

5/24/2009  
1:30 p.m. - 2:20 p.m.  
West 301 CD  
CSE

### Global-Warming Effects and Human Solutions

Chair: Paul Chance

FREDERIC H. WAGNER (Department of Wildland Resources, Utah State University)



**Dr. Frederic H. Wagner** is currently Professor Emeritus in the Department of Wildland Resources at Utah State University. His educational background includes a B.S. in Biology at Southern Methodist University and graduate degrees in Zoology and Wildlife Management at the University of Wisconsin. Dr. Wagner has served as Director of the seven-department Ecology Center and Associate Dean of the College of Natural Resources, both at Utah State University; visiting professorships in the Department of Zoology, University of New England, Armidale, N.S.W. Australia and the Department of Biology, University of California, Santa Barbara. His research interests have addressed animal populations in Wisconsin and the Intermountain West, ecology of deserts in North America and North Africa, application of ecology in natural-resources management, and role of science in natural-resources and environmental policy. Involvement in the global-warming issue includes coordination of a 1998-2003 assessment of the effects of climate change on the nine-state Intermountain region, one of 19 regional assessments ordered by Congress; editing an in-press, multi-authored book *Climate Warming in Western North America/Evidence and Environmental Effects*; and conference presentations and publications in professional journals.

If, as predicted, human populations and economies increase (including higher per capita energy use and greenhouse gas emissions) during the 21st century, global temperatures are projected to increase 1.4-5.8°C (2.5-10.4°F) by 9:00 p.m. . The result will be profound magnification of the above environmental effects. Avoiding these changes will involve fundamental changes in human behavior at the levels of both individuals and institutions or governments.

**Abstract:** During the 20th century, the average global temperature rose 1°C (1.8°F) in response to human emissions of CO<sub>2</sub> and other greenhouse gases. Environmental effects of this change included precipitation decline in subtropical latitudes, increases at higher latitudes. Montane snowpacks and glaciers shrank, changing, and in some cases stopping, streamflows. Ocean levels rose 12-13cm.

Health problems associated with increasing temperatures included direct heat deaths in hot years like the 20,000 Europeans who succumbed in the summer of 2003, and expanding ranges of disease vectors like the one transmitting dengue fever.

The global biota – terrestrial, freshwater, marine – has responded to these changes. Individual plant and animal species have extended their ranges; advanced the dates of migration, reproduction, and growth; changed their population densities. As these species undergo these changes, they alter their interactions with other species, and change the structures of their communities and ecosystems.

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## #224 Paper Session

5/24/2009

1:30 p.m. - 2:20 p.m.

North 122 A

EDC

### **Behavior Management in the Classroom**

Chair: Rick Shaw (Behavior Issues)

#### **Strategy of Behavioral Modification Applicable to Attention-Deficit Hyperactivity Disorder.**

(Applied Behavior Analysis) JOSUÉ ANTONIO CAMACHO CANDIA (Universidad Autónoma de Tlaxcala), Fabiola Muñoz Ramírez (Universidad Autónoma de Tlaxcala), Adriana Aida Casillas Belmares (Universidad Autónoma de Tlaxcala)

**Abstract:** A case study was carried out with the purpose of making a behavioral modification in a child eight years old, from Puebla City (Mexico) and diagnosed with attention-deficit hyperactivity disorder by a Neuropsychological center in the same state. A Behavioral Diagnostic was used as a pre and pos test at the start and the end of the sessions. Thirteen interaction sessions were conducted with the purpose of behavioral change in the following points: that the child can wait his turn in group activities, the child can differentiate the letters “b” and “d”, and get down the impulsiveness when he is writing. The results show the child has fewer interruptions in the group activities and he has best results in the differentiation of the letters “b” and “d”, although the child couldn’t decrease the impulsivity when he is writing. Moreover, the results show two things: the current utility of the psychological theory and the need that the family, specialists and educative institution all them work together.

**Differential Reinforcement and Response Marking to Decrease Challenging Behaviors in the Classroom.** (Applied Behavior Analysis) Heidi Maurer (Kentwood High School), Susan Browder (Kentwood High School), RICK SHAW (Behavior Issues)

**Abstract:** An intervention that utilized visual and verbal response marking with differential reinforcement of low rates (DRL) and positive punishment was implemented to several high school classes. The classes were special education classes for reading, writing, and social skills. These classes were chosen based on the high frequency of disruptive and challenging behaviors. The class was rewarded a “free day,” on a bi-weekly basis for averaging at or below a preset goal determined by baseline means. The class also could earn a daily reward for engaging in less disruptive behaviors according to the DRL schedule. A tally counter was used as the visual stimulus that the teacher clicked, tallied, and made a verbal statement (response marking) each time a student engaged in a disruptive behavior. At the end of the period a student was selected to graph the number of tallies for that period. Class and individual disruptive behaviors decreased to frequencies that were more acceptable to the teachers.

## #225 B. F. Skinner Lecture Series

5/24/2009  
1:30 p.m. - 2:20 p.m.  
West 301 AB  
EDC

### **Data-Based Decision Making and Evidence-Based Practice: A Systems Level Approach**

Chair: Ronnie Detrich (Wing Institute)

BRUCE CHORPITA (UCLA)



**Dr. Bruce Chorpita** is currently Professor of Psychology, at the University of California, Los Angeles. He received his Ph.D. in psychology from the University at Albany, State University of New York and held a faculty position with the Department of Psychology at the University of Hawaii from 1997 to 2008. From 2001 to 2003, Dr. Chorpita served as the Clinical Director of the Hawaii Department of Health's Child and Adolescent Mental Health Division. With over 100 publications on children's mental health, he has been the recipient of multiple awards and honors for his work. Dr. Chorpita has held research and training grants from the National Institute of Mental Health, the Hawaii Departments of Education and Health, the John D. and Catherine T. MacArthur Foundation, and the Annie E. Casey Foundation. He recently published a book on Modular Cognitive Behavior Therapy in 2007 with Guilford Press.

**Abstract:** The heart of the evidence-based practice movement for practitioners is data based decision-making. Practitioners use data for two purposes: (1) guide decisions about which interventions have an adequate empirical basis for a particular individual and problem; (2) determine if an implemented interventions is actually effective. If practitioners are to be successful with the evidence-based practice model then it will be necessary for clinicians to have easy access to information to the evidentiary status of interventions so they can make real time decisions for clients. It will also be necessary for the clinician to have feedback about the effectiveness of an intervention once implemented. To do this on a large scale will require a systems level intervention. This presentation will provide an overview of the considerations when introducing evidence-based services into established mental health systems, including (1) strategies for the measurement and feedback of child outcomes to guide clinical decisions and (2) strategies for pulling clinically useful information from the published research trials. Examples of clinical and feedback strategies will highlight the concept of a "clinical dashboard," which is a visual summary of complex client-specific information to guide the clinician.

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## #226 Panel Discussion

5/24/2009  
1:30 p.m. - 2:50 p.m.  
North 120 BC  
AUT/DDA; Applied Behavior Analysis

### **A Consultant Model for Treating Challenging Children and Adolescents in Home, School, and Community Settings**

Chair: Richard M. Foxx (Pennsylvania State University)

JEFFREY S. GARITO (Independent practice)  
LACEY R BAILEY (Independent Practice)  
KATHRYN M PETERSON (Independent Practice)  
BRADLEY A GROOVER (Penn State University)

**Abstract:** Children and adolescents with challenging behaviors typically present parents and school personnel with a number of difficult major decisions regarding where they should live and be educated. In some cases,

the severities of the behaviors result in individuals being sent to a hospital or residential placement. In the best of circumstances, these placements are relatively short term and, more importantly, in facilities that provide quality behavior analytic services. The focus for these individuals is to reintegrate them into their families, schools, and communities and prevent future such placements. For other individuals, intervention is required to prevent them from being sent to hospitals, residential placement, or more restrictive educational settings. In both cases, the families of these children and adolescents are in need of comprehensive behavioral services. This panel will present a behavior consultation model for addressing both of the situations described above. A number of cases will be presented. Factors that contributed to the success of the model and interventions will be identified and discussed as well as the challenges that remain.

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## #227 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 124 B

AUT/EDC; Applied Behavior Analysis

### **Distance Learning for Parents and Personnel: Instructional Design, Evaluation and Future Directions for Research**

Chair: Leslie A. Morrison (UMass Medical School- Shriver Center)

**Abstract:** Four papers are presented on the application of online learning to educate parents, paraprofessionals and professionals in behavioral intervention applied to autism and to diverse topics of interest to early intervention professionals. The focus of the first three presentations is to: 1) describe instructional design methods used to meet the specific needs of each of the target audiences; 2) illustrate selected course features, including text presentation, Flash programming, and applications of three types of video – brief parent-documentaries, demonstrations of behavioral procedures and automated interactive exercises; 3) present formative evaluation information, including how it was applied to course development; and 4) present summative field evaluation data. The fourth paper summarizes the instructional methodology presented in the first three papers in the context of future development strategies. Opportunities to build upon the methods by employing multi-media technology as a means of moving from primarily educational to increasingly training-oriented course objectives will be examined.

