelists will discuss aspects of research on schedules of reinforcement and its relevance to applied settings.

#15 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 124 B
AUT/DDA; Service Delivery

Targeting Common Sources of Stress Among Parents of Children with Autism Spectrum Disorder: From Stressor Identification to Intervention Implementation.
Chair and Discussant: Emily Huber Callahan (Binghamton University)

Abstract: In the Clinical Practice Guideline, Report of the Recommendations for Autism and Pervasive Developmental Disorders sponsored by the New York State Department of Health Early Intervention

Program (1999), parent training is recommended as an important component of comprehensive interventions for children with these disorders. Among the numerous potential benefits of parent training, the recommendation notes that it may be useful in decreasing parental stress. Service providers who work with families of children with Autism Spectrum Disorder (ASD) recognize that a family's ability to access and maintain resources and support can be a moderator of treatment's effectiveness. Parental stress, in turn, can impact a family's ability to access these needed resources. Stress management, therefore, becomes an important component of service provision when working with these families. The goal of this symposium is to present three common sources of parental stress that arise frequently for parents of children with ASD, specifically, feeding problems, safety concerns, and advocacy issues. Discussion will focus on the bidirectional relations of these interventions with overall stress levels and effective methods for teaching parents how to identify, target, and manage stressors in these areas.

The Mealtime Battle Between Parent and Child with ASD. COURTNEY A POOLER (Binghamton University), Raymond G. Romanczyk (Institute for Child Development)

Abstract: Parents of children with ASD are more likely to report feeding problems and less likely to describe their children as healthy eaters (Lockner, Crowe, & Skipper, 2008). Feeding difficulties, while somewhat common among children who are typically developing, affect up to 80% of children with a developmental disability (Manikam & Perman, 2000). Many of the feeding difficulties identified in children with ASD can be described as behavioral feeding disorders, or sensory-based feeding disorders (Schwarz, 2003). This presentation will identify major feeding concerns of parents of children with ASD. Additionally, common pitfalls of concerned parents desperate to get their child to eat something (rather than nothing) will be discussed. This presentation will highlight methods of helping parents identify their own behavior patterns that may be contributing to or maintaining a child's maladaptive feeding behavior, as well as useful treatment methods that may be implemented in the home environment. Although parent stress is often not the impetus for treating feeding disorders in a child with ASD, it is hypothesized that by improving feeding behavior, families will experience more ease in meal preparation and increase in utilization of restaurants and other recreational activities, and therefore, a decrease in some of the daily stressors on parents.

When Childproof No Longer Applies: Child Safety and ASD. RACHEL N STRAUB (Institute for Child Development, Binghamton University-SUNY), Raymond G. Romanczyk (Institute for Child Development)

Abstract: Children with mental or developmental disabilities are more likely to experience nonfatal injury, with greater severity, than non-disabled peers (Xiang, et al., 2005). Further, research has shown that children with impairments in attention, communication, and social interaction, have elevated levels of injury risk (Sherrard, Tonge, & Ozanne-Smith, 2002). For parents of children with ASD, this implies that greater vigilance is needed in order to maintain safety and reduce injury risk both at home and in the community. This presentation will highlight primary safety concerns expressed by parents of children with ASD. Discussion will include approaches to helping parents identify potential hazards and implement preventive methods using both environmental manipulations and applied behavior analysis with their children to reduce their own stress and concern. Additionally, common problems parents may encounter when implementing home safety behavioral programs will be presented, specifically regarding the use and effectiveness of home safety rules. Finally, the bidirectional relations of injury risk and safety program implementation being both the cause and relief of parent stress will be reviewed.

Advocate, Arbiter, Service Provider, or Caregiver? The Silent Struggle of Parenting a Child with ASD. JULIA BARNES (Binghamton University), Raymond G. Romanczyk (Institute for Child Development)

Abstract: Inherent in parenting a child with ASD is the adoption of multiple new roles. In addition to the role of nurturing caregiver, these parents often find themselves in the unanticipated position of being the arbiters of decisions regarding their child's treatment. The Committee on Educational Interventions for Children with Autism, National Research Council (2001) proposed that parents of children with ASD need to be educated in specialized skills and knowledge of scientifically based information about the

disorder and its treatment in order to be effective advocates of their child's education. In their attempts to realize recommendations like this, however, some parents may feel as though they are being pressured to become experts in best practice, service delivery and the accompanying legal issues. This perception can lead to heightened parental stress, perhaps even beyond that associated with the behavioral excesses and deficits of ASD The aim of this presentation will be to identify potential avenues by which parents incur stress from serving multiple roles with respect to their child's education. In doing so, the primary objective will be to suggest methods for coping with and, where appropriate, alleviating these sources of stress.

#16 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 120 BC
AUT/DDA; Applied Behavior Analysis

Video Modeling: Prerequisites, Successes and Future Directions
Chair: Rebecca P. F. MacDonald (The New England Center for Children)

Abstract: Video modeling has been demonstrated to be an effective procedure to teach a variety of skills to individuals with autism. In this session we will describe studies demonstrating the use of video modeling to teach social interactions and daily living skills. With the wide spread use of to video modeling as part of behavioral programming, we have found that some children have difficulty learning using video instruction. We will present a pre-assessment battery of skills that begins to assess the prerequisites necessary for learning using video instruction. In addition, we will present data showing that remediation of these skill deficits can have an impact on acquisition of behavioral chains using video modeling. We will review the parameters of video construction and point of view as is relates to learning. We will review the advantages of this teaching procedure and the technical issues encountered when implementing the procedures. We will also discuss the implications for this technology as an easy and effective strategy for educators and parents to use to teach play and other skills.

Examining Prerequisite Skills for Learning Using Video Modeling. MEGHAN E. ROBINSON (New England Center for Children), Rebecca P. F. MacDonald (The New England Center for Children), William H. Ahearn (The New England Center for Children)

Abstract: In the following study 10 preschool students diagnosed with an autism spectrum disorder were assessed with 10 potential pre-requisite skills for video modeling performance. The assessments included gross motor imitation, actions with objects, simultaneous matching pictures to objects, delayed matching pictures to objects, attending to a video, simultaneous matching pictures to objects on computer screen, delayed matching pictures to objects on computer, motor skills, delayed actions with objects, and 2-step delayed actions with objects. 7 of the 9 students demonstrated mastery of all assessments including video modeling. Two students did not demonstrate mastery of learning through video modeling. Of those 2 students, one did not perform delayed matching and the second student did not perform 2-step delayed actions with objects. The results of this study confirm a potential relationship between delayed matching tasks and learning through video modeling. Future research is warranted on the role of delayed matching with learning through video modeling, as well as the importance delayed matching skills may have on the overall academic and social acquisition of children diagnosed with an autism spectrum disorder.

Teaching Laundry Skills to Individuals with Developmental Disabilities Using Video Prompting. JULIE HORN (University of South Florida), Raymond G. Miltenberger (University of South Florida), Timothy M. Weil (University of South Florida), Judy Mowrey (University of South Florida), Maribel Conn (University of South Florida), Leigh Anne Sams (University of South Florida)

Abstract: Video prompting is a training procedure used to teach a complex behavior by showing steps of a task analysis on video. The present study evaluated how many steps in the video model were required for the learner to acquire a 10 step laundry task. Participants were three individuals with mental

retardation. Participants viewed the entire task on video and then progressively shorter segments until they performed all task steps. The results, evaluated in a multiple baseline across subjects design, showed that one individual learned the task with 2 video segments and another with 3 segments. The final participant needed a least to most prompting procedure to learn the skills.
Key words: video prompting, video modeling, task analysis, laundry skills.

The Effects of Peer Video Modeling on Conversational Speech in a General Education Setting. LIJA LEKAN (New England Center for Children), Rebecca P. F. MacDonald (The New England Center for Children)

Abstract: Video modeling is a technique shown to be effective at increasing social initiations and conversational speech in children with autism. This study examined the effects of a video modeling intervention on social initiations and responding to peers during times of socialization in an inclusive setting for a student with autism. A multiple baseline design across environments was used with a single participant. The child watched a video clip of typical peers engaging in conversational speech. Video modeling resulted in an increase in the use of scripted comments and responses to peers in the cafeteria and classroom settings. The intervention also resulted in an increase in novel conversational speech with peers and this increase in level of speech was maintained during follow up probe sessions.

A Review of Procedural Variations in Conducing Video Modeling: What We Know, What We Think We Know, and What We Need To Find Out. COURTNEY DILLON (Western Michigan University), Linda A. LeBlanc (Western Michigan University), Kaneen B. Geiger (Western Michigan University)

Abstract: Several studies have demonstrated the effectiveness of using video models to teach a various skills to children with autism spectrum disorders, including increasing social initiations (Nikopoulos & Keenan, 2004), perspective taking (Charlop-Christy & Daneshvar, 2003; LeBlanc et al., 2003), giving compliments (Apple, Billingsley, & Schwartz, 2005), and engaging in conversational speech (Charlop & Milstein, 1989). While video models have generally been found to be effective teaching tools, the procedures used in these supportive studies have varied on a number of dimensions. For example, the length of the video varies widely between studies, as does the number of exemplars shown in the video, characteristics of the model, and whether a discriminative stimulus for imitation is delivered in the video. Though the procedures have varied across studies, few of these variables have been experimentally examined. The purpose of this review is to illustrate the procedural variations used in previous studies and to outline a research agenda for the future studies that might experimentally determine the optimal characteristics of video models to foster development of best practice in this area.

#17 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 125
AUT/EDC; Applied Behavior Analysis

A Focus on Generalization of Skills for Young Children with Autism and Developmental Delays
Chair: Ilene S. Schwartz (University of Washington)
Discussant: Carol Ann Davis (University of Washington)

Abstract: Slow acquisition and generalization of skills continues to be a struggle for children with disabilities. Children with autism and developmental disabilities often exhibit low rates of engagement, deficits in language and symbolic play with the lack of generalization or transfer of skills. Each of these deficits provides significant challenges for children with autism both in terms of their learning and their long-term outcomes. Given the abundant number of skills young children with autism and developmental delays with must learn, behavior analysts must evaluate and apply generative approaches to instruction so that some skills are taught and others emerge without direct teaching. Three papers will offer research findings on studies of generalization. Axe and Sainato will present their study of matrix training for young children with autism, "

"Matrix Training of Instruction Following of Pre-Academic Skills with Preschoolers with Autism ". Duckett and Schwartz will offer a paper examining the use of matrix training for receptive language skills. Garfinkle will present a study of the untrained generalization of engagement in very young children with a focus on play materials. Carol Davis will serve as a discussant in her review of these papers offering implications for practice and recommendations for future directions for research.

"Matrix Training of Instruction Following of Pre-Academic Skills with Preschoolers with Autism." JUDAH AXE (Simmons College), Diane M. Sainato (The Ohio State University)

Abstract: Given the abundant number of skills children with autism must learn, behavior analysts must evaluate and apply generative approaches to instruction so that some skills are taught and others emerge without direct teaching. Matrix training is a generative approach and was evaluated with four preschoolers with autism learning to follow trained and untrained action-picture instructions (e.g., circle the pepper, underline the deer). Six actions and six pictures were each arranged on axes of matrices. Errorless teaching was used to train the instructions along the diagonal of the matrices. A multiple probe across behaviors design was employed. Mean interobserver agreement of responses across participants, phases, and tiers was above 93%. Two participants readily followed untrained instructions with the minimal number of trained instructions. Two participants required training on more than the minimal number of instructions to demonstrate generalization to untrained instructions. Three of the four participants followed instructions to perform the actions with previously known pictures, letters, and numbers. This study extended previous research by using matrix training to teach picture identification and writing skills to preschoolers with autism. Matrix training is an efficient approach to instruction and can be used to teach academic skills to children with autism.

The Matrix Revisited: Recombinative Generalization and Young Children with Autism. LAURELIN DUCKETT (The University of Washington), Ilene S. Schwartz (University of Washington)

Abstract: Slow acquisition and generalization continue to be a struggle for children on the autism spectrum. This study looked at the use of recombinative generalization and the effectiveness of using matrix-training procedures to teach receptive language to young children with autism. An AB design with multiple probes was used and then replicated across two children and three matrices, resulting in a total of 6 AB designs. Two preschool children with autism participated in the study, a five-year-old girl and a three-year-old boy. The three matrices involved teaching receptive language combinations of adjective/noun, agent/action, and emotion/preposition. Both children were able to acquire new receptive language using discrete trial training and then generalized to more then 3 times the number of stimuli originally taught. The results of the study show that matrix-training may be an effective and highly efficient way to enhance an intervention with young children with autism by decreasing the number of stimuli being taught and increasing the number of stimuli acquired.

The Untrained Generalization. ANN N. GARFINKLE (University of Montana)

Abstract: Children with autism often have low rates of engagement, deficits in symbolic play, and with the generalization or transfer of skills. Each of these deficits provides significant challenges for children with autism both in terms of their learning and their long-term outcomes. The current study examines toy materials and their attributes that may have facilitated the untrained generalization of engagement across play materials. Three male children under the age of three, diagnosed with autism, were observed over a three-month period. In addition three age-match typically developing children were also measured. In this time period a momentary time sample recorded children's engagement and play material. The data show, with a high degree of confidence, that both the typically developing children and those diagnosed with autism increased the number of different play materials with which they interacted. This increase took place in the absence of training during the observation period. By examining the features of the toy materials it may possible to determine which attributes facilitate the generalization of toy play in young children with autism. Both practical and theoretical implications will be discussed.

#18 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 124 A
AUT/DDA; Applied Behavior Analysis

Advances in Data Collection Techniques: Impact on Clinical Decision-Making
Chair: Ginette Wilson-Bishop (Melmark New England)
Discussant: Arthur Richard Campbell (Melmark New England)

Abstract: Clinical decision-making rests, in large part, on the accuracy of the data being collected to inform those decisions. The importance of representative and accurate behavioral assessment to guide intervention cannot be understated. However, these considerations must be balanced with the identification of efficient data collection systems that are also user-friendly. This symposium highlights advances in data collection methodology and the subsequent impact on clinical decision-making. The first two talks share results from a two-part study that sought to examine the effects of data collection methodology on the mastery and maintenance of skills learned by young children with autism through discrete trial training. The final talk will present an alternative use of conditional probabilities and contingency space analysis for measuring treatment integrity, which refers to consistent and accurate plan implementation by change agents over time. Presenters will summarize existing research, describe advances in the data collection techniques, offer empirical examples, and discuss implications within clinical settings.

Comparison of First Trial Probe and Continuous Data Collection Procedures in an Early Childhood Program for Children with Developmental Disabilities. GINETTE WILSON-BISHOP (Melmark New England), Florence D. DiGennaro Reed (Melmark New England)

Abstract: This purpose of this presentation is to share the results of an investigation that sought to extend the findings of a study conducted by Cummings and Carr (in press). These researchers found that continuous and first trial probe data collection procedures did not result in significantly different acquisition data but that first trial probe data collection resulted in relatively (a) quicker mastery and (b) poorer maintenance data. As an extension of Cummings and Carr's research, which was carried out in an analog setting, the present study was conducted in an applied setting (i.e., students' classrooms) by teachers during typical instruction, using common classroom materials. A multi-element design was used to evaluate clinical decision-making based on visual analysis of continuous versus first trial probe data collection during implementation of receptive programs. Follow-up probes were conducted for three weeks following mastery and a treatment acceptability questionnaire was completed by teachers to assess their acceptability of the different data collection procedures. Data are currently being collected.

A Comparison of Three Types of Data Collection Procedures on Skill Acquisition and Maintenance in Children with Developmental Disabilities. Florence D. DiGennaro Reed (Melmark New England), GINETTE WILSON-BISHOP (Melmark New England)

Abstract: Limited research exists to guide the types of data collection methods used within discrete trial training programs for children with disabilities. To date, only one study (Cummings & Carr, in press) has been published on the systematic examination of the impact of first trial probe and continuous data collection procedures on mastery and maintenance of skills. This presentation will share findings from the second part a two-part study extending the findings of Cummings and Carr. The current study replicated Cummings and Carr's methodology; however, the researchers also examined a third type of data collection technique. Within discrete trial training, the difference between first trial probe, intermittent (e.g., first, fifth, and tenth trial), and continuous (e.g., trial-by-trial) data collection procedures on the skill acquisition and maintenance of receptive programs of children with developmental disabilities was examined using a multi-element design. In addition, teacher acceptability of the data collection methods was assessed using a Likert-type scale. Data collection is presently underway.

A Contingency Space Analysis of Treatment Integrity: Assessing Implementation Accuracy and Consistency. Derek D. Reed (Melmark New England), FLORENCE D. DIGENNARO REED (Melmark New England)

Abstract: While the reliable and accurate collection of data on dependent variables has long been a virtue of behavior analytic research, only recently have behavior analysts looked towards improving the degree to which independent variables are delivered in their intended and prescribed manner. The degree of accuracy and consistency in the implementation of behavior change procedures has been termed "treatment integrity " or "procedural fidelity. " A majority of such studies has focused exclusively on improving levels of treatment integrity in behavior change agents and have historically measured treatment integrity as the percentage of treatment steps implemented correctly. In this presentation, we propose that a contingency space analysis of the change agent's delivery of consequences to clients' behaviors may provide further insight into the effects of treatment integrity on operant learning. Using data from clinical cases, we will highlight the various ways in which supplementing traditional accuracy measures of treatment integrity with contingency space analyses may provide additional information on plan implementation and treatment efficacy to assist in decision-making regarding treatment modifications or change agent performance enhancement opportunities.

#19 Panel Discussion

5/23/2009
1:00 p.m. - 2:20 p.m.
North 127
AUT/DDA; Applied Behavior Analysis

Language and Behavior: Positive Outcomes when the Worlds Collide!
Chair: Joanne Gerenser (Eden II Programs)

JOANNE GERENSER (Eden II Programs)
NICOLE WEIDENBAUM (Nassau-Suffolk Services for Autism)
DANA BATTAGLIA (Eden II/Genesis School)
JOANNE SGAMBATI (Eden II/Genesis Programs)

Abstract: Individuals with autism spectrum disorders have difficulty with communication, which is an inherent component of the diagnosis. Speech language pathologists are highly trained in the area of language, while behavior analysts are equally skilled in the area of human behavior. There are times when a behavior can be a function of language, and other times that language can be a function of behavior and/or the environment. Teasing out which is which is the challenge. When this is done, however, and clinicians match treatment to function, participant outcomes are maximized. This presentation will discuss such issues in creating behavior plans. Case studies will be presented.

#20 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 126
AUT/CSE; Applied Behavior Analysis

Effect of Child and Treatment Variables on Communication Skills Acquired Through PECS
Chair: Adrienne M. Perry (York University)
Discussant: Andrew S. Bondy (Pyramid Educational Consultants)

Abstract: As disordered communication is one of the core deficits of autism spectrum disorders (ASD), interventions logically focus on the development of functional communication systems. One of the most frequently recommended, and successfully used, approaches is the Picture Exchange Communication System (PECS). Based on the principles of Applied Behaviour Analysis, whereby behavioural teaching strategies such

as prompting and reinforcement are used to facilitate independent communication, PECS users communicate by exchanging pictures of items with a communicative partner in exchange for preferred items or a social interaction. This symposium explores the impact of teaching PECS to 22 children and adolescents diagnosed with an ASD in a therapeutic summer camp program. Data were collected according to a pre-post longitudinal research design. Results shared will include a detailed description of child outcomes, along with an analysis of the specific child and treatment factors associated with varying outcomes. Implications for theory and practice will be discussed.

The Effect of PECS Training on the Communicative Behaviour of Children with Autism Spectrum Disorders. JULIE L. KOUDYS (York University), Kristen McFee (York University), Adrienne M. Perry (York University)

Abstract: The acquisition of functional communication skills largely dictates the extent to which individuals with ASDs participate in daily activities at home and school and develop social relationships. In addition, the attainment of a communication system has been directly linked to the prevention and reduction of problem behaviours. Numerous studies link PECS to enhanced communication and speech development, as well as decreases in contextually inappropriate behaviours. However, few explore the quality of children's communication skills following PECS training in detail. As such, there exists little information about vocabulary diversity (i.e., breadth/type of word use), sophistication of communication (i.e., mean length of utterance, use of attributes/proper syntax) or the range of functions the system serves (i.e., requests or social interactions). Further, little is known about the types of environments and activities in which PECS is used. Most significantly, little is known about specific areas of difficulty (i.e., spontaneity, distance, discrimination). This session provides a detailed description of the outcome of PECS training, including its impact on speech development, in a real-world setting. Data sources include pre- and post-assessment of communicative behaviour and PECS use, daily data logs, video review and parent communication questionnaires.

What Matters? Child and Treatment Variables Associated with Varying PECS Outcomes. KRISTEN MCFEE (York University), Julie L. Koudys (York University), Adrienne M. Perry (York University), James M. Bebko (York University)

Abstract: Research supports the use of PECS as a means of developing functional communication skills for individuals with ASDs. However, little is know about the specific child and treatment variables associated with varying outcomes. Studies examining the impact of behaviourally-based educational programs with children with ASDs provide evidence that child factors, familial factors and intervention factors likely play a role in outcome. However, it remains unknown as to whether or not these same factors play an equally important role in the acquisition of augmentative communication or speech via PECS. Given the prevalent use of PECS within the ASD population, outcome expectancies and evidence-based practice guidelines must be identified. This study explores specific child and treatment variables as they relate to PECS outcomes. Child variables explored include developmental level (i.e., mental age or IQ), cognitive variables (i.e., verbal/nonverbal skills), adaptive skills (i.e., self-help, social, communication skills) and severity of autism symptoms. Treatment variables include fidelity (i.e., adherence to PECS protocol), intensity, (i.e., number of requests per day) and generalization factors (i.e., variety of reinforcers, activities, environments and people). Implications for outcome expectancies and teaching will be shared.

Prerequisite Skills: Are they Really a Prerequisite to PECS Training? KRISTEN MCFEE (York University), Julie L. Koudys (York University), James M. Bebko (York University)

Abstract: There has long been debate as to whether prerequisite skills, such as imitation or discrimination, are required prior to teaching a behaviourally-based communication system like PECS. A large body of developmental research suggests that individuals with ASDs demonstrate impairments in symbolic cognitive development, including difficulties with speech, gesture, imitation and pretend play. These skills, along with an understanding of other symbols like pictures, typically emerge within the first few years of life. This study explores whether individuals with ASDs may also have difficulties understanding pictures as symbols and more importantly, whether such impairment impacts the ability to

use PECS. Other cognitive skills explored include the ability to discriminate amongst pictures, match pictures and objects, and learn associations between words and pictures. From a behavioural perspective, it is hypothesized that many of these cognitive skills are irrelevant to a child's ability to use PECS. Children were evaluated on the aforementioned cognitive skills and entry level of PECS at the beginning of camp, as well as on PECS outcomes at the end of camp. Implications for teaching PECS will be discussed.

#21 Paper Session

5/23/2009
1:00 p.m. - 2:20 p.m.
North 221 C
AUT

Addressing the Needs of Adults with ASDs
Chair: Grace C.E. Chang (SEEK Education, Inc.)

The Effects of Self-management on the Job-related Social Skills for an Adult with Autism. (Applied Behavior Analysis) GRACE C.E. CHANG (SEEK Education, Inc.), Hua Feng (National Chang-hua University of Education), Hsiuchi Lin (National Changhua university of Education)

Abstract: This study was to investigate the effectiveness of job-related social skills for an adult with autism in the workplace after receiving self-management training. The research design of this study was a multiple-probe design across behaviors. The independent variable was self-management training, while the dependent variable was the job-related social skill in the workplace. Before intervention, the subject was conducted functional behavior assessment and three target behaviors of the subject were identified. They were (a) to display good manner by saying "welcome " to the customers, (b) to take up his proper place without verbal prompt, and (c) to follow the task procedures. The result showed that self-management has positive effects on improving the job-related social skills for the adult with autism. In addition, the data also showed that with the increase of positive behaviors, some of his stereotyped behaviors also reduced after the intervention. The results also displayed favor outcome of the generalized effects (generalization to different situations and different people). For social validity data, the job coach, the subject's mother, and supervisor in the workplace were interviewed and reported highly positive response to this training program at the conclusion of this study. Discussion and suggestions for the professional and researchers were also included.

Developing Successful Vocational Programs for Individuals with ASD Using Empirically-based Behavioural Strategies. (Applied Behavior Analysis) KERRY-ANNE ROBINSON (Brock University; Progressive Steps Training and Consultation)

Abstract: Employment opportunities have been shown to improve the quality of life and level of functioning of individuals with autism spectrum disorder (ASD) (Garcia-Villamisar et al., 2002; 2007). Although there has been a considerable amount of research that supports the use of applied behaviour analysis in the treatment and education of children with ASD, limited research is available to guide service providers in their work with adolescents and adults. This presentation will address empirically-based strategies used to teach adolescents and adults with ASD vocational and employment skills, focusing on those who demonstrate significant challenges and limitations. A behavioural program developed to teach an adolescent with ASD to complete a paper route will be discussed with an emphasis on the empirically-based strategies utilized. Data presented will demonstrate mastery of each of the component skills required to complete a paper route including, sorting and stuffing, street safety, delivering papers to the correct houses, asking for payment and giving the correct amount of change if necessary. This presentation will illustrate that an adolescent with ASD who demonstrates significant challenges can be taught to complete a vocational task encompassing numerous component skills using empirically-based behavioural strategies.

Staying Out of Bed All Day: Adult with PDD Moves to the Community. (Applied Behavior Analysis) CORRINE R. DONLEY (University of Wisconsin Oshkosh Emeritus)

Abstract: The purpose of this paper was to demonstrate the effects of positive reinforcement and positive correction on the behavior of a gentleman with PDD who had been institutionalized for 40 years and who had moved to the community. Results show that staff members, who had been trained and monitored by a behavior analyst, were able to modify his staying out of bed for as little as five hours of the day to 14 to 15 hours for 30 days within six months. The author offers limitations of the study and recommendations for further research.

Learning to Pack and Carry a Handbag on the Stairs: An Adult with Autism in the Community. (Applied Behavior Analysis) CORRINE R. DONLEY (University of Wisconsin Oshkosh Emeritus)

Abstract: This paper describes the process by which the managers and staff of a group home taught an awkward 45-year-old man with autism to pack a handbag with his favorite catalogs and carry it up and down the stairs so that he could hold onto the banister. He had been in an institution for many years where he had been an extremely violent person before transitioning to the community. The large catalogs proved to be strong reinforcement for appropriate behaviors, whereas negative punishment worked to decrease his aggression, self-injury, and property damage greatly. Yet carrying them in his hands meant that he could not hold onto the banister for safety. Results show, through an ABCD single case research design, that physical prompting, faded prompts, and reinforcement worked to accomplish the task in four months.

#22 Paper Session

5/23/2009
1:00 p.m. - 2:20 p.m.
North 226 C
AUT

Issues in Establishing Services for Persons with ASDs
Chair: Betty Fry Williams (Whitworth University)

Serving University Students with Autism Spectrum Disorder: Accommodations for High-functioning Students with Autism or Asperger's Syndrome. (Service Delivery) BETTY FRY WILLIAMS (Whitworth University)

Abstract: As the rate of Autism Spectrum Disorder (ASD) increases, so does the number of students with ASD who are being admitted to universities. This presentation considers those characteristics of ASD that interfere with learning and socialization on the university campus and provides concrete recommendations for supporting successful university experiences for high-functioning students with autism or Asperger's Syndrome. Specific instructional accommodations, social supports, and preparation for campus life are included.

Respite Care Services for Families of Children with Autism - Developing Quality Personnel Pools. (Service Delivery) CORINNE M. MURPHY (West Chester University), Jennifer E. Dawson (SPARC)

Abstract: Respite care services are arguably some of the most requested services by families of children with autism. Waitlists for respite services from MR/DD and other respite care providers can range from 1 week to 6 months dependent on geographical location. In addition to long waitlists, parents/guardians are challenged to find qualified personnel. Such personnel are trained in both behavioral principles as well as characteristics of individuals with autism spectrum disorders. Adequate training is a necessary component to providing quality respite care services. This paper will describe the development of a volunteer-based, behavioral respite care program as well as provide direction for the development of

similar programs. The paper will identify 1) funding sources 2) personnel pools 3) training protocols and 4) family recruitment. The paper will highlight an exemplar program funded by grant monies and developed at West Chester University of Pennsylvania, in collaboration with the Southeastern Pennsylvania Autism Resource Center, by Drs. Corinne M. Murphy, BCBA and Jennifer Dawson.

A Summer Camp Model for Teaching Social Skills to Children with Autism Spectrum Disorders and other Developmental Disabilities. (Applied Behavior Analysis) Natalie Kathleen Morris (Washington Park District), CLAIRE R LEECH (Washington Park District), Amy Shymansky (Washington Park District)

Abstract: Camp Connections was an eight-week social skills camp targeting the core deficits typically seen in children with Autism Spectrum Disorders and other developmental disabilities. Participants were 19 children with various social skill deficits. Children received a maximum of 108 hours of intervention depending upon attendance. Trained therapists targeted social skills including building topics of conversation, initiating conversation based on someone else's perspective, maintaining conversations, drawing inferences in social scenarios, and initiating and maintaining play with peers. Direct instruction and video modeling interventions were used to teach new skills during small group or individual instructional periods. Typical peers were used as models as well to assist in generalizing new skills to natural environments. A total of 8-10 objectives per child were targeted during the intervention period. After the 8-week session, data collected from the objectives were statistically analyzed along with feedback from each of the participant's families. The analysis demonstrated 64% of the objectives increased in complexity to a higher skill level, 7% were mastered, and more than 50% of parents reported generalization in the natural environment. It is suggested that these teaching strategies can be effective in developing social skills in children with Autism Spectrum Disorders and other developmental disabilities.

Creating a Summer Educational Experience for Children with Autism: An Evaluation of "Kids for Camp." (Service Delivery) LEASHA BARRY (University of West Florida), Susan Sowell Byram (Autism Society of the Panhandle), Jeanie Lundy (Kids for Camp), Laura Brumfield (University of Florida), Dayna Beddick (University of West Florida), Desirae Celiberti (University of West Florida)

Abstract: This presentation will highlight the key factors that have collectively made "Kids for Camp " a success for over 60 children who reside in a rural community lacking in formal behavioral intervention or summer educational opportunities for children with Autism. Key factors include fund raising, community involvement, school district buy-in, intensive training of 1:1 "teachers " (community members interested in learning more about Autism) in research-based practices including verbal behavior, on-going professional supervision and leadership, and assessment of child and teacher learning gains assessed using the ABLLS-R and teacher competencies. The presentation will include a) descriptions of how the summer educational experience was created and coordinated; b) summary data evaluating the learning gains for children with Autism who attended the 6-week summer experience; and c) summary data evaluating the learning gains of "teachers " who were local school teachers, teacher assistants, and other interested local participants.

#23 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 224 A
CBM/VRB; Applied Behavior Analysis

Perspective-taking in Adults: Empirical Tests of the Role of Deictic Framing in Applied Settings
Chair: Roger Vilardaga (University of Nevada, Reno)

Abstract: Contextual Behavioral Science is a strategic approach within the behavior analytic tradition that emphasizes the use of different fronts of exploration as means to strengthen our knowledge about our subject matter (Vilardaga, Hayes, Levin, Muto, in press). Within this strategic approach, Relational Frame Theory (RFT; Hayes, Barnes-Holmes, Roche, 2001) has developed a behavioral account of human language

and cognition that has led to a variety of techniques, such as those of Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999). One of the behavioral processes investigated by RFT is that of deictic framing, which is a class of derived relational responding that allows perspective taking distinctions that according to RFT may be at the core of empathy, social bonding, and a stable sense of self. This symposium will present a review of the literature on deictic framing, and data from three new studies that test those scientific questions. The four papers presented in this symposium will (1) review the current literature on deictic framing, (2) present data on the role of deictic framing in the context of stigmatized attitudes, (3) individuals suffering from schizophrenia and (4) individuals with psychotic symptoms compared to normal adults. Our aim is that at the end of the symposium, attendees will have learned about the RFT account of perspective taking and will be exposed to a sample of contextual behavioral science in that specific field.

A Systematic and Comprehensive Review of the RFT Literature on Deictic Framing. DOUGLAS MOORE LONG (University of Nevada, Reno), Roger Vilardaga (University of Nevada, Reno), Colin Stromberg (University of Nevada, Reno)

Abstract: In this paper we will present a systematic and comprehensive review of the Relational Frame Theory work on deictic framing from the publication of Making sense of spirituality (Hayes, 1984) to date. Our summary of the literature on deictic framing will include theoretical and conceptual chapters and papers, and all the published and non published empirical studies. In this review we will summarize the theoretical rationale behind deictic framing, the range of complex phenomena that according to RFT, this behavioral process might account for, the results of empirical studies, the methodological strategies that have been used, their clinical and non clinical target populations, and finally, the inconsistencies and problems of this current line of research. Overall, we will show the steps that have been taken towards the building of a programmatic line of research in that field, and how it coheres with the contextual behavioral science approach.

Deictic Framing and Human Objectification: Further Testing of a New Procedure to Enhance Empathic Concern Towards Others. ROGER VILARDAGA (University of Nevada, Reno), Thomas J. Waltz (University of Nevada, Reno), Michael Levin (University of Nevada-Reno), Steven C. Hayes (University of Nevada, Reno), Kimberly Amador (University of Nevada, Reno)

Abstract: A previous study performed in our laboratory showed significant baseline correlations between performance in a deictic framing task and an empathy questionnaire (IRI; Davis, 1984) in a sample of college students (n=58). The study was designed to address the potential role of deictic framing in the enhancement of empathic concern towards individuals belonging to an ethnic minority. Results also indicated that a deictic framing manipulation produced increased levels of empathic concern but those levels of connection faded over time. In this paper, we will present data from a second study that will test the same rationale but using an automated procedure to avoid for demand characteristics of the experimenter. This new procedure incorporates (1) a larger pool of trials, (2) equal number of trials for the three types of deictic framing and their levels of complexity, (3) systematic variations of trial content, and (4) collection of fluency data. In addition, we created an automated delay discounting assessment task that serves as an analog of social bonding. Results will be discussed in terms of the larger implications of this line of research for the enhancement of social interactions in normal adults.

Deictic Perspective Taking and Belief Attribution in Schizophrenia. MATTHIEU VILLATTE (Université de Picardie Jules Verne), Jean-Louis Monestès (Centre Hospitalier Ph. Pinel), Louise A. McHugh (University of Wales Swansea), Gwenolé Loas (Centre Hospitalier Ph. Pinel.)

Abstract: Impairment in the ability to attribute mental states is a characteristic feature of schizophrenia demonstrated in the field of cognitive psychology for more than a decade. Relational Frame Theory (RFT) has recently proposed a behavioral approach to this skill in terms of deictic relational responding and has proved efficient in the assessment as well as in the training of these repertoires. The current research aims to examine RFT predictions in psychosis by assessing deictic framing with perspective-taking and belief-attribution tasks in a group of 15 patients diagnosed with schizophrenia and in a group of aged matched controls. Results revealed poorer performance of the patients in responding in accordance with deictic frames. In the perspective-taking protocol, reversing and double reversing

relations produced the most important number of errors. No difference appeared between the two groups on simple perspective-taking. In the belief-attribution protocol, patients were as accurate as controls only on self-attribution of true belief, which indicates difficulties in relation to the interpersonal deictic frame and to logical not. Group effects remained significant even after controlling for IQ. Implications for the remediation of deficits in mental states attribution linked to psychosis are discussed.