**Educating Parents of Children with ASD in Behavioral Intervention: An Online Program.** ELISE A. STOKES (Shriver/UMass Medical School), Richard K. Fleming (Shriver/UMass Medical School), Elaine Gabovitch (Shriver/UMass Medical School), Melissa C. T. Maslin (Shriver/UMass Medical School), Richard W. Serna (University of Massachusetts Medical School - Shriv), Maura Buckley (Praxis, Inc.), Cheryl Gray (Praxis, Inc.), Paul Roselli (Corporate Film & Video Productions, LLC)

**Abstract:** When a child receives an autism spectrum disorder (ASD) diagnosis, the parents are faced with a whirlwind of anecdotal accounts from other parents, promises of a ‘cure,’ and dramatic stories told by the media. To address the need for accurate information for parents of children newly diagnosed with ASD, the authors have created an online course in Behavioral Intervention (BI) that is especially geared to parents. The course teaches BI by presenting each topic in three layers: 1) basic information written in a parent-friendly style; 2) more in-depth and technical information, replete with examples and interactive exercises; and 3) links to supporting literature and Internet resources. Interwoven with this instructional content, throughout the course, are short parent-interview video clips that document the experiences and stories of 5 families as they adopted and used BI. This paper describes and illustrates the course by presenting its instructional methodology, BI topics covered, parent and professional focus group data, video footage of parents and an interactive video exercise.

**Behavioral Intervention Skills for Entry-Level Paraprofessionals.** LESLIE A. MORRISON (UMass Medical School- Shriver Center), Richard K. Fleming (Shriver/UMass Medical School), Charles Hamad (UMASS Medical School), Cheryl Gray (Praxis, Inc.), Richard W. Serna (University of Massachusetts Medical School - Shriver Center)

**Abstract:** Behavioral Intervention in Autism-Practitioner Skills is an Internet-based distance learning program designed to introduce entry-level paraprofessionals and teacher aides, as well as parents and family members, to core behavioral intervention (BI) procedures in the treatment of young children with ASD. In an “instructorless” format, learners are guided through a series of sequential lessons that include reading online text (“lectures”) and viewing video footage that depicts providers, including parents and children with ASD, demonstrating critical BI procedures in both home- and school-based settings. In addition, self-assessments and practice exercises are utilized as a way for learners to assess knowledge acquired within the modules. The first phase in the development of this multi-module course consists of three modules: (1) Positive Reinforcement: Selection and Use of Reinforcement; (2) Relationship Building: Pairing and Teaching Cooperation; and (3) Prompting and Prompt Fading. Data from a field evaluation will be presented. A second phase of course development has been proposed, which would include up to 10 additional modules on BI procedures.

**Educating Early Intervention Professionals in Current Topics through Distance Learning.**

RICHARD K. FLEMING (Shriver/UMass Medical School), Leslie A. Morrison (UMass Medical School-Shriver Center), Cindy K. Fleming (Praxis, Inc.), Cheryl Gray (Praxis, Inc.), Charles Hamad (UMASS Medical School)

**Abstract:** Early intervention professionals work in a highly multi-disciplinary environment. As such they stand to benefit from opportunities to supplement their expertise, by taking online courses on topics such as infant and toddler development, transition planning, team collaboration, assistive technology, naturalistic teaching methods and more. This paper presents formative evaluation methods and results, the development of audience-relevant learning objectives, the selection and implementation of instructional design features and summative evaluation procedures and data. Examples of design features, and summative evaluation data, are provided for several distinctively different courses. Our current use and continued development of an instructional design protocol is also presented.

**Summary and Future Directions for Online Course Development.** RICHARD W. SERNA (University of Massachusetts Medical School - Shriver Center), Richard K. Fleming (Shriver/UMass Medical School), Charles Hamad (UMASS Medical School)

**Abstract:** This paper will focus on future development strategies and methods that could move distance learning from primarily educational online courses to full training experiences. The previous three papers in this symposium described instructional methods designed to educate and, via some simulation, to train parents and personnel online. Advances in multi-media technology available to both developers and users present opportunities to greatly enhance those methods. Interactive video, live video for observation and feedback, and Flash-based learning environments are among the options that will be discussed for moving in this direction.

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**#228 Symposium**

5/24/2009

1:30 p.m. - 2:50 p.m.

North 124 A

AUT/N/A; Service Delivery

**Considerations in Starting an ABA Autism Service**

Chair: Amanda Adams (California State University, Fresno)

Discussant: Marianne L. Jackson (California State University, Fresno)

**Abstract:** This symposium examines several methods of bringing autism services to communities with different issues and considerations that challenge service providers. ONE talk will focus on building relationships with community service providers, a second on training parents in areas of lack of funding for autism services, and the final presentation on possible benefits of center based programs for children with autism. Time for questions and discussion will be allotted at the end of the presentations.

**Community Partnerships and Funding: Being Effective and Timely.** CHRISTINA SEXTON (UNR), Ashley Greenwald (University of Nevada, Reno), Marianne L. Jackson (California State University, Fresno), Melissa Nosik (TEAM Centers), Holly Seniuk (University Nevada Reno), Christy Walsh (UNR), Chelsea Wilhite (UNR), W. Larry Williams (University of Nevada, Reno)

**Abstract:** Acquiring funding for autism services in some areas can be a major obstacle in getting behavioral intervention. This presentation will provide an overview of some of the important areas related to funding acquisition, contract development, and will also provide tips for working effectively with existing community service providers who have political and government significance. Fawcette's (1978) community Psychology principles will be related to these variables

**A Service Delivery Model for Families in Areas with Few or No In-Home Intensive Services.** HOLLY SENIUK (University Nevada Reno), Lavonne Brooks (UNR), Ashley Greenwald (University of Nevada, Reno), Marianne L. Jackson (California State University, Fresno), Melissa Nosik (TEAM Centers), Christina Sexton (UNR), Christy Walsh (UNR), Chelsea Wilhite (California State University, Fresno)

**Abstract:** Autism has received much press recently, and while there is much research supporting intensive behavioral intervention, there are situations in which this is not within a family's resources. This presentation will provide an overview of a behavioral consultant service delivery model for those with autism that may fall into this category. This model utilizes a two prong approach to amelioration of the symptoms of this disorder: comprehensive functional assessment of the individual and competency-based instruction on basic behavior techniques to parents. After an overview of this model, we will suggest some modifications scaled to available resources. One of the most innovative features of this training model is the incorporation of the skill acquisition of the parents occurring in tandem with the in-home assessments and interventions. Aspects of these training classes include several methods which have demonstrated generality to the home environment. Data will be presented on acquisition and maintenance of those skills after completion of the instruction.

**Beginning a Center-Based Autism Program.** AMANDA ADAMS (California State University, Fresno)

**Abstract:** The Central California Autism Center (CCAC) is a center based program for young children with autism housed on the grounds of California State university, Fresno. This program was begun by the Behavior Analysis program in the Department of Psychology and runs as a cooperative project with the Colleges of Science and Mathematics and the College of Education. The center took a year to establish and a second year to build to a financially viable operation. State funding was procured, university and state paperwork filed, student recruited and trained, referrals sought, and finally, treatment programs initiated. Now, at the beginning of its second year, the CCAC provides over 350 hours of ABA therapy per week to 16 children, employees over 30 students and is engaging in an active research program. Our purpose is three-fold: 1) to provide excellent training and experience for undergraduate and graduate students, 2) to conduct and promote active research in best practices for behavioral treatment for autism, and 3) to provide the community with outstanding behavioral therapy programs. This presentation will discuss how to replicate this or similar models in university and non-university settings.

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## #229 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 125

AUT/DDA; Applied Behavior Analysis

### **Improving Social Interactions for Children with Autism Through the Use of Scripts and Script-fading Procedures**

Chair: Brian J. Joergens (The Graduate Center/CUNY at Queens College)

Discussant: Sue Vener (New York Child Learning Institute)

**Abstract:** Autism is a disorder characterized by a deficit in social interaction skills. Scripts and script-fading procedures have been used to increase verbal interactions among individuals with autism. This symposium will present three studies in which scripts and script-fading procedures are used to improve the social interaction skills of children with autism. The first study used a multiple-baseline-across-participants design to evaluate the effects of scripts and a script-fading procedure on verbal interactions during a lunch period for children with autism. The second study examined the effects of a script-fading procedure on peer interactions for four-to-six year old children with autism in a multiple-baseline across-participants design. In both studies, introduction of scripts resulted in a systematic increase in social initiations. The third study examined the effects of a video-script-fading procedure on appropriate-affective components (head movement, facial expression, and vocal intonation) of social initiations for children with autism in a multiple-baseline-across-response-categories design. Results of this study indicate that introduction of a video-script resulted in a systematic increase of initiations with appropriate-affective components. These studies demonstrate that script and script-fading procedures can be tailored to address various social skill deficits of children with autism.

#### **Using Scripts and Script-Fading Procedures to Increase Peer Interactions during Lunch.**

TIFFANI HEWLIN (New York Child Learning Institute), Sue Vener (New York Child Learning Institute)

**Abstract:** Scripts and script-fading procedures have been shown to successfully increase verbal interactions among individuals with autism. In the present study, a multiple baseline experimental design across three youths with autism was used to evaluate the effects of scripts and script fading on the number of verbal interactions during lunch at school. This study also investigated the effects of scripts and script fading at school on the number of interactions in different locations (e.g. a diner; McDonalds; an Italian restaurant). During teaching written scripts were provided to each participant. Throughout teaching, scripts were faded from end to beginning, until all written cues were removed. The results show that prior to teaching, the participants did not engage in verbal exchanges in the school lunchroom or in different locations. Following the introduction of teaching, there was a systematic increase in the number of scripted and unscripted interactions across participants in the lunchroom. In addition, there was an increase in the number on interactions in the local diner, McDonalds, and an Italian restaurant.

**The Effect of a Script-Fading Procedure on Social Initiation and Novel Utterances among Young Children with Autism.** ALISON WICHNICK (The Graduate Center/CUNY, New York Child Learning Institute), Colleen Keating (The New York Child Learning Institute), Sue Vener (New York Child Learning Institute), Claire L. Poulson (Queens College/CUNY)

**Abstract:** Autism is a disorder characterized by a deficit in social interaction skills. Initiation of social behavior is the focus of this study. Several studies provide evidence for the effectiveness of the script-fading procedure on improving the social initiation skills of those with autism. Nevertheless, there is little focus on peer initiation among young children with autism and on the production of novel utterances. The purpose of this study was to use toys with audiotaped scripts to evoke peer initiations among three young children with autism and to measure novel utterances. The three participants, ages 4, 5, and 6 years, showed deficits in peer initiation and tended to initiate to adults only. During baseline, the three participants emitted few, if any, initiations to one another. When toys with scripts were introduced,

initiations systematically increased across the participants. Furthermore, as scripts were faded, novel initiations were emitted, thus demonstrating response generalization. Therefore, the script-fading procedure was an effective method for increasing and for producing novel peer initiations among young children with autism. This technology can improve the social skills of those with autism and can provide more opportunities to integrate with society, thus attenuating the characteristic social-skill deficit of this disorder.

**Using a Video-Script Fading Procedure to Teach Affective-Social Initiations to Children with Autism.** BRIAN J. JOERGENS (The Graduate Center/CUNY at Queens College), Sue Vener (New York Child Learning Institute), Claire L. Poulson (Queens College/CUNY)

**Abstract:** A video-script-fading procedure embedded in a written activity schedule is being used to teach affective-social initiations to children with autism. The study is being conducted in a typical classroom setting for children with autism. Two male students are participating in this study. Measured dimensions of appropriate-affective initiations include: voice intonation, head movement, and facial expression in accordance with the category of the initiation. Three categories of affective-social initiations are being taught: excitement, commiserations, and compliments. A multiple-baseline-across-response-categories experimental design is being used in this study. During baseline, social scripts are presented on a pocket pc as written text and a picture of the instructor using an appropriate facial expression for the response category. During treatment, social scripts are presented on a pocket pc as written text with a video model depicting the instructor engaging in the social initiation while using appropriate facial expression, vocal intonation, and head movement. The results indicate that implementation of treatment has produced a systematic increase in the percent of initiations with appropriate affect components. Video-script fading is a promising treatment package for teaching complex social initiations to children with autism.

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## #230 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 126

AUT/OBM; Applied Behavior Analysis

### Use of Staff Training in Educational and Residential Setting

Chair: Hanna C. Rue (The May Institute)

**Abstract:** There are many challenges with training staff and teachers and administrators in schools with limited time and resources. Administrator and supervisory staff must find way to quickly and accurately train staff to be able to perform with students and individuals in school and residential setting. Performance feedback has been shown to be an effective teaching tool and motivator in a wide variety of professional environments. Performance feedback typically consists of two key components; corrective and positive feedback. Recent studies have demonstrated positive effects of performance feedback, but have come up short in maintenance outcomes (Moore et al, 2002) and generality to supplementary curriculum (Leblanc, Ricciardi & Luiselli, 2005). This symposium provide several example of training interventions, using written and video Feedback to train educational assessment, Functional assessment and supervision to teachers and direct care staff. The first presentation demonstrates a practical method for training staff to implement functional analysis conditions. The second presentation demonstrates the use of performance feedback to increase group management skills in a classroom. The third presentation demonstrates a method for increase entry-level supervisors feedback skills, and the fourth demonstrates the use of performance feedback to increase staff oral presentation of clinical data. all presentation represents interventions used across multiple staff in education and therapeutic environments.

**Training Package to Increase Supervisor Feedback Skills.** STEFANIE FILLERS (May Institute), Hanna C. Rue (The May Institute)

**Abstract:** The purpose of the study was to determine the effectiveness of a training package to improve supervisor feedback skills. Participants in the study were four lead teachers at a private school for

children with developmental disabilities, supervising 3-7 teaching staff. Sessions took place within the supervisor's classroom, while students were present, once a day, 2-3 times per week. During each session, the participant was observed providing feedback to a staff member following an observation of staff's program implementation. Feedback skills were scored using a 10-component feedback checklist. Following baseline, a mini-workshop was conducted, and then subsequent observations were conducted with direct feedback from the experimenter to the participant. The feedback training package was evaluated in a multiple-baseline across participants design. Results indicate that the training package increased feedback skills across all supervisors.

**A Training to Enhance the Quality of Group a Training to Enhance Group Management.** STEPHANIE ORMAN (The May Institute), Katherine Gilligan (The May Center for Child Development), Kate Desmond (May Institute)

**Abstract:** When services are provided to groups of individuals, direct support professionals must be capable of interacting with all members of the group. Even when working with a group of three or more students, it is necessary for students to stay on task, and engage appropriately. However, if teachers are unsure how to effectively manage a group, students may not demonstrate appropriate behaviors and may not learn or maintain skills. The current study used a multiple baseline across staff to examine staff performance and student engagement following training in group management. Prior to the study, guidelines for interaction were created. Once baseline data had been collected teachers were then trained to exhibit the specific behaviors identified by the researchers as vital to effectively manage a group. Data were collected on staff behavior and student engagement across conditions. Interobserver agreement for teacher behavior averaged 97% during baseline and 86% during treatment. Results indicated that prior to training, teachers provided infrequent interactions, averaging 6% and student engagement was low, averaging 5%. Following training, teachers provided more frequent interactions, averaging 92%, and student engagement increased, averaging 80%.

**Teaching Educators to Implement Functional Analysis Conditions.** NATALIE DENARDO (Northeastern University)

**Abstract:** The functional analysis assesses the variables which maintain targeted behaviors so it is important that staff know how to implement a functional analysis. The participants used in this functional analysis training were five teachers and one home-based consultant. One group was trained using a brief power point presentation and after the training used a self-monitoring checklist while running the functional analysis conditions. The other group received a brief power point presentation and video training without a self-monitoring checklist. The results indicated that two participants met criterion required to implement the attention, demand, and play conditions after the initial functional analysis training. Three participants required feedback once and one participant required feedback twice before meeting criterion for all three conditions. The self-monitoring group and the video-training group acquired functional analysis skills at nearly the same rate.

**The Use of Performance feedback to Increase The Use of Perfomance Feedbck to Increase Staff Verbal and Written Presentation During Clinical Review.** JOHN STOKES (May Institute), Karin Page (May Institute), Gina Tacconi Morre (May Institute)

**Abstract:** A two-step Performance training program was implemented across 8 residential programs. The goal of the training was to instruct staff in how to increase their accuracy in verbal and graphic presentation of clinical data during biweekly clinical reviews. The program involved defining desired staff behavior, training and performance feedback. The procedure resulted in increased rates of appropriate presentation behaviors being exhibited by staff working in the respected programs. The greatest increase in teaching behavior by staff was demonstrated during the performance feedback session of the training. All staff increased their performance to at least 80%. Data is displayed graphically and results are discussed in terms of using effective staff training as a means of increasing staff professional oral presentation and graphic display of data. Inter-observer agreement data was taken for 30% of trial for each subject. Their was a mean IOA of 89% with a ranger of 76% to 100%.

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## #231 Paper Session

5/24/2009

1:30 p.m. - 2:50 p.m.

North 227 A

AUT

### Unique Challenges in Providing Behavioral Services

Chair: Molly Ola Pinney (Global Autism Project & Columbia University)

**Staff Training In An International Environment: Teaching Discrete Trial Methodologies In West Africa.** (Applied Behavior Analysis) MOLLY OLA PINNEY (Global Autism Project & Columbia University), Ann Brigid Beirne (YAI-NYL Lifestart / Global Autism Project)

**Abstract:** The Global Autism Project is an organization that works to bridge the global gap in resources and understanding of autism. We address these needs by first establishing and utilizing any available resources and setting up partnerships to work with the local individuals currently providing services.

Our current service partner is a center in Accra, Ghana. In Ghana, where access to diagnosis and treatment are scarce, this center provides a safe haven for children with autism. Although some teaching programs were provided, no data was collected and few instructional programs were run. The Global Autism Project provided training in discrete trial teaching methodologies and data collection. Following this training, students at the center were provided instructional programming and data was collected on all programming, allowing data based decision making by center staff. This training allowed for an increase in structured teaching for all classrooms. As a measure of social validity, data collection was mentioned by all staff as a favorite aspect of training. Data collection had been maintained at a follow-up visit.

**Behavior Analytic Services for Children with Autism Spectrum Disorder in Saudi Arabia.** (Service Delivery) SUSAN AINSLEIGH (Dar Al-Hekma College)

**Abstract:** Sources report that the incidence of autism spectrum disorder (ASD) is increasing in the Kingdom of Saudi Arabia. Estimates show prevalence figures approaching 1 in 160 children, nearly comparable to figures published of prevalence in the United States and the United Kingdom. It is still a challenge, however, for families to access intensive or effective programming for their children with diagnoses of ASD. Practitioners with behavioral training remain scarce in Saudi Arabia, and educators or clinicians with knowledge of behavioral practices are uncommon. Efforts to increase the practice of applied behavior analysis in the Arabian Gulf are underway, including the development of behavior analytic training opportunities for practitioners studying at the secondary level. This paper presents several current initiatives for strengthening behavioral practices for children with autism in Saudi Arabia, and reviews some of the challenges faced in bringing the science of applied behavior analysis to the Arabian Gulf.