Deictic Framing Protocols to Increase Discrimination of Own Behavior and Reduce Impulsive Behavior. CARMEN LUCIANO SORIANO (University Almería, Spain), Vanessa Sánchez (Universidad de Almería), Francisco José Ruiz Jiménez (University of Almería), Marisa Páez Blarrina (Instituto ACT), Olga Gutierrez Martinez (Universidad Autonoma de Barcelona), Rosa M. Vizcaíno (Universidad de Almería)

Abstract: Based on the effectiveness of the brief ACT protocol focused on the clarification of values and defusion components used with 5 at-risk adolescents (Gómez, Luciano, Páez, & Valdivia, 2007), the aim of the present study is to isolate the deictic framing protocol upon which both, the values and the defusion components, are based. Participants, either showing an onset or a chronic experiential avoidance regulation will participate (10 children, 10 adolescents showing different types of impulsive behavior and 10 psychotic adults). Baseline impulsive behavior and valued actions as well as AAQ and other questionnaires will be taken. Following that, a values clarification protocol plus an intensive deictic training protocol will be applied in two sessions (individual and group sessions). The deictic training protocol will be implemented by using an experimental task especially designed to manage clinical behavior equivalent to the forms taken by the experiential avoidance regulation that is present in the participant's repertoire. Finally, follow-up measures will be taken. Results will be discussed according to the verbal processes involved in the values clarification and defusion components of Acceptance and Commitment Therapy (Hayes, Strosahl, & Wilson, 1999).

#24 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 222 AB
CBM; Applied Behavior Analysis

A Behavior Analytic Methodology for Studying Psychotherapy: New Data on Functional Analytic Psychotherapy
Chair: Jonathan W. Kanter (Department of Psychology/University of Wisconsin,-Milwaukee)
Discussant: Glenn M. Callaghan (San Jose State University)

Abstract: A strength of behavior analysis is its focus on behavior as it occurs. Thus, Functional Analytic Psychotherapy presents a functional analysis of the psychotherapy situation that focuses on the moment-to-moment behavioral interaction between the client and therapist and how the therapist can shape client behavior in the moment. This level of analysis also lends itself to a methodology for the study of psychotherapy process and mechanisms of action that uniquely provides data useful to both the scientist and clinician. In this symposium, three studies using a moment-to-moment coding scheme for Functional Analytic Psychotherapy are presented. These studies examine FAP's mechanism, including a detailed analysis of a single FAP session, an analysis of several FAP successes and failures, and an analysis to determine the appropriate unit of analysis when coding FAP sessions. This coding analysis is presented as a uniquely behavior analytic method for studying the empirical basis of a psychotherapy approach, at the level of individual mechanism rather than group treatment outcome.

Enough is Enough: Determining Adequate Sampling Techniques for the FAPRS Coding System. SABRINA DARROW (University of Nevada, Reno), Jordan T. Bonow (University of Nevada, Reno), William C. Follette (University of Nevada Reno), Glenn M. Callaghan (San Jose State University)

Abstract: Functional Analytic Psychotherapy (FAP) is one treatment in the clinical behavior analysis tradition. In this radical behavioral approach to psychotherapy therapists attempt to shape the

interpersonal behaviors of clients in-vivo (i.e., within sessions). The Functional Analytic Psychotherapy Rating Scale (FAPRS; Callaghan, Follette, Ruckstuhl, & Linnerooth, 2008) is popularly used in the process and outcome research of FAP. The FAPRS is a coding system used to identify the function of therapist and client verbalizations on a turn-by-turn basis. When used to the fullest extent, all turns in a therapy session are assigned a code from the FAPRS. This allows FAP researchers to test hypotheses regarding the shaping process thought to occur during FAP sessions. Research of other coding systems for interpersonal interactions has suggested that only portions of the entire interactions taking place need to be coded in order to identify the processes occurring during those interactions. This study uses similar methodology in order to determine appropriate sampling techniques in the employment of the FAPRS. It is hoped that empirically generated sampling techniques will provide a less intensive alternative to the laborious process of coding entire therapy sessions.

Detailed Empirical Investigation of a Single Successful FAP Session. DANIEL WILLIAM MAITLAND (University of Wisconsin-Milwaukee), Jonathan W. Kanter (Department of Psychology/University of Wisconsin,-Milwaukee), Cristal E. Weeks (Department of Psychology/ University of Wisconsin-Milwaukee), David E. Baruch (University of Wisconsin-Milwaukee), Andrew Busch (Brown Medical School)

Abstract: One of the strengths of FAP is that it specifies its hypothesized mechanism of action in behavioral terms at the level of the moment-to-moment client-therapist interaction. This allows for precise, behavior analytic investigations of the therapeutic process to evaluate whether FAP's mechanism occurred in successful and unsuccessful cases. While previous analyses have focused on session-by-session data, the current analysis will explore a single FAP session, turn-by-turn. The goal will be to dissect the actual interaction in terms of the ideal FAP interaction suggested by FAP's mechanism. This presentation will be useful both as an example of behavior analytic research on FAP and as a clinical demonstration of FAP's mechanism of action in action.

A Process Analysis of Functional Analytic Psychotherapy's Mechanism of Change. CRISTAL E. WEEKS (Department of Psychology/ University of Wisconsin-Milwaukee), David E. Baruch (University of Wisconsin-Milwaukee), Laura C. Rusch (Univ of Wisconsin - Milwaukee), Jonathan W. Kanter (Department of Psychology/University of Wisconsin,-Milwaukee)

Abstract: A behavior analytic method for analyzing therapy sessions is to use a molecular coding approach that tracks therapist-client interactions on the moment-to-moment level by focusing on each turn of speech. Functional Analytic Psychotherapy (FAP), is a radical behavioral therapy which utilizes the moment-to-moment contingencies inherent in outpatient therapy by strategically applying contingent reinforcement to shape client behavior in-session (Baruch et al., in press). The FAP Rating System (FAPRS) was designed to measure turn-by-turn client and therapist behavior in order to investigate FAP's purported mechanism of change: therapist contingent responding. We used the FAPRS to code tapes from a non-concurrent, multiple baseline A/A +B single subject design exploring FAP's mechanism of change. The baseline phase consisted of assessment to identify idiographic target behavior for clients to track outside of session and FAP interventions excluding therapist contingent responding. At the phase shift, therapists were instructed to begin to contingently respond to CRB. Participants included five clients diagnosed with Major Depressive Disorder and one or more personality disorders. The current study will present the pending results of a FAPRS analysis of these sessions to explore the role of contingent responding in all five clients, which includes both successful and unsuccessful applications of FAP.

#25 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 222 C
CBM; Applied Behavior Analysis

ABA Interventions for Persons with Acquired Brain Injuries
Chair and Discussant: Michael P. Mozzoni (Learning Services NeuroBehavioral Institute of Colorado)

Abstract: Persons with Acquired Brain Injures (ABI) present with a variety of deficits and skills which makes each client unique. Applied Behavior Analysis (ABA) is suited to this challenge though its methodological use of the single subject design. These papers exhibit the robust application of ABA in a post acute clinical setting. The purpose of the first study was to determine if a behavioral approach to relaxation training (BRT) could benefit individuals who display significant agitation following a traumatic brain injury. The second study was concerned with SAFMEDS and reteaching a person correct tacting following ABI. The procedure was tailored by gradually increasing the number of stimulus cards in each deck and merging decks. The purpose was to see if it would result in faster acquisition of desired information (tacting). The purpose of the third study was to determine if a token system could be useful in decreasing clients' over-selectivity of staff.

Efficacy of Behavioral Relaxation Training for Individuals with Traumatic Brain. DIXIE EASTRIDGE (Learning Services NeuroBehavioral Institute of Colorado)

Abstract: The purpose of this study was to determine if a behavioral approach for relaxation training benefits individuals who display significant agitation following a traumatic brain injury. The study was based on the basic premise that "a relaxed person engages in overt motoric behavior that is characteristic of relaxation " and by practicing these overt skills they actually become relaxed. Results indicated that participants of this study who experienced disability following traumatic brain injury were able to learn relaxation using Poppen's Behavior Relaxation techniques. The first participant was able to achieve eight of ten postures rapidly. However, the rate the participant was able to learn and engage in relaxed postures in the training phase was significantly affected by medication changes. After the initial relaxation session, medication changes began that had a significant impact on the ability of the participant to remain in the relaxed positions. Following feedback in the first session, the participant was able to average 6.8 of the ten relaxed positions in a five minute session; medication changes began three days later that resulted in the individual being unable to remain in a five minute session in a relaxed position and the session ended after one minute

Precision Teaching and Traumatic Brain Injury. TAMRY L JUNTUNEN (The Chicago School of Professional Psychology)

Abstract: The purpose of this study was to assess the utility of SAFMEDS training on tacting in a 57-year-old Caucasian male with an acquired brain injury resulting from cardiac arrest secondary to electrocution who was 35 years post injury. Two primary SAFMEDS decks were used, each containing thirty-five cards. All cards displayed color pictures of items relating to activities of daily living. Correct responses were counted as any vocal response that would lead to acquisition of the desired item in a natural environment. The decks of cards were split into several decks. Varying amount of cards and time limits were used to evaluate which procedure works best in the TBI population. Results indicate that tailoring the exposure to each stimulus may result in faster acquisition of desired information. Smaller decks or increased exposure to stimuli was the best procedure for this individual. Results suggest that individuals with TBI may benefit from Precision Teaching methodology, specifically when the procedures are adapted to the individual client.

Use of a Token Economy to Increase Staff Acceptance in a Person with an Acquired Brain Injury. ABRAHAM SAENZ (Learning Services of Northern California)

Abstract: Persons with Acquired Brian Injuries (ABI) present with a variety of challenging behaviors. Frequently these challenging behaviors interfere with therapy, social relationships and community independence. Awareness deficits often result in poor cooperation and active resistance to rehabilitation interventions. When internal motivators cannot be accessed, external motivators may be used to increase cooperation. Cooperation with therapeutic instructions and safety precautions can make the difference between eventual independence and supervised living. In this study a token economy was used in a multiple baseline to decrease physical and verbal aggression and increase cooperation across 2 participants in a residential post acute treatment program. Frequent "cash in " opportunities and meaningful reinforcing activities arising from reinforcer assessments were critical to getting the clients to buy into the token system. Results indicate that staff training and consistent checks of therapeutic integrity are essential to program and client success.

#26 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 131 A
CSE/CBM; Service Delivery

Supporting Adults with Extreme Behavior Challenges in Community Settings: Practical and Conceptual Issues
Chair: Jeffrey C. Brittain (Pathways Community Mental Health)

Abstract: Providing applied behavior analysis support to persons with extreme behavior challenges in typical community settings is perhaps the most complicated and difficult task facing many clinicians and agencies, particularly in the public sector. Extreme behaviors (e.g., behaviors resulting in injuries to staff/consumers) often exceed the capacity of staff, programs, and settings which effectively meet the needs of nearly all others served by an agency. The process of developing solutions is influenced by multiple and often sharply conflicting forces, including state/agency administrative regulations, behavior analyst practice standards, individual and parent/guardian decision making, practical limitations within some communities, and various resource limitations. Solutions developed by a large public mental health agency are reviewed, highlighting changes in agency policy/focus as well as attempts to develop specific new support systems. Several common approaches to community treatment are examined in detail, with particular attention to concerns that emerge in practice, but are not typically acknowledged in policy and treatment negotiations. Suggestions for reconciling conflicting needs, priorities, and decisions are discussed.

When Difficulty Approaches Impossibility: Coping with Extreme Behavior Challenges in Typical Community Settings. DENISE CLARK (Pathways Community Mental Health)

Abstract: Persons engaging in extreme aggression, self-injury, and other behaviors posing safety risks strain treatment support systems capacities. Viewed from an applied behavior analysis perspective and addressed under ideal conditions, these behaviors can be difficult to treat. Immediate pressure builds around maintaining staff and consumer safety, a complicated clinical process that often requires providing increased staff training, additional clinical supports, and attempts to limit the use of emergency response options that have significant risks or detrimental effects (e.g., public safety, psychiatric hospitalization). Additional considerations present in the public mental health system and other typical contexts can create seemingly intractable situations. Administrative rules defining limitations and requirements on behavioral treatment can become seriously disconnected from clinical reality. High-level philosophical shifts, while laudable, may likewise over-reach current resources and may be contraindicated in extreme situations. Staffing, funding, community resources, and professional resources place practical limits on available support options. Guardian and individual decision making may further complicate this picture. Without careful guidance and thought, clinic decision making in these contexts can loose comprehensive focus and become seriously off course.

Preparing Group Home Staff to Succeed with Individuals Who Display Extremely Challenging Behaviors. JEFFREY C. BRITTAIN (Pathways Community Mental Health)

Abstract: State level policy changes limiting the use of physical management procedures, along with a mandate to document Positive Behavioral Supports (PBS), brought to light the need for changes in direct care worker training (DCW). DCWs and home managers need advanced training in PBS if they are to succeed in treating individuals with extremely challenging behaviors. An established PBS curriculum was selected and additional specialized topics such as: improving teamwork, developing reinforcing relationships, handling negativity and clarifying the process of developing behavior programs are woven in to the training. Effectiveness of behavior program implementation, decreasing the need for physical crisis management procedures, staff injury and turnover are overall goals of PBS training. This customized DCW training is a key component of preparation for work in a specialized group home designed to treat individuals with extreme behavioral challenges. The scope and importance of this training presented numerous logistical challenges regarding roll out, data collection, evaluation of skills and standardization of delivery. Presentation of effectiveness data suggest strengths and areas in need of further development in the training.

Re-engineering and Improving Community Treatment Options for Persons with Challenging Behaviors. Ralph L. Olson (Pathways Community Mental Health), Jeffrey C. Brittain (Pathways Community Mental Health), DENISE CLARK (Pathways Community Mental Health)

Abstract: Public mental health agencies commonly provide behavioral and other supports in a variety of community settings to persons with behavioral challenges. De-institutionalization, person-centered planning, and self-determination concepts have driven demand for individualized housing, smaller group homes, and other customized living arrangements. Behavioral supports delivered in these settings often produce highly variable results based on several key factors. These include the behavioral and other clinical support needs of the individual, general community characteristics, staffing arrangements, the array of supports that can be realistically orchestrated, and financial/administrative constraints. A four-county public mental health agency's history supporting persons in individualized and group home settings is reviewed in detail, highlighting problems and successes. Based on these experiences, new and better implementations of individualized and group home placements have been conceptualized. The process of creating new options is explored, with particular attention to features contributing to success.

Beyond Politics and Rhetoric: Moving Toward a Pragmatic Appraisal and Approach to Community Support Options. RALPH L. OLSON (Pathways Community Mental Health), Jeffrey C. Brittain (Pathways Community Mental Health), Denise Clark (Pathways Community Mental Health)

Abstract: As suggested at the outset of this symposium, many factors must be considered in designing and providing community-based behavioral supports for persons with extreme behavior challenges. Unfortunately, this endeavor is often hampered by a critical lack of information about, or outright rejection of, basic behavior analysis principles and practice standards. Instead, the process of developing specific support options becomes dominated by administrative and ideological emphases, often which seem inherently in conflict. Several unintended consequences impacting persons served and those supporting them commonly emerge, including breakdowns in skill development efforts, safety concerns, staffing difficulties, and an inability to provide effective ongoing monitoring. In some cases, support options identified as universally desirable and appropriate become a focus or mandate, at the expense of carefully analyzing their implementation and potentially serious drawbacks when considered case-by-case. Suggestions for bringing more order and clarity to this entire process are presented, emphasizing the need for education regarding behavior analysis practice and a more careful and expansive examination of support options.

#27 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 120 A
DDA/EAB; Applied Behavior Analysis

Recent Advances on Preference Assessment and Determinants of Choice
Chair: April S. Worsdell (May Institute)

Abstract: A wide variety of methods have been developed for identifying individual preferences for children and clinical populations that otherwise have difficulty in expressing meaningful preferences. These methods have correspondingly spawned an increasing applied literature on the factors that contribute to relative preferences and relative response allocation. The present series of studies extends both of these literatures in individuals with developmental disabilities and pre-school aged children. Two presentations offer refinements and adaptations of existing preference assessment methodologies towards: 1) balancing expediency and efficacy in the process of identifying effective reinforcers and, 2) comparing procedures for identifying negative reinforcers. A third presentation employs behavioral economic analysis to gauge the ability of several preference assessment formats to predict reinforcer value in the face of increasing response requirements. The final presentation adopts established reinforcer assessment methods to raise interesting questions about the relative contributions of response effort and reinforcer delay in contributing to children's preferences for varying reinforcement arrangements. Collectively, the studies are discussed in terms of their implications for arranging optimal therapeutic and educational environments.

Evaluation of a Progressive Model for Identifying Preferred Stimuli with Children Diagnosed with Developmental Disabilities. AMANDA KARSTEN (Western New England College), James E. Carr (Auburn University), Tracy L. Lepper (Western Michigan University)

Abstract: Preference assessments for individuals with disabilities differ along many dimensions, including time requirements for implementation and probability of identifying a hierarchy of preferred stimuli. Some methods of assessment are also more conducive to use with individuals who exhibit problem behavior or certain prerequisite skills. Inaccurate results and loss of valuable treatment time are among the risks associated with selecting ineffective or unnecessarily lengthy procedures. The purpose of the current investigation was to evaluate a progressive model for conducting preference assessments which incorporates many of the aforementioned considerations. Concurrent-operant reinforcer evaluations were used to verify assessment findings. Based on 17 participants completed to date, the majority (i.e., 76% of all participants) progressed to reinforcer evaluation following the initial multiple-stimulus without replacement (MSWO) assessment. The free-operant method was the second most commonly implemented approach (i.e., 18% of all participants). Subsequent reinforcer evaluations confirmed assessment findings in all but two cases. Interobserver agreement and procedural integrity data were collected for a minimum of 33% of assessment trials per participant and averaged at least 90%, respectively. Results from the investigation will be discussed in terms of the utility of this particular model and possibilities for the application of alternative algorithms to behavior analytic technologies.

A Comparison of Methods for Assessing Preference for Negative Reinforcers. ROBERT R. PABICO (Marcus Autism Center and Children's Healthcare of), Nathan A. Call (Marcus Autism Center and Emory University School of Medicine)

Abstract: In a recent study, (Call, Pabico, & Lomas, in press) potential negative reinforcers were identified for inclusion in functional analyses using average latency to the first instance of problem behavior. While this methodology shows promise for use in the assessment of problem behavior, it may be worthwhile to identify alternative methods for assessing preference for negative reinforcers. The purpose of the current study was to evaluate a paired stimulus methodology for evaluating preferences for potential negative reinforcers adapted from the preference assessment method described by Fisher et al. (1992). This methodology was compared and contrasted with that described by Call et al. in terms of

results, as well as the relative advantages and disadvantages of the two methods. Interobserver agreement data were collected for at least 20% of sessions and always exceeded 80% agreement.

Demand Curve Validation of Preference Assessment Predictions. DEREK D. REED (The May Institute), Jennifer Dawn Magnuson (The May Institute), Stefanie Fillers (May Institute), Shawn Vieira (May Institute), Hanna C. Rue (The May Institute), James K. Luiselli (The May Institute)

Abstract: This study examined the degree to which three formal preference assessments (i.e., paired-stimulus, multiple-stimulus without replacement, and a free-operant procedure) successfully identified reinforcers from six edibles in a subsequent reinforcement assessment. Across all three preference assessment types, accuracy in the identification of the top three reinforcers was 67%. A subsequent demand curve analysis was conducted using the entire hierarchy of low-, moderate-, and high-preferred edibles. Results are discussed with regards to the efficiency of preference assessments and the utility of progressive-ratio schedules in quickly identifying efficacious rewards.

A Systematic Evaluation of Response Effort and Reinforcer Delay on Choice Responding. AMY POLICK (Auburn University), James M. Johnston (Auburn University)

Abstract: A number of studies have investigated the effects of manipulating the physical effort required for an individual to emit a response. This research overwhelmingly shows that as force requirements increase, response rates decrease (Friman & Poling, 1995). However, the literature does not clarify the variables underlying the changes in responding after effort is applied. It is not clear whether increasing effort serves as a form of punishment or whether it merely delays access to reinforcement (i.e. effortful responses take longer to complete). We investigated the relations between physical effort and reinforcer delay and their effects on choice responding using a concurrent matching to sample task with three preschool-aged children. Results of the study showed that participants exhibited a stronger preference for low effort tasks when paired with high effort ones (M=96% response allocation) than they did for tasks resulting in immediate reinforcement versus a delay of 30 s (M=71%). The results extend the current research on response effort and reinforcer delay and provide a novel procedure for evaluating preference in a choice context.

#28 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 129 A
DDA/OBM; Service Delivery

Treatments Used to Develop a Structured Classroom for Dually-Diagnosed Adults in a Community Agency
Chair: Gabriela Sierra (Seguin Services)
Discussant: David A. Pyles (Chicago School of Professional Psychology)

Abstract: A new group was developed within a facility that provides services to adults with developmental disabilities to provide appropriate programming and supports for dually diagnosed individuals performing poorly in previous placements. These individuals were assigned to this group based on shared frequencies and severities of inappropriate behaviors. Group facilitators requested assistance in efforts to decrease behaviors targeted for reduction and increase rate of skill acquisition for these individuals. Consumers were interviewed and identified obtaining community employment as their ultimate program goal; however, review of current group programming did not correspond to those goals. Standardized assessments that identify current employment-related skill levels will be conducted. Programming will then be developed for each individual based on both assessments and employment goals. To ensure that the most favorable learning conditions were provided in the group, staff will be trained to: appropriately assess goal progress, deliver instruction effectively, reinforce appropriate classroom and social behavior, and manage the daily schedule. Trained observers will provide immediate vocal constructive/corrective and delayed written feedback to each group

facilitator for an entire day at least once per week. Data to be collected. Effects, implications, social significance, and suggestions for future research are discussed.

A Review of Assessments Used to Create Programs to Develop Job Skills. GABRIELA SIERRA (Seguin Services), Trista Robinson (Seguin Services)

Abstract: A new group was developed within a facility that provides services to adults with developmental disabilities to provide appropriate programming and supports for dually diagnosed individuals performing poorly in previous placements. All individuals identified obtaining a job and independence in the community as their main goals. A file review was completed for all individuals in the group to obtain information regarding current level of functioning and acquired skills. The review revealed that psychological assessments, employment profiles, and inventories for client and agency planning were completed. However, these evaluations did not provide information about the specific skills in each individual's repertoire. The need for a comprehensive assessment of skills was identified. Three assessments available for dually diagnosed adults to measure employability and independent living skills were reviewed and the results were compared to assess their applicability to develop specific programming. Benefits of programming such as acquiring prerequisite skills to obtain employment and level of supervision needed in community will be discussed.

Effects of Staff Training and Performance Feedback on Delivery of Instruction and Group Management. TRISTA ROBINSON (Seguin Services), Gabriela Sierra (Seguin Services)

Abstract: A new group was developed within a facility that provides services to adults with developmental disabilities to provide appropriate programming and supports for dually diagnosed individuals performing poorly in previous placements. Group facilitators requested assistance in efforts to decrease behaviors targeted for reduction and increase rate of skill acquisition for individuals in the group. Upon observation, it was revealed that group facilitators were either unable to or were not efficient in: accurately assessing individual skill levels and relevant goals, delivering effective instruction, reinforcing individual's appropriate classroom and social behavior, collecting data, and managing the daily schedule for the group. Based on these observations, goals and expectations for group facilitator performance were developed. Group facilitators were then trained in effective delivery of instruction, reinforcement of desired behavior, data collection, and schedule management, as well as informed of their own performance expectations. Trained observers collected data on staff performance for an entire day at least once per week and these observers provided both immediate vocal constructive/corrective feedback as well as delayed vocal and written constructive/corrective feedback to the facilitators. Effects, implications, social significance, and suggestions for future research are discussed.

Effects of a Structured Classroom on Skill Acquisition and Behaviors Targeted for Reduction. BRIAN ALHORN (The Chicago School of Professional Psychology), Renee Diane Quinnett (The Chicago School of Professional Psychology), Gabriela Sierra (Seguin Services), Trista Robinson (Seguin Services)

Abstract: A new group was developed within a facility that provides services to adults with developmental disabilities to provide appropriate programming and supports for dually diagnosed individuals performing poorly in previous placements. These individuals were assigned to this group based on shared frequencies and severities of inappropriate behaviors. Group facilitators requested assistance in efforts to decrease behaviors targeted for reduction and increase rate of skill acquisition for these individuals. Group and individual observations revealed that current programming was inappropriate for the majority of the individuals in the group in that programs were not assigned according to skill level, programs were not consistent with desired outcomes, and programs were not relevant to individual goals. It was also determined that the day's schedule was largely unstructured and group facilitators were not managing the group effectively. More appropriate programming was developed for each individual based on both assessments and individual employment goals. In addition to programming changes, group facilitators were trained to structure each day's activities and also more effectively manage the group. Effects of classroom structuring on individual skill acquisition and

frequency of behaviors targeted for reduction, as well as implications, social significance, and suggestions for future research, are discussed.

#29 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 128
DDA/AUT; Applied Behavior Analysis

Assessment and Treatment Behavior Maintained by Automatic Reinforcement
Chair: Louis P. Hagopian (Kennedy Krieger Institute)

Abstract: Although the assessment and treatment of problem behavior maintained by automatic reinforcement poses many challenges, interventions such as competing stimuli and response interruption continue to show promise. Presenters in the current symposium will review findings on the assessment and treatment of pica, motor stereotypy, and vocal stereotypy maintained by automatic reinforcement. Melissa Gonzalez from the Kennedy Krieger Institute will present data on the assessment of pica and a treatment demonstrating the use of competing stimuli and differential reinforcement of incompatible behavior (i.e., discarding of pica materials). Keira Moore from the New England Center for Children will present findings from a study examining the effectiveness of sensory integration (SI) therapy for the treatment of motor stereotypy which failed to demonstrate that SI was effective. Courtney Keegan from the May Institute will present a comparative analysis of treatments for vocal stereotypy using response interruption and redirection (RIRD) to engage in appropriate vocalizations versus RIRD to engage in physical demands. Jessica Barron from the New England Center for Children will present a comparative analysis of DRA with and without RIRD as a treatment for stereotypy while measuring collateral effects on performance and appropriate alternative behavior. Findings suggest that direct reductive procedures, such as RIRD, may be indicated for reducing automatically-reinforced stereotypy.

The Treatment of Pica with Competing Stimuli and Differential Reinforcement of an Incompatible Response. MELISSA GONZALEZ (Kennedy Krieger Institute), Louis P. Hagopian (Kennedy Krieger Institute)

Abstract: Behavior maintained by automatic reinforcement can be difficult to treat given that the specific source of reinforcement (i.e., source of stimulation or sensory attenuation) maintaining the response is difficult to precisely identify or directly control. Pica is a behavior that poses a high risk for injury. When maintained by automatic reinforcement this behavior may present unique challenges in terms accurate, yet safe behavioral assessment and effective treatment. The current study describes the assessment and treatment of pica in a female diagnosed with autism and severe intellectual disability. Functional analyses determined that pica was maintained by automatic reinforcement. Initial treatment evaluations indicated that competing stimuli were not effective in reducing pica to clinically significant levels. The addition of response blocking reduced incidents of pica, but did not decrease the rate at which she picked up items from the floor. A treatment incorporating differential reinforcement of an incompatible behavior (discarding pica materials) was effective in reducing pica. This treatment was generalized across staff, settings, and pica items varying in degrees of preference.

Sensory Integration as a Treatment for Automatically Reinforced Behavior. KEIRA M MOORE (New England Center for Children), Catia Cividini-Motta (New England Center for Children), Jennifer Dashner (New England Center for Children), Dana Justice (New England Center for Children), Kathy Clark (New England Center for Children), William H. Ahearn (New England Center for Children)

Abstract: According to sensory integration (SI) theory, autism is caused by an individual's inability to integrate and adaptively respond to sensory input (Ayres, 2005). It can be presumed that SI would be most effective for behavior maintained by sensory consequences and if it is effective then it is likely due to SI serving as an abolishing operation. Two students with automatically reinforced motor stereotypy and autism participated in this study. Following functional analysis, an Occupational Therapist selected

sensory activities to present to the participants for SI. These items were also assessed to determine whether they competed with motor stereotypy by providing access to the items and recording stereotypy and engagement. The effect of SI on stereotypy was evaluated in an ABAB-type design. Stereotypy was measured twice daily, 2-3 times per week during baseline and treatment. SI was implemented by providing access to the items on a daily basis 6 to 7 times a day for 10-15 minutes every hour of the school day. Results showed that the sensory diet was not successful in decreasing target behavior for either participant. The results of this study do not support SI as an effective treatment approach.

Further Evaluation of Response Interruption as a Treatment for Vocal Stereotypy. COURTNEY L KEEGAN (May Institute), April S. Worsdell (May Institute), Philip Cook (May Institute), Meghan M. Holligan Whitney (May Institute), Sandra G. Rivers (May Institute), Ryan Schweck (May Institute)

Abstract: The occurrence of vocal stereotypy often interferes with learning and socialization in children with autism; as a result, it is important to identify interventions that are effective in reducing this behavior. In a recent study, Ahearn et al. (2007) successfully decreased the vocal stereotypy of four children with autism with a response interruption and redirection (RIRD) procedure involving the contingent delivery of vocal demands. The purpose of this study will be to extend the findings of Ahearn et al. by comparing two treatments for automatically-maintained vocal stereotypy. In the first intervention, vocal stereotypy will be interrupted by an immediate redirection to engage in appropriate vocalizations (i.e., Vocal RIRD); the second intervention will involve the interruption of vocal stereotypy with a redirection to engage in physical demands (i.e., Physical RIRD). Currently, two children with autism are in various stages of data collection, and we expect 1-2 additional children to participate. Researchers anticipate one of two possible results: (a) one RIRD intervention will be more effective than the other in suppressing vocal stereotypy; or (b) both Vocal RIRD and Physical RIRD will be equally effective at reducing vocal stereotypy.

Comparison of Differential Reinforcement of Alternative Behavior Alone and in Combination with Response Interruption and Redirection for Treating Automatically-Reinforced Stereotypy. JESSICA L. BARRON (The New England Center for Children), Eileen M. Roscoe (New England Center for Children), Jason C. Bourret (New England Center for Children), Gesell Gavidia (New England Center for Children)

Abstract: Response interruption and redirection (RIRD) alone and in combination with reinforcement-based interventions have been effective in reducing automatically-reinforced stereotypy. However, it is unclear whether differential reinforcement of an alternative behavior (DRA) alone would be effective in decreasing stereotypy. In addition, it is unclear whether the combination of DRA and redirection may affect appropriate alternative responding. The purpose of this study was to evaluate the relative effectiveness of DRA alone and in combination with RIRD as treatment for stereotypy while measuring collateral effects on accuracy and rate of completion of appropriate alternative behavior. Three individuals, with an autism spectrum disorder, who exhibited motor stereotypy maintained by automatic reinforcement, participated. The effects of DRA alone and DRA with RIRD were evaluated using a combination of reversal and multielement designs. During DRA, a high preference edible was delivered contingent on an appropriate academic response, and no programmed consequences were provided for motor stereotypy. During DRA with RIRD, a redirection procedure was added, which involved interruption and presentation of instructions to engage in motor compliances contingent on stereotypy. Results suggest that direct reductive procedures, such as RIRD, may be necessary for reducing automatically-reinforced stereotypy. However, RIRD did not negatively impact academic performance.

#30 Paper Session

5/23/2009
1:00 p.m. - 2:20 p.m.
North 132 BC
DEV

Behavior Analysis of Aging and Health Issues
Chair: Celia Wolk Gershenson (University of Minnesota)

Role of Mental Health Provider in End-of-Life Care. (Service Delivery) YASH P. MANCHANDA (Retired- Part Time Practice)

Abstract: Culturally diverse and the aging population in Developmental Centers of this country requires new skills for the Mental Health Providers. This presentation based upon ELNEC (City of Hope/AACN) conference and Internet-based Education on End-of-Life Issues for Mental Health Providers, developed by eNursing llc (www.enursingllc.com) with CE from APA provides an overview of the role of a Mental Health Providers at the End-Of-Life. The topics include: Principles of Palliative Care, Pain/non-pain Management, and vignettes on cultural/ethical issues and bereavement.

Preference and Reinforcing Stimuli in Patients with Alzheimer's Dementia. (Applied Behavior Analysis) JAVIER VIRUÉS-ORTEGA (ABA SPAIN)

Abstract: Little research efforts are being devoted to understand the behavioral features of medical syndromes. Alzheimer's dementia is a neurodegenerative disease that involves a number of behavioral features that have not yet been studied. The aging of the Western world along with increases of life expectancy have set the prevalence of Alzheimer's dementia on the raise. Service demand in this area has also grown consistently. However, basic knowledge and behavioral technology are lacking. Increased behavior problem and loss of stimulus control are just some of the features that need to be elaborated behaviorally. A basic issue but highly relevant to intervention involves the assessment and identification of effective reinforcers for this population. This study presents a preference assessment procedure adapted to highly disabled Alzheimer's dementia patients. The procedure is based upon systematic preference assessment methods already developed for non-demented populations. Preference of a wide range of stimuli pertaining to different categories (social, leisure, edible) was assessed. In addition, the effect of contingent reinforcement of highly preferred stimuli upon socially significant behaviors was explored.

The Use of Behavioral Methods in Health Maintenance Programs. (Applied Behavior Analysis) PARSLA VINTERE (Queens College, CUNY)

Abstract: There is growing concern that physical inactivity increases the risk of many chronic disorders. One of the primary prevention modalities for chronic health conditions is counseling people at risk to become more physically active. Despite the fact that physical activity might be a very effective primary preventive medicine, its use is not that common in primary care settings. Three major obstacles to implementing an effective counseling to people with chronic health conditions that are often mention are (a) insufficient time for patient education; (b) lack of necessary skills to provide this type of counseling; and (c) lack of physical activity–related preventive health maintenance and treatment programs. The purpose of this paper is to discuss the potential contribution the behavioral methods could provide in developing health maintenance programs that could be implemented in primary care settings. The main purpose of such program would be to educate sedentary patients, children or adults, in making healthy lifestyle changes. The argument is made for a new niche for the behavioral analysts in preventive medicine.

Aging Well: Life-Span Development, Selective Optimization and Compensation, and Behavior Analysis (Theory) CELIA WOLK GERSHENSON (University of Minnesota)

Abstract: Behavior Analysts have long ignored the area of normal aging as a fertile field for basic and applied research. Developments in the psychological study of normal aging warrant our attention. The behavioral variables that contribute to aging successfully or optimally is a focus for much of current aging research and theory. The goal of this presentation is to highlight the relationship between behavior analysis and models of aging successfully. The paper will begin with a brief review and of the principles of Life-Span Development which includes such concepts as multidirectionality, plasticity, modifiability, among others. A description of P. B. Baltes' psychological model for aging optimally, Selective Optimization and Compensation, will follow. The presentation will conclude with examples from the experimental analysis literature that bear directly on the development of behavior necessary for aging successfully. Illustrations will touch on principles of reinforcement, response variability, choice behavior and related areas of research. Research questions that should be of interest to Behavior Analysts will be suggested. Problems associated with the design of such research will be mentioned.