**Establishing an Undergraduate College-Student Internship Program; A Partnership between an Applied Center-Based Behavioral Education Program for Individuals with Autism and a Higher Education Institution.** (Applied Behavior Analysis) KRISTINE TURKO (Mount Union College) , Jocelyn Eskenazi (The Cleveland Clinic Center for Autism)

**Abstract:** The Cleveland Clinic Center for Autism has developed and organized an internship program to include a cooperative learning experience, paired with Higher Education undergraduate students majoring in Psychology or Cognitive Behavioral Neurosciences.

The partnership program is a three tier process, (1) the higher education institution utilized as the portal through which highly qualified and motivated students would compete for a position as an intern at the center-based program, (2) the college is utilized as an academic headquarter of the Center's college-student intern program. The expansion of this tier would include interns from a second Institution of

Higher Education and broaden the opportunity for an additional 3-5 interns to participate, (3) the expansion of therapeutic services to families with needs associated with Autism Spectrum Disorder; in particular, linking students trained with the ABA program of the center-based program to families that would not otherwise have access to ABA intervention.

Participants attending this workshop will learn the necessary steps taken in recruiting interns and issues related to autism, assisting them in learning more about their topics of interest, conducting a search for an intern pool, and conducting a search for students interested in community outreach opportunities. Further, participants will be informed of developing and implementing the process of selecting, interviewing, training and evaluating college-student interns placed within an applied behavioral education program. An organizational matrix of essential components for a successful tiered program will also be presented.

**Adaptation and Evaluation of a Math Skills Program for Children with Autism in ABA School Settings.** (Applied Behavior Analysis) CORINNA F. GRINDLE (Bangor University, UK), Maria Saville (Bangor University, UK), Richard P. Hastings (Bangor University, UK)

**Abstract:** There is a scarcity of research on early numeracy intervention for children with autism. If teachers turn to published curriculum guides on ABA for children with autism for guidance, they find a lack of suitable tools for assessing children's numeracy skills and knowledge and few appropriate programs available to address the deficits. There is some evidence that the "Maths Recovery Program" is effective in ameliorating the difficulties experienced by low attaining typically developing children in the 4- to 8- year age range (e.g., Wright, Martland, Stafford & Stanger, 2006). This individualized teaching approach seems well suited to addressing the learning needs of children with autism on ABA programs. The presentation will summarize the learning framework for the Maths Recovery Program and discuss its implications for early intervention. Some preliminary results will also be presented showing that children with autism on the program can very quickly show significant improvement in their attainment of number skills.

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## #232 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 226 C

BPH/EAB; Experimental Analysis

### **Delay Discounting, Substance Abuse, and Gambling**

Chair: Kathryn A. Saulsgiver (University of Vermont)

**Abstract:** Delay discounting (DD), or the degree to which a future reward is discounted, has been shown to predict treatment outcome in substance abusers (Yoon et al., 2007). Higher rates of DD have also been found in pathological gamblers in comparison to matched controls (e.g., Alessi & Petry, 2003). This symposium examines how discounting rates are associated with treatment outcome in various substance abusing populations. This symposium also bridges the gap between human and non-human research by examining the effects of pre-session pramipexole in a DD paradigm and on an animal model of gambling.

**Delay Discounting and Other Variables Associated with Pregnant Smokers: Those Who Quit vs Those Who Don't** JIN HO YOON (Baylor College of Medicine), Stephen T. Higgins (University of Vermont)

**Abstract:** Maternal smoking is a leading preventable cause of poor pregnancy outcomes and infant morbidity and mortality. Despite the existence of effective interventions, end-of-pregnancy rates are often low (<20%). Greater knowledge of factors influencing smoking cessation during pregnancy is therefore needed to understand continued smoking in this population and to aid in the development of more effective interventions. Participants (N = 131) were involved in two separate clinical trials examining the influence of incentives for either promoting or maintaining smoking abstinence during

pregnancy and up to 6-months postpartum. One group of women was still smoking at intake, whereas the other group had quit smoking prior to intake once they discovered that they were pregnant. Our group was therefore in a unique position to identify potential variables associated with women who were more or less likely to quit smoking once they discovered that they were pregnant. Socio-demographic, smoking characteristics, and history of depressive symptoms were assessed during at study intake. Additionally, impulsivity was assessed using a delay-discounting task for hypothetical monetary rewards. Delay discounting was found to be significantly different between the two groups in univariate analyses and the general pattern of results showed that women who were still smoking and those that had stopped were differentiated by variables traditionally associated with smoking availability and severity.

**Baseline Delay Discounting Predicts Response to a Behavioral Smoking Intervention Among Opiate Maintained Patients.** KATHRYN A. SAULSGIVER (University of Vermont), Kelly Dunn (University of Vermont), Stacey C. Sigmon (University of Vermont), Matthew P Bradstreet (University of Vermont), Ed Reimann (University of Vermont), Sarah Heil (University of Vermont), Stephen T. Higgins (University of Vermont)

**Abstract:** Delay discounting (DD) has been used to characterize potentially important differences in dealing with reinforcement delay between individuals with and without substance use disorders and, more recently, to predict treatment response (Dallery & Raiff, 2007; Doran et al., 2004; Krishnan-Sarin et al., 2007; Yoon et al., 2007). DD was examined as part of a larger evaluation of a contingency-management intervention for reducing cigarette smoking among methadone- and buprenorphine-maintained patients (Dunn et al., in press). In this 2-week study, 15 participants received voucher-based reinforcement contingent upon smoking abstinence. DD was assessed on various Study Days using hypothetical monetary rewards over a range of delays. We examined the data using both the conventional k-value calculation (Mazur, 1987) and a more recently-developed ED50 calculation (Yoon & Higgins, 2008). To examine the relationship between baseline DD and subsequent smoking abstinence, participants were dichotomized into low (Lo-DD, n=7) and high (Hi-DD, n=8) groups based on baseline ED50. Preliminary analyses show that Lo-DD participants achieved more smoking abstinence, as evidenced by more smoking-negative samples (85.7% vs. 51.8%;  $p < .001$ ) and longer durations of continuous abstinence (10.6 vs. 5.6 days;  $p = .11$ ) than Hi-DD, respectively. Participants were also dichotomized based on whether they abstained (n=10) or continued to smoke (n=5) during the study. Abstainers had significantly lower baseline k-values (.0007 vs. .009;  $p = .02$ ) and marginally higher ED50 values (3.75 vs. 0.31 years;  $p = .12$ ) than Smokers, respectively. These preliminary data suggest that baseline DD may predict subsequent response to a smoking intervention and extend these findings to opioid-maintained smokers.

**Delay Discounting in Cocaine Dependent Outpatients.** YUKIKO WASHIO (University of Vermont), Matthew P Bradstreet (University of Vermont), Gary J. Badger (University of Vermont) , Sarah Heil (University of Vermont), Stephen T. Higgins (University of Vermont)

**Abstract:** The observation that the value of a reinforcer decreases as a function of increased delay to delivery is described as delay discounting (DD) (Bickel & Marsch, 2001; Reynolds, 2006). Substance abuse can be described as a real-world example of DD, in which the immediate reinforcing effects of a drug is preferred over the longer-term benefits of abstaining from drug abuse (Yoon & Higgins, 2008). The literature reliably demonstrates that drug abusers exhibit greater DD compared to non-drug abusers (Yoon et al., 2007). DD of monetary values was examined among cocaine dependent outpatients as part of our ongoing randomized clinical trials with community reinforcement approach plus vouchers. Compared within subjects, there was no visually detectable change in k values, a measure of the rate of discounting, between the time of intake and that of 6-weeks into the recommended 24-weeks of treatment. These results support a position that DD of monetary reinforcement among these cocaine-dependent outpatients appears to be a relatively stable behavioral characteristic. This study is still ongoing, and additional patients and analyses will be added to the current data set.

**Delay Discounting Processes in Pathological Gambling: Pharmacological Induction of Impulsive Behavior in the Nonhuman Laboratory.** PATRICK S. JOHNSON (University of Kansas), Adam T. Brewer (University of Kansas), Jonathan W. Pinkston (University of Kansas), Jeff S. Stein

(University of Kansas), Monica T. Francisco (University of Kansas), Gregory J. Madden (University of Kansas)

**Abstract:** Mazur's (1987) hyperbolic discounting equation has been suggested to describe not only the discounting of delayed rewards but also the discounting of rewards requiring significant effort (e.g., Grossbard & Mazur, 1986). In this way, severe forms of impulsive behavior such as pathological gambling may be directly correlated with rates of delay discounting (Madden, Ewan, & Lagorio, 2007). In fact, studies investigating delay discounting in pathological gamblers oftentimes reveal higher rates of discounting for gamblers than for matched controls (e.g., Alessi & Petry, 2003). Findings from experimental work with nonhuman subjects in these areas (i.e., delay discounting, pathological gambling) will be discussed. Clinical reports have implicated pramipexole, a D2/D3 dopamine receptor agonist commonly prescribed for Parkinson's disease, in the development of a number of impulse control disorders (e.g., Dodd, Klos, Bower, Geda, Josephs, & Ahlskog, 2005). The effects of pre-session pramipexole were studied in a delay discounting paradigm and in an animal model of gambling. Pramipexole significantly increased impulsive choice above saline levels in the delay discounting task; the drug also significantly increased preference for gambling-like sources of reinforcement in the gambling model. Results of these studies will be interpreted with respect to the purported linkage between delay and effort discounting.

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### #233 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 224 A

CBM/OTH; Applied Behavior Analysis

#### **With A Rebel Yell: Addressing Destructive Behaviors in Disenfranchised Young Adults Through ABA Strategies**

Chair: James Para-Cremer (Lakeview Specialty Hospital & Rehab)

**Abstract:** Struggling to conform to societal norms, rules, and peers' expectations creates difficulties for many teens and young adults. Jokingly, it has been suggested that puberty itself is a type of brain injury resulting in strange and socially undesirable behaviors. While many adolescents navigate these times without lasting damaging effects, some teens participate in behaviors that are dangerous to themselves or others and may have potentially criminal consequences.

This symposium shares the results of the clinical application of applied behavior analysis with teens struggling to succeed within their academic, residential, and therapy environments. The participants are young adults between the ages 15 and 21 that have been diagnosed as having a traumatic brain injury, emotional disorder, and/or conduct disorder. The target behaviors addressed within this symposium include aggression, vandalism, cutting and other self-injurious behaviors, elopement, isolation, and low-participation within academic and therapeutic settings. Results include measures of social validity for the participants, their families/guardians, and teachers.

**Paint it Black: Effects of Fluency Training on Inner and Public Behaviors.** AMBER RICH (Lakeview Specialty Hospital, UWM), James Para-Cremer (Lakeview Specialty Hospital & Rehab), Jonathan W. Kanter (Department of Psychology/University of Wisconsin,-Milwaukee), Marshall L. Dermer (University of Wisconsin, Milwaukee)

**Abstract:** A fluency training procedure was used by adolescents living in a residential treatment facility to address positive and negative thoughts and feelings (i.e. inners). Participants with unwanted negative thoughts and feelings were referred by the Psychology Department within the facility; parent/guardian and participant consents were obtained. A multi-baseline design across participants was utilized including a maintenance phase and month follow-up probes. During all phases of the study, participants counted positive and negative inners throughout the day on a handheld gold counter. Participants also gave a daily mood rating on a 7-point Likert scale and charted their counts on a Standard Celeration Chart. During the fluency training intervention, participants quickly thought and counted positive inners in six ten-

second session spread throughout the day. The effects on rates and celeration of self-reported positive and negative inner behaviors were examined for all phases of the study. The effects on participants' aberrant behaviors and other public behaviors recorded by the residential treatment facility staff were also examined. Pre and post Beck Depression Inventory and Automatic Thoughts Questionnaire results were analyzed.

**Bang Your Head: Reducing Negative Attention Seeking Behavior Through Temporal Cueing and Positive Practice.** TIMOTHY C. WIEDEL (Lakeview Specialty Hospital & Rehab), Amanda Karlen (Illinois School of Professional Psychology), James Para-Cremer (Lakeview Specialty Hospital & Rehab), Amber Rich (Lakeview Specialty Hospital, UWM)

**Abstract:** Negative attention seeking behaviors such as head banging, swearing, hitting, and spitting create significant difficulties for recovery and step down to less restrictive settings for adolescents with neurological and emotional disorders. Cueing is often used to encourage and remind patients to use a particular new behavior and discontinue an unwanted one. In temporal cuing a cue is given at a certain time each day when the unwanted behavior often occurs. The temporal cue then becomes a stimulus to remind the patient to engage in the new behavior which has been shaped by positive practice. This study applies the strategy of temporally cueing a pro-social skill to minimize the occurrence of problem behaviors in adolescents. The study utilizes a multiple baseline design across settings. Dependent measures include frequency of aberrant behaviors during targeted times of the day and the use of desired pro-social behavior. Discussion will address the maintenance and generalization of the pro-social behavior and the challenges of shaping positive attention seeking behaviors in a residential treatment facility are discussed.

**Rock N' Roll High School: Identifying Successful Teaching Strategies Through Multiple Treatment Design.** JAMES PARA-CREMER (Lakeview Specialty Hospital & Rehab), Susan Conhartoski (Lakeview Specialty Hospital & Rehab)

**Abstract:** Low or poor student performance within classroom settings can result from a multitude of stimuli. Classroom environments continue to be overcrowded and understaffed. Teachers are faced with choosing between the competing contingencies of classroom management and individualized instruction. Federal attempts to improve student academic performance by establishing minimum testing standards without provision for additional classroom resources has only served to compound the problem. In an effort to meet these standards teachers are left to apply homogenous education strategies to a diverse student population. By the time a student with special learning requirements reaches adolescence a negative relationship with the school environment has been conditioned. Seeking to escape the punitive stimuli of the classroom the student may engage in intense behaviors such as aggression and property destruction and/or more passive behaviors such as sleeping or truancy. This study utilizes an alternating treatment design within a classroom setting to identify the most effective method for teaching math skills to adolescent students with special needs. Additionally, teachers were taught how to implement this design within their classrooms. Dependent measures include the number of correct responses, frequency of aberrant behaviors, student time on-task and social validity measures of teacher and student acceptance of the design.

**Ch-ch-changes: The Effects of Different Treatment Plan Designs on Client Outcomes.** MAHIN L. PARA-CREMER (Lakeview Specialty Hospital), James Para-Cremer (Lakeview Specialty Hospital & Rehab), Debra Hill (Lakeview Specialty Hospital & Rehab), Susan Weller (Lakeview Specialty Hospital & Rehab), Amanda Ramsey (Lakeview Specialty Hospital & Rehab), Amanda Karlen (Illinois School of Professional Psychology), Amber Rich (Lakeview Specialty Hospital, UWM)

**Abstract:** Person centered planning is an essential component for achieving vested outcomes for individuals-in-care. Traditional approaches towards treatment have been clinician directed and provide little opportunity for control or choice for the patient. This approach potentially limits buy-in to treatment goals by the primary stake holder, the young adult patient. This study is a multiple baseline across subjects and settings evaluating quality outcome measures for people served within residential settings at a Midwestern rehabilitation hospital. The setting includes a child and adolescent residential

treatment center for children ages 6-17 with neurobehavioral diagnoses, and a community-based residential facility for adults with acquired brain injuries. The independent variable is the application of the person-centered planning treatment model within the environment of a medical treatment planning model. Treatment components include staff training and coaching on the person centered planning process and essential components for the development of a person-centered plan, person served involvement, and the involvement of those who know and care about the person, in the plan development and implementation, and an evaluation of outcome measures following the implementation of person-centered planning.

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## #234 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 222 AB

CBM/Applied Behavior Analysis

### **Mindfulness for Two (Part I): Manipulating the Room**

Chair: Maureen Kathleen Flynn (University of Mississippi)

Discussant: Chad Drake (Portland Psychotherapy Clinic, Research, and Train)

**Abstract:** Researchers have long been interested in different factors relevant to the process and outcome of therapy (Smith & Glass, 1977). This symposium will present findings from a series of studies involving an analogue of a first therapy session. In each of these studies, particular variables in the therapy room that are theoretically important to the practice of Acceptance and Commitment Therapy were manipulated (See Wilson, in press). Some of the variables include, the use of a clipboard to take notes, chair placement, and the use of the Outcome Questionnaire (OQ-45.2) versus the Valued Living Questionnaire (VLQ-2) prior to the interview. Data were collected and scored from a video-tape recording of the session. Additionally, self-report data were collected using established measures of therapeutic alliance as well as measures specifically created for this study.

**The Effects of the Pre-interview Questionnaire Administered.** MAUREEN KATHLEEN FLYNN (University of Mississippi), Kelly G. Wilson (University of Mississippi), Kate Kellum (The University of Mississippi), Emily Kennison Sandoz (University of Mississippi)

**Abstract:** This study examined how manipulating the interviewee's behavior prior to the interview affects a number of different process variables believed to be relevant to the practice of Acceptance and Commitment Therapy (Wilson, in press). Specifically, this study manipulated the pre-interview questionnaire administered to interviewees. Interviewees were randomly assigned to fill out either the Outcome Questionnaire-45.2 (OQ-45.2) or the Valued Living Questionnaire-II (VLQ-2). Next, the interviewer was instructed to ask the interviewee about a disagreement they had with someone who is important to them. Data were collected and scored from a video-tape recording of the session. Additionally, self-report data were collected post-interview from both interviewers and interviewees using measures of therapeutic alliance and personal experiences, such as positive/negative mood and physical sensations.

**The Effects of the Use of a Clipboard.** ERIC M DAVIS (University of Mississippi), Kelly G. Wilson (University of Mississippi), Kate Kellum (The University of Mississippi), Emily Kennison Sandoz (University of Mississippi)

**Abstract:** This study examined how manipulating the interviewer's behavior during the interview effects a number of different process variables believed to be relevant to the practice of Acceptance and Commitment Therapy (Wilson, in press). Specifically, this study manipulated the interviewer's use of a clipboard during the interview. The interviewer was randomly selected to either have or not to have a clipboard to use during the interview. Next, the interviewer was instructed to ask the interviewee about a disagreement they had with someone who is important to them. Data were collected and scored from a

video-tape recording of the session. Additionally, self-report data were collected using established measures of therapeutic alliance as well as measures specifically created for this study.