#31 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 228
EAB; Experimental Analysis

Behavioral Momentum: Translational Research and Practice
Chair and Discussant: Timothy D. Hackenberg (University of Florida)

Abstract: Behavioral momentum concepts have provided a rich theoretical and analytic context for understanding the dynamic relationships between stimuli, reinforcers, and behavior. The purpose of this symposium is to bridge laboratory and applied research utilizing momentum concepts. Nevin's presentation provides an overview of key concepts in momentum theory, and their generality across species and settings. Mace and McComas describe how momentum concepts have inspired new conceptualizations and treatments of problem behavior in applied settings. Momentum concepts have proven especially valuable in the analysis of concurrent operants, as Mace shows in his analysis of DRA procedures, and McComas shows in her analysis of compliance. Such findings not only expand the generality of momentum theory, they suggest important new research avenues. As such, the presentations illustrate the bidirectional interplay between laboratory and applied research.

Stimuli, Reinforcers, and the Persistence of Behavior. JOHN A. NEVIN (University of New Hampshire)

Abstract: Behavioral momentum theory has proposed that although response rate in the steady state depends on response-reinforcer contingencies, the resistance to change of responding depends on the relation between environmental stimuli and reinforcers. I will review some basic research on resistance to change that demonstrates the power of stimulus-reinforcer relations and their generality across settings, species, responses, and reinforcers. Applied behavior analyses must take stimulus-reinforcer relations as well as response-reinforcer contingencies into account.

Differential Reinforcement of Alternative Behavior (DRA): Some Perverse Effects and How to Avoid Them. F. CHARLES MACE (University of Southern Maine)

Abstract: I will describe applied analyses where the use of DRA to reduce the frequency of undesirable behavior such as food-stealing and aggression also increased their persistence. Studies with lever pressing in rats and with disruptive behavior in developmentally disabled humans suggest that providing reinforcers for alternative behavior in the presence of a distinctively different stimulus prevents this increase in persistence.

The Effects of Stimulus Control on the Persistence of Negatively-Reinforced Problem Behavior and Compliance. JENNIFER J. MCCOMAS (University of Minnesota)

Abstract: In the context of instructional demands, problem behavior and compliance can be considered concurrent operants. Of applied interest is increasing one behavior (i.e., compliance) while decreasing the other (i.e., problem behavior). Strategic arrangement of reinforcement can alter stimulus control of each response alternative, as well as influence generalization and maintenance of observed effects. A case study will be presented in which an adult with developmental disabilities and negatively reinforced aggressive and destructive behavior refused to comply with instructional demands. Delivery of noncontingent attention and edibles combined with edibles contingent on compliance resulted in an increase in compliance and virtual elimination of problem behavior. The effects persisted when treatment was withdrawn but did not fully generalize to a novel therapist and no effects were observed with novel tasks. Results are discussed in terms of stimulus control and behavioral persistence.

#32 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 226 AB
EAB/EDC; Experimental Analysis

New Evidence of the Sources of Conditioned Reinforcement for Observing Responses
Chair: Nirvana Pistoljevic (Teachers College, Columbia University)
Discussant: Jessica Singer-Dudek (Teachers College, CU and CABAS)

Abstract: This symposium will present new research related to the acquisition of conditioned reinforcement and emulation as a function of observation. The first 2 papers will outline new research regarding the role of both the peer and the experimenter during an observational intervention which has been demonstrated to successfully convert neutral stimuli to conditioned reinforcers. The third paper will present new research regarding the induction of emulation in typically developing 2-year-olds. All three papers will be discussed in terms of their utility for informing new research on the sources of conditioned reinforcement for observing responses.

The Role of the Experimenter in the Emergence of Conditioned Reinforcement from Observation. R. Douglas Greer (Columbia University Graduate School and Teachers College), MICHELLE L. ZRINZO (Teachers College, Columbia University)

Abstract: An experiment was conducted that tested the effects of the presence of an experimenter on the acquisition of conditioned reinforcement as a function of observation with three preschool age children for whom metal washers did not function to reinforce performance or learning tasks. A counterbalanced reversal design was implemented for the pre-intervention performance tasks and a pre-intervention baseline was implemented for learning tasks in order to test the reinforcing effects of the washers. The intervention consisted of an automated device delivering the neutral stimuli to a peer confederate's translucent plastic cup (in the participants' view) while an identical cup in front of the participants remained empty. Participants were not aware that the experimenter was present during the observational intervention as she was positioned behind a partition. Participants completed a performance task next to a peer confederate separated by another partition. The experimenter dropped a metal washer down an opaque chute into a cup located on the desk in front of the peer confederate contingent upon participant responding. The participants were able to observe the peer confederate receive these metal washers while they did not receive them at any point. Following the intervention, post-intervention assessments for performance and learning tasks were re-implemented in order to determine the effects of the intervention on the dependent variables.

The Role of Peers in the Emergence of Conditioned Reinforcement from Observation. R. Douglas Greer (Columbia University Graduate School and Teachers College), Jessica Singer-Dudek (Teachers College, CU and CABAS), MARA KATRA OBLAK (Teachers College, Columbia University)

Abstract: We used a delayed multiple baseline design across participants to determine the role of the peer in an observational intervention on the emergence of conditioned reinforcers. Four preschool students with and without developmental delays served as the participants for this experiment. Prior to the experiment, small pieces of string (delivered into translucent plastic cups) did not function as conditioned reinforcers for performance or learning tasks for any of the participants. An observational intervention was conducted, during which a performance task was presented to the participant and no peer confederate was present. During the return to pre-intervention conditions, the data showed that the strings were not conditioned as reinforcers. A second observational intervention was conducted in which a peer confederate was present, seated next to the participant but separated by an opaque partition, so that each could see each other's head, shoulders, and cup, but not the task each performed. The observational intervention ended when the target students began requesting or manding for strings, either vocally or by attempting to look at or take the peer's string. A return to the performance and acquisition tasks following the observational intervention demonstrated that strings were conditioned as reinforcers only when the peer confederate was present.

The Induction of Emulation in Typically Developing 2-Year-Olds. R. Douglas Greer (Columbia University Graduate School and Teachers College), MINDY BUNYA ROTHSTEIN (Teachers College Columbia University)

Abstract: Research has demonstrated that typically developing children do not naturally emulate. Instead, children imitate others. In particular, when compared with chimpanzees, human children imitate while chimpanzees emulate. This study investigated emulation in typically developing 2-year-old children. A counterbalanced delayed multiple probe design was utilized across participants to compare a "trial and error " treatment package to instruction in object use imitation. Baseline conditions tested for emulation using apparatuses that housed reinforcers for the participants. Treatment conditions compared and "trial and error " treatment package to instruction in object use imitation to determine which procedure induced emulation in participants.

#33 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 227 BC
EAB; Experimental Analysis

BIG SIG Symposium 2: Maintaining Variables of Gambling Behavior
Chair: Mary Ellen Garner (Southern Illinois University)
Discussant: Lindsay Beth Vick (Southern Illinois University)

Abstract: Variables which contribute to continued engagement of gambling behavior are numerous. The present symposium is dedication to the further investigation of those maintaining variables with respect to gambling behavior by offering an experimental analysis of them. Ways in which we can address these potentially problematic maintaining variables via treatment are offered.

Alcohol as a Discriminative Stimulus for Gambling Behavior. ELLEN MEIER (University of North Dakota), Cody Link (University of North Dakota), Jeffrey N. Weatherly (University of North Dakota)

Abstract: The present study was an attempt to produce alcohol discrimination when gambling served as the dependent variable. Twelve non-pathological participants experienced two training sessions in which they consumed either alcohol or a placebo. They then played two slot-machine simulations, with one or the other paying out at a substantially higher rate depending on which beverage had been consumed. Participants then experienced two test sessions, again consuming either alcohol or a placebo. In these sessions, participants could freely choose between the slot-machine simulations, which were programmed to pay out at identical rates. Results demonstrated that participants gambling during the test sessions

varied as a function of beverage consumed. These results have implications for the role of substance use in the context of gambling.

Investigation of the Near-Miss Effect in a Game of Roulette. ADAM D. HAHS (Southern Illinois University), Mark R. Dixon (Southern Illinois University), Nicholas Mui Ker Lik (Southern Illinois University), Becky L. Nastally (Southern Illinois University)

Abstract: The present study was conducted in order to extend the literature on the near-miss effect in games of chance. Specifically, the study sought to investigate the near-miss effect in the game of roulette. Previous research has shown not only that participants rate near-miss losses closer to a win than non near-miss losses, but also that they play for more trials overall. Participants for the present study played on a modified version of roulette. They were asked to record their behavior on 4 dimensions of behavior which include their bet placement, the actual outcome, whether they won or not, and their closeness to winning rating. Results were discussed with respect to the near-miss effect in relation to typical gamblers' behavior.

Gambling as a Verbal Event: Transformation of Slot Machine Response Functions in Accordance with Derived Comparative Relations. ALICE E HOON (Swansea University), Simon Dymond (Swansea University)

Abstract: Gambling behavior is likely maintained, at least in part, by verbal stimulus functions that may interact with, or override, programmed reinforcement contingencies. Contemporary behavior-analytic research on derived relational responding and the transformation of stimulus functions provides a means of investigating this issue. The present study sought to demonstrate a transformation of slot machine gambling functions in accordance with derived comparative (more than/less than) relations in novice gamblers. Participants were first exposed to a non-arbitrary relational training task designed to establish contextual cues for more-than and less-than relations, respectively. Next, the cues were employed in an arbitrary relational training task to establish five-member relational network. Participants then played a slot machine labeled C, a low payout probability slot machine, and a slot machine labeled with the novel stimulus X, a high payout probability slot machine. Finally, the test for transformation of functions involved presentations of pairs of stimuli from the relational network under extinction. The majority of participants demonstrated the predicted transformation of functions by consistently selecting the higher-ranking stimulus. The implications of the findings for contemporary behavior-analytic research on gambling are discussed.

#34 Paper Session

5/23/2009
1:00 p.m. - 2:20 p.m.
North 225
EAB

Experimental Analysis of Human Behavior I
Chair: Vennessa L. Walker (West Virginia University)

Simple Discrimination, Specific and Differential Reinforcement to Each Class in Teaching Reading. (Experimental Analysis) CAMILA DOMENICONI (Universidade Federal de São Carlos), Laura Rabelo (Universidade Federal de São Carlos), Jaylsan Castro (Universidade Federal de São Carlos)

Abstract: Stimulus equivalence paradigm traditionally uses conditional discrimination training to establish arbitrary relations amongst stimuli. One relevant proposal of ampliating this paradigm is to use training procedures based on simple discrimination, including different and specific reinforcers to each trained class. The present study intended to investigate the efficiency of a procedure based on the mentioned alterations to teach isolated words reading. Nine children aged six to ten years old participated on simple discrimination training with differential and specific reinforcement to each stimuli class. All participants read none of the 15 words displayed on pre-test. Twelve printed words and the

correspondent figure were used as the stimuli set and they were presented in a simple and simultaneous discrimination setting (two printed words or two figures). Post-test results showed that eight children presented increased reading results with percentage varying from 20 a 80%. The post test results of figure-printed word/printed word-figure relations were on average 81,1%, also indicating a significative improvement on it if compared with the mean obtained from the pre-test (56,6%). Probably training with less words per block of trials and thus, with a smaller variety of reinforcers, could be more effective to class emergency concerning printed word and figures.

Number and Language- Comparing Human and Nonhuman Numerical Discrimination Performance. (Experimental Analysis) LAVINIA CM TAN (University of Canterbury), Randolph C. Grace (University of Canterbury), Anthony P. McLean (Canterbury University)

Abstract: We investigated the performance of humans in a verbal and nonverbal numerical discrimination task, and examined similarities and differences between humans and nonhumans. Each trial in this procedure began with a sample phase, in which a sequence of randomly ordered green and red pictures of common objects was presented. Subjects were required to monitor the number of red pictures presented during the sample phase, and report the number in a following response phase, using one of three response types: 1) Reproduction in key-presses, 2) Categorization as "large " or "small " or 3) Report. Participants were randomly assigned to two groups, either a verbal counting group- in which participants were required to say out loud, as each picture was presented, the number of red pictures already seen- or a non-verbal counting group- in which participants were prevented from counting verbally by being required to name each object presented. The nature of responding in this task will be discussed and compared with findings from previous experiments with nonhuman animals.

Effects of Rates of Feedback and Reinforcement on Fluency Outcomes. (Experimental Analysis) VENNESSA L. WALKER (West Virginia Wesleyan College), Philip N. Chase (Cambridge Center for Behavioral Studies)

Abstract: Precision teaching claims to produce fluency outcomes such as stability, retention, and adduction, but the critical components of precision teaching are unclear. Ten middle-school students were assigned to receive feedback and token reinforcement either every 1 min (high rate) or every 15 min (low rate). Subjects used a computer program to learn 5 basic algebra skills at high rates and high accuracy. Subjects were yoked with a partner for practice so that each member of the pair completed the same number of items per skill. Subjects completed cumulative review worksheets and then were tested for stability, adduction, and retention. Results suggest that a high rate of feedback and reinforcement facilitates faster acquisition of skills as well as better performance on cumulative reviews, stability, and retention tests compared to low rate. Subjects were generally unable to complete the adduction items, however, suggesting that the current procedures may be inadequate for producing generalization of skills.

#35 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 122 BC
EDC/DDA; Applied Behavior Analysis

Analysis and Treatment of Problem Behavior in School Settings
Chair: Bryan J. Davey (ACCEL)
Discussant: Stephanie M. Peterson (Idaho State University)

Abstract: The symposium will highlight the application of functional analysis methodology in public school settings. The session will begin with a brief history and an overview of the technological framework of functional behavior assessment currently used in public schools. This presentation will be followed by a literature review of 53 empirical studies that described functional behavioral assessments. These studies included structural analyses or functional analyses, conducted on students with identified disabilities included in the Individuals with Disabilities Education Act of 2004. Population characteristics, educational placement,

target behaviors, functional behavior assessment methodologies and outcomes, and treatment selection and outcomes will be presented. The symposium will conclude with an in-depth examination conceptualized using an evidence-based practice framework. Specifically, categorical function-based treatments will be examined to determine whether they may be considered as an evidence-based practice based one organization's standards. The presentations address analyses and interventions responsive to the dynamic environment of public school settings.

An Overview of the Technological Framework for Conducting Functional Behavior Assessment in School Settings. ROBERT PENNINGTON (University of Kentucky), Donald M. Stenhoff (University of Kentucky), Bryan J. Davey (ACCEL)

Abstract: Legislation mandates using functional behavior assessment (FBA) for students with disabilities when their problem behavior impedes learning or serves as an impetus for a change in educational placement (Individuals with Disabilities Education Act, 2004). As a result, there has been an increased focus on the development of sound technologies for conducting FBA in school settings. FBA generally involves the (a) development of an operational definition of a problem behavior, (b) determination of antecedent events that are reliably present during the occurrence and nonoccurrence of the problem behavior, and (c) the identification of consequent events that serve to maintain the problem behavior. Interventionists use the data gathered from FBA to build behavior intervention plans that are directly linked to variables maintaining the problem behavior. The purpose of this session is to describe the most current technological framework for conducting FBA in school settings. The presenter will describe the continuum of FBA technology used in school settings and the procedures employed at each level.

FBA Including Experimental Manipulations in Public School Settings. BRYAN J. DAVEY (ACCEL), Donald M. Stenhoff (University of Kentucky), Robert Pennington (University of Kentucky)

Abstract: The presentation examines the research literature on functional behavioral assessments that included experimental manipulations (e.g., functional analyses) conducted in special education settings within public schools. While it is true that the majority of published research that utilizes such analyses is conducted in hospitals and institutional settings (see Hanley, Iwata, & McCord, 2003), a growing literature base is evolving on functional behavioral assessment that included experimental manipulations within special education settings within public schools. The investigators sought a better understanding of the methodologies used to asses target behaviors, intervention selection, and intervention outcomes.

The purpose of this presentation is to examine experimental analyses conducted in public school, special education settings. This review examined participants receiving FBA services, their educational placements, target behaviors which lead to assessment, and practitioners/researchers conducting assessments within public schools. Data were collected on population characteristics such as disability category, educational placement, functional behavior assessment methodologies and outcomes. Additionally, data were collected, when provided, on treatment selection and outcomes. Results are discussed in terms of current trends in the literature, and areas in which future research is necessary.

An Analysis of Function-Based Treatments in Public School Settings Using an Evidence-Based Practice Framework. DONALD M. STENHOFF (University of Kentucky), Bryan J. Davey (ACCEL), Robert Pennington (University of Kentucky)

Abstract: The No Child Left Behind Act and the Individuals with Disabilities Education Improvement Act 2004 (IDEA) require school personnel to use evidence-based practices in school settings. Additionally, IDEA mandates the use Functional Behavioral Assessment (FBA) by district personnel under certain circumstances, including patterns of student behavior that are likely to cause harm to themselves, other students, and staff. While there is a diverse collection of indirect and direct FBA methods, the experimental components of FBA are limited to structural and/or functional analyses. The purpose of these components is to indentify the function of problem behavior. While there are several studies supporting the effectiveness of function-based interventions, it is important that the outcomes are analyzed in an evidence-based framework. This provides school personnel support in selecting interventions. Several professional organizations have conceptualized standards to identify evidenced-

based practices in research. The purpose of this presentation is to describe the outcomes of a FBA literature review within an evidence-based practice framework. Specifically, the experimental components of FBA and the outcomes will be assessed to determine the extent to which they may be classified as an evidence-based practice.

#36 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 121 A
EDC; Applied Behavior Analysis

Recent Developments in Brief Experimental Analysis of Academic Performance
Chair: Matthew Burns (University of Minnesota)
Discussant: Brian K. Martens (Syracuse University)

Abstract: Brief experimental analysis (BEA) of academic performance is a technology that has been used to identify effective individualized interventions for students with academic difficulties and has been applied primarily to reading fluency. However, the development and application of this technology is in its infancy. This symposium will present some recent developments in the application of this technology. Matt Burns will present the first paper that will outline the utility of BEAs for math skills. Next, David Parker will present a paper describing a comparison of the effects of BED-identified interventions with the effects of the district summer school curriculum on reading fluency for a large group of elementary age summer school students in an urban setting. Finally, Breanne Byiers will present the results of a study that addressed reading skills of 6th grade students in an urban setting. Brian Martens will discuss the papers and provide ideas for future research.

Functionally Meaningful Indicators of Math Competence for Experimental Analyses of Math Skills. MATTHEW BURNS (University of Minnesota), Amanda M. VanDerHeyden (Education Research and Consulting, Inc.)

Abstract: The presentation presents the utility of various curriculum-based assessment and measurement estimates of mathematics performance for predicting functional outcomes (i.e., retention of learned skills over time and faster learning of related content in the future) for children in grades 2-5. All children participated in a standardized intervention and skills were monitored on a regular basis with three measurements. Each week children completed a timed probe of the skill for which intervention was currently occurring and a timed probe of previously mastered skills from the sequence of computational skill objectives. Each month, all children completed a timed probe of mathematics skills representing computational skills that students were expected to master by year's end at each grade level. At all grade levels, learning a skill that appeared early in the hierarchy or sequence of skills related positively to learning of future related and more complex computational skills. Fluency criteria were specified that predicted retention of the skill over several months. The application of these findings to experimental analysis of academic behavior will be discussed.

Systematic Analysis and Treatment for Reading Fluency. BREANNE JUNE BYIERS (University of Minnesota), Jennifer J. McComas (University of Minnesota), David Parker (University of Minnesota), Jodie Mettee (University of Minnesota), Josh Goldberg (University of Minnesota), Mimi L. McDonnell (University of Minnesota)

Abstract: The purpose of this study was to test the effects of individualized supplemental reading instruction on sustained oral reading. Participants were 6th grade students identified as having oral reading fluency deficits on grade level reading materials. Individualized instructional reading strategies were identified for 14 students based on the results of brief experimental analyses (BEA) in which incentives and levels of modeling were tested. These students received 1:1 tutoring for 30 min per day, approximately 3 days per week using the BEA-identified instructional strategies. Standardized timed reading passages were used to compare oral reading fluency from pre-intervention and following 6

months of tutoring. These results were compared with (a) the performance of 9 students at the same school who also displayed oral reading fluency deficits but were not provided supplemental instruction, and (b) the expected growth in reading fluency for 6th graders (Hasbrouk & Tindal, 2006). The participants showed an average increase of 1.94 words per week, far exceeding expected and non-participant growth rates. These results suggest that individualized reading instruction based on BEA results can be effective in improving oral reading fluency for students with identified reading deficits.

An Assessment and Application of Brief Experimental Analysis for Reading Fluency. DAVID PARKER (University of Minnesota), Jennifer J. McComas (University of Minnesota), Dana Wagner (University of Minnesota), Jessica L. Cherne (University of Minnesota), Emily R. Monn (University of Minnesota), Mimi L. McDonnell (University of Minnesota)

Abstract: The purpose of the current study was to extend support for the use of brief experimental analysis (BEA) procedures with oral reading fluency. Participating 1st through 5th graders in a 4-week summer school program received one of three treatment conditions. Two conditions consisted of interventions based fully or partially on the results of BEAs in which incentives and levels of modeling were tested. A third condition consisting of the district summer school curriculum served as a control. All students in the two treatment groups received 1:1 tutoring for 30 min per day, 4 days per week. Students who received treatment based solely on BEA-identified interventions performed significantly better than students in the control group, whereas students in the partial-BEA condition did not. Results for student response to intervention within the dual discrepancy model (Fuchs, 2003) are also reported. The findings are discussed in terms of the utility of BEA procedures in brief (i.e., 4 week) designs as well as for abbreviated interventions for elementary age students in an urban setting.

#37 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 122 A
EDC/TPC; Applied Behavior Analysis

Producing Generative Outcomes, Part 1: Instructional Innovations
Chair: Kimberley L. M. Zonneveld (University of Nevada, Reno)

Abstract: Producing generalized effects serves as a primary goal for applied behavior analysts. However, such a goal often occurs as an after-thought rather than as an explicitly programmed outcome. The papers included in the current symposium will outline four instructional strategies explicitly designed to produce generative repertoires with learners in academic settings. One paper will illustrate the benefits of using nonsense words for the establishment of a generalized spelling repertoire. The establishment of a generative computation repertoire produced through the training of math fact families will be outlined in a second paper. A third paper will describe a relational learning program used to establish emergent comprehension skills in students with language-based deficits. The final paper will articulate how an instructional control program was used to establish generalized attending and self-awareness skills with a learner, which resulted in a transformation of that learner's overall teach-ability. All papers will include outcome data obtained with learners attending a private learning center. Future research directions stemming from these clinical outcomes will be offered.

Generalized Decoding Repertoire. MARIA T. STEVENSON (University of Nevada, Reno - student), Kimberly Nix Berens (Center for Advanced Learning, Inc.)

Abstract: The present study utilized the standard celeration chart to determine if participants could generalize a decoding repertoire to learn how to sound out and read words. Specifically, the authors evaluated if participants could generalize the phonetic rules of speech by learning how to sound out nonsense words (e.g., fic, sul) to real words without being directly taught how to read real words. Participants were children who were not able to read or decode words. During the training condition, participants were taught to decode and read nonsense words (e.g., fic, sul). In addition, probes were conducted each week to determine if participants were able to generalize the phonetic rules learned

during the training condition to real words. Additional pre/post assessment to real words that participants were not exposed to during training or probes were utilized to further assess their ability to decode and read words.

Creating a Learning Context for Generative Outcomes. TIMOTHY C. FULLER (Washoe County School District), Kendra L. Rickard (University of Nevada, Reno - Center for Advanced L), Kimberly Nix Berens (Center for Advanced Learning, Inc.)

Abstract: Programming for generative learning outcomes is an advantageous goal for those in any instructional setting. The present paper will outline how standard measurement practices can lead to the design of an instructional context, which promotes generative outcomes. A conceptual analysis of this instructional context will be outlined and data from several students will be used to support these conceptualizations. More specifically, the emergence of self-awareness and generalized forms of attending will be highlighted as products of an intervention designed to increase instructional control.

Establishing the Components of Comprehension: A Preliminary Investigation into the Remediation of Comprehension Deficits. CYNTHIA CARDENAS (University of Nevada, Reno), Kendra L. Rickard (University of Nevada, Reno - Center for Advanced L), Kimberly Nix Berens (Center for Advanced Learning, Inc.)

Abstract: Reading fluency has been implicated as a critical factor in the remediation of reading comprehension deficits. As fluency is established, collateral improvements are often observed in reading comprehension as well. However, for some learners, collateral improvements are not observed. As comprehension is inherently relational, this failure to improve is likely due to deficits in core language processes. Specifically, core relational skills involved in both listening and reading comprehension are likely not well established. Using a relational frame theory approach, the current presentation will consider the skills inherent in comprehension, as well as how multiple exemplar training of key relations can have a generative effect on untrained relations. Clinical data will be shown and directions for future research suggested.

Producing Generative Outcomes in Computation. KIMBERLEY L. M. ZONNEVELD (University of Nevada, Reno), Kendra L. Rickard (University of Nevada, Reno - Center for Advanced L), Kimberly Nix Berens (Center for Advanced Learning, Inc.)

Abstract: The current state of math instruction appears analogous to the whole language approach to reading instruction, whereby students learn each word in a given language. A consensus now exists with respect to the generative effects observed in an individual's reading repertoire following the direct instruction of a small set of phonemic rules. However, such an agreement is not observed in the area of mathematics. Currently, students learn each individual computational problem via direct training rather than receive direct instruction on a small set of math fact families, which can then be applied to numerous computational problems. This presentation will discuss the efficacy of a specific method of math instruction that combines The Morningside Mathematics Fluency: Math Facts program with The Center for Advanced Learning's math curriculum. In particular, existing clinical data will be presented on the generalized computational repertoire that results from the direct instruction of a small set of fact families. Finally, conceptual issues regarding this particular method of teaching will be addressed.

#38 Symposium

5/23/2009
1:00 p.m. - 2:20 p.m.
North 121 BC
EDC/AUT; Service Delivery

The Application of Precision Teaching Methodologies into an Inclusive Elementary School Program
Chair and Discussant: Alison L. Moors (Academy for Precision Learning)

Abstract: Throughout the years, Precision Teaching methodologies have been linked to successful implementations within programs which serve general education students, those with learning disabilities/Attention problems and in one on one teaching situations with students on the autism spectrum. This symposium will highlight the use of Precision Teaching methodologies within a private elementary school with a special focus on including all types of learners (from gifted, to general education to those with learning disabilities to those diagnosed on the autism spectrum). Data will be presented which highlights the effectiveness of the staff training protocol in place, the successful strategies for classroom management for multiple students working on timed practice simultaneously and how to program for skill sets that successfully generalize into general education classrooms. This symposium will help professionals identify the critical features necessary for implementation of an effective inclusion program whereas all students are learning to their maximum potential using Precision Teaching.

"Usability" Checks: Manipulating One to One Teaching Protocols for Maximum Usefulness in Inclusive Environments. LOVELLE T SUAREZ (Academy for Precision Learning), Alison L. Moors (Academy for Precision Learning)

Abstract: This study investigates the systematic manipulation of structured one on one Fluency Based Instruction teaching methods and the effects of those manipulations on the application of those skill sets within and across learning environments. All participants in the study are between the ages of 6 and 12, have a diagnosis of Autism Spectrum Disorder, and attend a private inclusive elementary program. All data was collected in situ by a variety of school staff members throughout the school day (6 ½ hours). Findings of the study provide information regarding successful manipulations of structured teaching time in order to increase the "usability " and accuracy of those skill sets in a more naturalistic environment.

Help...I'm Outnumbered! NICOLE GEORGIS (Academy for Precision Learning), Alison L. Moors (Academy for Precision Learning)

Abstract: A common complaint of teachers attempting to implement Precision Teaching methodologies into their general education classrooms is the perceived amount of teacher effort required to follow the protocol. How does one person deliver individualized precision teaching to a group of students? This paper will present one classroom teachers' methods for incorporating Precision Teaching into her classroom. Participants were students in an inclusive private elementary 5th grade classroom. Student abilities range from general education to Attention Deficit Hyperactivity Disorder and those on the Autism Spectrum. Data will be presented to show student progress on academic skills as a result of peer coaching, student's charting their own practice data and student's learning effective study strategies.

Staff Training and its Impact on Student Success VALORI N. BERENDS (Academy for Precision Learning), Alison L. Moors (Academy for Precision Learning)

Abstract: This study evaluated the effect of implementing a staff training tool/feedback and its effect on child progress in an inclusive elementary education program which utilizes Precision Teaching methodologies with its students. This program is a private school for students ages 6-12 years of age. The students' abilities range across the autism spectrum. Five male and female staff members participated in the study. Staff ages ranged from 20 to 30 years and these staff had a variety of entering experience levels with implementing Precision Teaching methodologies in previous work settings. The study used a comparison design, and the program's clinical director implemented the staff training tool and provided

feedback to staff. Participants collected data on child goal-attainment and the number of tasks completed during instructional time. Findings of the study indicate the validity of the staff training tool and feedback for effecting child progress.

#39 Panel Discussion

5/23/2009
1:00 p.m. - 2:20 p.m.
North 129 B
TBA/EDC; Applied Behavior Analysis

Unconventional Graduate and BCBA Training: Distance Learning and Web-Based Clinical Supervision
Chair: Mark R. Dixon (Southern Illinois University)

JOHN C PINGO (Goldie B. Floberg Center)
SHANNON J. MITCHELL (Southern Illinois University)
RAMA RAO HOTHUR (Southern Illinois University, Carbondale)
CHRISTINE M. DEAVER (Peace Garden Consortium)

Abstract: The present roundtable will be a forum to showcase the various ways by which individuals interested in graduate training or BACB certification can occur via distance education methods. Web-classes, video chatting, and off-campus cohort learning are presented from students that have actually benefited from one or more of these unconventional learning methods. A showcase of the myriad of available distance learning opportunities at SIU will also be presented. Attendees will be encouraged to question the panel about the pros and cons to such unconventional learning formats.

#40 Special Event

5/23/2009
2:00 p.m. - 2:50 p.m.
North 120 D
EAB; Experimental Analysis

SQAB Tutorial: Cue Competition in Pavlovian Conditioning
Chair: William L. Palya (Jacksonville State University)

STEVEN C. STOUT (Jacksonville State University)

Dr. Steven Stout earned a Master's in experimental psychology at Northeast Louisiana University where he specialized in the study of drug reinforcement and Hull-Spence models of learning. His doctorate is from Texas Christian University, where under the directorship of Mauricio Papini, he investigated the separate contribution of after-reinforcement and after-nonreinforcement factors to the reinforcement omission effect in rats and pigeons. Dr. Stout worked as a postdoctoral fellow under the sponsorship of Ralph Miller. With Dr. Miller, Dr. Stout has investigated determinants of cue interaction versus cue facilitation in Pavlovian preparations and co-authored a mathematical implementation and extension of Miller and colleague's extended comparator hypothesis. He then taught at Valdosta State University. He now teaches at Jacksonville State University where he has become involved in the application of behavioral principles to primary and middle school education.

Abstract: In recent decades researchers in the field of Pavlovian conditioning have focused on how conditioned responding to a target conditioned stimulus (CS) is affected by the presence of nontarget CSs. A common observation is that target and nontarget CSs compete for control over conditioned responding in the sense that their response potentials are inversely correlated. In the three and a half decades since the theoretical model of Rescorla and Wagner inspired a wealth of research into cue competition, investigators

have uncovered a number of interesting empirical regularities. Unfortunately, the dissemination of these regularities to a wider community outside associative learning circles has been obscured by the tendency of Pavlovian investigators to discuss their research in a heavily theory-laden language. The purpose of this tutorial is to introduce undergraduates to the field of cue competition who have been otherwise put off by constructs such as positive and negative associations, memorial representations, and comparator processes. In particular, I will consider what happens to conditioned responding when nontarget CSs are presented before, interspersed among, or after the target CS-US pairings, and whether those nontarget CSs are discrete or contextual. Conditions under which cue competition, or its opposite, cue facilitation, are observed will be discussed.

#41 Tutorial

5/23/2009
2:00 p.m. - 2:50 p.m.
West 301 CD
VRB; Applied Behavior Analysis

Verbal Behavior Applications in Developmental Disabilities: Current Evidence and Methodological Recommendations
Chair: Caio F. Miguel (California State University, Sacramento)

JAMES E. CARR (Auburn University)

Dr. Jim Carr is an associate professor of psychology at Auburn University. His current research interests include verbal behavior, analysis and intervention in developmental disabilities, the behavioral treatment of tic disorders, and college teaching methodology. Dr. Carr has published over 100 articles, chapters, and book and is currently an associate editor of Journal of Applied Behavior Analysis. He was the 2002 recipient of the B. F. Skinner New Researcher Award by Division 25 (Behavior Analysis) of the American Psychological Association. Dr. Carr received his Ph.D. in 1996 from Florida State University and previously served on the psychology faculties at Western Michigan University (1999-2008) and University of Nevada-Reno (1996-1999).

Abstract: Skinner's (1957) analysis of verbal behavior has proven useful for conceptualizing and developing language interventions for individuals with developmental disabilities. In recent years, a number of procedures (hereafter referred to as the "verbal behavior approach ") inspired by this analysis have been packaged and disseminated for the treatment of early childhood autism. Although the verbal behavior approach is conceptually sound and supported by modest literature on teaching individual verbal operants, no outcome research currently exists to directly support its intensive, long-term application. Furthermore, more than a few applied studies in the verbal behavior literature have methodological shortcomings that preclude confident conclusions regarding their effects. In this tutorial, I will briefly summarize the state of the evidence for common procedural elements of the verbal behavior approach, as well as its large-scale application. I will then describe and illustrate the types of evidence needed to ensure that the dissemination of the verbal behavior approach better corresponds to the existing empirical database.

#42 Invited Symposia

5/23/2009
2:00 p.m. - 3:20 p.m.
West 301 AB
DEV; Experimental Analysis

The Bigger Picture from Infancy to Evolution: Genes, Development, and Behavior Analysis
Chair: Martha Pelaez (Florida International University)
Discussant: Susan M. Schneider (Florida International University)

Discussant **Dr. Susan Schneider's** involvement in behavior analysis goes back to high school when she wrote B. F. Skinner, never dreaming that he would reply. They corresponded through her master's degree in mechanical engineering (Brown), her engineering career, and her stint in the Peace Corps. At that point Schneider gave in to the inevitable and committed to a career in behavior analysis, obtaining her Ph.D. in 1989 (University of Kansas). Her pioneering work in the experimental analysis of behavior includes several firsts: applying the generalized matching law to sequences, and demonstrating operant generalization and matching in neonates. Her 25+ publications also cover the history and philosophy of behavior analysis and the neglected method of sequential analysis. Schneider has long championed the inclusive, behavior analysis-friendly developmental systems theory approach to nature-nurture relations, culminating in reviews in 2003 (Journal of the Experimental Analysis of Behavior) and 2007 (The Behavior Analyst). She co-founded and was the first Chair of the SIG that preceded the current Dissemination of Behavior Analysis SIG. In that vein, she is currently writing a trade book: Shaping Destinies: Nature-Nurture and the Unexpected Science of Consequences.