**The Effects of Chair Placement.** NICOLE KEEN (University of Mississippi), Kelly G. Wilson (University of Mississippi), Kate Kellum (The University of Mississippi), Emily Kennison Sandoz (University of Mississippi)

**Abstract:** This study examined how manipulating the space in the room during the interview effects a number of different process variables believed to be relevant to the practice of Acceptance and Commitment Therapy (Wilson, in press). In this study the interviewers and interviewees were placed in one of four conditions: chairs were face-to-face, chairs were angled, chairs were near in proximity, and chairs were far in proximity. Next, the interviewer was instructed to ask the interviewee about a disagreement they had with someone who is important to them. Data were collected and scored from a video-tape recording of the session. Additionally, self-report data were collected using established measures of therapeutic alliance as well as measures specifically created for this study.

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## #235 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 222 C

CBM/EDC; Applied Behavior Analysis

### **A Constructional Approach to Student Mentoring**

Chair: Kelly Tait (University of North Texas)

Discussant: Paul Thomas Andronis (Northern Michigan University)

**Abstract:** An inherent mantra for mentors is that they should find a ‘guiding theory’ fitting their beliefs and styles, using this within the mentoring session. This idea is so important that without a theory to guide action, mentors “would be vulnerable, directionless creatures bombarded with literally hundreds of impressions and pieces of information in a single session” (Prochaska & Norcross, 2003). Our findings suggest that a constructional rather than a pathological approach can be very effective in allowing for a productive and progressive mentoring session. The first presentation outlines our guiding model, a constructional approach to student mentoring and contrasts its unique position to a pathological orientation to working with students to identify and reach goals. The second presentation explores the extent of a useful tool within our guiding model in a group setting emphasizing its application for the classroom. The third presentation takes the constructional student mentoring model and demonstrates its application highlighting data collection methodology produced through inductive mentoring sessions. Colleagues, the constructional approach is approaching! Let’s Go!

### **The Roots of a Solid Future for Students: A Constructional Approach to Student Mentoring.**

TIMOTHY ALLEN LIDEN (University of North Texas), J. A. Levine (University of North Texas), Kelly Tait (University of North Texas), Ana Barbara Neves (University of North Texas), Daniele Ortu (University of North Texas), Kimberly L. James-Kelly (University of North Texas), Michelle Lamancusa (University of North Texas), Jesus Rosales-Ruiz (University of North Texas)

**Abstract:** A typical approach to student mentoring involves alleviating problems students bring to the table; if the student is failing science, then tutoring in science is needed. By simply ‘putting out fires’, the mentor focuses on behavior deficits and ways to correct problems students put forth; a pathological orientation (Goldiamond, 1984). Rather than focusing on what is wrong or what is lacking, one way a constructional approach is used to help students meet their goals is by focusing on building, transferring, and reestablishing repertoires. Before spotlighting this unique orientation, it is imperative to outline and describe the process of our guiding model which has been successful in helping at-risk students become aware of their own environment and how this affects their feelings about themselves and the world around them. Models of how we collect information about students’ interactions with their environment,

how we show changes in students' feelings about themselves, and our success with improving their lives, as well as their grade point average, will be discussed.

**The Constructional Approach in the Classroom: Building a Community for Behavior Change.**

MICHELLE LAMANCUSA (University of North Texas), Jesus Rosales-Ruiz (University of North Texas)

**Abstract:** Although undergraduate students in behavior analysis classrooms are taught the fundamental principles of a behavioral science, they are rarely successful in using them to arrange their environments to promote effective behavior change in their own lives. The 'exploratory log', a tool within the constructional approach model, provides the student with an opportunity to observe the extent with which the environment plays a role in their behavior. A group of at-risk students in an introductory behavior analysis course at the University of North Texas were targeted to be mentored on the exploratory log. Mentoring sessions were conducted once a week in group settings and lasted for 15 minutes either before or after class. Data on changes in student's daily activities and corresponding emotions were collected and compared to changes in coursework progress. The outcome of this study shows that through the continued use of the exploratory log, students became more aware of how the environment impacts their behavior, thus improving quality and quantity of coursework, all resulting in an overall higher grade for the course.

**An Inductive Approach Towards Student-Mentor Interactions: Findings of Dancing Inside the Mentoring Session.**

J. A. LEVINE (University of North Texas), Timothy Allen Liden (University of North Texas), Jesus Rosales-Ruiz (University of North Texas)

**Abstract:** Under the constructional approach model, dancing inside the mentoring session is a unique metaphor to describe an inductive approach towards student-mentor interactions. Part of the idea behind this interaction involves taking whatever the student gives you and using that information to assist in goal setting. Rather than adopting a fixed process, an inductive approach toward student-mentor interactions has proven highly successful in helping students get to where they want to go. By following the lead of the student, the mentor captures the current level of interaction throughout each session and progress on goal setting flows quiet naturally; an inductive approach. Findings of dancing inside the therapy session suggest (a) an inductive orientation within the constructional student model is an effective approach towards student success, (b) the constructional student model has possibility for greater generality across populations, and (c) a promise for very informative and unique data collection system, presentation, and training methods based on unique contingency arrangements.

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**#236 Symposium**

5/24/2009

1:30 p.m. - 2:50 p.m.

North 131 A

CSE/CBM; Applied Behavior Analysis

**Improving Safety in the Community**

Chair: Kimberly V. Beck (Behavior Management Solutions, Inc.)

**Abstract:** This symposium will consist of four papers discussing recent research concerning safety in community settings. Kimberly Beck will discuss research on evaluating a commercially-available abduction prevention program and using in situ training to teach abduction prevention skills to children. Jennifer Pan-Skadden will talk about her research on using behavioral skills training and in situ training to teach safety skills to lost children. Danielle Deller will discuss research conducted evaluating the effectiveness of prompts and incentives as a package intervention on the number of designated drivers leaving a bar near a college campus. Finally, Kari Woznick will discuss research concerning the use of visual and verbal prompts as an additional intervention to increasing seat belt use of high school drivers.

**The Evaluation of a Commercially-Available Abduction Prevention Program.** KIMBERLY V. BECK (Behavior Management Solutions, Inc.), Raymond G. Miltenberger (University of South Florida)

**Abstract:** Child abduction is a serious problem; therefore, it is essential that researchers evaluate the efficacy of currently available abduction prevention programs. A multiple baseline design across participants (ages 6-8) was used to evaluate the effects of a training program, The Safe Side. Safety responses were assessed in situ within two different situations (knock on the door and interaction by a stranger in public). Results revealed that participants did not demonstrate the safety skills following Safe Side training. All participants subsequently received in situ training implemented by the parent. Additional assessments and in situ training were conducted until each participant performed the skills to criterion. All participants demonstrated criterion performance following in situ training and maintained the skills over time.

**The Use of Behavioral Skills Training and In-Situ Training to Teach Children to Solicit Help When Lost.** JENNIFER M PAN-SKADDEN (Florida Institute of Technology), David A. Wilder (Florida Institute of Technology), Jessica Sparling (Florida Tech), Erica Severtson (University of Kansas), Jeanne Donaldson (University of Florida), Gracie Beavers (University of Florida), Nicole J. Postma (Florida Institute of Technology), Pamela L. Neidert (University of Kansas)

**Abstract:** Behavioral skills training (BST) was combined with in-situ training to teach young children to solicit help when they become lost from a caregiver at a store. Three children were taught to approach a cashier, tell the cashier their name, and inform the cashier that they are lost. A multiple baseline design across participants was used to evaluate the effects of training. One of the three participants successfully met the criterion with the BST + in situ training treatment package alone, and the other two participants required an incentive to meet the criterion. All participants maintained the safety skill at follow-up evaluations.

**A Public Benefit Analysis of Designated Drivers.** DANIELLE J DELLER (Florida State University/Behavior Management Consu), Richard Kazbour (Florida State University), Yaz About (Florida State University), Ann Saksefski (Florida State University)

**Abstract:** College bars across the country are consistently creating opportunities for college aged populations to drink and drive by offering happy hours, college nights, and other drink specials daily. In many cases the opportunity to consume alcohol and have a good time far outweighs the possibility of any negative effects associated with drinking and driving. The use of a designated driver by these individuals is a rare occurrence. Most students fail to utilize designated drivers as a safety precaution. The present study evaluated the effects of prompts and incentives as an intervention to increase the number of designated drivers who identified themselves at a bar. The dependent variable was the number of individuals present who self-identified themselves as designated drivers, had at least one passenger riding in their car that night, agreed to a breathalyzer test, and was found to have a BAC under 0.05. An ABAB design was used to evaluate the effectiveness of prompts and incentives as a package intervention on the number of designated drivers leaving the bar. Results showed that the intervention was successful at increasing the number of self-identified designated drivers.

**Improving Safe Driving Among Teens by Increasing Seat Belt Use at a Local High School.** Kari Woznick (Florida State University), MEREDITH A. WHITE (Florida State University), Megan Bausch (Florida State University), Jessica K Andrews (Florida State University)

**Abstract:** Based on recent reports of unsafe driving behavior during lunch-time in local high school students, this study used an A-B-C-D research design to increase seat belt use among eleventh and twelfth grade students of Mosley High School. As this study began, a natural intervention was implemented by the Florida Department of Transportation including surveys, school incentives, providing give-a-ways, and an actor impersonator. The current intervention consisted of visual prompts through the school television system and verbal prompts through the teachers. There was a noticeable increase in the frequency of safety belt use during this phase. Despite the limitations of this study, the

researchers found that a simple and cost-effective intervention can be effective in changing a socially significant behavior.

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## #237 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 120 A

DDA/Applied Behavior Analysis

### **Epidemiological Analyses of Large Databases Involving Functional Analyses and Function-Based Interventions**

Chair: Louis P. Hagopian (Kennedy Krieger Institute)

Discussant: Brian A. Iwata (University of Florida)

**Abstract:** The utility of functional analysis based interventions for treating problem behavior exhibited by persons with intellectual and developmental disabilities is well established and widely recognized as representing best practices. Large scale analyses of functional assessment data and function-based treatment outcomes across individuals has great promise for improving our understanding of the functional characteristics of problem behavior, including the identification of predisposing risk factors as well as variables that may mediate responsiveness to treatment. Presenters in the current symposium will review findings obtained from the analysis of large databases of single-subject functional analyses and function-based interventions. Mary Anderson from the Kennedy Krieger Institute will discuss the potential utility of functional analysis as a standardized method for more precisely defining the behavioral phenotype of groups of individuals with neurogenetic developmental disabilities. Kelly Bouxsein from the Monroe-Meyer Institute will review and discuss functional analysis data of 121 individuals with developmental disabilities and destructive behavior. Variables impacting outcomes including functional analysis methods and participant characteristics will be discussed. Turning to treatment outcomes, Candice Jostad from the Monroe-Meyer Institute will review 135 data sets from children treated for pediatric feeding disorders. She will review data on the effectiveness of traditional escape extinction procedures (EE) compared to EE combined with other procedures in increasing acceptance and decreasing inappropriate mealtime behavior.

**Functional Behavioral Phenotypes.** MARY CARUSO-ANDERSON (Kennedy Krieger Institute), Theodosia R. Paclawskyj (The Kennedy Krieger Institute), Denise Kurek (Kennedy Krieger Institute), Louis P. Hagopian (Kennedy Krieger Institute)

**Abstract:** Functional analysis is typically used to identify controlling variables of problem behavior for the purpose of guiding the development of behavioral interventions. Another potential application is to use it as a standardized method for more precisely defining the behavioral characteristics of groups of individuals with neurogenetic developmental disabilities. Generally, research describing “behavioral phenotypes” has characterized neurogenetic disorders in terms of broad behavioral characteristics (i.e., forms) and cognitive profiles rather than in terms of sensitivities to certain antecedent or consequent stimuli. The current study is part of an ongoing investigation of how people with various genetic disorders differ in their sensitivity to operant processes, thus producing the “functional behavioral phenotype”. In this study, we examined response patterns from functional analyses and preference assessments in individuals who were treated for severe problem behavior. Subjects were categorized according to syndrome and compared to a control group of individuals with developmental disabilities of unknown etiology. These findings suggest that functional analysis methodologies can be used to further refine behavioral phenotypes and advance that body of research. The findings also have implications for the development of more targeted strategies to prevent problem behavior.

**Further Epidemiological Analysis of the Functions of Severe Destructive Behavior.** KELLY J. BOUXSEIN (UNMC), Henry S. Roane (University of Nebraska Medical Center & Munroe-Meyer Institute), Wayne Fisher (Munroe-Meyer Institute, UNMC), Rebecca A. Veenstra (Munroe-Meyer Institute, University of Nebraska Medical Center), Joanna Lomas (Marcus Institute)

**Abstract:** The development of functional analysis methods has allowed for the differential identification of the reinforcers maintaining an individual's aberrant behavior (Iwata, Pace et al., 1994). In the current study, single-subject analyses were conducted to identify the reinforcing functions of the destructive behavior (e.g., self-injurious behavior, aggression) for 121 individuals with developmental disabilities. Each participant was exposed to a variety of test conditions in which the antecedent and consequent variables were systematically varied and each test condition was compared to a relevant control condition. Of the original sample, the analogue functional analysis based on the methods described by Iwata et al. (1982/1994; i.e., attention, demand, alone, toy play) yielded differentiated outcomes for 75 (62%) of participants. For the remaining 46 participants (38%) with an initial undifferentiated outcome, modified functional analyses designed to evaluate specific idiosyncratic response-reinforcer relations yielded differentiated results for 44 participants (96%). Also, specific maintaining reinforcement contingencies appeared to vary based on characteristics of the participants. For example, individuals who were diagnosed with autism were more likely to exhibit behavior maintained by automatic or idiosyncratic sources of reinforcement. These results illustrate the flexibility of functional analysis procedures for identifying functional reinforcers for severe destructive behavior.

**Pediatric Feeding Disorders Treatment: Relative Effectiveness of Reinforcement-Based vs. Other Procedures Added to Escape Extinction.** CANDICE M. JOSTAD (Munroe Meyer Institute), Valerie M. Volkert (Munroe-Meyer Institute), Kristi Rivas (Munroe-Meyer Institute), Victoria Stewart (University of Nebraska Medical Center), Heather Kadey (Munroe-Meyer Institute, University of Nebraska Med), Cathleen C. Piazza (Munroe-Meyer Institute)

**Abstract:** Previous research has demonstrated that escape extinction (EE) is a necessary component of treatment for pediatric feeding disorders in most cases (e.g., Ahearn, Kerwin, Eicher, Shantz, & Swearingin, 1996; Patel, Piazza, Martinez, Volkert, & Santana, 2001; Reed, Piazza, Patel, Layer, Bachmeyer, Bethke, & Gutshall, 2004). However, EE is not always effective when used alone. Consequently, supplemental procedures are often added to EE. Traditionally, reinforcement-based procedures are selected first because they are non-aversive and less intrusive than other procedures. When these are not fully effective, additional techniques (e.g., swallow facilitation, redistribution) are considered. The relative effectiveness of these approaches has not yet been evaluated on a large scale. In the present paper, we examined 135 data sets from children referred for pediatric feeding disorders. We compared the effectiveness of traditional EE procedures (i.e., EE alone or in combination with a reinforcement procedure) and EE combined with procedures other than reinforcement in increasing acceptance and mouth cleans (a product measure of swallowing) and decreasing inappropriate mealtime behavior. When traditional EE procedures were not effective, we identified the procedures that were used and evaluated their effectiveness in treating the target behaviors noted above.

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## #238 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 128

DDA/AUT; Applied Behavior Analysis

### **Innovations and Extensions in the Treatment of Pediatric Feeding Disorders**

Chair: Becky Penrod (California State University, Sacramento)

Discussant: Michele D. Wallace (California State University, Los Angeles)

**Abstract:** A significant amount of research has demonstrated that behavioral approaches can be particularly effective for treating pediatric feeding disorders. However, the majority of previous research has examined the direct effects of treatments such as escape extinction and most research has been conducted on a small scale, short-term basis. In this symposium we present three papers that attempt to extend the feeding literature in several ways. We begin with a study that extends the use of differential reinforcement and response cost to the treatment of food selectivity in children with autism. The second paper examines the indirect effects of escape extinction on changes in preference for nonpreferred foods. The third presentation

is a clinic-wide program evaluation for a short-term intensive outpatient treatment program for pediatric feeding disorders in Austin, Texas. The symposium will conclude with a discussion by Dr. Michele Wallace.

**Use of a Multicomponent Treatment for Food Selectivity in Children with Autism.** LISA BALTRUSCHAT (Center for Autism and Related Disorders, Inc.), Jonathan J. Tarbox (Center for Autism and Related Disorders, Inc.), Adel C. Najdowski (Center for autism and Related Disorders, Inc.)

**Abstract:** According to Kahng, Tarbox, and Wilke (2001) reported the use of differential reinforcement of alternative behavior (DRA) and response cost (RC) to treat the food refusal of a young child with mild to moderate mental retardation. The present study investigated whether this multicomponent treatment package was effective when applied to three children with autism who displayed food selectivity. For one of the three participants the basic RC+DRA treatment resulted in an increase in food acceptance to 100% of bite offers. For the two other participating children the basic treatment was enlarged by three additional treatment components (size fading, preferred food-positive reinforcement, and a free operant procedure). For both of them the modified treatment resulted in an increase in food acceptance to 100% of bite offers. In addition, the participants' caregivers were successfully trained to implement the treatment.

**An Evaluation of Emerging Preference for Non-preferred Foods Targeted in the Treatment of Food Selectivity.** BECKY PENROD (California State University, Sacramento), Kate H Perry (California State University, Sacramento), Traci Oberg (State University of California, Sacramento), Jessica Gamba (California State University, Sacramento)

**Abstract:** The current study conducted a comparison of sequential and simultaneous food presentation in the treatment of food selectivity. Both presentation methods were evaluated in the absence of escape extinction. Neither presentation method was effective in increasing food consumption; consequently, both presentation methods were combined with escape extinction in the form of a nonremoval of the spoon procedure. After the nonremoval of the spoon procedure was introduced, food consumption increased for all participants. These results support prior research showing that the acquisition of food consumption does not occur until after escape extinction is implemented (e.g., Piazza et al., 2003). However, findings from the current research suggest that while the nonremoval of the spoon procedure may have been necessary for the acquisition of food consumption, maintenance of food consumption may have been due to preferences developing for the non-preferred foods targeted during treatment. In the current study, food preference assessments were conducted pre- and post-treatment and it was found that following exposure to a nonremoval of the spoon procedure, participants developed a preference for the foods that were targeted in treatment.