Abstract: In evolution's indelicate dance, behavior leads as well as follows genetic change--and infancy is an individual and theoretical proving ground tougher than Dancing with the Stars. What with rapid physical, behavioral, emotional, sexual, and social development, hormonal and neurophysiological changes, genetic differences, immediate early genes being turned on and off, and learning's accelerating trajectory, the scientific challenges can present a blooming, buzzing confusion. Further, it's easy to show that both behavior and biology stem from the pas de deux of 100% genes and 100% environment; we can "can " the simplistic square dance in favor of the higher exponentials. So where do operant learning and classical conditioning fit in? Pioneering behavior analysts showed how operant contingencies help shape infant babbling and language acquisition, songbird song learning, and filial imprinting, to name a few examples. That was just the beginning. As for evolutionary beginnings, even Darwin and Lamarck recognized the driving power of behavior change, one of the ultimate engines of diversity. The symposium participants will spell out the choreography, with a focus on illuminating the starring role behavior analysis can play in the next frontier of nature & nurture.

"The Trilling Wire in the Blood… ": What Can We Mean by Nature and Nurture in the First Place? PAUL THOMAS ANDRONIS (Northern Michigan University)

Dr. Paul Thomas Andronis, Professor of Psychology at Northern Michigan University, (B.S. Biology, M.S. Zoology, Western Illinois University), received his Ph.D. in Biopsychology from The University of Chicago, working under Israel Goldiamond. He was the recipient of a U.S.P.H.S. Physiological Psychology Training Fellowship, the Joseph Kelly Memorial Award in Biopsychology, and a U.S.P.H.S. Postdoctoral Research Training Fellowship in Psychiatry. He was appointed to the faculty in Clinical Psychiatry at the Chicago Osteopathic Medical School where he founded the section on Behavioral Medicine, before returning to Chicago as a Clinical Assistant Professor of Behavioral Medicine in the Departments of Psychiatry and Gastroenterology, and Instructor in Biopsychology (teaching the ethology course previously taught by the late Eckhard Hess, now with an explicit focus on relations between the phylogeny and ontogeny of behavior). Dr. Andronis currently serves as Coordinator of Northern Michigan's Behavior Analysis option for psychology majors, supervises the behavior analysis practicum, directs the NMU Behavior Analysis Research Laboratories (pigeon, fish, and human), and teaches courses in both behavior analysis and biopsychology. His ongoing research on the nonlinear emergence of complex repertoires from simpler components guides his interests in both widespread applications of behavioral technology to important behavior problems, and the role of biological variables in the genesis of novel patterns of behavior.

Abstract: Nature/nurture debates typically focus on the extent to which the behavior of organisms is best accounted for by the phylogenetically determined innate physiology and anatomy of the organisms themselves, or by proximal formative processes of nurture. Disputes arise because some behavior seems to be a rather direct result of physical architecture (behavior called "instinct "), and not the result of historical processes during the individual organisms' lifetimes (behavior described as "learned "). Aristotle argued for the priority of final (teleological) causes, presaging Darwin's selection by

consequences. My paper argues that this may in fact be an adequate resolution for the nature/nurture question, particularly when we extend the selection metaphor from evolutionary theory to operants and proximal behavioral histories. The rich variety of behavior in nature suggests that we abandon overarching statements about causes of behavior and examine the particulars. The behavior analytic approach should integrate what we have learned from biology with our hard-fought knowledge of how the environment contributes to behavior under complex historical conditions. Examples from nonhuman animals in their natural ecologies, as well as humans enthralled in cultural contingencies, reveal the usefulness of this approach.

On Heritability and Inheritability: How Behavior Contributes to Genetic Expression
DAVID S. MOORE (Pitzer College and Claremont Graduate University)

Dr. David Moore received his B.A. in psychology from Tufts University and his M.A. and Ph.D. in developmental and biological psychology from Harvard University. Since completing a postdoctoral fellowship at the City University of New York, he has been a professor at Pitzer College, one of the Claremont Colleges. From 2004 - 2006, he was on a leave of absence in New York City, teaching and conducting research at Yeshiva University and Sarah Lawrence College. His theoretical work has explored the contributions of genetic and environmental factors to human development, and his book The Dependent Gene: The Fallacy of "Nature vs. Nurture, " the subject of a review in the Journal of the Experimental Analysis of Behavior, was recently translated into Japanese and was nominated for the Cognitive Development Society's Best Authored Volume award. In 2007, Moore gave a B. F. Skinner Address about nature-nurture relations at ABA, and was pleased to be invited back to participate in this symposium. A developmental psychologist and cognitive neuroscientist with research expertise in the development of perception and cognition in fetuses, newborns, and older infants, he has published numerous articles and book chapters on infants' abilities to "mentally " rotate visual images, to perceive numerical quantities, to categorize infant-directed speech, and to integrate visual and auditory information.

Abstract: Behavior geneticists have traditionally sought evidence that genes contribute to behavior, whereas behavior analysts have traditionally sought to understand behavior's more proximal causes. Now, decades after advocates of a systems view of development began arguing that insight into the origins of behavioral characteristics would require an understanding of how genes and non-genetic factors interact during development, studies have demonstrated that epigenetic mechanisms allow some behaviors to influence genetic expression. Indeed, genes and behavior influence each other bidirectionally. In contrast to traits that behavior geneticists have found to be heritable, epigenetic characteristics are genuinely inheritable (i.e., passed from generation to generation); thus, behaviors produced in one generation can influence genetic activity in subsequent generations, influencing descendants' behaviors, as well. Remarkably, studies combining the methods of behavior analysis and molecular biology have produced results consistent with the predictions of developmental systems theorists. This talk will critically analyze behavior geneticists' heritability statistic (which doesn't really mean what it sounds like it means), present data on how parental behaviors can influence genetic expression in offspring, and consider the implications of these findings for our understanding of evolution.

Sex Differences in Development: Contributions from Inherited Experiential Resources CELIA L. MOORE (University of Massachusetts Boston)

Dr. Celia Moore was introduced to the study of animal behavior as an undergraduate at the University of Texas, where E. J. Capaldi was her primary mentor and major influence. She took his undergraduate Comparative Psychology and graduate Learning Theory courses, so had an early exposure to evolution and behavior steeped in the learning tradition. Capaldi introduced her to rats and research with a summer project, and to evolutionary biology by suggesting she take courses with R. K. Selander. The combination flourished, perhaps because of her experience growing up on a small farm. When Daniel Lehrman visited campus to give a guest lecture, the decision was quickly made to apply to his graduate program. She did her doctoral dissertation on parental behavior in ring doves under Lehrman¹s direction, where she developed a strong fascination with developmental inquiry. She took a position at the University of

Massachusetts Boston shortly after graduate school. She has remained in this position, except for a visiting appointment at the University of Illinois, working with Janice Juraska. This collaboration brought her long-standing interest in the role of learning and experience in species-typical development to the cellular level of analysis.

Abstract: Development is a constructive process that requires enduring, multi-leveled connections among the heterogeneous elements that constitute nature and nurture. Developmental systems theorists have the data to show that explanations of species-typical outcomes can be found without invoking endpoints (e.g., genetic plans) that preexist in the initial state. An expanded view of inheritance that includes heterogeneous resources--including learning and other forms of experience--is a key part of such explanations. Sex differences in behavior provide opportunities to examine the processes that lead to divergent endpoints in organisms with few or no genetic differences at conception. (Sex is not always determined genetically.) Over the past three decades, researchers have identified quite a diverse array of contributors to reliably divergent developmental pathways. Some contributors arise from endogenous processes in the developing organism (e.g., nerve-muscle interactions and biased sensory innervation in the pudendal system) and some are generated by the mother as a ubiquitous part of the early environment of her offspring. For example, tactile stimulation from licking and grooming in rats is reliably present and reliably different for the two sexes--and turns out to entail operant involvement. Small differences in the availability of resources may be magnified in development to produce large differences in developmental outcome.

#43 Symposium

5/23/2009
2:00 p.m. - 3:20 p.m.
North 221 AB
OBM/EAB; Applied Behavior Analysis

A Proven Bailout for Business Owners: Performance Management to the Rescue
Chair: Allison C. Blake (Western Michigan University)
Discussant: Sigurdur Oli Sigurdsson (University of Maryland, Baltimore County)

Abstract: Performance management can offer business owners solutions to challenges they face on a daily basis. Critical employee behaviors can be improved by working with owners and managers to implement techniques based on the fundamental principles of behavior. The current session shares three applications of behavioral technology that utilize proven scientific methodologies to demonstrate effectiveness in privately owned business settings.

Wake Up and Smell the Coffee: Improving Greeting Behaviors and Suggestive Selling at the Coffee Pub. BRANDON RING (University of Maryland - Baltimore County), Ashley Baker (Florida State University), Jon S. Bailey (FSU, BMC, FABA)

Abstract: The purpose of this study was to increase greeting behaviors, smiling, suggestive selling and cleaning behaviors at a privately owned coffee shop. Greeting behaviors were defined as prompt greeting, employee initiating conversation and making eye contact with the customer. There were a total of 36 baseline sessions and 15 intervention sessions. Prompt greeting had an over increase of 26% and initiating conversation increased from 74% to 98%. Eye contact increased to 100% during the intervention and occurred during every session after the intervention was implemented. Smiling showed an increase of 25% and up selling increased from 3% to 24%. Also the number of occurrences of up selling doubled during the intervention.

Keeping it Clean: Using Performance Management at a Local Mexican Restaurant. ELIANA MILLAN (Florida State University), Marco D. Tomasi (SAIC)

Abstract: This study evaluated the effects of task clarification, sign prompts, graphic feedback and goal setting on cleaning behaviors in two different areas at a local restaurant. A multiple baseline was

implemented across two settings: the kitchen and the serving line. During the intervention the employees received a task clarification memo, posted graphic feedback with sub-goals, and were exposed to various sign prompts. All target behaviors increased across both settings when the intervention was implemented. Implications for future research are suggested.

Rolling in Dough: The Effects of OBM Technology at a Local Pizzeria Franchise. CATALINA REY (Florida Institute of Technology), Jennifer L Csenge (Florida State University), Erica Kennan (Florida State University), Austin Kaye Jackson (The Florida State University), Jon S. Bailey (FSU, BMC, FABA)

Abstract: The purpose of this study was to improve customer service and maximize profits by increasing suggestive selling practices. Several interventions were used including task clarification, role-play, graphic feedback, and monetary incentives. A raffle was used for the last intervention by setting goals based on current appetizer sales and using a point system that converted into lottery tickets. At the end of each sales week there were three drawings in which each winner received $50. As a result, suggestive selling went up 75 percentage points increasing appetizer sales increased by 35%.

#44 Panel Discussion

5/23/2009
2:00 p.m. - 3:20 p.m.
North 227 A
OTH; Theory

Professional Development Series: Prominent Women in Behavior Analysis
Chair: Jennifer A. Bonow (University of Nevada, Reno)

JANET S. TWYMAN (Headsprout)
MARIA E MALOTT (ABAI)
RAMONA HOUMANFAR (University of Nevada, Reno)
AMY ODUM (Utah State University)

Abstract: Prominent women in Behavior Analysis will discuss their experiences in the field, challenges and achievements, and invite questions from attendees.

#45 Paper Session

5/23/2009
2:00 p.m. - 3:20 p.m.
North 131 BC
TPC

Punishment, DRO, and Aversive Control
Chair: Zina A. Eluri (Eastern Michigan University)

Punish or Perish: The Desperate Need for Punishment in Behavior Modification. (Service Delivery) GARY WILKES (Arizona State University)

Abstract: This year, millions of dogs will die because of a lack of positive punishment. Their common failing is behavioral, not medical. This behavioral malady is composed of several innocuous and lethal behaviors: jumping on people, darting out the front door, destroying property and biting. Each of these behaviors can be stopped through operant means – but not if your tool is positive reinforcement. Positive reinforcement cannot create inhibitions that will prevent an animal from offering normally occurring behaviors. Only positive punishment is capable of stopping a behavior, cold. If you wish to slow down or stop the slaughter, you must be able to skillfully punish a behavior. That presents a bigger problem. Virtually every academic institution and many professional psychological associations tacitly

endorse and enforce a bias against the study or practice of positive punishment. So, while millions of carcasses are hauled to land-fills, major institutions decry the behavioral effect that would save their lives -- positive punishment. This presentation will include a robust discussion of positive punishment. This will include a summary of the rules governing the practical and effective use of positive punishment and live demonstrations of these rules on real animals.

What is DRO Anyway? The Need for Understanding the Mechanisms Behind Response Suppression. (Theory) ZINA A. ELURI (Eastern Michigan University), James T. Todd (Eastern Michigan University)

Abstract: Differential reinforcement of other behavior (DRO) is studied extensively in the literature and has been considered to be the most widely used behavior reduction technique; however, the literature is limited in identifying the necessary and sufficient conditions for effective treatment, minimizing our understanding of this contingency. The literature, however, has focused more on comparing or combining DRO with other contingencies, such as punishment and extinction. Although determining its effectiveness is important, it is critical to clearly identify the mechanisms under which suppression occurs. Our inability to identify and substantiate the method by which the suppressive effects can be attributed may result in the use of extra components that complicate the procedure or lead to unnecessary side effects, thereby, minimizing correct implementation, delaying effective treatment, and causing undo harm to the individual. Furthermore, the lack of understanding may also lead to discrepancies in the way the procedure is conducted and discussed among experts. For these reasons, it is critical to shift the focus towards understanding the mechanisms that contribute to the effectiveness of DRO. This paper will discuss the importance of identifying the necessary and sufficient conditions for response suppression and provide directions for future research.

Who is Afraid of Aversive Control? (Theory) JOÃO CLAUDIO TODOROV (Universidade Católica de Goiás)

Abstract: Experiments on escape, avoidance, and punishment using aversive stimulation have practically stopped for the last 30 years due to several reasons, including more strict ethical guidelines. On the applied side, behavior analysis is known for its strong preference for the use of contingencies of positive reinforcement. Here we discuss the need for continuing basic research involving aversive control as well as non experimental studies in applied situations, and the use of data collected by other approaches in psychology and any other behavioral science. Aversive control is part of life; it is not always bad, not always avoidable, and not always stressful.

#46 Paper Session

5/23/2009
2:00 p.m. - 3:20 p.m.
North 132 A
TPC

Saving the World: Behavior Analysis and Culture
Chair: Sam Leigland (Gonzaga University)

How We Might (Possibly) Act to Save the World. (Theory) SAM LEIGLAND (Gonzaga University)

Abstract: A recent paper by Chance (2007) documented a shift in Skinner's views during the last years of his life regarding the future of the human species and the role of behavioral science in that future. Skinner had long advocated a science and technology of behavior for finding and engineering solutions to cultural and global problems and advancing human development. This optimism had given way under a gradual realization that the science of behavior was in fact showing how such problems were unlikely to be solved in time to avert a variety of possible disasters. Chance described nine findings (contingencies or behavioral phenomena) that appear to interfere with effective problem-solving behavior on a large scale and in effective time frames. These findings will be reviewed, and modest strategic recommendations will

be offered as means of initiating critical discussion. The recommendations will emphasize verbal and cultural (including political) contingencies, and lines of empirical research will be considered for the possible development of effective practices. The challenges are daunting, but may nevertheless be regarded as technical problems best suited for a science and technology of behavior.

Toward an Interdisciplinary Science of Culture. (Theory) LINDA J. HAYES (University of Nevada, Reno), Mitch Fryling (University of Nevada, Reno)

Abstract: Cultural events are of interest to scientists working in many scientific domains. Given this, an interdisciplinary science of culture may provide a more thorough understanding of cultural phenomena. However, interdisciplinary sciences depend upon the validity and vitality of the participating disciplines. This paper reviews the nature of scientific enterprises and problematic conceptualizations of interdisciplinary science from an interbehavioral perspective. Meta-systemic and systemic foundations for an interdisciplinary science of culture are proposed.

The Behavior-Analytic Investigation of Cultural Selection and the Complexity of Cultural Phenomena. (Theory) EMMANUEL Z. TOURINHO (Universidade Federal do Pará)

Abstract: Conceptual work on social behavior and cultural phenomena, published in recent behavior-analytic literature, has made it possible to address cultural selection in original and heuristic ways. A possible unity of analysis of cultural phenomena has been suggested under the concept of metacontingency, and has grounded several successful empirical investigations that aim to approach selection at the cultural level. A step forward has been taken to consider dimensions along which cultural phenomena may vary towards complexity. The aim of the present work is to discuss this point. I describe some behavior-analytic and sociological views of complexity of cultural phenomena in modern societies, in which the individualization processes produce original interdependence relations among individuals. I also suggest that these views of complexity may give rise to diverse (and, perhaps, complementary) references to the empirical investigation, under the concept of metacontingency. Finally, I address some possible implications of the discussion of complexity to the definition of the unity of analysis of cultural phenomena.

Learning and Thinking: A Behavioral Treatise on Abuse and Antisocial Behavior in Young Criminal Offenders. (Theory) WALTER WITTY PRATHER (Barry University)

Abstract: Social learning theory provides a useful conceptual framework for understanding abuse and the teaching and learning of antisocial or criminal behavior in young offenders. This article examines social learning theory and the quality of parent-child relationships from the perspective of behavioral analysis, and provides a rationale for a comprehensive behavioral treatment approach for young offenders and their parents. A theoretical model has been developed to provide the social context to examine how abuse and neglect, inconsistent or erratic parenting practices, non-intact family structure, and poor or weak parent-child relationships, can be integrated to predict criminal behavior. The purpose of this model is to examine the major environmental or familial determinants associated with criminal or antisocial behavior in children, and the relevant but implicit behavioral principles operating in and outside of the home. Questions are raised which suggest that typical or mainstream juvenile detention programs compete with the acquisition of new functional skills, and provide an environment for learned dysfunctional habits that are then reinforced and maintained in back-end rather than front-end treatment programs. Conclusions are reached that learning and reinforcement history have a greater impact on the quality of parent-child relationships than family structure, and provide a theoretical rationale for analyzing and developing effective interventions for a problem of social importance.

#47 Paper Session

5/23/2009
2:30 p.m. - 3:20 p.m.
North 126
AUT

Facilitated Communication Lives
Chair: James A. Mulick (The Ohio State University)

They Don't Make Coffin Nails Like They Used to: Facilitated Communication Rises Again. (Applied Behavior Analysis) JAMES T. TODD (Eastern Michigan University)

Abstract: Deep into its third decade, the advocates of facilitated communication (FC) have failed to produce a single properly controlled peer-reviewed study showing that their method works, much less a body of credible research supporting their fanciful claims. During the same period, researchers of all stripes, from radical behaviorists to cognitive psychologists, have not only demonstrated that FC does not produce independent communication, they have repeatedly shown that the typed output comes from the facilitator rather than the communicator. Despite the total failure of FC in the scientific realm and its abandonment by almost everyone in the 1990s, FC seems to be making a comeback. FC is found again in schools. It gets administrative support at universities. It is promoted by major autism organizations. It is touted in a best-selling augmentative communication textbook. It receives considerable positive coverage from the media. False FC accusations are sending people to prison. FC is even used, and presumably advocated, by some BCBAs. This address will describe the basic features of FC as it is currently practiced--showing what has changed and what has not--and examine the factors that have allowed this menace to creep back from its well-deserved oblivion.

How the Court Accepted Superstition and Rejected Science: The Michigan Facilitated Communication Horror Story. (Applied Behavior Analysis) JAMES T. TODD (Eastern Michigan University)

Abstract: Falsely accused through facilitated communication (FC) of raping his daughter, a Michigan man spent 80 days in jail before all charges were dropped. His wife, also accused, was placed on an electronic tether. The children were taken away. The girl's 13-year-old developmental disabled younger brother was subjected to an intense police interrogation in which he was lied to about evidence implicating his parents. Despite (1) hearing no testimony supporting the validity of the facilitated accusations, (2) having no good physical evidence that a crime had occurred, (3) seeing two failed in-court tests of FC, (4) hearing two experts testify to the lack of scientific support for FC, (5) having a credible alibi provided by an Orthodox Rabbi against additional charges, and (6) discovering many errors in accusations themselves, the court nevertheless accepted the accusations and refused to allow further scientific testimony on the reliability of FC. This address will describe how a Michigan court could accept FC in the first place, then reject science and direct evidence to rule that FC is a valid means of communication. It will also show the extreme danger this fallacious legal theory poses for those accused of crimes through FC.

#48 Paper Session

5/23/2009
2:30 p.m. - 3:20 p.m.
North 124 B
AUT

Solving Toileting Problems
Chair: Michelle A. Furminger (Lizard Children's Centre)

Using a Separate Bowel Program to Aide in Bowel Control in Toileting Training Procedure. (Service Delivery) MICHELLE A. FURMINGER (Lizard Children's Centre), Cassie le Fevre (Lizard Children's Centre)

Abstract: Toilet training practices for children with Autism have been widely researched in the past and have had success in establishing urine control (Bettison, 1982; Dunlap, Koegel & Kern Koegel, 1984). For some children, the control of the bowel is also successful but for others, a separate program is necessary.
This paper will investigate variables that may aide in helping a child to acquire bowel control. Data collected from three children who currently attend an early intervention clinic in Sydney Australia will be analysed. All three children have acquired bladder control and currently have a separate bowel control program. Variables that will be analysed and measured will include: antecedent and consequential behaviours associated with bowel movements as well as latency data in regards to voiding. Also the paper will investigate the motivational effects of having separate reinforcers for bowel control programs than for bladder control programs.

Combined Strategy for Students with Autism to Flush Toilet. (Applied Behavior Analysis) TAKETO NAKAO (University of Florida)

Abstract: I report on a combined strategy implemented for a student with autism in an inclusive classroom to flush a toilet. Four components comprised the combined strategy. The first component involved visual steps on the floor to get the student closer to the bathroom door when his aide flushed the toilet. Visual steps were pieces of colored tape which was two inches apart. For the second component, colored tape was put on a wall in the bathroom where the student put his right hand. The colored tape was also two inches apart and put on at the end of the wall in the bathroom where the flush lever was reachable for the student. The third component involved a sticker selection. The student could choose a sticker as a reinforcer when he stayed in the bathroom after his aide flushed the toilet. The fourth component involved a choice for the student to either close the toilet or leave it open when he flushed. The last component did not include a sticker selection. The intervention effectiveness was evaluated using an ABCD design. After 19 sessions, the student was able to flush the toilet. Generalization for his flushing a toilet was also assessed.

#49 Paper Session

5/23/2009
2:30 p.m. - 3:20 p.m.
North 125
AUT

Visual Strategies in Treating ASDs
Chair: Dana J. Stevens (Whitworth University)

The Effects of Visual Supports on Acquisition of Independent Routines for Adolescents with Autism Spectrum Disorder. (Applied Behavior Analysis) Erin Brown (Whitworth University), DANA J. STEVENS (Whitworth University), Betty Fry Williams (Whitworth University)

Abstract: The main purpose of this study was to determine the effectiveness of using a visual support to teach an independent routine to three adolescent boys with autism. Additional purposes included examining potential generalization of the use of the visual support, and determining if the visual support had social validity. During each session, participants used a pictorial strip to follow a 13-step routine to make a sandwich. Eating the completed sandwich was the natural reinforcer used at the end of each session. By the end of the study, two of the participants were able to independently make the sandwich using the visual support, and the third could complete eight of the thirteen steps. Generalization and social validity of the visual support also yielded positive results. The intervention was an overall success.

Impact of Visual Strategies in Integrated Play Groups for Children with Autism Spectrum Disorders. (Applied Behavior Analysis) JENNIFER B GANZ (Texas A&M University), Margaret M Flores (Auburn University)

Abstract: The purpose of this paper is to report the results of a study that investigated the impact of visual strategies with preschool children with autism spectrum disorders (ASD) and their peers during play group sessions. A changing-criterion design was implemented with three preschool-aged children with ASD while they participated in play groups with four typically-developing peers. The participants with ASD were initially all able to speak, though two used more spontaneous speech than the other. The researchers implemented two types of visual cues, peer instruction cards, which provided the peers with ideas for how to interact effectively with their playmates, and visual scripts, which provided the children with ASD with ideas of context-appropriate phrases they could use. Results indicated improvements in the use of script phrases, context-related comments, and intervals in which speech occurred for all three participants. Results regarding unscripted phrases, responses, and use of prompts were variable and will be discussed. This paper provides evidence supporting the use of visual cues to facilitate verbal interactions between children with ASD and their peers.

#50 Paper Session

5/23/2009
2:30 p.m. - 3:20 p.m.
North 124 A
AUT

Discrimination Training
Chair: Rafal J. Kawa (University of Warsaw)

Conditional Discrimination Training – Programming For Recombinative Generalization in Children with Autism. (Applied Behavior Analysis) RAFAL J. KAWA (University of Warsaw), Monika M. Suchowierska (Warsaw School of Social Psychology)

Abstract: Recombinative generalization is an essential process in establishing generative responding during language acquisition. It refers to correct responding to novel stimuli that comprise of known elements. Two methods of programming for recombinative generalization in children with autism are compared: a one-term discrimination training vs. a two-term conditional discrimination training. In the experiment, 3 children with autism were taught to identify (receptively) 22 pictures described by a two-word phrase (profession + action). The taught phrases were a part of two matrices consisting of a total of 72 phrases (36 for each matrix). The terms to be taught were arranged in 8 sets. Within sets, the terms had overlapping elements denoting the profession or denoting the action. Tests for recombinative generalization determined whether children identified correctly novel pictures that were constructed by recombining elements denoting profession and action in ways that had not been directly trained. For one participant, the teaching method (one-term vs. two-term discrimination) did not influence the level of recombination. Two other participants showed either difficulties learning two-term discriminations or lower levels of recombination following two-term discrimination training. The results suggest that for some children with autism establishing conditional discrimination with unknown multi-element stimuli may be too difficult.

Establishing Textual Language When Receptive and Expressive Language has Failed. (Service Delivery) Allison Disch (Perspectives), LELA CLOER REYNOLDS (Perspectives Corporation)

Abstract: Establishing receptive language is a beginning step in teaching children with autism. But what do you do when you are unable to get it? This paper discusses two case studies where textual language has taken the place of traditional receptive and expressive language. The case studies demonstrate the failures of traditional methods to establish receptive language and the development of a textual based system of instruction in which text is utilized for both instruction delivery and responses. These cases demonstrate the capacity for further language development as reading comprehension increases. Video

segments will be shown to demonstrate the steps taken to establish the textual language. Establishing a form of communication for children with autism is a priority for those in the profession. These case studies demonstrate how matching in a variety of forms has lead to a working receptive and expressive textual language repertoire that has increased the communication skills of both children.

#51 Paper Session

5/23/2009
2:30 p.m. - 3:20 p.m.
North 120 BC
AUT

Innovative Approaches in Autism Research
Chair: Sarah M. Dunkel (Southern Illinois University)

Examining Conditioned Reinforcing Effects of Self-Control Training Tasks with Adults with Autism and Related Disorders. (Applied Behavior Analysis) SARAH M. DUNKEL (Southern Illinois University), Mark R. Dixon (Southern Illinois University)

Abstract: Previous self-control research has suggested the potentially significant effects of conditioned reinforcement on the choice-making of impulsive participants. The purpose of the present study was to examine the possibility of nonpreferred training tasks ultimately serving as conditioned reinforcers for engagement in other nonpreferred tasks. Initially, adult workers with autism were asked to engage in both a nonpreferred table-top training task and a nonpreferred functional task to determine their preference for small, immediate reinforcers versus large, delayed reinforcers. Once participants showed a preference for impulsive responding, the table-top procedure was used during a Self-Control Training procedure with a progressive delay. Finally, participants were offered access to the initially "nonpreferred " training task contingent upon engagement in the nonpreferred functional task. Results and implications of conditioned reinforcement will be discussed.

Stimulus Induced Stereotypic Behavior: An Analysis (Applied Behavior Analysis) Svein Eikeseth (Akershus University College), ROLF MAGNUS GRUNG (Akershus University College)

Abstract: Research indicates that environmental enrichment may function to increase stereotyped behavior. The present paper reviews studies showing increased rates of stereotyped behavior when social, tangible, or sensory stimuli are available noncontingently. Moreover, mechanisms possibly responsible for the stereotyped behavior are discussed.

#52 Paper Session

5/23/2009
2:30 p.m. - 3:20 p.m.
North 222 AB
CBM

ACT
Chair: Thano Hassoulas (Swansea University)

Avoidance and Flexibility in OCD. (Experimental Analysis) THANO HASSOULAS (Swansea University), Louise A. McHugh (University of Wales Swansea), Phil Reed (University of Wales Swansea)

Abstract: Three experiments were devised to measure differences in responding between individuals who exhibited heightened obsessive-compulsive traits and those who exhibited few such traits. A Sidman procedure was used during the first experiment, where participants were required to respond to an aversive event by identifying the avoidance response in order to postpone exposure to the aversive event. A fixed-interval schedule was employed. The second and third studies aimed to differentiate between

variable and rigid responding among individuals who once again exhibited heightened obsessive-compulsive traits and those who did not. During the second study, a positive-reinforcement procedure was used in order to establish whether high scorers were more likely to perform the desired responding during the condition-specific trials whereas a negative-reinforcement procedure was applied during the third study. The results of the first study indicate a difference between the rate of acquisition and reinforcing of the avoidance response between the two groups. The second and third studies reveal differences in reinforcing either a variable manner in responding or a rigid one between the two groups. The differences in responding when high and low scorers were exposed to either positive or negative reinforcement also provide insight into the complex nature of this disorder.

The Mediating Roles of Body Image Acceptance and Values Concordance on the Level of Distress Among College Students. (Experimental Analysis) HEATHER RENEE MANLEY (Missouri State University), Ann Branstetter-Rost (Missouri State University), Charles Gilpin (Missouri State University), Shawn Fitzwilliam (Missouri State University)

Abstract: The objective of this study is to investigate the mediating roles of acceptance and values concordance on the level of distress due to body image concerns among college students. Current studies have shown college-age women commonly have body image concerns and college-age men's body image concerns are rising (Forrest & Stuhldreher, 2007). Furthermore, research indicates those with body image concerns have higher levels of depression, anxiety, and suicidality (Dyl, Kittler, Phillips, & Hunt, 2006). Alternatively, researchers have recently reported that psychological acceptance of painful emotional stimuli, such as negative body image, is associated with lower levels of distress among various populations (Roussi & Koutri, 2007). In addition to the role of acceptance in lowering distress, a similar role has been reported to exist for living in concordance with ones values even through the presence of painful emotional stimuli (McCracken & Yang, 2006). The current study seeks to examine the possible mediating role of psychological acceptance and values concordance on distress as related to body image concerns among college students. Preliminary results indicate significant bivariate correlations between the level of distress and level of acceptance ($r=-.30$, $p<.05$), between values concordance and quality of life and distress ($r=.64$, $p<.05$ and $r=-.58$. $p<-.05$, respectively). As we continue to accrue participants, data will be used to further investigate the mediating roles of body image acceptance and values concordance. This information may then be applied to the development of new therapeutic techniques and treatment outcome studies to better serve the needs of these individuals.

#53 Paper Session

5/23/2009
2:30 p.m. - 3:50 p.m.
North 221 C
AUT

Evaluating Outcomes for Children receiving Intensive Services
Chair: Bob Remington (University of Southampton)

Two Year Follow-up of 24-month Early Intensive Behavioral Intervention for Preschool Children with Autism. (Applied Behavior Analysis) BOB REMINGTON (University of Southampton), Richard P. Hastings (University of Wales Bangor), Hanna Kovshoff (University of Southampton)

Abstract: A group of 44 preschool children with autism who had previously participated in a 2-year prospective controlled comparison study of the effects of early intensive behavioral intervention (Remington et al., 2007) were reassessed 2 years after the termination of intensive treatment. All 23 children in the Intervention group (100% of the original sample) and 18 in the Treatment as Usual Comparison group (86% of the original sample) were located and re-tested. Significantly more children from the Intervention group than the Comparison group were receiving education in mainstream schools at follow up, and group status predicted school placement even when baseline IQ had been statistically controlled. Within the Intervention group, the IQs of five of the six best outcome children (identified in terms of reliable change (Jacobson & Truax, 1991) in IQ scores at termination) improved further,

remained stable, or remained in the normal range. Conversely, five of the six children who improved least during the intervention period showed falling IQs during at the follow-up assessment, and the sixth's IQ remained stable at a low level. Results are discussed in relation to the literature on long-term outcomes of time-limited behavioral interventions for autism.

A Retrospective Video Analysis Relating Age and Responsiveness to Intensive Behavioral Treatment for Autism. (Applied Behavior Analysis) LESLIE V. SINCLAIR (Cleveland Clinic Center for Autism), Carolyn O'Brien (Cleveland Clinic Center for Autism), Ralph O'Brien (Cleveland Clinic Center for Autism)

Abstract: Intensive behavioral treatments for children with autism are designed to minimize challenging behavior, increase adaptive gain and develop functional skills, thus making successful learners/students and, ultimately, productive members of their community. The study results indicated that the children who received intensive behavioral treatment for autism earlier had improved adaptive gains and a lessening in maladaptive behavior. 22 children with a clinical diagnosis of autism spectrum disorder, who were either enrolled in, or recently graduated from a specialized ABA school program, participated in the study. Through analyzing home-video tapes with a standardized protocol (PDDBI), the results showed that children who received intensive applied behavior intervention (IABI) at earlier ages had better outcomes than those children who began IABI at older ages. The study further showed that pre-treatment videotapes of all subject as toddlers showed no statistically significant difference in autism symptoms.

Applied Behavior Analysis with Children in Their Natural Environment: Autism and Other Developmental Disabilities. (Service Delivery) DENNIS CROWLEY (Macon County Mental Health Board & Millikin University), Kristen Deeanne Braun (Macon County Mental Health Board), Amy Shymansky (Washington Park District)

Abstract: This pilot project examined the efficacy and cost efficiency of a short-term (i.e., eight to ten weeks) applied behavior analysis (ABA) program implemented in the natural environment. The target population was children with clinical diagnoses of autism spectrum disorders, other developmental disabilities, or co-morbid conditions. A county-based community mental health board funded and designed services, initially utilizing a consultative triad (Tharp & Wetzel, 1969). The model was further developed across three summers. The model includes an applied behavioral analyst, who assessed each participant's needs, developed an individualized plan to target skill deficits plus trained and supervised paraprofessionals. Families directly employed the paraprofessionals (i.e., college students, teacher's aides) using grant funds provided to the family by the community mental health board. Families received training and participated in the development of service plans and team meetings, during which progress was evaluated. Services were delivered in the home or day care environments. Thirty participants were served across three summers. Preliminary outcome data were collected for each participant relative to the individual's targeted objectives and program. The data indicate that this model was both clinically and cost-effective. All children showed gains across the eight to ten weeks and families reported high satisfaction.

#54 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 224 A
CBM; Service Delivery

Extensions of Experimental Analysis Procedures within Outpatient and Home Settings
Chair: Wendy K. Berg (University of Iowa)
Discussant: Patricia F. Kurtz (Kennedy Krieger Institute)

Abstract: Experimental analyses of problem behavior (Iwata et al. 1982/1084) have proven to be a robust set of procedures that can be applied to a variety of settings, populations, and questions. Three papers

demonstrating extensions of experimental analysis procedures to address specific questions within outpatient or home settings will be presented. The first paper describes the application of experimental analysis procedures within a free standing outpatient clinic that is not associated with a medical setting or a doctorate granting program. The presentation will include a summary of patient outcomes over a ten year period. The second paper describes the use of functional analysis analog conditions to evaluate parent-child interactions and to identify parenting styles within Latino families. The final presentation describes the use of experimental analysis procedures with typically developing children to identify social reinforcers for problem behavior, and an extension of these procedures to identify antecedent stimuli associated with abolishing operations for problem behavior. Patricia Kurtz will serve as the discussant.

Application of Experimental Analysis procedures in an Outpatient Clinic Setting: A Ten Year Descriptive Assessment. K. MARK DERBY (Gonzaga University), Anjali Barretto (Gonzaga University), Martin Conn (Gonzaga University), Kimberly P. Weber (Gonzaga University), Timothy McLaughlin (Gonzaga University)

Abstract: As the use of functional analyses and other experimental reinforcer selection procedures become best practice and mandated, a number of concerns need to be addressed. Most importantly, the applicability of these procedures within free-standing clinics (clinics that are not associated with medical schools or doctorate granting university settings) is unknown. In the current presentation, we will provide patient outcomes from the first ten years of services provided by the Gonzaga Center for Applied Behavior Analysis. This non-profit outpatient clinic was developed within the Department of Special Education at Gonzaga University to provide services for persons with developmental disabilities who display behavioral difficulties. The clinic model includes the completion of forced-choice preference, reinforcer, functional analysis, and treatment assessments for all clients served. We will provide a descriptive analysis of the results obtained for each of these procedures with the population of children served to date. In addition, we will discuss what we have learned over the last ten years regarding the day to day pragmatic issues that arise when operating a free standing outpatient clinic.

Parenting Styles, Latino Parents and Functional Analysis Methodology. ANDREW W. GARDNER (Northern Arizona University), Siomara Enriquez (Northern Arizona University), Colleen Lui (Northern Arizona University), Caitlan Allen (Northern Arizona University)

Abstract: Parenting styles were initially developed to describe the parenting milieu and focused on three components: emotional relationship, parental practices, and belief system (Darling & Steinberg, 1993). A behavioral perspective focuses on observable behavior and less on attitudes. Measures for parenting styles have been based on observing the differences in the learning environment and categorizing practices with the most widely used parenting styles developed by Baumrind (1967), which included three styles: Authoritative, Authoritarian, and Permissive. "Uninvolved " was added later (Darling & Steinberg, 1993).

Cultural variables are often ignored within the parenting style literature especially between minority subgroups. If taken into consideration, general statements for "Latinos " are often used disregarding within-group heterogeneity. The term Latino is a label used for all people with origins in Mexico, Central or South America, and the Spanish speaking Caribbean islands (Rodriguez et al., 2006). The current study used functional analysis methodology (Iwata et al. 1982/1994) to investigate Latino parent-child interactions (i.e. parenting styles) within typical parenting contexts or situations (i.e. free play, attention, demands, and tangible) in home settings. Results are discussed in terms of parenting styles across contexts as well as possible cultural variables impacting both parent and child behavior.

Evaluating Abolishing Operations for Disruptive Behavior in Young Children Referred to a Behavioral Pediatrics Clinic. BRENDA J. ENGEBRETSON (University of Iowa), David P. Wacker (University of Iowa), Anuradha Salil Kumar Dutt (University of Iowa), Patrick Romani (University of Iowa)

Abstract: The Behavioral Pediatrics Clinic at the University of Iowa Children's Hospital specializes in the assessment and treatment of young children with disruptive behavior disorders. To evaluate variables

reinforcing the child's disruptive behavior, clinicians routinely use brief experimental analyses conducted within a multi-element design. A recent outcome summary of clinic cases showed that of the children who engaged in disruptive behavior during the clinical evaluation (N = 96), disruptive behavior was maintained by negative reinforcement in 47% of the cases, by positive reinforcement in 13% of the cases, and by both types of reinforcement in the remaining cases. Although understanding what reinforces the child's target behavior is important for identifying treatment, it can be equally beneficial to determine antecedent variables that serve as abolishing operations for the target behavior when identifying a behavioral treatment package. In this presentation, a case example of a 4-year-old boy who engages in disruptive behavior is presented with discussion of the implications that the assessment results had on treatment recommendations. Inter-observer agreement for occurrence and nonoccurrence of the target behavior was calculated on 75% of the assessment sessions (mean agreement = 95%; range 86% - 100%).

#55 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 222 C
CBM/DDA; Applied Behavior Analysis

The Assessment and Treatment of Feeding Problems in Children
Chair: Meeta R. Patel (Clinic 4 Kidz)
Discussant: Michael E. Kelley (University of Southern Maine)

Abstract: This symposium will include three data-based presentations on the assessment and treatment of feeding problems in children. Data will be presented from both clinic and home-based programs.

An Examination of Stimulus Fading and Escape Extinction in the Treatment of Food Refusal.
MICHELLE L. WADDELL (Clinic 4 Kidz), Meeta R. Patel (Clinic 4 Kidz), Jennifer Leigh King (Clinic 4 Kidz), Angela Pruett (Clinic 4 Kidz)

Abstract: Children with pediatric feeding disorders may display a variety of inappropriate behaviors to avoid eating. It is likely that the spoon alone has become aversive because it has been paired with something negative (e.g., choking, vomiting). Previous research has shown the utility of escape extinction as an effective treatment to decrease food refusal. However, escape extinction alone has also been shown to produce some negative side effects such as extinction bursts and/or emotional responding. Therefore, the purpose of this study was to develop a treatment protocol to decrease the aversive properties of eating by evaluating antecedent variables. In this study we compared the effects of stimulus fading (i.e., manipulating different foods/liquids and volumes on the spoon) plus escape extinction in the treatment of food refusal. First, an antecedent assessment was conducted to determine the starting point for the stimulus fading treatment component. During the treatment evaluation, stimulus fading steps plus escape extinction were evaluated in a multiple probe and multiple baseline across participants designs. Data from the antecedent assessment showed that each participant had a different starting point (e.g., empty spoon, full spoon with yogurt etc.) for treatment. The data from the treatment evaluation indicated that acceptance increased with stimulus fading plus escape extinction and inappropriate behaviors decreased. These data are discussed in relation to negative reinforcement and establishing operations.

Home-Based Treatment of Food Refusal Using Shaping and Other Behavioral Procedures.
KIMBERLY V. BECK (University of South Florida), Raymond G. Miltenberger (University of South Florida), Betsy M. Zamora (University of South Florida), Jessica Thompson (University of South Florida)

Abstract: Feeding related problems occur frequently in children with developmental delays and typical development. Much of the research on treatment of pediatric feeding disorders occurs in clinic settings. The present study took place in the home of a typically developing three year old boy displaying food refusal behavior resulting in extremely selective eating. The goal was to increase the intake of a wide variety of non-preferred foods. With the first 2 interventions, involving differential reinforcement of bites with attention and preferred foods, he increased his intake of fruit but still refused other foods. The next

intervention involved shaping eating behavior with 40 successive approximations to eating a bite of food. Each approximation was reinforced with preferred food and other reinforcers. Refusal to engage in the behavior resulted in guided compliance (escape extinction and negative reinforcement). Partial success with an all positive approach and challenges and limitations to in home treatment will be discussed.

Implementation of a Chin Prompt to Reduce Expulsion. LARA BARNETT (University of Nebraska Medical Center, Munroe-Meyer Institute), Candice M. Jostad (Munroe Meyer Institute), Heather Kadey (Munroe-Meyer Institute, University of Nebraska Med), Victoria Stewart (University of Nebraska Medical Center), Kristi Rivas (Munroe-Meyer Institute), Cathleen C. Piazza (Munroe-Meyer Institute)

Abstract: Pediatric feeding disorders are manifested in a variety of ways, including refusal behaviors. These behaviors may take on the form of spitting out the food (i.e., expulsion). The etiology of refusal behavior may be either medical, oral motor, behavioral, or a combination of some or all of these factors. Therefore, the purpose of the current investigation was to examine the implementation of a procedure (i.e., chin prompt) that may have functioned to treat oral motor skill deficits in conjunction with escape extinction. The participants were two children admitted to a Pediatric Feeding Disorders Program for the assessment and treatment of food refusal. Initial treatment consisted of re-presentation of expelled food. The chin prompt was added to the re-presentation procedure when re-presentation alone proved unsuccessful. The chin prompt consisted of the feeder providing gentle pressure under the child's chin following presentation of bites or during re-presentation of expelled food. Results indicated that for all participants, the most effective treatment to reduce expulsions was one in which re-presentation and the chin prompt were combined.

#56 Paper Session

5/23/2009
2:30 p.m. - 3:50 p.m.
North 131 A
CSE

Community Interventions Paper Session 3
Chair: Andree Fleming-Holland (Universidad Veracruzana)

Those Left Behind: Children of Migrants to the United States. (Theory) ANDREE FLEMING-HOLLAND (University of Veracruz (Mexico)), Marco W. Salas-Martinez (University of Veracruz (Mexico))

Abstract: The effect of the growing migrant traffic between the United States and Mexico has repercussions on both sides of the border. Veracruz is a recent entry into this human trafficking to the north, but now ranks 5th in the number of workers exported annually to de US. This population principally is composed of young men with little formal schooling. However, there is a growing demographic of women between 20 and 29 who are migrating north, often leaving their children behind to be cared for by relatives or even neighbors. These children are growing up without one or both parents, with obvious psychological repercussions such as anxiety and depression. They often perform poorly in school, and exhibit acting out, aggressive and impulsive behaviors, leading to undesirable consequences such as early pregnancies or addictions to alcohol or drugs. Since this is a relatively new phenomenon in Veracruz, the state is largely unprepared for addressing the mental health issues in this segment of the population, which requires prompt detection, intervention and resolution in a significant proportion of the citizens of tomorrow.

Self-Control Training in the Natural Environment to Increase Task Compliance and Appropriate Behavior. (Applied Behavior Analysis) VENESA BALIS (Florida Institute of Technology), Ada Celeste Harvey (Florida Institute of Technology), Mark T. Harvey (Florida Institute of Technology), Craig Cook (Attain, Inc.)

Abstract: The present study evaluated a procedure to increase self-control, compliance with functional daily routines, and other appropriate behavior for an adult with developmental disabilities within a community-based residential agency. Results show that, during baseline, when the participant's staff requested performance of tasks with prompting, he was non-compliant, and/or exhibited problem behavior that was sometimes severe. A functional analysis revealed that problem behavior was maintained by escape from task demands. During a pre-intervention self-control assessment phase, the participant was given a choice of a small reinforcer with no contingencies (i.e., no task completion was required to access the item) or a large reinforcer contingent on a pre-specified duration of task compliance with appropriate behavior. The participant consistently chose the large reinforcer, but he was unable to meet the criterion regarding the task duration to earn the item during several trials. Intervention included implementation of a self-control procedure utilizing a concurrent fixed-duration/progressive-duration reinforcement schedule within a changing-criterion design. The participant was able to gradually increase task compliance and engaged in appropriate behavior, meeting the target duration goal. Social validity measures revealed that staff working for the residential agency found the treatment acceptable and efficacious for the participant.

40 Years Is an Awful Long Time. Parents Caring For Adult Sons and Daughters with Disabilities. (Service Delivery) KAROLA DILLENBURGER (The Queen's University, Belfast, Northern Ireland)

Abstract: Older people who are caring for their adult sons and daughter with disabilities are under tremendous stress because they may suffer health problems themselves; have financial problems due a lifetime of caring; may have to care on their own due to the death of their spouse; worry about the future care of their child; and may feel uncomfortable approaching professionals for help. Behavior analysts working with these families need to take contextual pressures into consideration when planning intervention.

Parents of 26 adults with intellectual and/or developmental disabilities (including autism) were asked about present care and service arrangements, health issues, family support, and 'futures planning'. The research reported here identifies very high levels of commitment and love for sons and daughters despite severe lack of care and service provision, increasing parental health care needs, isolation and social exclusion, and deficit of statutory support. Virtual absence of structured futures planning was identified as one of the key issues. Recommendations are made for behavior analysts working in this field.

#57 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 129 A
DDA/AUT; Applied Behavior Analysis

Current Research in Verbal Behavior
Chair: Paul D. Neuman (Bryn Mawr College)
Discussant: Philip N. Hineline (Temple University)

Abstract: Applied behavior analysts have a rich history of teaching socially important behavior to individuals with developmental disabilities, autism and language delay. Less often, the learning of more complex social behavior is studied with typically developing children. Response prompting, reinforcement, generalization, and maintenance have all been extensively studied to identify best teaching practices. This symposium will examine prompting to establish tacts, several methods for teaching intraverbals to individuals with verbal deficits and several methods for teaching autoclitics to improve "social skills. " . Each study focuses on a different unit of verbal with individuals with distinct deficits. The first study, presented by Catia Cividini-Motta, explores the teaching of tacts using social stimuli as reinforcers. The second examination, presented by Nicole M. Trosclair-Lasserre, compares three methods for teaching intraverbals. In the third study, presented by Jennifer Wade, simple mands, component autoclitics comprised of more basic verbal operants, and

parsimonious autoclitics are taught to typically developing children. The distinguished verbal behavior scholar, Philip N. Hineline, will serve as the discussant.

Establishing Joint Attention Responses Using Social Stimuli as Reinforcers While Providing Opportunities to Tact. CATIA CIVIDINI-MOTTA (New England Center for Children), Tala Williford (New England Center for Children), Kathy Kathy Clark (New England Center for Children), William H. Ahearn (The New England Center for Children)

Abstract: The current research project assessed the effectiveness of using social stimuli and prompting to establish tact responses in 2 individuals diagnosed with Autism. Because tacts are maintained by either generalized or social reinforcers, it may be best to teach them using social stimuli as reinforcers. A reinforcer assessment of social stimuli was conducted and the results suggested two social reinforcers for use during the training phase. A multiple baseline across responses design was used to demonstrate experimental control. Baseline consisted of two sets of five trials in which no consequences were delivered for responding. During training, one of the two social consequences was delivered contingent on the target response, for both prompted and independent responses. The training phase continued until each one of the responses met the mastery criteria of 90% independent across two consecutive sessions. Interobserver (IOA) agreement data was collected over 33% of the sessions across both the reinforcer and the training phases and it averaged over 90% agreement. The results of this project suggested that social stimuli combined with prompting are effective for establishing joint attention responses during tact training with students diagnosed with autism.

Evaluation of Three Methods for Teaching Intraverbals to Children with Language Delays. NICOLE M. TROSCLAIR-LASSERRE (LSUHSC – Human Development Center), Dorothea C. Lerman (University of Houston-Clear Lake), Crystal N. Bowen (Marcus Autism Center), Joslyn N. Cynkus (Louisiana State University), Nathan A. Call (Marcus Autism Center and Emory University School of Medicine)

Abstract: Direct instruction is often necessary to develop language or expand language use in individuals with language delays. Previous research has begun to identify certain training conditions that result in more efficient use of instructional time devoted to language development. Specifically, incorporating mands into the instructional arrangement, increasing the quality of reinforcement delivered for interspersed tasks, and including instructive feedback stimuli into the consequences of learning trials have all demonstrated more efficient learning of targeted language skills. The purpose of the current investigation was to compare three methods for teaching intraverbals to individuals with deficits in this area. Interobserver agreement was collected for at least 48% of sessions and agreement coefficients exceeded 97% for all participants. Training conditions incorporating mands into instruction did not result in faster acquisition of intraverbals relative to the instructive feedback condition. Two out of three participants acquired new intraverbals related to the instructive feedback stimuli; however, the third participant did not acquire intraverbals presented as instructive feedback even when direct instruction was initiated. Generalization was not explicitly programmed but was observed for two participants. Finally, no single training condition was associated with improved maintenance relative to the other conditions.

Establishing Manipulative Autoclitics in Young Children's Repertoires as a Method for Improving Social Skills. JENIFER A. WADE (Temple University), Philip N. Hineline (Temple University)

Abstract: The study of verbal operants has received considerable attention; however, autoclitics have generally been overlooked in experimental and applied domains. Autoclitics can be defined as verbal operants modifying other verbal operants or the effect of these operants upon the listener. Autoclitics emitted by the speaker require discrimination of the listener's reaction in order to be effective. Placing autoclitics in a larger framework, verbal behavior relevant to what we speak of as social skills, persuasion, and conversation can be analyzed in part by in depth consideration of autoclitics. The current study implements several methods aimed at establishing autoclitics likely to improve what we speak of as "social skills. " Simple mands, component autoclitics comprised of more basic verbal operants, and

parsimonious autoclitics were taught to typically developing children. Preliminary data suggest that differences in use and variation of autoclitics exist both in speaker and listener repertoires based upon method of establishing such autoclitics, and that automatic transfer often occurs between speaker and listener roles (eg. pliance) after participation in speaker roles alone. The wide scope implications not only for educational domains, but for more varied social domains are discussed.

#58 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 128
DDA/DEV; Applied Behavior Analysis

Advancements in Preference and Choice Research across Multiple Applied Contexts
Chair: Richard G. Smith (University of North Texas)

Abstract: Applied researchers have increasingly examined the variables that contribute to participant choices in applied settings and how those variables can influence the efficacy of therapeutic and educational arrangements. The present set of papers will extend this line of research across a range of populations, including individuals with intellectual and development disabilities, older adults with dementia, and typically developing children of pre-school age. The studies pose a variety of overlapping experimental questions related to: 1) the stability of individual preferences across time, as determined by common preference assessment methods; 2) changes in the relative strength of reinforcers under increasingly intermittent reinforcement schedules, as determined through progressive-ratio and behavioral economic analyses; and 3) how contingency, schedule-correlated stimuli, and delay to reinforcement influence choice responding. Findings from the studies are individually discussed in terms of their implications for the arrangement of optimal, and ecologically relevant, environments for these varying populations.

Preference Assessments for Older Adults with Dementia: Stability of Preferences Identified by Multiple Stimulus Assessments. PAIGE BROOKLEY RAETZ (Western Michigan University), Linda A. LeBlanc (Western Michigan University), Jonathan C. Baker (Western Michigan University), Laura C Hilton (Western Michigan University)

Abstract: Individuals with dementia suffer from a variety of cognitive deficits that can lead to a lack of engagement in activities. Preference assessments have been used effectively with individuals with developmental disabilities to determine preferences for items and activities that can be incorporated into treatment programs and leisure activity schedules. Recently, literature in the area of aging has begun to incorporate the use of systematic preference assessments to assess preference for leisure activities with adults with dementia but several research questions remain. The purpose of the current study was to assess the utility of the Multiple Stimulus Without Replacement (MSWO) assessment for older adults with dementia. In addition, the current study assessed the stability of preference for individuals diagnosed with dementia by administering repeated MSWO assessments over the span of 4-5 months. Results indicated that older adults in the mild to moderate range of dementia were able to complete the MSWO assessment and that the assessment did identify a hierarchy of preferred activities. Additionally, results indicate that for 2/3 participants preference remained stable over a 4-5 month time period.

Child Preference for Various Discontinuous Schedules of Social Interaction. KEVIN LUCZYNSKI (Western New England College), Gregory P. Hanley (Western New England College)

Abstract: Children's preference for contingent over noncontingent reinforcement has been repeatedly demonstrated (Hanley, Piazza, Fisher, Contrucci, & Maglieri, 1997; Luczynski & Hanley, in press), but only under continuous reinforcement schedules. Because continuous schedules of social interaction are impractical to arrange in everyday settings, the present study evaluated children's preferences for several commonly prescribed, discontinuous schedules of social interaction; these included briefly signaled delayed reinforcement, multiple schedules of reinforcement in which signaled periods of extinction and contingent reinforcement alternated, and yoked noncontingent reinforcement in which the same amount

reinforcement was provided on time-based schedules. Interobserver agreement was collected for 100% of preference selections and averaged 100%. Several comparisons involving 6 children showed that when a preference was demonstrated, children preferred noncontingent reinforcement to contingent but delayed reinforcement, and children preferred contingent reinforcement in a multiple schedule to both noncontingent reinforcement and contingent but delayed reinforcement. From these data, it appears that preference for contingent reinforcement is influenced by the strength of the contingency operating within a schedule. Implications for scheduling the delivery of reinforcement in ecologically-relevant situations will be discussed.

Evaluation of Functional and Alternative Reinforcers under Progressive Schedule Requirements. CAITLIN J. SMITH (Munroe Meyer Institute), Henry S. Roane (University of Nebraska Medical Center & Munroe-Meyer Institute), Kasey Stephenson (Munroe-Meyer Institute / UNMC)

Abstract: One effective treatment for destructive behavior is to deliver a functional reinforcer (i.e., those that maintain destructive behavior) contingent upon an alternative response. Providing contingent access to highly preferred alternative reinforcers (i.e., those that do not maintain problem behavior) also has been demonstrated to be effective at decreasing destructive behavior. However, recent research has suggested that existing preference assessments may not be optimal for identifying stimuli to be incorporated into interventions, particularly when the response requirements of the intervention vary. In the current study, functional analyses were used to identify the reinforcer that maintained 2 participants' destructive behavior and preference assessments were used to identify alternative reinforcers. Next, the reinforcing effects of the functional and alternative reinforcers were assessed under progressively increasing response requirements. Finally, a treatment was developed in which the participants accessed either reinforcer following the omission of destructive behavior for a specific interval. For both participants, the reinforcer associated with more responding under the progressive response requirements was also associated with lower levels of destructive behavior during treatment. Results will be discussed in terms of using alternative methods to identifying effective interventions for destructive behavior.

Correspondence between Preference Shifts Occasioned by Increases in Unit Price and Increases in Reinforcer Delay. MICHELLE A. FRANK (Kennedy Krieger Institute), Iser Guillermo DeLeon (Kennedy Krieger Institute), Melissa J. Allman (Kennedy Krieger Institute/Hopkins), Abbey Carreau (Kennedy Krieger Institute), Mandy M. Triggs (Kennedy Krieger Institute)

Abstract: Although economic relations have been demonstrated using price manipulations for individuals with developmental disabilities, no study has examined the extent to which similar relations obtain with manipulations involving delay. The current study evaluated the correspondence between demand curves constructed for concurrently available stimuli when work requirements or delay to reinforcement for one stimulus was increased. Three individuals with developmental disabilities participated. Choices between stimuli were first assessed under concurrent FR1-FR1 schedules and then under schedule arrangements in which response requirements were held constant for one stimulus but increased across phases for the other stimulus. The average time between completion of the first response and delivery of reinforcement was assessed for each FR schedule. During the delay manipulation, the interval values replaced the ratio schedules such that the delay value was held constant at 0 s for one stimulus but increased across phases for the other stimulus. Results suggested that for the majority of comparisons, shifts in preference either did not occur when price and delay were manipulated or did occur and at similar values. The results are discussed in terms of their implications for development of effective training or treatment procedures for individuals with developmental disabilities.

#59 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 120 A
DDA; Applied Behavior Analysis

Variables Influencing the Persistence of Adaptive and Problem Behavior
Chair: Eric Boelter (Kennedy Krieger Institute)
Discussant: Wayne Fisher (Munroe-Meyer Institute, UNMC)

Abstract: A common problem encountered when treating individuals with intellectual disabilities who engage in disruptive behavior is that problem behavior often persists despite attempts to teach adaptive behavior. The current collection of papers investigates variables that affect the persistence of both adaptive and problem behavior. First, Jackie MacDonald, William Ahearn, and William Dube present data showing that problem behavior is more persistent during periods of extinction following a period in which it was reinforced on a continuous schedule relative to an intermittent schedule. Next, Jennifer McComas, Ellie Hatman, Chin-Chih Chen, and John Hoch investigate the effects of both continuous and intermittent concurrent schedules of reinforcement for adaptive and problem behavior on the persistence of those behaviors during a subsequent extinction period. Results suggest that the response rates of behavior observed under the various schedules predicts the persistence of the behavior during extinction. Finally, David Wacker, Wendy Berg, Jay Harding, John Lee, Kelly Schieltz, and Yaniz Padilla present data showing that, following long-term treatment with functional communication training, appropriate mands can persist during periods of extinction even when several challenges to the behavior are presented. In summary, these papers address important issues related to the persistence of both problem and adaptive behavior.

Examining Resistance in Automatically Reinforced and Socially-Maintained Problem Behavior. JACQUELYN M. MACDONALD (New England Center for Children), William H. Ahearn (The New England Center for Children), William V. Dube (UMMS Shriver Center)

Abstract: Some have suggested that continuously reinforced (CRF) behavior is less persistent during extinction (EXT) than behavior reinforced on an intermittent (INT) schedule; however, research generally supports the opposite (see Nevin, 1988; 1992). This general finding was supported by Ahearn and colleagues (2003). Automatically reinforced behavior was more resistant to disruption following periods of access to preferred stimuli delivered on a VT schedule relative to the absence of access to preferred items. It is likely that severe problem behavior is often maintained via intermittent contingencies in natural settings so the present study attempted to examine whether there is differential persistence during EXT when behavior is reinforced via CRF and INT schedules prior to EXT. Four children diagnosed with an autism spectrum disorder who engaged in problem behavior sensitive to social reinforcers participated. Two experimental conditions, CRF and INT, were compared; each condition involved a sequence of four components. With CRF, the four components occurred in the following order: (a) no social interaction, (b) continuous reinforcement of problem behavior, (c) EXT, and (d) no social interaction. With INT, intermittent reinforcement of problem behavior occurred during the second component. Behavior was more persistent during EXT in the CRF condition for each participant.

Persistence of Mands and Self-Injurious Behavior following Concurrent Continuous and Intermittent Schedules of Reinforcement. JENNIFER J. MCCOMAS (University of Minnesota), Ellie C. Hartman (University of Wisconsin-Stout), Chin-Chih Chen (University of Minnesota), John Hoch (University of Minnesota)

Abstract: The current study tested the persistence of mands and self-injurious behavior during extinction following concurrent intermittent and continuous schedules of positive reinforcement (tangible items). Persistence was measured in terms of both latency to respond and response rate. In addition, persistence was examined as a function of the preceding reinforcement schedule as in the presence of a novel stimulus (novel interventionist) and in the presence of a variety of establishing operations (preferred and

non-preferred toys). Response rates during concurrent reinforcement consistently predicted persistence during subsequent extinction for latency and response rate and similar results were observed in the presence of a novel stimulus and variety of EOs. Results are discussed in terms of behavioral maintenance of responding in concurrent schedule arrangements and suggest that further research is needed to better understand the effects of concurrent schedules on response persistence.

Behavioral Persistence Following Long-Term Treatment with Functional Communication Training. DAVID P. WACKER (University of Iowa), Wendy K. Berg (University of Iowa), Jay W. Harding (University of Iowa), John F. Lee (University of Iowa), Kelly M. Schieltz (University of Iowa), Yaniz C. Padilla (University of Iowa)

Abstract: Seven children with developmental disabilities who displayed destructive behavior (self-injury, aggression, and property destruction) received long-term (at least 1 year) functional communication training in their homes. The behavioral persistence of destructive behavior, manding, and task completion was evaluated via two sets of procedures. First, intermittently throughout treatment, a baseline extinction condition was conducted within a reversal design to evaluate persistence under brief extinction conditions. Second, at the completion of treatment, four distinct challenges to treatment were conducted within a multielement design: (a) establishing operations challenge, in which the baseline extinction sessions were increased to three times their original length; (b) change in discriminative stimulus (Sd) task challenge, in which the target task was changed to a novel task; (c) change in Sd mand challenge, in which the card signaling that mands would be reinforced was removed; and (d) competing schedules of reinforcement challenge, in which destructive behavior as well as mands were reinforced. Interobserver agreement was collected across 30% of all sessions and was at least 90% for all dependent variables. The results showed that behavioral persistence of adaptive behavior during brief periods of extinction increased over the course of treatment and remained stable across each challenge condition for most children.

#60 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 225
EAB; Experimental Analysis

Experimental Analyses of Jackpotting with Dogs, Pigeons, and Rats
Chair: Toshikazu Kuroda (West Virginia University)

Abstract: The concept of jackpotting was introduced by Pryor (1984) in her animal training book Don't Shoot the Dog! It has been defined as the rare delivery of a larger than normal food presentation, either dependent on a response (Burch & Bailey, 1999) or independently of responding (Pryor, 1984). It has been suggested that jackpotting has a disproportionally strong reinforcing effect on ongoing behavior: It "results in an animal that is excited and curious about what might be coming next " (Burch & Bailey, 1999, p. 44). But its effects are limited to anecdotes and empirical investigation is invited. In this symposium, four experiments using different species as subjects will be presented: Muir and Rosales-Ruiz measured, before and after introducing jackpotting, frequency of a target response and choice between two target responses using dogs; Kuroda and Lattal measured effects of response-dependent jackpotting under a fixed-interval schedule with pigeons; Roca and Lattal measured response rate and resistance to change using rats, with milk and food pellets as reinforcers; and Jarmolowicz, Kuroda, and Lattal measured effects of response-dependent and of response-independent jackpotting under progressive-ratio schedules using pigeons. Results will be discussed in terms of implications for both experimental and animal training literature.

The Effects of Jackpots on Frequency of Response and Choice. KRISTY MUIR (University of North Texas), Jesus Rosales-Ruiz (University of North Texas)

Abstract: The use of jackpots is a very common practice in applied animal behavior. However, no formal definition has been agreed upon for jackpotting. Definitions are highly variable and many times vague. In

general, a jackpot is considered to be an unusually large or valuable reinforcer delivered contingently upon a high quality or difficult approximation. Additionally, there is no agreement about the effects of jackpotting on behavior. The present study examined the effects of using a jackpot on the frequency of response and on response choice in domestic dogs. Dogs were trained to target in a free operant setting. In experiment 1 a single target was used. After a baseline was established with continuous reinforcement a jackpot condition was introduced and response frequency was measured. In experiment 2 dogs were trained to alternate touching two targets. During baseline touching either target was reinforced. After baseline a jackpot was scheduled for one of the targets. Results will be discussed in terms of the implications for applied animal training.

An Experimental Analysis of Jackpotting under a Fixed-Interval Schedule. TOSHIKAZU KURODA (West Virginia University), Kennon A. Lattal (West Virginia University)

Abstract: Three experimentally naïve White Carneau pigeons serve in the present study. A fixed-interval (FI) 60s schedule is in effect for 60 reinforcers in baselines. Experimental conditions are identical to baselines, but reinforcement (access to mixed grain for 1s, which begins when the pigeon inserts its head in the aperture and breaks the photocell, thereby activating a 1-s timer) is infrequently replaced by jackpotting (7s access): A total of 2 and 4 jackpots are quasi-randomly distributed in the 60 FIs in the Low and High Probability conditions, respectively. Baselines alternate with experimental conditions, constituting a total of 5 conditions for each subject. The delivery of a jackpot disrupted a pause-and-run pattern of an FI schedule. The postreinforcement pause was consistently shorter immediately after than immediately before the delivery of a jackpot. These molecular measures corroborate the effects of jackpotting described in the animal training literature. But no consistent effect was observed in molar measures such as running rates.

Jackpotting: Effects of Reinforcer Variety and Magnitude on Response Rate and Resistance to Change. ALICIA ROCA (National University of Mexico), Kennon A. Lattal (West Virginia University)

Abstract: In animal training reports, jackpots have been described as "surprise " rewards that increase the frequency of occurrence of target responses. As described in these reports, a jackpot is not only an extraordinary large reward, but is also qualitatively novel, is delivered infrequently, and is effective to establish and maintain responding. In the present study we designed an experimental model of jackpotting using rats as subjects. Lever pressing was reinforced with milk according to a fixed-interval schedule in two components of a multiple schedule. The "jackpot " consisted of thirty food pellets that were delivered complementarily to the milk but occurred at random only once during each session. The " jackpot " was always correlated with the same component. The effects of jackpot delivery on response rates and resistance to change in the two components were examined. The results were consistent with the findings of previous studies on resistance to change and varied reinforcement.

Progressive-Ratio Schedules: Effects of Response-Dependent and Response-Independent Jackpotting." DAVID P. JARMOLOWICZ (West Virginia University), Toshikazu Kuroda (West Virginia University), Kennon A. Lattal (West Virginia University)

Abstract: "Jackpotting " has generally been described as the delivery of a larger-than-usual reinforcer resulting in an immediate increase in some dimension of responding. On separate occasions, the delivery of this reinforcer has been described as a response-dependent and as a response-independent event (Burch & Bailey, 1999; Pryor, 1984) Although one can examine the effects of response-dependent "jackpotting " on behavior maintained by a range of schedules of reinforcement, the extensive pausing associated with progressive-ratio (PR) schedules provides a unique opportunity to study the effects of response-independent "jackpotting ". The current study examined the effects of both response-dependent and response-independent "jackpotting " on behavior maintained by PR schedules.

#61 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 226 AB
EAB/AUT; Applied Behavior Analysis

Topics in Translational and Applied Research
Chair: Jason C. Bourret (New England Center for Children)

Abstract: The research presented in this symposium touches upon a range of topics with the underlying theme of bridging basic and applied behavior analytic research. Two of the presentations involve applications of behavioral economics. One in the context of describing consumption of reinforcers in clinically used token economies in place throughout the participant's day, over the course of two years. The other in the context of an evaluation of the effects of allowing selection of reinforcers (i.e., "choice ") across a range of schedule values. The other two presentations both involve analyses of the effects of feedback. One is an examination of the functions of feedback stimuli in pigeons. The other is an evaluation of the utility of an automated training for establishing graphing and spread sheet using skills in teachers.

Behavior Economic Analysis of Consumption of Particular Reinforcers in Closed Token Economies. DANA JUSTICE (New England Center for Children), Jason C. Bourret (New England Center for Children), Kathryn G. Horton (New England Center for Children)

Abstract: Previous literature in behavioral economics has described the function for of consumption of commodities across unit prices, or schedules of reinforcement. Our study examined whether the consumption of different types of edibles by human participants in an applied setting conformed to this pattern with increases in token FR schedule. Over a two year period, data were collected on the edible reinforcers consumed by three children diagnosed with autism at a residential school for individuals with developmental disabilities, earned in a closed token economy. Responding was measured across a range of exchange schedules. Demand and work functions were generated for the most selected reinforcers and these were compared to the results of multiple and paired stimulus preference assessments. Implications for the analysis of reinforcer efficacy in clinical settings using this method are discussed.

A Behavioral Economic Analysis of Choice. JAMIE LEBOWITZ (New England Center for Children), Jason C. Bourret (New England Center for Children)

Abstract: The current study is a behavioral economic analysis of concurrent and simple terminal links in two-component chained schedules. In study 1, a concurrent-chains schedule was used to measure differences between concurrent (choice) and simple FR1 (no choice) terminal links. Two individuals diagnosed with autism spectrum disorders were presented with two options simultaneously. Responding on the choice link resulted in access to a plate of multiple, identical items, from which a single item could be chosen, and responding on the no-choice link resulted in access to one item on a plate. In Study 2, choice and no-choice conditions were arranged in a multiple schedule and schedule requirements for both were systematically manipulated. Data from study two were analyzed as work and demand functions.

Examination of the Utility of an Automated Training in Teaching Graphing and Spreadsheet Use. NICHOLAS R VANSELOW (Northeastern University/New England Center for Children), Jason C. Bourret (New England Center for Children)

Abstract: In many higher-level academic courses, information is presented on overhead slides. In this study, slides are enhanced with feedback from test information. Participants were taught to create APA style graphs over nine lessons. Each lesson began with a pre-test. After the pre-test, participants were presented with slides containing lesson material. In the feedback condition, slides with information relevant to questions the participant answered incorrectly displayed the message "Error on this information "; other slides displayed "Correct ". In the no feedback condition, these messages were not

displayed. After the slides, the participant completed a post-test. Participants repeated slides and post-tests until the post-test score was 100%. Participants completed the workshop in four fewer attempts in the feedback condition than in the no feedback condition on average. During lesson slides, participants spent more time on slides containing information marked with an error message than other slides in the feedback condition. However, even in the no feedback condition, participants spent more time, though not as much as in the feedback condition, on error slides. This study has implications for future research on the use of feedback and "passive " learning. Further research is needed to determine how discrimination between correct and incorrect responses occurs even without feedback.

Effects of Feedback Following a Spatially Defined Response in Pigeons. CHATA A. DICKSON (West Virginia University), Yusuke Hayashi (West Virginia University), Andrew Lightner (West Virginia University), Kennon A. Lattal (West Virginia University)

Abstract: Feedback for responding is commonly studied and its use is frequently recommended in relation to problems of learning and behavior. Rarely is the function of these contingent stimuli examined. In this study we investigated effects of response feedback on keypecking and on a spatially defined operant in three pigeons. Measures included response rate, interresponse time, temporal control, and rate of obtained reinforcement. In one component of a multiple schedule immediate response feedback followed each response. In the other component no feedback was delivered. Reinforcement schedules were identical across components and included both VI and DRL schedules across a range of values of each. When the response was a spatially defined operant, response feedback tended to decrease response rates, and altered the shape of the IRT distribution by decreasing short IRTs and shifting the peak of the distribution toward longer IRTs, relative to the no feedback condition. Under some parameters of the DRL schedule, the rate of reinforcement was greater in the feedback component.

#62 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 227 BC
EAB; Experimental Analysis

Electrophysiology and Learning: Methodological Considerations, Experimental Results and Future Research
Chair: Jon Gretar Sigurjonsson (National University of Ireland, Galway)
Discussant: John W. Donahoe (Univ. Massachusetts/Amherst)

Abstract: Major advances are being made in uncovering the brain mechanisms of learning and complex behavior and interest in this area is growing within the behavior analysis community. The papers at this symposium will address a variety of topics ranging from methodological advances in the analysis of the EEG, to the identification of brain mechanisms which might shed light on the process of acceptance and to the brain activity that is thought to correlate with the recognition of conditioned reinforcers. The first paper contrasts and compares traditional spectral power analysis with the so called Individual Alpha Frequency method and why this new method should not be over looked by behavior analysts. The second paper will review the research linking the P300 wave to conditioned reinforcers and the efficacy of using rat P300 model to investigate learning processes using EEG and pharmacological manipulations. The third paper will present preliminary results of a protocol exploring potential neural correlates to acceptance cultivated by Acceptance and Commitment Therapy and how these results might serve in the development of a functional contextualistic neuroscience.

Frequency vs. Power Analysis of EEG Signals in the Analysis of Stimulus Equivalence. JON GRETAR SIGURJONSSON (National University of Ireland, Galway), Denis P. O'Hora (National University of Ireland, Galway)

Abstract: Electrophysiological measurements have become a part of the repertoire of behavior analysts when analyzing the effects of reinforcement contingencies on human behavior. For the most part

behavior analysts have used the event related potential (ERP) method to collect and analyze data but few researchers have analyzed EEG bands, a method which might be used to capture the formation of stimulus classes in the brain or identify brain states that precede stimulus class formation. It has been pointed out the band analysis method masks individual differences in electrophysiological activity and could serve to diminish visible biological effects of behavioral and cognitive tasks. A different way to analyze EEG bands is the Individual Alpha Frequency (IAF) method which uses individual participants frequency measures to gauge the brain activity and might be more attractive to behavior analysts than the band analysis. The strengths and weaknesses of each method will be discussed.

The P300 Event Related Potential in Rats is a Correlate of Conditioned Reinforcement.
WILLIAM D. KLIPEC (Drake University)

Abstract: The human P300 event related potential (ERP) is a trait marker for schizophrenia in human males and is thought to reflect an underlying cognitive process. Research in our laboratory has demonstrated a robust P300 ERP in rats, the amplitude of which is directly related to the acquisition, extinction and reacquisition of control by a discriminative stimulus. Additionally, we have shown that P300 ERP amplitude in rats is an incremental function of conditioned stimulus proximity to primary reinforcement in behavioral chains. We have also demonstrated robust P300 ERPs to stimuli predicting the occurrence as well as the omission of expected reinforcers. These findings support the hypothesis that the P300 is a correlate of the brain's response to recognizing a conditioned reinforcer. The presentation will review this research and discuss the efficacy of the rat P300 model for investigating learning processes in unrestrained rats using electroencephalography and pharmacological manipulations.

An Exploration of Acceptance Related Processes in Pre-surgically Implanted Epileptic Patients by Means of Real-Time Frequency-Band Analysis System. BENJAMIN SCHOENDORFF (Claude Bernard University, Lyon, France), Juan Vidal (Claude Bernard University, Lyon, France), Karim Jerbi (Claude Bernard University, Lyon, France), Philippe Kahane (Claude Bernard University, Lyon, France), Philippe Ryvlin (Claude Bernard University, Lyon, France), Lydie Cornu (Claude Bernard University, Lyon, France), Jean-Philippe Lachaux (Claude Bernard University, Lyon, France)

Abstract: The surgical treatment of patients with intractable epilepsy is preceded by a pre-surgical evaluation period during which intracranial EEG recordings are performed to identify the epileptogenic network and provide a functional map of eloquent cerebral areas that need to be spared to minimize the risk of post-operative deficits. A growing body of research based on such invasive recordings indicates that cortical oscillations at various frequencies, especially in the gamma range (40 to 150 Hz), can provide efficient markers of task-related neural network activity.

Using a novel real-time investigation framework for mapping human brain functions based on online visualization of the spectral power of the ongoing intracranial activity (Lachaux et al, 2008), we will present preliminary results of a protocol exploring potential correlates of acceptance related processes as cultivated by Acceptance and Commitment Therapy (Hayes et al 1999) and suggest possible ways in which such real-time brain imaging technology might both guide the cultivation of therapeutic processes such as acceptance (by means of neurofeedack) and serve in the development of a functional contextual neuroscience.

#63 Paper Session

5/23/2009
2:30 p.m. - 3:50 p.m.
North 228
EAB

Discounting
Chair: Gabriel D Searcy (Western Michigan University)

Effects of Added Cost on Choice Between High and low Risk Options: A Dynamic Analysis
(Experimental Analysis) J. ADAM BENNETT (Western Michigan University), Gabriel D Searcy (Western Michigan University), Adam E. Fox (Western Michigan University), Cynthia J. Pietras (Western Michigan University)

Abstract: Risky choice in adult humans was assessed in a task designed to approximate energy budget manipulations conducted with non-humans. Following each choice an amount of money was subtracted from earnings to model energy expenditures. The primary aim of the study was to determine whether the value of the cost affected risky choice. Subjects were presented with choices between high- and low-variance monetary options in blocks of five trials. Block earnings were added to session earnings only if a subject met the minimum earnings requirement. Each trial, a set amount was subtracted from subjects' earnings when a trial choice was made. Cost was manipulated across conditions to generate positive and negative earnings budgets. Similar to previous earnings budget studies, risk sensitivity varied as a function of budget condition. That is, choice tended to be risk-averse under positive-budget conditions (no cost) and risk-prone under negative-budget conditions (moderate and high costs). Contrary to previous earnings budget studies, however, choice patterns were not reliably predicted by a dynamic (trial-by-trial) optimization model and the proportion of choices consistent with predictions differed across the two choice options.

An Abbreviated Temporal Discounting Procedure for Calculating Discount Rate. (Experimental Analysis) RICHARD YI (University of Arkansas for Medical Sciences), Jeffery Pitcock (University of Arkansas for Medical Sciences)

Abstract: Temporal discounting refers to the reduction in the present subjective value (indifference point) of a delayed outcome as a function of the delay to that outcome. The dominant procedure is to obtain indifference points at each of 6 or 7 delays, and use these values to calculate a single discounting rate. The resulting number of trials leads to lengthy sessions where subject fatigue and ambivalence are of concern. The purpose of the present analysis was to determine if discount rates, equally precise, could be determined with fewer indifference points. In an analysis of temporal discounting data collected over numerous studies collecting 7 indifference points at delays between 1 day and 25 years, we comprehensively compared discount rates obtained from different combinations of fewer indifference points. This analysis indicates that the same discount rates obtained with 7 indifference points can be obtained with substantially fewer indifference points. This suggests that a substantially abbreviated temporal discounting procedure can be conducted without any loss in the precision of the discounting rate measure. We provide the conditions under which this abbreviation is possible.

Probability Discounting in Humans: Hypothetical Versus Real Outcomes. (Experimental Analysis) GABRIEL D SEARCY (Western Michigan University), Cynthia J. Pietras (Western Michigan University)

Abstract: Three experiments investigated probability discounting in 18 adults with hypothetical or real outcomes. Experiment 1 used a Decreasing-Adjustment Algorithm (Du et al., 2002). Experiments 2 and 3 used a Double-Limit Algorithm (Richards et al., 1999). Experiment 3 included feedback (regarding average trial earning) after each session. Participants were given repeated choices between a large amount ($1.00) delivered probabilistically and a smaller amount delivered with certainty (e.g. $0.05). In hypothetical conditions, participants were paid a standard amount, whereas in real conditions,

participants were paid the outcomes of their choices from a proportion of trials. A repeated measurements design was used and all participants were exposed to both hypothetical and real conditions. Hyperbolic discounting curves were fit to indifference points using h values. Experiment 1 h values were higher (and AUC values lower) in the Hypothetical condition than in the Real condition indicating that rates of discounting were different between real and hypothetical conditions. Experiment 2 and 3 h and AUC values were similar across conditions and showed no consistent difference between real and hypothetical conditions. These results suggest that the nature of the choice outcome may influence probability discounting, but that the effect may depend on the adjusting algorithm used.

#64 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 121 BC
EDC; Service Delivery

Supporting the Implementation of Evidence-Based Practices: Technical Assistance, Monitoring and Implementation Fidelity
Chair: Teri Lewis-Palmer (Independent Consultant)
Discussant: Cynthia M. Anderson (University of Oregon)

Abstract: In a recent article, Biglan and Ogden (2008) make the case that there is sufficient knowledge to produce significant positive outcomes on a large scale if evidence-based interventions were adopted and implemented. The difficulty lies in the lack of knowledge about how to influence organizations to adopt and implement evidence-based interventions. The question is how do we transport our scientific knowledge base to practice settings without losing the power of the intervention. The research to practice gap is more than having evidence-based practices available. Krachtowill, Albers, & Steele Shernoff (2004) indicate that practice sites are challenged by cumbersome organization, lack of skills and resources and limited emphasis on prevention. Furthermore, Fixsen and colleagues (2005) have suggested that sustainability is a function of how well adoption and implementation has been handled. This symposium focuses on adoption and implementation of evidence-based practices. Each of the three presentations will present a different aspect of practice site implementation including building training and technical assistance into existing local resources, establishing monitoring systems that are reliable and accessible and using fidelity of implementation to increase accuracy and sustainability of practitioner efforts.

Foundations of Implementation: Establishing and Maintaining Systems for Higher Level Implementation of Evidence-Based Practices. R. KENTON DENNY (Louisiana State University)

Abstract: One of the greatest challenges for going to scale with evidence based practices is the ability to establish and maintain fidelity implementation across distances and time. In this presentation we will look at the factors to be considered in the design of large scale systems of implementation especially as it relates to the implementation of behavioral support practices. Supporting practices and challenges will be identified for both universal and targeted group interventions. Efforts to integrate fidelity of implementation measures within state level compliance and school performance monitoring will be presented.

Reliability of Behavior Ratings for Daily Behavior Report Cards. MACK D. BURKE (Texas A&M University), Kimberly Vannest (Texas A&M University)

Abstract: Daily behavior report cards (DBRCs) have long been used in Applied Behavior Analysis as illustrated in the seminal study by Bailey, Wolf, and Phillips (1970) on the use of daily behavior report cards, home-based reinforcement, and problem behavior. DBRCs continue to be a user friendly approach to (a) communicating with parents, (b) documenting intervention effects, (c) anchoring contingencies, and (d) progress monitoring IEP goals and objectives. DBRCs may be used for progress monitoring of individual goals and objectives for students with disabilities or for monitoring progress toward meeting school expectations. DBRCs can be embedded into check in/out programs, reinforcement programs, and

behavior intervention plans. In this presentation, we will review initial results of the reliability of a categorical rating approach that represents a hybrid between direct observations and traditional behavior rating scales.

The Importance of Fidelity Measurement to Interpret Intervention Results and Improve Implementation. SHANNA HAGAN-BURKE (Texas A&M University), Eric Oslund (Texas A&M University), Melissa Fogarty (Texas A&M University), Caitlin Johnson (Texas A&M University)

Abstract: Well designed measures of implementation fidelity provide vital data for informing educational research and practice. This session will present the fidelity measures used in an early reading intervention study and describe how those data were used to (a) capture the differences and samenesses between experimental and comparison conditions and (b) determine formative feedback for interventionists delivering an early reading intervention to kindergarteners at-risk for reading problems. Observation measures were developed for both the intervention and comparison conditions. These protocols were designed to document the extent to which fundamental intervention elements were delivered (intervention version) and evaluate the quality of instructional delivery (intervention and comparison versions). The protocols also allowed observers to document the extent to which students attended to instruction and refrained from problem behaviors. These fidelity data provided a context for interpreting intervention results and helped researchers isolate the intervention features required for student success

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#65 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 121 A
EDC; Applied Behavior Analysis

Three Experimental Studies of Interventions for Strengthening Stimulus Control in Reading Fluency and Word Reading
Chair: Kristi L. Hofstadter (University of Nebraska- Lincoln)
Discussant: Mark D. Shriver (Munroe-Meyer Institute)

Abstract: In this symposium, three studies will be presented which investigated a variety of intervention strategies for improving the reading fluency and word identification of elementary school students. In the first study, three sight word acquisition interventions consisting of either individual or combined flashcard and modeling components were compared using a multielement design. Findings examining data to be collected will be presented and discussed. In the second study, the effects of a peer-mediated reading fluency intervention derived from brief experimental analysis results were examined across curriculum passages. Results demonstrated large improvements in reading fluency upon intervention implementation across passages, as well as maintenance of effects after intervention removal. In the third study, the effects of two interventions, Replacement Repeated Reading (RRR) and Repeated Reading (RR), for improving acquisition and maintenance of unknown words were compared using a parallel treatments design. The two reading interventions both utilized repeated opportunities to respond during reading instruction. However, RRR progressively introduced a consistent, pre-determined number of error words within the same passage across presentations, whereas RR introduced error words within separate passages. The results of data to be collected will be presented and implications discussed.

Stimulus Control of Word Reading: An Investigation of Combined Effects of Isolated Training and Modeling. MELISSA N. ANDERSEN (University of Nebraska-Lincoln), Edward J. Daly III (University of Nebraska-Lincoln)

Abstract: Reading is a critical skill, which prevents academic and behavioral problems; yet many children struggle with learning to read. Training in isolation using flashcards has been shown to bring word reading under stimulus control prior to introduction to the natural context (e.g., connected text). Additionally, modeling is an evidence-based strategy to enhance stimulus control of word reading in connected text (e.g., oral reading fluency). Yet, the combined effects of training sight words in isolation

and modeling word reading in connected text on sight word identification have yet to be investigated. Using a multielement design, the current study will investigate the differential effects of three treatments, (1) a treatment package combining research-proven flashcard and modeling techniques, (2) modeling alone, and (3) antecedent flashcard presentation, on sight word acquisition. Participants consisted of four students attending an urban Midwestern elementary school. Data to be collected on number of sight words gained across conditions will be presented. Results will be discussed in terms of the treatment elements that may enhance stimulus control of word reading in connected text.

Reading Friends: A Peer-Mediated Reading Fluency Intervention. KRISTI L. HOFSTADTER (University of Nebraska- Lincoln), Edward J. Daly III (University of Nebraska-Lincoln)

Abstract: Although behavioral consultation is frequently employed in school settings to derive effective academic interventions, the identified treatments can often be time consuming for teachers, posing a potential threat to treatment integrity and acceptability. Peer-mediated treatments provide a promising alternative to traditional teacher-directed interventions. Throughout the behavioral consultation process, an individualized peer-mediated reading fluency treatment was developed and implemented. Data gathered throughout the consultation process, as well as a brief experimental analysis, were employed to design a reading intervention consisting of listening passage preview, repeated reading, error correction, and contingent reinforcement. The identified reading package was delivered by a fluent classroom peer (i.e., at or above grade-level Dynamic Indicators of Basic Early Literacy Skills oral reading fluency benchmarks). A multiple-probe design across curriculum-derived passages was employed to evaluate the effects of the peer-delivered intervention on the reading fluency of one first grade student. Results indicated that the student read with increased fluency and accuracy upon intervention implementation across all six passages. Fluency improvements were also maintained for all passages upon withdrawal of treatment. Discussion will focus on the use of experimental analysis to develop peer-tutoring interventions, implementation considerations across change agents, and directions for future research.

Replacement Repeated Reading: An Intervention for Increasing Word Acquisition and Reading Fluency. SARA S KUPZYK (University of Nebraska-Lincoln), Edward J. Daly III (University of Nebraska-Lincoln)

Abstract: Interspersal training has been found to facilitate acquisition of a variety of stimuli in academic settings. Additionally, findings indicate students prefer interspersal training when given a choice. However, interspersal training has not been applied to word acquisition in text reading. In this study, using a parallel treatments design, a traditional repeated reading (RR) program is compared to replacement repeated reading (RRR). Elementary students were exposed to both programs which involved replacing known words in a passage with unknown words. In the RRR program, the same passage was used across stimulus sets (i.e., previously unknown words remained in the passage while known words were replaced) to increase opportunities to respond to new words and to decrease student effort in passage reading. In the RR program, a new passage was used for each set of stimuli. Data to be collected on acquisition and maintenance of previously unknown words in each treatment will be presented. Results will be discussed in terms of the treatment elements that appear to improve acquisition and maintenance of new words through in-text reading. Additionally, future classroom applications and considerations for use of the intervention with students with behavioral problems will be discussed.

#66 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 122 BC
EDC/EAB; Applied Behavior Analysis

Science Board Translational Series: Lessons of Stimulus Relations Research for Creating Lessons for Sophisticated Learners
Chair: Thomas S. Critchfield (Illinois State University)

Abstract: Basic research on stimulus equivalence and other stimulus relations shows how teaching a few things can create a variety of untaught abilities -- a finding that should be of special interest in education, where a lot must be taught using very limited time and effort. This session will focus on applying principles that were derived from the basic laboratory to the development of instruction for sophisticated adult learners (college students). Each presenter will briefly survey selected basic research and theory, and discuss how those it may be used to create lessons that generate more abilities than are directly taught. Each presentation will showcase selected applied research findings that illustrate the operation and effectiveness of the resulting instruction.

Examining the Generalization and Retention of Equivalence Relations Consisting of Course Content in the Undergraduate Rehabilitation Services Major. RUTH ANNE REHFELDT (Southern Illinois University), Brooke Diane Walker (SIU Carbondale), Yors A. Garcia (Southern Illinois University)

Abstract: This presentation will report two experiments in which the stimulus equivalence instructional protocol was implemented to teach the basic concepts in two undergraduate rehabilitation courses. In the first experiment, an automated protocol was used to establish three, 4-member classes between stimuli related to single-subject methodology. Stimuli included the names of the design, representative graphs, definitions, and clinical vignettes in which the use of a particular design as an evaluation technique would be appropriate. Generalization of the relations to novel clinical vignettes was examined, as was the retention of the derived relations at least one month following their original laboratory experiment. In the second experiment, a paper-and-pencil format was used to establish relations between disability names, causes, definitions, and common treatments. Experimental performance was correlated with class performance, and long-term retention was also examined. Results suggest that the stimulus equivalence protocol may be an efficient means of facilitating student achievement of basic course objectives, and the relations may be remarkably stable over time.

Generalization, Perceptual Classes, and Equivalence Classes: Their Intersection and Applications. LANNY FIELDS (Queens College, CUNY), Patricia A. Moss (The Graduate Center of CUNY)

Abstract: Equivalence classes can be used as models of meaningful informational networks that include perceptually disparate stimuli all of which can be used interchangeably. An example would be the words DOG and PERRO, and the picture of the family dog called Clarence. The class then is composed of singular stimuli. In contrast, all stimuli encountered in actual settings will be perceptual variations of these prototypical stimuli that are the members of the above mentioned equivalence class. To be of real world utility, however, perceptual variants of each of these terms in the equivalence should also be interchangeable with the class members. Further, if a response is learned in the presence of one of the class members, it should be evoked by all of the members of the basal class and all of the perceptual variants of those class members. This induction of these performances will be considered by integrating current knowledge of stimulus generalization, the relationship of broad generalization gradients to perceptual classes, and the linkage of perceptual classes and equivalence classes. These topics will be considered in the presentation with relevant information drawn from the basic research and applied behavioral domains.

Using Contextual Control to Promote "Conditional Reasoning " in Hypothesis Decision Making. THOMAS S. CRITCHFIELD (Illinois State University), Daniel Mark Fienup (The May Institute)

Abstract: Most academic abilities require a degree of "conditional reasoning, " that is, concepts apply only under some circumstances. We will briefly survey the phenomenon called contextual control, in which a stimulus participates in multiple equivalence classes in different contexts. We will proceed to show how this phenomenon shaped the development of equivalence-based lessons to teach undergraduate research methods students about the role of statistical inference in hypothesis decision making. Both laboratory and field research show that the lessons succeed in creating "conditional

reasoning " and that the resulting abilities expand in predictable, untaught ways. We will also consider whether the stimulus control literature suggests better ways to accomplish the same outcomes.

Web-Based Accelerated Acquisition of Complex Mathematical Relations: An Artificial Neural Network Approach. CHRIS NINNESS (Stephen F. Austin State University), Jennifer McGinty (Stephen F. Austin State University), Robin Rumph (Stephen F. Austin University), Glen L. McCuller (Stephen F. Austin State University), Sharon K. Ninness (Nacogdoches ISD)

Abstract: We are developing and deploying a series of web-interactive construction-based / selection-based software systems addressing a wide range of math skills, including trigonometric identities, inverse trigonometric functions, and various types of multivariate statistical relations. As training progresses, our neural network architecture identifies (and allows us to remediate) mathematical error patterns that may occur during our online training. Outcomes suggest that mathematically inexperienced students are capable of acquiring extremely large, complex, and multifaceted abstract concepts rather efficiently when exposed to these online procedures. In this presentation, we will illustrate several of our recently developed web-based training protocols. Moreover, we will describe the respective histories of selection-based responding and construction-based responding and demonstrate how both types of preparations can be employed symbiotically across and within studies.

#67 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 122 A
EDC/TBA; Applied Behavior Analysis

Out of the Nest - New CABAS®/AIL Initiatives: Start-up Applications of Teaching as Applied Behavior Analysis in University and School Based Settings.
Chair: Dolleen-Day Keohane (Columbia University Teachers College & CABAS)
Discussant: Denise O'Sullivan (Teachers College, Columbia University)

Abstract: CABAS®/AIL University and school based programs have been in place since 1981. The applied behavior analysis program in teacher education at Columbia University Teachers College has provided both Masters and PhD students with learning opportunities at the University level through coursework and at the school level through University sponsored mentored internships. Those internships include in situ training by mentors with high levels of expertise in the applied and basic sciences. This symposium will focus on three new university and school based initiatives that include early components of the CABAS®/AIL systems approach to education in both public and private school settings. The new programs are at varying distances from the Columbia University Teachers College nest and represent early start-up efforts to expand the scope of teaching as applied behavior analysis. Data based measurement of the progress of the components of the programs, in general, and the acquisition of the learning objectives by the students' will be discussed, as well as proposals for current programs and subsequent new initiatives.

Bringing a Start-up Program Based on Teaching as Applied Behavior Analysis to a Public School District in Louisiana. DOLLEEN-DAY KEOHANE (Columbia University Teachers College & CABAS/AIL)

Abstract: The Accelerated Independent Learner (AIL) Model of Teaching and Learning has been in place in a general education setting in New Jersey since 2005, and in a pre-school setting in New York for the last six years. AIL is a CABAS® general education initiative and includes the following components: a) graduate level university programs in Teaching as Applied Behavior Analysis (TABA), b) associated internship placements for MA level students enrolled in the university program, and c) university trained in situ mentors who maintain an ongoing relationship with the university training program. In situ training is a hallmark of CABAS®/AIL programs and is accomplished through a mentoring system based on levels of complexity of verbal behavior analysis. On-going opportunities for the attainment of CABAS® Board certified ranks are in place for teaching, mentoring, research, and scholarship, thereby,

providing a data based measure of expertise as conceptualized through a pyramid of competencies. The start up efforts and early results of the application of an Accelerated Independent Learner (AIL) initiative in Louisiana will be discussed and analyzed. Early implementation data will be presented and evaluated in terms of projections for future planning.

The Effects of Peer Administered TPRAs in Inclusive Classrooms by Support Staff on the Performance of the Support Staff in Self-Contained Classrooms. GRANT GAUTREAUX (Nicholls State University)

Abstract: CABAS is a behavioral model of schooling drawing on 1) other behavioral models of schooling, 2) tactics and strategies from the applied and experimental branches of behavior analysis, 3) epistemology of behavioral selectionism, 4) research on CABAS components, and 5) demonstration applications to several schools. These components are applied to all areas of schooling including the students, parents, teachers, supervisors, and the University training program. Research in behavior analysis suggests a common set of effective teaching strategies. These strategies and CABAS components are demonstrated in certified CABAS schools and in public school systems. The following is a data presentation showing the effects of implementing one of these components of the CABAS model in a public school system special education self-contained classroom. While much research has been conducted on the efficacy of the Teacher Performance Rate and Accuracy scale (TPRA) administered by supervisors who are "token holders " for teachers, to date no one has investigated whether similar results would be realized if staff were taught to peer administer the measure outside of their classrooms and the subsequent effect on their teaching within their classrooms. The results are reported as a function of the relationship between improving teaching performance and student outcomes.

An Analysis of the Verbally Mediated Responses of Teachers and Teaching Assistants in a CABAS Component School. KATHERINE M. MATTHEWS (The Faison School for Autism), Maureen A. Conroy (Virginia Commonwealth University), Louis P. Hagopian (Kennedy Krieger Institute)

Abstract: Pedagogy is a term traditionally used to describe methods of teaching. In CABAS programs, pedagogy occurs when a student responds to a teacher's presentation of instruction and continues when the teacher then responds to the student in ways that produce a targeted outcome. A teacher working from this platform is focused on relating scientific knowledge to instructional practice. The level of analysis used to tact student learning problems and to choose appropriate teaching strategies encompasses the verbally-mediated teaching repertoire. The Faison School in Richmond, Virginia has been working to develop this area of expertise in its teaching staff and will share the results of an analysis of this process and tactics to increase the correct verbally mediated responses of its teachers. We will present data on the verbally mediated responses of teachers and teaching assistants at the school and a discussion will be
provided on how these behaviors relate to student outcomes, teacher
training, and teacher expertise.

#68 Symposium

5/23/2009
2:30 p.m. - 3:50 p.m.
North 129 B
TBA/EDC; Applied Behavior Analysis

The CABAS Accelerated Independent Learner Model of Education Procedures and Outcomes of Year 4
Chair: Janet C. Solorzano-Correia (Teachers College, Columbia University)

Abstract: We present four papers describing publicly-funded regular education classes based entirely on teaching as applied behavior analysis for grades 1, 2, 3, and 4 (CABAS® Accelerated Independent Learner Model for regular education). We identify the components of the model and the outcomes according to

standardized tests and direct measures of achievement of educational standards. These papers catalogue the tactics and curricula, verbal developmental interventions for different grade levels and capabilities that include pre-listener-pre-speaker, speaker-listener, reader-writer, readers as self-editors, self-management and academic literacy tactics. We will present various methods of teaching curriculum such as choral responding, model learn units, response board learn units, namer learn units and short lecture learn units. We also discuss tactics and procedures that resulted in academically successful inclusion for children with autism and English Language Learners. These components include procedures used to induce new verbal capabilities or behavioral cusps. In turn, students could learn in ways they could not learn before.

The Identification of Components of Successful Inclusion for Children with Autism. ALISON CORWIN (Teacher's College, Columbia University)

Abstract: We shall describe the verbal developmental capabilities, observational learning capabilities, and academic prerequisites that were associated with the successful inclusion of the students with autism in the Accelerated Independent Learner classroom. The children were prepared for the inclusion class by receiving instruction in a CABAS self-contained class for one or more years (i.e., preschool and kindergarten). Some developmental capabilities were induced prior to inclusion while some were done during inclusion. All of the children had strong reading, math, or reading and math that they were taught prior to their inclusion. The effectiveness of scientific protocols to induce certain verbal developmental capabilities appears to predict some aspects of effective inclusion.

Tactics, Developmental Protocols and Curricula Used in the First Grade Class. JANET C. SOLORZANO-CORREIA (Teachers College, Columbia University), Sarah E. Orlans (Columbia University Teachers College)

Abstract: We describe the research-based tactics used in the first grade class according to the most common tactics and the tactics used for learning problems by various children. We also describe the functional curricular components and the structural components built around international educational standards. Finally we describe the developmental protocols used to induce new learning and verbal capabilities.

Accelerated Independent Learning in the Second Grade. SHARLENE JOO (Teachers College, Columbia University)

Abstract: We describe the academic and self-management tactics, verbal developmental protocols, and curricula that were used as we continued to teach the students as readers/writers and observational learners in the second grade. Through model, observational, choral responding, response board, and namer learn units we prepare the students for the third grade.

Continuing to Accelerate Independent Learning in the Third Grade and Fourth Grade. KIMBERLY M. LAKE (Columbia University Teachers College), Petra Wiehe (Teachers College Columbia University), Samara Cohen (Teachers College, Columbia University), Samantha G Brodlieb (Teachers College, Columbia University)

Abstract: We describe the self- management and academic tactics, verbal development protocols, and curricula that were used as we continued to teach the children in the third and fourth grade and prepare them for fourth grade. We focus on extending reader and writer capabilities through the use of choral responding, response boards, namer learn units and introducing short lecture learn units. In this year we emphasize improving reading capabilities and vocabulary for English Language Learners through phonetic awareness protocol and rapid expansion of tacts through direct contact with learn units, aesthetic and technical writing, implicit and explicit comprehension and learning by exposure building on the students' naming capabilities.

#69 Tutorial

5/23/2009
3:00 p.m. - 3:50 p.m.
West 301 CD
DDA; Applied Behavior Analysis

The Assessment of Basic Learning Abilities (ABLA): Thirty years in the development of a Clinical and Research Tool
Chair: Christina A. Weise Default (Southern Illinois University Carbondale)

W. LARRY WILLIAMS (University of Nevada, Reno)

Having graduated in 1977 from the University of Manitoba, Canada, in 1978, **Dr. Wilfred Lawrence Williams** and 2 prominent Brazilian Psychologists designed the first Masters Degree program in Special Education in South America at the Federal University at Sao Carlos. Dr. Williams was its chair from 1979-1981. In 1985 Dr. Williams became the director of the Agency Behavioral Consultation Services and subsequently Director of the Family and later the Community Behavioral services at Surrey Place Centre, Toronto Canada. In 1994, Dr. Williams accepted his current position at the University of Nevada, Reno where he teaches at both the undergraduate and graduate levels, directs a community program for adults with Intellectual disabilities, consults to service agencies, provides a service for children with Autism, and maintains an active basic and clinical research laboratory. Dr. Williams served as Associate Chair of the Psychology Department and has now assumed the duties of Director of the UNR graduate Behavior Analysis Program. A Board Certified Behavior Analyst and a registered Psychologist in Ontario, Canada, he was the founder of the Ontario Behavior Analysis Association, a founding member of the Manitoba Behavior Modification Association, and the Founding President of the Nevada Association for Behavior Analysis.

Abstract: A ubiquitous feature of a behavior analytic approach to the measurement and manipulation of learning is the concept of discrimination. Much of the behavior analytic literature on learning and behavior change in general is presented in terms of simple discrimination tasks and more complex "conditional " discrimination tasks. It has been assumed that more complex, conditional discriminations represent performance that is more "difficult " than simple discrimination tasks.

The ABLA is a table top testing protocol that assesses an individual's performance on 6 types of discriminations: a simple motor task, a visual position discrimination, a simple visual discrimination, a conditional visual discrimination(match-to-sample), a simple auditory discrimination, and a conditional auditory-visual discrimination. Thirty years of research has indicated that these discriminations are hierarchical in difficulty, predict testability on standard intelligence tests, are predictive of daily living skills, and may be pre-requisite for cross-modal equivalence formation and relational framing. As such the ABLA can be considered a basic tool for clinicians and researchers interested in learning, behavior function, preference assessments, language acquisition, social skills and many other performances. The objective of this tutorial is to allow more behavior analysts to become aware of this amazing clinical and research instrument.

#70 Special Event

5/23/2009
3:00 p.m. - 3:50 p.m.
North 120 D
EAB; Experimental Analysis

SQAB Tutorial: Dynamics of Choice
Chair: Michael C. Davison (University of Auckland)

WILLIAM M. BAUM (University of California, Davis)

Dr. William M. Baum received his A.B. in psychology from Harvard College in 1961. Originally a biology major, he switched into psychology after taking courses from B. F. Skinner and R. J. Herrnstein in his freshman and sophomore years. He returned to Harvard University for graduate study in 1962, where he was supervised by Herrnstein and received his Ph.D. in 1966. He spent the year 1965-66 at Cambridge University, studying ethology at the Sub-Department of Animal Behavior. From 1966 to 1975, he held appointments as post-doctoral fellow, research associate, and assistant professor at Harvard University. He spent two years at the NIH Laboratory for Brain, Evolution, and Behavior, and then accepted an appointment in psychology at University of New Hampshire in 1977. He retired from there in 1999. He currently has an appointment as Associate Researcher at University of California – Davis and lives in San Francisco. His research concerns choice, molar behavior-environment relations, foraging, and behaviorism. He is the author of a book, Understanding Behaviorism: Behavior, Culture, and Evolution.

Abstract: This tutorial examines the centrality of choice to the understanding of behavior. By re-examining the concept of reinforcement and relating it to behavioral allocation, the dynamics of choice may be seen as the process of shifting allocation. Skinner's assertion that the law of effect is not a theory was correct, even if his theory of reinforcement was incorrect. Research of the last forty years suggests that the events called "reinforcers " affect behavior in two ways: induction and contingency. Reinforcers induce activities related to them by life history or phylogeny, and reinforcers add value to the situations in which they occur. By linking particular activities with particular results, contingencies both constrain behavior change and add value to those activities. Seen this way, the dynamics of choice may be construed as optimization, a tendency to move toward the highest value possible. These dynamics may be seen sometimes on a short time scale and sometimes on a longer time scale. Some recent research by Davison and Aparicio and myself, as well as some earlier experiments, support these ideas.

#71 Paper Session

5/23/2009
3:00 p.m. - 4:20 p.m.
North 127
VRB

Conceptual Issues in the Analysis of Verbal Behavior
Chair: Robert Dlouhy (Western Michigan University)

An Analysis of English Language Articles and Determiners. (Theory) ROBERT DLOUHY (Western Michigan University)

Abstract: Learners of the English language often have difficulty becoming accurate and consistent in their use of articles, since the semantic and pragmatic factors that control article usage are complex. This complexity makes teaching this area of English structure challenging and often frustrating for both the teacher and learner. This paper will provide an interpretation of English articles by taking a behavior-analytic viewpoint on how they operate.

Behavior-analytic treatments of language began with Skinner's Verbal Behavior in 1957, but have since been greatly extended by Sidman's work on equivalence responding in the 1980s and Hayes's work in relational framing in the 1990s. This paper will take current descriptions of article usage such as those found in Biber, et.al. (1999), Carter and McCarthy (2005), and Celce-Murcia and Larson-Freeman (1999) and interpret them in contemporary behavior-analytic terms. Specifically, noun phrases will be interpreted as intraverbal and autoclitic response frames that have slots for response classes (known as determiners) controlled by referential relations.

This treatment will be theoretical, but will inform instructional designers and teachers on effective strategies for teaching English articles.

Verbal Behavior and the Search for a Unit. (Theory) JOHN H. MABRY

Abstract: The unit of verbal behavior— the verbal operant is defined as a class of responses of identifiable form functionally related to one or more controlling variables, which Chomsky (1959) called "…so vague and subjective that it does not really contribute …. "
However, more traditional notions of proper units have not fared well. Lashley challenged a traditional notion of sensory-motor chains in speech and other rapid movements. He describes the "…finger strokes of a musician… which call for a definite and changing order of successive finger movements. " Empirical studies using blocking of various forms of afferent stimulation, intense delayed auditory feedback, and observations of the recently hearing impaired, failed to reveal the role of feedback in rapid, skilled speech.

Linguistic units such as the phoneme have been challenged as not being "discrete, static and context-free " as usually thought. The early development of children's speech has revealed that many early utterances were large "unanalyzed " chunks with only a intonational resemblance to speech and may continue well into its segmentation into 'words.' The contributions of phonology, neurophysiology, experimental psychology and developmental psycholinguistics and Skinner's notion of functional unity and functional units will be discussed.

Generic and Metaphorical Extensions – a Brief Tutorial. (Theory) JOHN H. MABRY

Abstract: Many metaphors have been useful in the progress of the sciences; light as waves, or particles, atoms as raisin cookies or as planetary objects, electricity as current, pressure and resistance. Many have heuristic value in portraying an invisible subject matter as an analog of more substantial events.
Metaphor has been treated largely in the province of literature as a special human capacity, as an essence, or as an explanation or cause of especially human behavior. Modern treatments such as those by Lakoff & Johnson ("Metaphors We Live by ") present metaphor as an energizing force.
Skinner is largely alone in treating metaphor and related phenomena as behaviors and as objects of a natural science and as a result of the similarity and the reinforcing practices of the community. His distinctions contrast what he calls 'generic extension' which leads to the expansion of a stimulus class (in calling a new kind of chair, a chair) and metaphorical extension. He recognizes that some metaphors have become standard responses over time, and not seen as metaphorical extensions.
We will examine Skinner's examples of metaphorical extensions of the past and some of possible stimulus conditions giving rise to them.

#72 B. F. Skinner Lecture Series

5/23/2009
3:30 p.m. - 4:20 p.m.
West 301 AB
CBM

Motivational Interviewing: Humanistic and Behavioral Perspectives
Chair: Jonathan W. Kanter (University of Wisconsin, Milwaukee)

WILLIAM R. MILLER (The University of New Mexico)

Dr. William R. Miller is Emeritus Distinguished Professor of Psychology and Psychiatry at the University of New Mexico, where he joined the faculty in 1976 after receiving his Ph.D. in clinical psychology from the University of Oregon. He served as Director of Clinical Training for UNM's APA-approved doctoral program in clinical psychology and as Co-Director of UNM's Center on Alcoholism, Substance Abuse and Addictions (CASAA). His publications include 40 books and over 400 articles and chapters. Fundamentally interested in the psychology of change, he has focused in particular on the development, testing, and dissemination of behavioral treatments for addictions. The Institute for Scientific Information lists him as one of the world's most cited scientists.

Abstract: The efficacy of motivational interviewing (MI), first described in 1983, has been examined in over 180 randomized trials. MI has been conceptually rooted in the humanistic psychotherapy of Carl Rogers, but behavioral explanations are also feasible. In this address, Bill Miller describes how MI first emerged, and its particular focus on client language as a precursor of behavior change. Behavior analysts are invited to contribute to our understanding and refinement of the mechanisms by which MI affects treatment outcomes.

#73 Symposium

5/23/2009
3:30 p.m. - 4:50 p.m.
North 120 BC
AUT; Applied Behavior Analysis

Naturalistic Teaching Strategies to Teach Social Skills to Children with Autism
Chair: Marjorie H. Charlop-Christy (Claremont McKenna College)

Abstract: One difficult problem when treating children with autism is the population's failure to develop functional skills. Although children with autism might acquire skills in the training environment, limited maintenance and generalization often means that these skills are not being used when it matters most: in the children's natural environments, under naturally occurring situations. Naturalistic teaching strategies (NaTS) were developed to address the need to facilitate skill acquisition while promoting generalization in natural environments. The research presented in this symposium highlights the ease with which components of NaTS can be successfully applied to a variety of both treatments and target skills. The first study compared a structured prompt fading technique with a naturalistic intervention when teaching spontaneous eye contact to children with autism. In the second study, NaTS were used with siblings of children with autism to target joint attention. The third study used video modeling to teach a variety of social skills to children with autism. Lastly, the fourth study used a picture communication system to teach requesting behaviors to nonverbal children with autism. All four studies support the application of NaTS to a variety of interventions for children with autism, especially when addressing functional skills.

Teaching Spontaneous eye Contact to Children with Autism: Comparing Naturalistic and Prompting Teaching Programs. ALISSA GREENBERG (Claremont Graduate University), Marjorie H. Charlop-Christy (Claremont McKenna College)

Abstract: Children with autism demonstrate deficits in eye contact, contributing to overall impairments in social interactions. Although previous research has demonstrated that children with autism can learn to make eye contact, the procedures used in these studies have been limited. The present study advances the literature in this area by comparing two frequently used interventions for teaching spontaneous eye contact: 1) a naturalistic teaching program that does not use prompts and 2) a prompting program that uses verbal prompts and prompt fading techniques. Preliminary results suggest that children in both conditions learn spontaneous eye contact. Furthermore, although children consistently generalize spontaneous eye contact across people, generalization across situations (i.e. to greetings and free play sessions) is limited. Results are discussed in relation to the potential problems associated with prompt dependency when targeting spontaneous behaviors.

Teaching Joint Attention to Children with Autism through a Sibling- Mediated Behavioral Intervention. SUZANNAH J. FERRAIOLI (Rutgers University), Sandra L. Harris (Rutgers, The State University of NJ)

Abstract: Severe deficits in socialization are intrinsic to the diagnosis of Autism Spectrum Disorders. A specific deficit in joint attention has been identified in this population; it appears to be universal and pivotal to the development of more complex social skills and language. Behavioral interventions targeting joint attention are evidenced to be effective in teaching these skills to young children with autism, but these treatments have traditionally been implemented by adults. In the present study three typically developing children were trained to implement a joint attention intervention to their siblings with autism.

Gains in responding to joint attention were observed for all three targets; gains in initiations were observed in two targets. These differential results provide information about merits of conceptualizing joint attention as a set of specific skills rather than an individual construct. Siblings found the treatment to be acceptable, and parent ratings indicated high satisfaction with the procedures. The implications of these findings for treatments targeting joint attention and for siblings as interventionists are discussed.

Teaching Social Skills to Children with Autism with Social Stories and Video- Modeling: An Alternating Treatments Investigation. SARA J GERSHFELD (Scripts College), Debra Berry Malmberg (Claremont McKenna College)

Abstract: Video Modeling has a great deal of research validating its use in behavioral treatment of children with autism (e.g., Charlop-Christy, Le & Freeman, 2002), whereas sound research studies on Social Stories are lacking. In the current study, an alternating treatment design with the additional control of a multiple-baseline design was used to compare the two interventions in teaching social skills to children with autism. The study assessed each child's individual needs and targeted specific social skills using the Video Modeling or Social Stories intervention. Video Modeling, which is based on the visual strengths of children, consisted of sessions where the child watched the video, then was observed to see if they engaged in the target behavior displayed in the video. The effectiveness of social stories was assessed after the child listened to the story, then was observed in a natural play setting to see if they engaged in the behavior described by the story. Results showed that Video Modeling resulted in faster acquisition of social skills than Social Stories and also showed positive findings of maintenance and generalization. Interobserver agreement was greater than 80%. Results discuss the importance of using empirical-validated procedures with children with autism.

A Visually Based Naturalistic Communication Intervention for Nonverbal Persons with Autism. GINA T. CHANG (Claremont Graduate University), Marjorie H. Charlop-Christy (Claremont McKenna College)

Abstract: Six nonverbal children with autism were taught to request six items using a visually based communication program. All participants met criterion during training and demonstrated generalization of target requests to their primary caregivers. In addition participants demonstrated generalization across additional stimuli, settings and persons. The results of the present study suggest a promising model of teaching augmentative and alternative communication to nonverbal children with autism. There are a number of components to the model that we hypothesize are responsible for the success of the intervention. Primarily, the intervention was implemented using a naturalistic strategy, Multiple Incidental Teaching Strategies (MITS). Multiple Incidental Teaching Strategies are characterized by implementation in the natural environment, child-directed interactions, the use of natural reinforcers, and the incorporation of rehearsal trials after the initial teaching has occurred (Charlop-Christy, 2008). In accordance with previous research that has implemented MITS (Charlop & Berquist, 2007; Charlop-Christy & Carpenter, 2000), this present study demonstrated high rates of acquisition and generalization for all six participants. This result supports the shift in the literature suggesting that more trials and a more structured environment do not equate to improved learning in children with autism (Delprato, 2001).

#74 Symposium

5/23/2009
3:30 p.m. - 4:50 p.m.
North 124 B
AUT/EDC; Applied Behavior Analysis

Improving Social Interactions in Children with Autism: Clinical Applications of the "Conversation Box"
Chair: David M. Corcoran (Beacon Services)
Discussant: Matthew Howarth (BEACON Services)

Abstract: Challenges in initiating, responding, and maintaining social language are one of the defining characteristics of PDD/autism. Visual supports such as the Picture Exchange Communication System (PECS), Frost & Bondy, (1994), have resulted in the acquisition of functional communication skills. In addition, these procedures have been shown to have positive collateral effects on the production of speech in many children. However, when speech emerges, for some children the speech may be limited to the use of mands and tacts. There is a critical need to expand the use of procedures used in language development for children with autism and other disabilities to teach and maintain intraverbal language. This symposium examines the use of a "conversation box " (Hahn, Filer, & Ross 2008) to support social interactions between children with PDD/ASD in a range of education settings. The interventions in this symposium took place in early childhood education settings, elementary schools and in middle school classrooms. Strategies for incorporating typically developing peers in to the conversation box routines, as well as procedure for fading materials to minimize intrusiveness in public school settings are also reviewed.

Social/Verbal Interaction between Children with PDD and Typical Peers. DAVID M. CORCORAN (Beacon Services), Stephanie Beard (BEACON Services), Robert K. Ross (BEACON Services)

Abstract: Many children with ASD demonstrate significant difficulty in production and fluent use of social language (Ricks & Wing, 1975). However, the use of a "conversation box " has been shown to support the acquisition and spontaneous production of social language (Hahn, Filer and Ross, 2008). The current study assessed the effects of visually cued conversation starters (asking a question and making a statement) as well as topic maintainers (answering a question and returning a comment), through the use of a conversation box, to support production of social language responses, in 5 elementary age children and 1 middle school child, with PDD, with their typical peers. The material used within this study was unique in that it incorporated a physical exchange, which assisted topic maintenance and shifting. When criterion for learning was met, generalization of social and verbal interaction was assessed with untrained topics of conversation, novel peers, and other settings. Fluency of responding was also directly trained and measured. Subsequent fading procedures included; reducing adult support (presence) and use of text scripts rather than the conversation box. Data demonstrate that performances were maintained in the assessed natural contexts.

Using a Communication Box to Increase Social Conversation Skills: A Replication. KAREN NAULT (BEACON Services), Robert K. Ross (BEACON Services)

Abstract: One of the core deficits in children with autism is social communication. A number of authors have found that prior to specific instruction social interactions are often quite limited (e.g., Hendrickson, et al. 1982, Krantz & McClannahan 1993) among others. In a previous study conducted with two preschoolers with Pervasive Developmental Disorder, a communication box was used successfully to increase independent social conversation skills, including asking and answering questions and making statements (Hahn, Filer and Ross, 2008) in two preschoolers with Pervasive Developmental Disorder. The present study replicates the previous study, examining the use of a conversation box to teach initiation and maintenance of a topical conversation in three 5-year-olds with ASD. All three participants were in an inclusion program and participated in an after school social group. Each had programs targeting social conversation, but were dependent on verbal cues and modeling to initiate and maintain social conversations with peers. The use of the conversation box successfully decreased their dependence on teacher prompts, and increased the participants' independence in beginning conversations, responding to questions, asking questions and waiting for the response. Collateral increases in appropriate eye contact, staying on topic, maintaining conversation and switching topics were also seen.

Use of a Conversation Box to Increase Social and Verbal Interactions in Children with Autism. LAURA D'ANTONA (BEACON Services), Joseph M. Vedora (BEACON Services), Robert K. Ross (BEACON Services)

Abstract: The spontaneous production of social language is a challenge for many children with Autism Spectrum Disorder (ASD) (Ricks & Wing, 1975). Visual supports have been shown to facilitate language production in children with ASD (Sarokoff, Taylor & Poulson, 2001). The purpose of the current study

was to assess the effects of visually cued social interactions for several children with autism. Specifically, a conversation box comprised of visual scripts was used to support production of social language during snack and centers in a reversed integrated preschool. The scripts facilitated initiation of an interaction and topic maintenance of the conversation. Once criterion for learning was met, generalization of social and verbal interaction was assessed with untrained topics of conversation, novel peers, and other settings. The results indicated successful acquisition of targeted social interaction skills and generalization to untrained conditions.

#75 Symposium

5/23/2009
3:30 p.m. - 4:50 p.m.
North 124 A
AUT/DDA; Applied Behavior Analysis

Joint Attention Intervention for Children with Autism Spectrum Disorders
Chair: Anibal Gutierrez Jr. (University of Miami)

Abstract: Joint attention, defined as sharing and following the attention of others (via coordinated attention to toys and people) (e.g., showing, pointing, gaze shifting), is a core deficit in children with Autism Spectrum Disorders (ASD). Research has shown that joint attention consistently predicts cognitive and language outcomes among children with ASD, making it a relevant target for intervention in young children with ASD. Recent studies also indicate that behaviorally-based interventions are successful at increasing joint attention skill, and in some cases these skills can be generalized and maintained over time. This symposium will provide an overview of joint attention from a behavior analytic perspective as well as review structured teaching strategies that increase joint attention and improve engagement. This symposium will present data from a randomized control trial employing behavioral methodologies to increase joint attention skills and interpersonal synchrony, as well as single-subject data from a study aimed at increasing eye contact using pivotal response training.

An Emerging Technology: Using Structured Teaching to Increase Joint Attention in Young Children with ASD. BETH REYNOLDS (University of North Carolina Chapel Hill Division TEACCH), Kara Hume (University of North Carolina Chapel Hill Frank Porter Graham Child Development Institute)

Abstract: Recent studies have indicated that joint attention, defined as sharing and following the attention of others (via coordinated attention to toys and people, showing toys or pointing to events and objects), can be successfully taught to young children with ASD, and that these skills can be generalized and maintained over time (Kasari, Freeman, & Paparella, 2006; Rocha, Schreibman, & Stahmer, 2007). A number of the teaching strategies used in these studies are similar to the teaching techniques used in Division TEACCH's early childhood program, including the use of structured activities in the initial teaching phases, building activities around child interest, manipulating the environment to facilitate social and communicative attempts, as well as imitation of child behavior, and planned steps towards generalization. This paper will highlight how structured teaching strategies increase joint attention and engagement, the empirical foundation for these strategies, and includes a number of classroom examples, photos, and video clips.

A Randomized Control Trial Targeting Initiating Joint Attention Skills in Young Children with Autism Spectrum Disorders. JENNIFER STELLA DUROCHER (University of Miami), Melissa N. Hale (University of Miami), Animal Gutierrez Jr. (University of Miami), Michael Alessandri (University of Miami)

Abstract: Joint attention involves sharing attention with others regarding interesting objects or events and is a core deficit in children with Autism Spectrum Disorders (ASD). Joint attention has recently become an intervention target based on findings that joint attention consistently predicts cognitive and language outcomes among children with ASD. The proposed presentation will describe the methodology

for a current randomized control trial (RCT) of an initiating joint attention (IJA) intervention for 40 children with ASD between the ages of 2 and 5. Pre-assessments are used to confirm ASD diagnosis and lack of well-developed IJA skills, and to measure variables that may predict differential response to the intervention (e.g., the reinforcing value of social consequences and preference for adult attention). Participants are randomized to either a treatment or "wait-list " control group. Intervention consists of a total of 16 sessions (twice a week for 8 weeks) targeting pointing, showing and gaze-shifting. Individual subject data are collected for all sessions. Post-treatment and 3-month follow-up assessments are administered to evaluate generalization and maintenance of skills. Data using a multiple baseline design across subjects will be presented, in additional to preliminary between-group comparisons. Implications of current findings and future direction will be discussed.

Building Interpersonal Synchrony: Teaching Joint Attention in Toddlers with Autism.
KATHERINE C. HOLMAN (Kennedy Krieger Institute), Rebecca Landa (Kennedy Krieger Institute)

Abstract: Introduction: Social and communication development are impaired early in life in children with autism and they are predictors of outcome. This study focused on determining whether interpersonal synchrony (joint attention, social contingent imitation, shared affect) could be improved in 2-year-olds with autism.
Method: 49 two-year-olds with autism spectrum disorder (ASD) were matched on verbal and non-verbal mental age and severity of autism symptoms and then randomly assigned to one of two intervention conditions. The conditions were identical in intensity, schedule, intervention strategies, and parent training. However, in the 'Interpersonal Synchrony' condition, sessions were saturated with activities that targeted response to joint attention cues, initiation of joint attention, socially contingent imitation, and affect sharing. Children received assessments pre-treatment, post-treatment, and 6-months following.
Results: Children in both groups made significant improvement in receptive and expressive language and in imitation from pre- to post-intervention ($p=0.008$ to 0.001), but only children in the Interpersonal Synchrony condition made significant gains in joint attention and shared affect ($p's=0.01$).
Discussion: These findings suggest intensive early intervention emphasizing interpersonal synchrony can improve core deficits of autism involving joint attention, imitation, and shared affect.

A Parent Training Procedure Utilizing Video Modeling and Feedback to Increase the Frequency of Eye Contact in Young Children with Autism Spectrum Disorder. TARA M. SHEEHAN (Nova Southeastern University Mailman Segal Institute), Heather O'Brien (Nova Southeastern University Mailman Segal Institute), Liliana Dietsch (Nova Southeastern University Mailman Segal Institute), Melissa DeVincentis (Nova Southeastern University), Hernan Dennis Ruf (Nova Southeastern University Mailman Segal Institute)

Abstract: This presentation will outline a parent training procedure based on pivotal response training designed to teach parents to evoke and reinforce eye contact behavior when interacting in play activities with their young child with autism spectrum disorder. Video will be used to highlight the training procedure and demonstrate the effects on parent behavior. Data on both parent and child behavior will be presented and the effectiveness of utilizing parents to increase the frequency of eye contact with their child with autism spectrum disorder will be discussed.

#76 Symposium

5/23/2009
3:30 p.m. - 4:50 p.m.
North 125
AUT/EDC; Applied Behavior Analysis

The Emergence of Stimulus Classes: Discrimination of Components in Compound Stimuli and the Role of Class-Specific Reinforcement
Chair: Kathy Clark (The New England Center for Children)
Discussant: Richard W. Serna (University of Massachusetts Medical School - Shriver Center)

Abstract: Over the years, matching-to-sample (MTS) procedures have been widely used in the stimulus equivalence literature. More recently, novel procedures and variations of typical MTS have been investigated. These may include MTS with class specific reinforcement, multiple-exemplar training, and discrimination training with compound stimuli. The current symposium will focus on the use of these procedural variations. The first study produced expansion of stimulus classes via class-specific reinforcement which suggests that conditioned and generalized reinforcers can become members of these classes. In the second study, a go/no-go procedure with spatially contiguous pairs of figures presented on a computer screen was used to produce emergent relations. Results suggested some advantages of the go/no-go procedure over matching-to-sample. In the third study, participants learned to respond to small verbal unit-components using multiple-exemplar training. Results suggest that participants acquired re-combinative reading immediately after training. Combined, these studies suggest alternative ways to generate stimulus classes and emergent responding.

Class-Specific Reinforcement and the Establishment of Equivalence Classes. CAMMARIE JOHNSON (The New England Center for Children), Olga Meleshkevich (The New England Center for Children and RCS Learning Center)

Abstract: This study examined the expansion of stimulus classes via class-specific reinforcement. Three typical adults learned conditional discriminations (AC, BC, and DF, EF) with match-to-sample procedures. Equivalence classes were then shown within two groups, each consisting of 3 three-member sets of nonrepresentational visual stimuli (A1B1C1, A2B2C2, A3B3C3 and D1E1F1, D2E2F2, D3E3F3). Throughout training, correct selection of A1, B1, C1 and D1, E1, F1 was always followed by reinforcers, r1/R1; correct selection of A2, B2, C2 and D2, E2, F2 was always followed by reinforcers, r2/R2, and those of A3, B3, C3 and D3, E3, F3 were always followed by reinforcers, r3/R3. None of the stimuli from ABC classes ever appeared on reinforced conditional discrimination trials with stimuli from DEF classes; however, for 2 of 3 participants 3, 6-member classes (e.g., A1B1C1D1E1F1) emerged. Moreover, tests for these 2 participants indicated that the class-specific reinforcers were also class members, thereby demonstrating 3 classes each with 8 members (e.g., A1B1C1D1E1F1r1R1). One implication from this study is the possible generation of equivalence classes with class-specific reinforcement. A second implication is that both conditioned and generalized reinforcers can become members of these classes.

Emergent Conditional Relations In A Go/No-Go Procedure: Figure-Ground and Stimulus-Position Compound Relations. PAULA DEBERT (University of Sao Paulo - Brazil), Edson Huziwara (Universidade de São Paulo), Robson Faggiani (USP), Maria Eugênia Simões De Mathis (University of São Paulo and University of Massachusetts Medical School), William J. McIlvane (University of Massachusetts Medical School)

Abstract: Past research has demonstrated emergent conditional relations using a go/no-go procedure with spatially contiguous pairs of figures presented on a computer screen. During training, each two-component stimulus was presented successively. Responses emitted in the presence of certain stimulus pairs (A1B1, A2B2, A3B3, B1C1, B2C2 and B3C3) were reinforced, whereas responses emitted in the presence of other pairs (A1B2, A1B3, A2B1, A2B3, A3B1, A3B2, B1C2, B1C3, B2C1, B2C3, B3C1 and B3C2) were not. During tests, new configurations (BA, CB, AC, and CA) were presented. The present study evaluated whether emergent relations would be established with this procedure addressing particularly situations in which the use of matching-to-sample is procedurally cumbersome or impossible. In Experiment 1, we evaluated whether emergent relations would be established when two-component stimuli were displayed as figure-ground (abstract figure displayed on colored background). Five adults showed emergent relations consistent with stimulus equivalence during testing. In Experiment 2, the two-component stimulus was a figure and its location (left or right). Six adults exhibited emergent relations. Thus, both experiments show that the go/no-go procedure with two-component has some advantages as an alternative to matching-to-sample to establish emergent relation when training involves stimuli of the type employed in the present experiments.

The Process of Discriminating Minimal Verbal Units in Reading. MARTHA HÜBNER (USP Sao Paulo, Brazil), Leila Bagaiolo (Gradual/USP)

Abstract: The current study investigated what has been called re-combinative reading. In other words, reading under the control of minimal verbal units involving the discrimination of the components of a compound stimulus (words). This behavior has been investigated within the equivalence paradigm (to establish reading with comprehension) and via generalization probes consisting of new words formed by syllables and letters from the learned set of words. Participants were typically developing preschool children. Training involved teaching participants to respond to the smaller verbal units using a multiple-exemplar procedure. Results indicated that participants acquired re-combinative reading during training and not during probe sessions since responses during the first probes were always correct. It was also observed that most errors occurred 1) in the presence of compound stimuli in which components topographically resembled each other and 2) when different sequences produced similar vocal responses.

#77 Paper Session

5/23/2009
3:30 p.m. - 4:50 p.m.
North 126
AUT

Examining Basic Learning Processes in Persons with Autism
Chair: Per Holth (Akershus University College)

Establishment of Conditioned Reinforcers: Comparing the Effectiveness of "Pairing" versus an SD Procedure. (Experimental Analysis) PER HOLTH (Akershus University College), Monica Vandbakk (Ullevaal University Hospital), Jonny Finstad (Oppland Habilitation Services), Else Marie Grönnerud (Innlandet Hospital), Janne Mari Sørensen Akselsen(Stavanger University Hospital)

Abstract: Experiments conducted more than 40 years ago concluded that a stimulus can become a conditioned reinforcer by being paired with an unconditioned reinforcer. Since that, textbooks on behavior principles have typically maintained the "pairing procedure " as the procedure through which new or conditioned reinforcers are established. However, clinical observations suggest that the "pairing procedure ", at least sometimes, does not very effectively establish new stimuli as conditioned reinforcers. The aim of the present experiment was to compare the "pairing procedure " with a " discriminative stimulus procedure " with respect to how effectively they established previously neutral stimuli as conditioned reinforcers. Eight children were exposed to a sequence of two different training and test procedures. First, a previously neutral stimulus was established as discriminative stimulus for a response that produced a reinforcer, and then tested for conditioned reinforcer effects when being presented contingent upon an arbitrary response. Second, another previously neutral stimulus was repeatedly paired with a reinforcer, and then tested for conditioned reinforcer effects. No additional reinforcers were presented during testing. The results suggest that conditioned reinforcers can be more effectively established through the discriminative stimulus procedure than through simple pairing with an unconditioned reinforcer.

Do Individuals with Autism Experience Difficulties in Perceiving the Passage of Time? Results from a Temporal Bisection Procedure. (Experimental Analysis) MELISSA J. ALLMAN (Kennedy Krieger Institute/Hopkins), John H. Wearden (Keele University, UK), Iser Guillermo DeLeon (Kennedy Krieger Institute)

Abstract: Impairments in the typical development of the interval timing system may represent a schema for understanding the basis of autism and its associated deficits. Interval timing allows us to perceive temporal structure in action sequences and events, and is fundamental for adaptive functioning and behavior. Two experiments are reported in which individuals with and without autism completed a temporal bisection procedure. Participants were trained to discriminate between the same visual stimuli, presented for either a 'short' or 'long' duration (a couple of seconds). During each test stage, stimuli also

appeared for durations intermediate to the trained standards and subjects were again required to respond 'short' or 'long'. Results from both experiments reveal that the autistic psychophysical functions are shifted toward the left relative to (typically developing) controls, with lower bisection points (duration giving rise to 50% 'long' responses) and higher Weber ratios (less steep psychophysical functions). Interestingly, aspects of behavioral performance on the timing tasks were also correlated with autism diagnostic test scores, and parental responses on a questionnaire about adaptive functioning to time (© R. Barkely, 1998). These results suggest that an impaired sense of time is a fundamental problem for individuals with autism.

Toward an Account of Habituation Patterns in Young Children with Autism. (Experimental Analysis) THOMAS G. SZABO (University of Nevada, Reno), W. Larry Williams (University of Nevada, Reno), Palwasha Ahad (University of Nevada, Reno), Jeffrey Hutsler (University of Nevada, Reno)

Abstract: Habituation is a critical process in infant development that if improperly acquired, will result in inadequate environmental control over a child's behavior and could have important implications for future acquisition of emotional repertoires, language, and cognitive development. The current investigation was designed to examine whether children with autism demonstrate patterns of habituation to repeating auditory stimuli that differ from typically developing peers. In experiment one, three dyads consisting of a child with autism and a typically developing peer matched on age and gender were exposed to repeating pulsating tones of 500, 2000, and 12,000 Hz at a constant intensity of 60 dB while playing a computer game. Subsequently, the children were exposed to repeating 60 dB tones while being read to by the experimenter. In experiment two, three new dyads were exposed to 500, 2000, and 8000 Hz tones at 70 dB during a game condition, and subsequently exposed to tones in both reading and no-activity conditions. The effects of repeated stimulus exposure on orienting response, auditory brainstem response, galvanic skin response, and operant response accuracy were measured to conduct within-subject, within-session, and within-dyad comparisons. Data are currently being analyzed and additional data are to be collected.

#78 Paper Session

5/23/2009
3:30 p.m. - 4:50 p.m.
North 131 BC
AUT

Measurement and Assessment Challenges in Providing Services for Persons with Autism
Chair: Thomas P. Kitchen (Achievement Center/Mercyhurst College)

Importance of Procedural Integrity to Ensure Effective Intervention Delivery for Children with Autism Spectrum Disorders. (Service Delivery) THOMAS P. KITCHEN (Achievement Center / Mercyhurst College), Holly Lynn Kitchen (Dr. Gertrude A. Barber National Institute), Phillip J. Belfiore (Mercyhurst College)

Abstract: As more autism service providers become aware of the growing evidentiary support and scientific merit of Applied Behavior Analysis (ABA), the ranks of those practicing in the field have been growing consistently. This poses both great benefit and great risk to the quality of services available to children with autism and their families, because services delivered ineffectively could actually cause harm. Therefore, it has become extremely important for providers of ABA services to adopt systems to account for procedural integrity as a way to ensure that those implementing such technologies are doing so with a high degree of fidelity to the standards of practice represented in peer-reviewed literature.

Additionally, a current study demonstrated the effects of various parameters of supervision on interventionists' ability to deliver services with a high degree of procedural integrity. While the study showed that announced observation of interventionists' behavior resulted in more consistent fidelity to programmatic procedures, there were several other factors integral to these results. These factors

included previous comprehensive training of staff, clear expectations (measurable via percentages of items scored on procedural integrity checklists), and the presence of frequent and effective supervision.

Using Observational Data from Neurotypical Children to Teach Age-Appropriate Play Skills to Children with Autism. (Service Delivery) CASSIE LE FEVRE (Lizard Children's Centre), Michelle A. Furminger (Lizard Children's Centre)

Abstract: Social interaction, one of the triad of impairments characterizing autism spectrum disorders, is used to describe a set of behaviors including social reciprocity, non-verbal communication and joint attention. These skills, which are crucial for the development of peer relationships, are some of the most difficult to teach children with autism. Previous research has discussed the need for both explicit teaching and peer interventions to assist in the development of play skills (Marwick et al, 2005; Wolfberg & Schuler, 2006). McKinnon (2008) described using observational data derived from a small sample of neurotypical children in order to develop realistic and data-based objectives to teach social skills. In keeping with this line of research, children aged between two and five, from three different preschool settings within Australia were observed during unstructured play sessions by two independent clinicians. Data collected specifically targeted three main areas of social interaction; number of vocalizations made during play, number of initiations made by individual children and frequency of social referencing between children. The data was then used to create social skills targets to teach within a behavioral program ensuring expectations were age-appropriate and could be generalized quickly from a one-to-one environment to unstructured play with same-age peers.

Cold Probe Versus Trial by Trial: A Critical Analysis of Two Data Collection Systems. (Applied Behavior Analysis) CRAIG A. THOMAS (TCLC MS Behavior Clinic)

Abstract: Much has been made in the field of the differences between the collections of cold probe data versus the collection of trial by trial data, yet there is little empirical data available, and the literature is nearly replete of any substantial studies favoring one over the other. This paper looks closely at benchmarks attained using both cold probes and trial by trial data and makes a direct comparison of the two methods of data collection. This paper discusses the differences between the two methods of data collection and points out the problems with each as well as discussing the benefits to each. Finally the paper discusses the effect that each collection system had on the overall outcome of acquisition of new behavior. This data is compared and contrasted as well as reviewing which of the two collection systems appeared to perform the best in terms of assisting the analyst to conduct behavior change.

The Role of Functional Behavior Assessment in the Diagnosis of Asperger's. (Service Delivery) THOMAS ANTONY (Ministry of Education-Spl. Education, New Zealand)

Abstract: Misdiagnosed and undiagnosed students with Autism Spectrum Disorders pose considerable challenge to behaviour specialists working in public school settings. Correct diagnosis can lead to effective and appropriate interventions and can avoid costly and unnecessary treatments. Research studies have clearly indicated the benefits of early diagnosis of ASD. A diagnosis of autism can also facilitate a better understanding of student's behavioural difficulties by his/her teachers and significant others.

Considerable confusion exists in the area of diagnosis of ASDs, especially Asperger's Syndrome. DSM classification relies on topographical descriptions of symptoms or specific behaviours. Clinicians can interpret these topographical descriptions of behaviours in totally different ways and arrive at different conclusions regarding diagnosis. One of the methods to eliminate or reduce the confusion is by conducting a functional behaviour assessment. This study describes the use of FBA in identifying the events that triggered challenging behaviours in three students enrolled in public schools in the Waikato region of New Zealand.

The successful elimination of aggressive behaviours and identification of certain behaviour patterns and clusters of behaviours as a result of FBA has helped the respective clinicians to review students' earlier diagnosis of ADHD/Oppositional Disorders and to re-diagnose them with Asperger's Syndrome

#79 Symposium

5/23/2009
3:30 p.m. - 4:50 p.m.
North 226 C
BPH/EAB; Experimental Analysis

Science Board Translational Series: Delay Discounting and Drug Abuse
Chair and Discussant: Amy Odum (Utah State University)

Abstract: Delay discounting refers to the decrease in the value of an outcome by delay to its receipt. Choosing a smaller more immediate outcome over a larger but delayed outcome is one form of impulsivity. Delay discounting has been found to be related to drug abuse in several ways. This symposium focuses on delay discounting across a spectrum from basic research with non-humans to prediction of relapse following abstinence in cigarette smokers. Mitchell and Wilhelm will discuss basic laboratory research with rats and mice. They find that alcohol consumption and delay discounting are related, and that both are heritable. Carroll and colleagues have examined the role of delay discounting and other forms of impulsivity in basic laboratory models with rats and monkeys. They report that heightened impulsivity is linked to all phases of drug abuse in these models (e.g., acquisition of drug taking, relapse after abstinence, etc.). Finally, Bickel and colleagues will discuss their attempts to predict a number of treatment outcomes (e.g., initiation of abstinence, duration of abstinence) using measures of delay discounting in cigarette smokers.

Shared Heritability of Delay Discounting and Alcohol Abuse. SUZANNE H. MITCHELL (Oregon Health & Science Univ), Clare J. Wilhelm (Oregon Health & Science University)

Abstract: Alcoholics and heavy drinkers discount delayed rewards more than social or light drinkers, but the role of genetics in this relationship is unknown. Genetics is known to contribute to the development of alcoholism, and various experimental techniques have been developed to examine the role of genotype in heightened consumption of alcohol. Delay discounting was assessed in several studies using an adjusting amount procedure in which rats (N = 80) or mice (N= 240) chose between small immediate sucrose solution and larger delayed sucrose reinforcers. Hyperbolic equations were fit to quantify the gradient of the function (k value) relating the immediate amount of sucrose that was equivalent to the larger amount at a series of delays (up to 16 s). Studies using inbred strains demonstrated that k values have a heritable component and that there was an inter-strain correlation with alcohol consumption, i.e., high k value strains are documented as having higher levels of alcohol consumption. Studies using mice and rats selectively bred for different levels of alcohol consumption indicated that high consumption lines showed steeper discounting that low consumption lines. These studies indicate that delay discounting has a heritable component and includes genes associated with heightened alcohol consumption.

Impulsivity, a Predictor and Outcome of Drug Abuse: Animal Models. MARILYN E. CARROLL (University of Minnesota), Justin J. Anker (University of Minnesota), Jennifer L. Newman (McLean Hospital, Harvard Medical School), Jami L. Mach (University of Minnesota), Jennifer L. Perry (Minneapolis Medical Research Foundation)

Abstract: There is a strong relationship between impulsive behavior, determined by choice of a small-immediate reward over a large-delayed reward (delay discounting task) and impaired inhibition of responding for a reward (Go/No-go task), and drug abuse. Several aspects of drug abuse have been modeled in rats and monkeys; such as, acquisition, maintenance, escalation, extinction, withdrawal, and reinstatement, and the influence of impulsivity on each of these phases has been determined in a series of experiments. Results indicate that impulsive behavior is a major risk factor for each stage of drug abuse, and some phases of drug abuse (e.g., withdrawal) elevate the animals' impulsivity for nondrug substances, indicating that impulsive behavior mediates substitution of drug and nondrug reinforcers. Other risk factors for drug abuse that add to the vulnerability produced by impulsivity are also discussed, such as age, sex, and innate sweet preference. The role of impulsivity in drug abuse is discussed in terms of its ability to predict pathological behavior and as a potential target for prevention and treatment attempts.

Supported by NIDA grants R01 DA002486, R01 DA003240, R01 DA019942, P20 DA024196, K05 DA015267 (MEC), F31 DA020237 (JLP), F31 DA023301 and T32 DA007097 (JLN).

Delay Discounting: Comparison with Other Measures in the Prediction of Smoking Treatment Outcomes. WARREN K. BICKEL (University of Arkansas for Medical Sciences), Darren R. Christensen (University of Arkansas for Medical Sciences), Richard Yi (University of Arkansas for Medical Sciences), Christine E. Sheffer (University of Arkansas for Medical Sciences), Lisa Jackson (University of Arkansas for Medical Sciences), Reid D. Landes (University of Arkansas for Medical Sciences), John E. McGeary (Brown University), James MacKillop (University of Georgia)

Abstract: Relapse poses significant challenges to the treatment of a broad array of behavioral disorders such as cigarette smoking. One neurobehavioral process that may be related to relapse and other treatment outcomes is delay discounting, which refers to the reduced value or worth of a delayed reinforcer compared to the value of an immediate reinforcer. We are conducting a large study (N= 250) to examine whether delay discounting predicts treatment outcome measures. To accomplish this, cigarette smokers complete a battery of measures at intake prior to treatment and then receive a cognitive behavior therapy delivered for 6 weeks. Outcome measures include the initiation of abstinence, duration of abstinence, and time to relapse. To date, we have completed over a 100 participants and we will conduct an interim analysis of those data and present them as part of this symposium. Initial analyses indicate that those who fail to initiate a quit attempt, discount substantially more than those who do. We will also compare the predictive ability of discounting to other theoretically important factors including, trait impulsivity, negative affect, neuro-cognitive functioning, and dopamine alleles. These results should identify which of the several factors best predict relapse and other treatment outcomes.

#80 Symposium

5/23/2009
3:30 p.m. - 4:50 p.m.
North 222 AB
CBM/TPC; Theory

Expanding the Methodologies Used in Behavior Analysis: Potential Means for Enhancing Progressivity
Chair: Michael Levin (University of Nevada-Reno)

Abstract: Behavior analytic research has traditionally emphasized the use of time series designs, somewhat to the exclusion of other potential methodologies. As behavior analysis continues to be applied to new areas, such as clinical behavior analysis, there appears to be an increasing need for expanding the methodological approaches used to address such issues. For example, developing methods to explore processes of change underlying interventions for targeted populations and the potential role of group designs, not only as a means for communicating with other areas of psychology, but also as a way of addressing questions that are important to the field.

A series of talks will be presented describing how methods typically used in other areas of psychology, such as group designs and analysis, can be incorporated into a behavior analytic approach. Studies will also be presented to provide examples of how these methodologies can be specifically applied. These talks will include a discussion of the potential implications of using such methodologies in terms of scientific strategy and progressivity in behavior analysis as a field.

Methodological Considerations to Advance Clinical Behavior Analysis. WILLIAM C. FOLLETTE (University of Nevada Reno)

Abstract: Behavior analysis has long embraced single subject designs in order to demonstrate control over relevant outcomes in experimental and clinical settings. The fact is that a failure to consider variations of other research designs, including group designs, has limited the influence of behavior analysis on other fields addressing behavior change. This paper will briefly review the virtues of single

subject designs and then propose other strategies using modifications of group designs that can satisfy behavior analysts and better impact the larger scientific community. The main focus of the paper will be on how one can maximize information about both individual and group effects while still making reasonable inferences about causal variables.

Combining Elements of Time-Series and Group Designs in an Analysis of Acceptance and Commitment Therapy Components. JENNIFER BOULANGER (University of Nevada, Reno), Steven C. Hayes (University of Nevada, Reno)

Abstract: In order for a clinical behavioral science to progress, it is necessary to examine treatments packages at the level of processes of change via meditational and component analyses. These are traditionally conducted in large scale dismantling studies in which the full treatment package is compared to a reduced treatment that does not include specific components. Such studies are expensive and difficult to mount, resulting in limited impact and occurring late in the dissemination cycle.

An alternative is to continuously test specific treatment technologies or components and their putative processes of change in small studies, with control conditions and measures selected to focus on theoretically critical comparisons. To demonstrate, we will present a study utilizing elements of both time-series and group designs to examine two components of Acceptance and Commitment Therapy for adults suffering from symptoms of depression and anxiety. Participants completed process and outcome measures at 16-22 different time-points, including baselines of varying length, a specified number of treatment sessions, and monthly follow-up assessments. The mixed design of this study allows for an acceptable degree of experimental control without denying or delaying treatment to participants, while the use of repeated measures allows for better tests of treatment mediation.

The Utility of a Group Design to Assess the Effects of Fluency Training for Early Literacy. JONATHAN WEINSTEIN (University of Mississippi), Kelly G. Wilson (University of Mississippi), Kate Kellum (The University of Mississippi)

Abstract: Many contemporary behavior analytic approaches to education prefer analytic strategies that maintain the individual student as the unit of analysis. While there are certainly important conceptual and pragmatic reasons for this approach, there may be additional benefits to combining these methods within research designs that can also be studied at the level of the group. Mixed designs of this type have the potential to achieve experimental control and to explore mechanisms of action without the need to reverse or delay an effective intervention. In this study, a small sample of first grade students received fluency training for phonemic awareness. The results of this intervention demonstrate that early exposure to phonemes enhances reading performance over time. Additionally, mechanisms of action relevant to the process of fluency training were explored to determine their relationship to student outcomes.

The Role of Group Design Methods in Behavior Analysis: Contextual Behavioral Science as a Model. MICHAEL LEVIN (University of Nevada-Reno), Roger Vilardaga (University of Nevada, Reno), Steven C. Hayes (University of Nevada, Reno)

Abstract: Developments within clinical behavior analysis have lead to an increased interest in group design methodologies for testing theoretical models and interventions. These methods can provide unique opportunities for answering important scientific questions as well as for communicating with other fields in psychology. However, behavior analysts have often warned against the use of such methodologies, suggesting the need to address the potential limitations of these approaches and their place in behavior analysis.

In this paper we will present a contextual behavioral science approach to group design methodologies, discussing the potential role of various methods including component, efficacy, and effectiveness/dissemination studies as well as meditational analysis within behavior analytic scientific strategy. We will discuss how these group designs can be used to test principles of behavior change scaled into analytic abstractive theoretical models, providing an opportunity for testing the scope of abstracted functional analysis of complex behavior. This is important for both testing theoretical models linked to

basic principles as well as exploring whether interventions can produce a broad impact within targeted populations. We will also review some of the research conducted on Acceptance and Commitment Therapy within this talk to provide an example of this approach.

#81 Panel Discussion

5/23/2009
3:30 p.m. - 4:50 p.m.
North 132 BC
DEV/TPC; Theory

Behavioral Contributions to Genetic Expression and Back: "The Bigger Picture from Infancy to Evolution"
Chair: Martha Pelaez (Florida International University)

DAVID S. MOORE (Pitzer College, The Claremont Colleges)
HANK SCHLINGER (California State University, Los Angeles)
MARTHA PELAEZ (Florida International University)
HAYNE W. REESE (West Virginia University)

Abstract: In an invited symposium, Andronis, Schneider, and invited speakers David Moore and Celia Moore will be discussing the current status of nature-nurture relations and their relevance to behavior analysis and human development. The panelists H. Schlinger, D. Moore, M. Pelaez, and H. Reese will examine and question the case for the priority of final causes (presaging Darwin's selection by consequences). Is this an adequate resolution for the nature/nurture question? This implies the abandonment of overarching statements about causes of behavior and a focus on the particulars. Are epigenetic characteristics genuinely inheritable (i.e., passed from generation to generation, from parent to child)? To what extent can behaviors produced in one generation influence genetic activity in subsequent generations? We know that genes and behavior can influence each other bidirectionally; how often do behavior analysts really need to take genes into account? Do sex differences provide an adequate opportunity to examine the processes that lead to divergent endpoints?

#82 Paper Session

5/23/2009
3:30 p.m. - 4:50 p.m.
North 221 AB
OBM

Goal Setting and Goal-Directed Behavior
Chair: Triona Tammemagi (National University of Ireland, Galway)

Dynamics of Goal-Directed Behaviour: The Search for the Optimal Goal. (Theory) TRIONA TAMMEMAGI (National University of Ireland, Galway), Denis P. O'Hora (National University of Ireland, Galway), Kristen A. Maglieri (School of Psychology, Trinity College, Dublin, Ireland)

Abstract: Goal setting is one of the most commonly used and effective interventions to increase work performance. Behaviour analysts have looked at goal setting in terms of discriminative stimuli, establishing operations, conditioned reinforcers, rules and relational responding. However, few researchers have attempted to prescribe how to identify the optimal goal level for a particular organizational task. An optimal goal level is one that will ensure a consistently high level of performance without negative side effects. In particular, the goal must be easy enough to reinforce performance, but difficult enough to require high levels of performance and to avoid satiation. Behaviour analytic accounts focus in particular on dynamic change in behaviour and, consequently, may be particularly well suited to the task of identifying an 'optimal goal level'. The current paper reviews the dynamics of goal-directed

behaviour over time and suggests an experimental program that will begin to identify how such optimal goals might be set.

An Experimental Analysis of the Dynamics of Goal-Directed Behaviour: Productivity and Persistence. (Experimental Analysis) TRIONA TAMMEMAGI (National University of Ireland, Galway), Denis P. O'Hora (National University of Ireland, Galway), Kristen A. Maglieri (School of Psychology, Trinity College, Dublin, Ireland)

Abstract: The current study examined the time course of goal-directed behaviour in a laboratory context. In particular, the study attempted to quantify both the beneficial effect of goals on performance and the deterioration of goal-directed behaviour over time. 20 participants were exposed to a data entry task, in which they were required to enter a "patient's code " and classify patient data as either within or outside guidelines. A counterbalanced ABAC reversal design was employed, consisting of an initial baseline phase, the first intervention phase, a return to baseline conditions and then a second intervention phase. In one condition, participants were provided with a low, easily attainable goal, while in the second condition they were provided with a high goal. In a final fifth phase, participants chose between a high or low goal for the final session. Productivity (the average performance per session) and persistence (change in performance across sessions) were measured. Findings will be discussed in light of recent behavioural accounts of goal setting.

The Effect of Rule Delivery in Relation to Goal-Setting to Improve Employee Adherence to Implementation of Behavior Guidance Program at a Therapeutic Group Home for Adolescent and Teenage Males. (Applied Behavior Analysis) KARIN TORSIELLO (Behavior Basics, Incorporated), Paula Leonardo (Behavior Basics, Incorporated)

Abstract: The way in which rules impact workplace performance has been a topic of discussion in the Organizational Behavior Management community for some time. However, rules, or contingency specifying stimuli as they have been described, have not been evaluated in an applied setting before. The purpose of this study is to examine the role of rules in the workplace. Participants included employees at a therapeutic group home for adolescent and teenage males. The dependent variable is the accuracy of delivering points on point card according to the rules outlined in the behavior guidance program. First, a goal was set for employees based on baseline performance. Employees were then given one of two randomly assigned goal-rules. Goal-rules consisted of a praise goal-rule or a reprimand goal-rule. Goal-rules were administered at the start of each shift. The corresponding contingency described in the goal-rule was delivered (i.e., praise or reprimand) if the employees met or did not meet the goal. Performance is evaluated based on the goal rules set and a reversal design is used.

#83 Panel Discussion

5/23/2009
3:30 p.m. - 4:50 p.m.
North 227 A
OTH; Theory

Fred Keller is Still with Us: My Personal Encounter
Chair: Sherman Yen (Asian American Anti-smoking Foundation)

R. DOUGLAS GREER (Columbia University Graduate School and Teachers College)
RANDY L. WILLIAMS (Gonzaga University)
CJ CONRAD (UHS - Keystone Schools)
SHERMAN YEN (Asian American Anti-smoking Foundation)

Abstract: Paying respect to our fallen comrade and dear old friend has been an annual event. For those of us who had the privilege of meeting and knowing him, this will be the occasion when we can share the most joyful moments spent with him with the next generation of behavior analysts. This is not an occasion to discuss his contribution to behavior analysis (theory and practice, etc), but a true moment to appreciate his

lifestyle, his love of fellow comrades, his sense of humor, etc. In 20 years or so, some of us will be joining him. The interesting encounters with Fred will be lost forever. This year, we will produce and distribute a free CD on Fred. His colleagues and fan club contributed different chapters with pictures. This is just a starter CD and we will always add more stories to the CD. Theories are important, and so are data analyses, but what would we be like if we did not have Skinner and Keller with us? This is a unique session as sessions before, and will last years.

#84 Paper Session

5/23/2009
3:30 p.m. - 4:50 p.m.
North 132 A
TPC

Non-behavioral Sources of Support for Behavior Analysis
Chair: Ted G. Schoneberger (Stanislaus County Office of Education, Modesto, CA)

Confessions of a Wayward Chomskyan: Dan I. Slobin Past and Present. (Theory) TED G. SCHONEBERGER (Stanislaus County Office of Education, Modesto, CA)

Abstract: In 1988, developmental psycholinguist Dan Slobin published "Confessions of a Wayward Chomskyan. " In that paper Slobin characterized Chomsky's attitude toward developmental psycholinguistics as one of "despair " (p.131). As Slobin saw it, this despair was the product of Chomsky's acceptance of the poverty of the stimulus argument (POSA). According to POSA, the linguistic evidence available to the child is too "degenerate " and "narrowly limited " (Chomsky, 1965, p. 58) to account for linguistic competence. Thus, for Chomsky, developmental psycholinguistics research is unlikely to explain much about such competence. As evidence of his waywardness, Slobin demurs from this conclusion, recasting Chomsky's poverty of the stimulus argument instead as "the argument from the poverty of the imagination " (p. 131). In short, Chomsky argues as follows: "Since I can't imagine a reasonable account of language acquisition, no one can " (Slobin, 1988, p. 131). In my paper, I shall present Slobin's criticisms, both past and present, of traditional Chomskyan psycholinguistics, and what he has proposed in its place. Topics shall include the brief "shelf life " of syntactic theories, the Language Making Capacity, and nativism's misinterpretation of both deaf children's use of homesigns and Nicaraguan Sign Language as evidence of innate grammatical knowledge.

Unusual Sources of Empirical Support for Behavior Analysis. (Theory) SAM LEIGLAND (Gonzaga University)

Abstract: Although the characteristics, progress, and achievements of behavior analysis remain largely unknown in the larger fields of psychology, philosophy, and linguistics, as well as the general public, research programs in other fields have produced empirical findings or theoretical positions that are compatible with or supportive of the products of behavior-analytic science, apparently without any awareness of such possible connections. Some recent examples of such research programs will be reviewed, including language development research which appears to highlight the importance of contingencies of reinforcement, cognitivist research which uses connectionist computer modeling of language development where the results have emphasized the roles of "input " and feedback as sufficient for the development of complex properties of verbal behavior, cognitivist research on "the illusion of conscious will, " philosophical criticisms of nativist theories of language development, and perhaps a few other programs. A critical examination and analysis of such research might (a) broaden the base of empirical support for behavior analysis, (b) demonstrate the power of a more efficient and effective set of explanatory practices as applied to such findings, and (c) lead to new lines of behavior-analytic research on complex human/verbal behavior.

Behaviorism vs. Cognitivism: Why the Conflict? (Theory) JOSEPH J. PEAR (University of Manitoba)

Abstract: Two major approaches in psychology are behaviorism and cognitivism. These two views are in such strong conflict that many see them as incompatible. Close examination, however, indicates that the differences are largely semantic. Rather than disagreeing on the phenomena of psychology, about which there tends to be general agreement, different terminology is used to talk about the phenomena. If there is general agreement on the phenomena of psychology, then is the conflict between the approaches necessary? In short, is a reconciliation of these two approaches possible? This paper addresses these questions by first examining the nature of science and the role of language in advanced sciences, such as physics, chemistry, and biology. Building on this examination, the paper then traces the history that gave rise to the behaviorism-cognitivism conflict, culminating in the so-called behavioral revolution and cognitive counterrevolution. The paper then suggests ways in which the conflict may be resolved.

Educating Future Behavior Analysts: Should we be Reading More Chomsky and Freud in our Classes? (Theory) JENNIFER DELANEY KOWALKOWSKI (Eastern Michigan University), James T. Todd (Eastern Michigan University)

Abstract: Great debaters tell us that the key to winning an argument is to know your opponent's arguments better than your own. The success of behavior analysis, now just four years short of its 100th birthday, may be traceable to the broad educational backgrounds of many of its founding members. Skinner was an English literature major who learned his psychology from a physiologist. Others were trained in engineering, psychodynamic psychology, and many different fields. In recent years, however, behavior analysis education has become increasingly focused on teaching behavior principles, experimental methodology, and validated interventions--often to the exclusion to other things--sometimes with a syllabus derived from credentialing requirements. The graduates of these programs find themselves in settings that require collaboration with non-behavior analysts, some of whom are misinformed and dismissive of our science. Behavior analysts then discover that they are ill-equipped to defend behavior analytic solutions because they are ignorant of the positions of their opponents, and sound like it. This paper will explore the negative consequences of overly narrow training, and suggest that the field of behavior analysis can only benefit from broadening behavior analytic training to directly contact and explore the positions and contributions of non-behavior analysts.

#85 Panel Discussion

5/23/2009
4:00 p.m. - 4:50 p.m.
North 224 A
CBM; Applied Behavior Analysis

Data Issues in NeuroBehavioral Rehabilitation
Chair: Michael P Mozzoni (Learning Services NeuroBehavioral Institute of Colorado)

NATILIE JACOME (Learning Services NeuroBehavioral Institute East)
LINDSAY VEIT (Learning Services of Raleigh/Durham NC)
MICHAEL P MOZZONI (Learning Services NeuroBehavioral Institute of Colorado)

Abstract: These series of papers will cover issues involving key points in working with persons with acquired brain injuries (ABI), data collection, and display systems. The first paper will highlight key issues in working with adults with brain injury including the unique set of issues with programming, development of care plans, and staff training. The presentation of brain injury varies vastly from individual to individual. Educating staff members on brain injury and the different ways it may present in adults and increases the understanding of each individual will be discussed. The second paper will focus on data systems. The lack of an efficient data analysis program can adversely impact clients and all consumers of the data (behavior analysts, behavior specialists, clinicians, case managers, guardians, etc.). Thus, a data analysis program that is both efficient and user-friendly is critical to the time management of behavior analysts. A data analysis program will be

presented that can speed analysis and data entry. The third paper will focus on issues involved with graphing data. Behavior analysts use data in order to make evidence-based treatment decisions. This presentation will demonstrate several ways to graph data in order to derive the most useful information. Both behavioral deceleration and acquisition graphs will be discussed. Data sets will be graphed in different ways to demonstrate utility of visual presentation. Time and frequency, cumulative frequency, averaging, and log and celeration graphing displays will be discussed.

#86 Panel Discussion

5/23/2009
4:00 p.m. - 4:50 p.m.
North 131 A
CSE/OBM; Applied Behavior Analysis

Acting to Change the World: Using Behavior Analysis to Make a Difference in Socially Significant Issues
Chair: Jon S. Bailey (FSU, BMC, FABA)

KEN WAGNER (ADI: The Human Performance Company)
MARCO D. TOMASI (SAIC)
JEANINE PLOWMAN STRATTON (Furman University)
JON S. BAILEY (FSU, BMC, FABA)

Abstract: One of the underlying fundamentals of applied behavior analysis is to address socially significant issues facing our communities, our nations, and our planet. Currently there is no shortage for outlets in which the application of behavior analysis can make a significant impact. Poor economic conditions find the business community in dire need of experts fluent in technology to boost organizational performance. Threats in the form of rogue terrorist elements, malicious cyber attacks, and nuclear proliferation require experts in the science of behavior to improve national security, intelligence, and safety. The effects of global climate change as a direct consequence of human behavior has highlighted the need for experts that can create effective, sustainable interventions to promote environmentally friendly behaviors. The current session brings together experts in behavior analysis working to make a difference in business/organization settings, in the defense/security sector, and in the environment. The panel will discuss their current work to make significant differences in socially significant issues, as well as discuss directions for future efforts.

#87 Special Event

5/23/2009
4:00 p.m. - 4:50 p.m.
North 120 D
EAB; Experimental Analysis

SQAB Tutorial: Cognitive Aging: A Behavior Theoretic Approach
Chair: Celia Wolk Gershenson (University of Minnesota)

JOEL MYERSON (Washington University)

Joel Myerson's convoluted career path began at the University of Michigan. An ardent science fiction fan, he switched from art to psychology after deciding the most important thing he could do with his life was contribute to the development of space travel. The way to do that, he reasoned, was by becoming a scientist, and the only science he was interested in was psychology. As a graduate student at Arizona State University, he trained monkeys for NASA, and was well on the way to fulfilling his dream. Unfortunately, the effort to turn A. S. U. into Fort Skinner in the desert failed shortly after he arrived, and most of the behavioral faculty left, ending the NASA contract. Fortunately, Peter Killeen decided to stay, and Joel became his student. After a series of post-docs and teaching positions, he and his

wife Sandy Hale ended up at Washington University. Since 1992, Joel has been a Research Professor, collaborating with Sandy on cognitive aging research and doing behavioral economics research with Len Green. As Seneca the Younger wrote, "non est ad astra mollis e terris via " (especially if you are afraid to fly), but you can still accomplish a lot in St. Louis.

Abstract: As people get older, their behavior on many different kinds of tasks tends to become slower, less accurate, and more variable. I will describe a theoretical framework that focuses purely on the behavior emitted by younger and older adults performing response-time and memory span tasks. Our findings support some distinctions in the cognitive psychology literature but not others, and our approach provides empirical bases for deciding which distinctions need to be made and which do not. For example, data on age-related behavioral slowing support the distinction between verbal and visuospatial processing, with the latter being much more sensitive to the effects of age. Within the verbal and visuospatial domains, however, there is little support for distinguishing between different kinds of information-processing operations, at least from an aging perspective. Similarly, data on age-related declines in working memory are also consistent with greater effects of age on memory for visuospatial information, but within each domain performance on simple span tasks declines as rapidly as performance on complex span tasks. Finally, the increased variability in older adults' performance turns out to be an indirect consequence of the fact that they are slower, and not a direct effect of aging at all.

#88 Paper Session

5/23/2009
4:00 p.m. - 4:50 p.m.
North 226 AB
EAB

Experimental Analysis of Human Behavior II
Chair: Kathryn Saunders (University of Kansas)

EAHB-SIG Distinguished Career Award: Joseph E. Spradlin (Experimental Analysis) JOSEPH E. SPRADLIN (University of Kansas)

Abstract: The talk will discuss much human behavior in terms of routines, or repeated sequences of behavior. Many people of a given community engage in common routines, hence it is often easy to predict behavior simply by observing an unknown person in a certain situation. Other routines are idiosyncratic, however repeated observations of the person in situations involving these routines makes individual predictions possible. The conventional routines often serve as targets for teaching persons who do not exhibit those routines. Routines have one major characteristic. Once a person starts a routine, that routine is usually completed. Delays in completing routines have three characteristics of aversive stimuli. First, the introduction of a delay in completing a routine will suppress the behavior that brings about that delay. Second, delays evoke emotional behavior. Third, any behavior that reduces a delay in completing a routine is strengthened. In teaching new routines, one can often simply engage the person in the routine and provide the support needed to complete the routine. This support is gradually withdrawn as the person begins to demonstrate the component skills.

Self Injurious Behaviour: The Role of Behavioural Function on Tutor Time Allocation on a Computer Simulated Teaching Task (Experimental Analysis) TARA BREA CUDDY (Southern Cross University), Lewis A. Bizo (Southern Cross University), Tom Randell (University of Southampton), Martin Hall (University of Southampton), Bob Remington (University of Southampton)

Abstract: The behaviour of caregivers has been implicated as a crucial determinant of self-injury by developmentally disabled children (Hall & Oliver, 1992). The present study aimed to assess how the behaviour of 60 naïve undergraduate students was affected by interactions with simulated children who engaged in self-injurious behaviour (SIB). Using an interactive computer simulation program, participants could interact with simulated children who were configured to represent either a child who self-injures to gain attention (an attention seeker), or one who engages in such behaviour to avoid demands (a demand

avoider). Participants' time allocation was differentially affected by the behavioural function of the simulated children, either attention seeker or demand avoider. Results showed that, as predicted, the simulation program parallels the real world impact of caregivers on SIB with participants utilising ineffective interventions for the management of self-injury (Bromley & Emerson, 1995; Carr, 1977). Results indicate that simulations have the potential to be used as complementary tools in the training of caregivers prior to their working with real self-injurious children.

#89 Panel Discussion

5/23/2009
4:00 p.m. - 4:50 p.m.
North 121 A
EDC; Theory

Professional Development Series: Behavior Analysis Around the World
Chair: Laura J. Seiverling (The Graduate Center and Queens College, CUNY)

CHRISTOS NIKOPOULOS (Brunel University)
W. DAVID PIERCE (University of Alberta)
JOSEPH E. MORROW (Applied Behavior Consultants)
PAOLO MODERATO (IULM University ITALY)

Abstract: Panelists will describe their experiences working, disseminating, and coordinating behavior analytic projects and programs internationally.

#90 Paper Session

5/23/2009
4:00 p.m. - 4:50 p.m.
North 122 A
EDC

Service Delivery Evaluation from a Distance
Chair: Pamela G. Osnes (Headsprout)

Developing a Technology of Program Implementation at Headsprout: An Evolutionary Process
(Service Delivery) PAMELA G. OSNES (Headsprout), Jennifer D. Clayton (Headsprout), Deborah Anne Haas (Headsprout, Inc.), Janet A. Webb (Headsprout)

Abstract: Historically, behavior analytic programs have proven themselves effective at the level of individual behavior change much more frequently than at the systemic level within schools. Even the most well-designed behavior change program cannot be evaluated on its merits if it is implemented without integrity. This paper will present the efforts of Headsprout to increase the fidelity of implementation of its reading program by teachers and other school personnel in multiple districts in the U.S. The results of both indirect and direct measures will be presented, including data from direct observation of Headsprout School Support/ Implementation Specialists at training workshops, levels of treatment integrity gleaned from analyses of critical implementation variables, and survey responses from teachers who use Headsprout. Implementation variables critical in reading acquisition in Headsprout include the requirements of student completion of three episodes per week, speaking aloud during selected episodes, reading accompanying Sprout Stories to program generalization from computer monitor to printed text, and the completion of benchmark readers by students and the entering of their scores online by teachers. The measurement process that yielded an "implementation score " will be described, as will be challenges encountered throughout the evolution of Headsprout's developing technology of implementation.

Building Effective Teaching Behaviors in a Virtual Environment (Applied Behavior Analysis) LEE L. MASON (Utah State University), Nancy Glomb (Utah State University), Peter Blair (Poster Presenter)

Abstract: This study investigates the use of Second Life as a medium for building effective teaching behaviors to fluency. Teacher trainees practiced delivering instruction in an online virtual environment and were provided feedback on specific teaching behaviors. These participants possessed a variety of classroom experiences, but no formal training in Direct Instruction (DI). All training took place on a virtual island in Second Life. Teacher performance was measured using the Direct Instruction Supervision System (Marchand-Martella, Lignugaris/Kraft, Pettigrew, & Leishman, 1995), and DI rating was determined by counting the number of correct and incorrect teaching behaviors over a six minute observation. Teaching behaviors consisted of presentation, calling for responses, error corrections, instructional pacing, and praise. A multiple-baseline across participants design demonstrates the efficacy of training in a virtual environment and generalization to a live class setting. The results of this study will be presented with discussion focused on training specific behaviors in Second Life and generalizing teaching behaviors from the virtual environment to the live classroom.

#91 Paper Session

5/23/2009
4:00 p.m. - 4:50 p.m.
North 121 BC
EDC

Math Interventions with Middle School Students
Chair: Jennifer Testa (St Cloud State University)

Effects of Peer Tutoring with Electronic Recording Device on Tutor Feedback Accuracy (Applied Behavior Analysis) JUAN M SIMON (University of Nevada, Las Vegas), Renee K. Van Norman (University of Oregon), Alicia Nehrkorn (University of Nevada, Las Vegas)

Abstract: Classwide peer tutoring has been shown to be an effective teaching tool by involving students in each other's learning experience. Placing students in pairs by academic ability can create more opportunities for supplemental instruction and practice. However if the pair is comprised of low-performing students a situation might be created in which students are practicing errors and are not receiving accurate feedback. A possible solution to this dilemma would be to provide tutors with a model of the correct answer during peer tutoring and testing. This study utilized a multiple baseline design across peer tutoring pairs. Its purpose was to evaluate the effects of a systematic peer tutoring program with electronic recording devices on the accuracy tutor feedback given by middle school students receiving instruction in a resource room. An additional aspect of this study evaluated the impact of peer tutoring on the acquisition of basic multiplication facts Weekly 1-minute fluency probes and 5-minute paper and pencil tests were used to measure level of acquisition. Results show that prerecorded answers to multiplication facts increased students' accurate feedback during peer tutoring and testing.

The Role of Diagnostic and Prescriptive Math in Algebraic Preparedness (Service Delivery) JENNIFER TESTA (Morningside Academy), Geoffrey H. Martin (Morningside Academy), Julian Gire (Morningside Academy), Kent Johnson (Morningside Academy)

Abstract: The National Mathematics Advisory Panel noted that mathematics achievement drops drastically as students encounter Algebra late in their middle school years. This decrease is partially a result of the cascading effects of dysfluency in component repertoires, which have broad implications as learners encounter progressively higher-order math. Accordingly, skill deficits in basic computation and conceptual understanding become most apparent once students are expected to recruit the wide range of component repertoires required in Algebra.

"Morningside Mathematics Foundations " is a corrective math program that takes a diagnostic and prescriptive approach. The program diagnoses specific component skill deficits through a precision

placement test and prescribes an individualized program involving explicit instruction and rate-building practice. The long-term goal of the program is to fill the holes in the learner's computational repertoire. Because success in algebra is heavily predicated on mastery and facility of foundational skills, this program can drastically increase the probability of success in Algebra.

This talk will address how Morningside's math program fulfills the panel's mathematics pedagogy recommendations, specifically focusing on curricular content, learning process, and instructional practices. Moreover, it will reveal how the program will foster a repertoire that prepares the learner for success in Algebra.

#92 Paper Session

5/23/2009
4:00 p.m. - 4:50 p.m.
North 122 BC
EDC

Systemic Approaches in School Settings
Chair: Benjamin W. Smith (University of Rochester)

Operationally Defining Positive Behavior Supports: The 5 Step Competing Schedules Model
(Applied Behavior Analysis) BENJAMIN W. SMITH (University of Rochester)

Abstract: Positive Behavior Supports (PBS) is a term used by people in different ways. The purpose of this paper is present an operational definition of PBS using a 5 step competing schedules model based on A.B.A. principles. This model was developed to facilitate the necessary paradigm shift from reactive, coercive based discipline interventions focused on the reduction of functional behaviors to an effective application of positive reinforcement and prevention-based interventions. This model begins with the explicit teaching and promotion of desired behavior and preventative strategies before development of responses to problem behavior. The 5 steps are: (1) active teaching of expected and functional replacement behaviors; (2) successful establishment of stimulus control; (3) ensuring adequate reinforcement for expected and replacement behaviors; (4) removing known antecedent-based stimuli related to problem behavior; and (5) effective responding to future occurrences of problem behavior. This model is used to train pre-service students and established teachers. This model has demonstrated its utility in facilitating greater understanding of what PBS is, and defining an ethically sound and effective application of A.B.A. principles to make meaningful changes in the lives of individuals.
NOTE: submitted and accepted for ABA Convention '08 but was unable to attend.

Response to Intervention: A Roadmap to Behavior Analysis Services in a Public School Setting
(Service Delivery) KAREN E. FLOTKOETTER (Marion County Public Schools), Jamie Hughes (Autism Consulting Services)

Abstract: The Exceptional Student Education Department in Marion County, located in Central Florida serves 15.4% of the 42,105 students enrolled within 49 schools, identified as having a disability. The Behavior Support Team serves all 49 schools through a referral process that begins at the student assistance team meeting where members of the multidisciplinary team from the school requesting services, meet with the behavior analyst to determine the proper level of involvement. Services are delivered in accordance to the Response to Intervention model. Tier I services are considered classroom consultations where behavior analysts are ask to help provide a classroom management plan teaching and reinforcing appropriate classroom behaviors. Tier II services include check in/check out systems and behavior contracts established by the behavior analyst. Tier III services include conducting a functional behavior assessment and developing a behavior intervention plan for an individual student. Training, implementation, data collection, and follow up services are included in all three Tiers of the service delivery model. For the 2007 – 2008 school year the Behavior Support Team generated 172 referrals across all Tiers with the majority of these referrals in the Tier II level of service. Kindergarten and 7th grade students were the highest referred grade levels.

#93 Tutorial

5/23/2009
4:00 p.m. - 4:50 p.m.
West 301 CD
EDC; Applied Behavior Analysis

Five Things that Guarantee School Success, and may even Close the Achievement Gap for Disadvantaged Learners
Chair: Cathy L. Watkins (California State University, Stanislaus)

RICHARD P. WEST (Utah State University)

Abstract: Participants will learn why much of what we have been told about learning and school success simply isn't enough to get the job done. In this era of increased accountability and pressure to meet standards, what really makes the biggest difference? How can we support teachers and enable them to do what they have been prepared to do? Tools and procedures for data-based decision-making will be described and explained.