**Program Evaluation of an Intensive Outpatient Feeding Treatment Facility.** MELISSA L. OLIVE (Center for Autism and Related Disorders, Inc.), Jonathan J. Tarbox (Center for Autism and Related Disorders, Inc.), Katharine Gutshall (Center For Autism and Related Disorders, Inc.)

**Abstract:** Research indicates that anywhere from 33-88% of children with disabilities have serious feeding concerns. A variety of interventions for feeding concerns have been reported in the literature. These include but are not limited to differential reinforcement and escape extinction. Prior studies generally focus on one to three children, often in controlled university or hospital settings. This paper will present a program evaluation for a community-based intensive outpatient feeding treatment facility. We summarize results of 15 children with autism treated over the past year. We present data on the intensity, duration, and total intervention time needed to address the feeding concern. Dependent measures to be presented include total treatment time in hours, total bites consumed, number of different foods consumed, number of aggressive/self-injurious behaviors per bite and number of disruptive behaviors per bite. Results indicate that all children showed a substantial increase in total number of bites and number of different foods consumed while concomitantly showing a decrease in number of aggressions, disruptions, and self-injurious behaviors per presentation.

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## #239 Paper Session

5/24/2009

1:30 p.m. - 2:50 p.m.

North 129 A

DDA

### **Feedback and Prompting as Variables in Behavior Change Programs**

Chair: Andrew Downs (University of Portland)

#### **Effects of Training and Feedback on Discrete Trial Teaching Skills and Student Performance**

(Service Delivery) ANDREW DOWNS (University of Portland), Robyn Conley Downs (Beaverton School District), Kathryn Rau (Central Washington University)

**Abstract:** As the number of children with developmental disabilities served by school programs increases, it is important to identify how to best implement instructional methods that facilitate developmental gains in this population. This study examined the effects of training and feedback on instructor performance of Discrete Trial Teaching (DTT) and support skills. This included examining the generalization and maintenance of instructor skills, and the impact of instructor skills on student performance. Six undergraduate students received an eight-hour training in DTT and taught a range of behaviors to four preschool students with developmental disabilities. A multiple-baseline design was used to assess instructor performance following training, during feedback implementation, and at follow-up. Instructors demonstrated 63% to 80% correct use of DTT and related skills following training. During feedback sessions all instructors attained proficiency ratings of 90% by the second session and 97% to 100% by the fourth session. High proficiency levels were maintained at follow-up and generalized across students and tasks. Student learning and instructional efficiency were superior in the feedback and follow-up conditions. The results highlight the need for training programs that allow school personnel to correctly use DTT to effectively facilitate learning and development in students who have developmental disabilities.

#### **Video Self-Prompting Devices for Persons With Moderate Intellectual Disabilities.** (Applied Behavior Analysis) LINDA MECHLING (University of North Carolina, Wilmington)

**Abstract:** The ability to initiate and complete daily tasks and manage one's own behavior in the absence of external adult controls are important considerations when planning programs and instructing persons with intellectual disabilities. Provision of self-management strategies may include the arrangement and use of antecedent stimuli which precede occurrence of a behavior. Innovative use of current technologies and evaluation of technology advancements hold promise for developing self-prompting tools to be used to self-manage a range of educational, living, work, and recreational activities. This presentation will discuss use of video prompting, via portable DVD players, laptop computers, and personal digital assistants (PDAs) as self-prompting devices for persons with moderate intellectual disabilities. Video prompting requires the individual to immediately perform a physical response after viewing a video segment and then advancing the program to the next video segment. The presenter has completed four applied research studies (in press) and is currently implementing a fifth which evaluate video self-prompting and will include the results of those studies in the presentation. Quantitative data across the five studies, supporting the effectiveness and efficiency of the interventions, will be presented to support use of video technology as a form of self-prompting.

#### **Automated Text Messaging to Improve Staff Reinforcement and Child Behavior in a Group Home.** (Applied Behavior Analysis) Daniel P Davidson (Another Perspective), JESSICA WING (Intermountain Centers for Human Development)

**Abstract:** Differential Reinforcement of Other behavior (DRO) can be an effective approach to preventing challenging behaviors. But many such plans fail because of poor fidelity or follow through on the part of the caregivers. This presentation details the process and results of using cell phone text messaging at prescribed intervals to remind the staff of a group home serving children with behavior

challenges to a) record the child's behavior and b) reward the child for desirable behavior. Data will be presented on both the staff's adherence to the reminders and the child's behaviors.

**Does Treatment Integrity (High and Low) Matter on Acquisition, Generalization, and Maintenance of The Discrete Skills?** (Applied Behavior Analysis) ELIF TEKIN-IFTAR (Anadolu Universitesi), Serhat Odluyurt (Anadolu University), Iclal Adalioğlu (Anadolu University)

**Abstract:** The purpose of this study was to compare the effects of simultaneous prompting delivered with high treatment integrity to simultaneous prompting with low treatment integrity on teaching the acquisition, maintenance, and generalization of the discrete skills to students with developmental disabilities. Delivery of the controlling prompt is the main measure when deciding high and low treatment integrity. An adapted alternating treatment designs was used to evaluate the differences between two implementation. The preliminary results will be shared with the attendees. The results will be discussed in terms of treatment integrity and effectiveness and efficiency of the instruction.

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## #240 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 132 BC

DEV/DDA; Applied Behavior Analysis

### **Developing Scaffolding and Errorless Teaching Skills for Staff in Early and Special Education Environments**

Chair: Roger D. Ray ( (AI)2, Inc. / Rollins College)

Discussant: David A. Eckerman (University of North Carolina, Chapel Hill)

**Abstract:** This symposium reviews the advanced teaching techniques of scaffolding and errorless teaching and their applications to preschool and special-needs students. The use of an adaptive expert training system, called Train-to-Code (TTC), for computerized training of staff and teachers in the effective applications of such teaching techniques will also be presented. This training via TTC is designed for near-errorless development of observation and coding skills using videos that illustrate desired teaching tactics being used by experts. Data presentations focus on the degree of transfer from this observation training to the subsequent use of these teaching techniques in training college students as teachers.

**Training Direct Observational Coding Skills: Transfer Effects on Errorless Teaching of Children with Special Needs.** KAITLIN G. CAUSIN (Rollins College), Roger D. Ray ( (AI)2, Inc. / Rollins College), Patrick E. McGreevy (Patrick McGreevy, Ph.D., P.A.)

**Abstract:** Train-to-Code (TTC), an artificially intelligent adaptive computerized expert training system, has been shown to be a successful tool for training behavioral observers to high degrees of inter-individual accuracy and intra-individual stability in coding performances (Ray & Ray, 2008). Instructor-generated videos and corresponding expert codings of those videos are used for prompting and feedback to guide a trainee through a nearly-errorless training procedure for coding. TTC adaptively presents six alternative prompting and feedback-based training levels, gradually fading each until an expert-equivalent level of inter-observer accuracy and satisfactory intra-individual stability in coding accuracy occurs without prompts or feedback. Preliminary data have been reported on a transfer effect from such coding training to applied situations requiring that coding trainees actually perform behaviors similar to those coded during training (Ray, Milkosky, & Hogan, 2008). This presentation expands on that theme by reporting use of TTC to train college students to code illustrations of an expert using errorless teaching techniques for children with special-needs. Pre-training versus post-training multi-session comparisons are reported based on these same college students' performances in executing errorless teaching procedures similar to those viewed and coded during training.

**Effectiveness of Errorless Teaching Procedures for Children with Special Needs.** PATRICK E. MCGREEVY (Patrick McGreevy, Ph.D., P.A.), Kaitlin G. Causin (Rollins College), Roger D. Ray (AI)2, Inc. / Rollins College)

**Abstract:** In an initial investigation, we used Train-to-Code (TTC) to train college students to code videotaped errorless teaching procedures conducted by an expert with students with special needs. Then, we examined the effects of the coding training on the implementation of these procedures by the same college students. In the present investigation, we examined the effect of the coding and implementation of these errorless teaching procedures on the acquisition of three functional skills by a young woman with a developmental disability. The coding and implementation of the errorless teaching procedures resulted in a rapid acquisition of all three skills.

**Use of an Expert System for Observational Training to Teach Scaffolding Techniques.**

NICOLE CATHERINE HOGAN (Rollins College), Roger D. Ray (AI)2, Inc. / Rollins College), Sharon L. Carnahan (Rollins College)

**Abstract:** Vygotsky's (1987) concept of scaffolding has had wide-spread incorporation into modern American educational practices. The concept is quite close to those used in errorless training procedures, but often rely on various questioning techniques to assess whether a learner is 1) already fluent, 2) within a "Zone of Proximal Development" where performances are possible with prompting support, or 3) being asked questions totally beyond the learner's current abilities regardless of the degree of prompting support offered. Preliminary data reported previously (Ray, Milkosky, & Hogan, 2008) suggested that college students trained to code other college students reading to pre-school children increased in their use of the fundamental questioning techniques used for subsequent scaffolding. This presentation reports a follow-up study on scaffolding technique transfers based on less training, thus evaluating the system's efficacy for use within a Developmental Psychology course as a simple repeated laboratory exercise. Pre-training versus post-training comparisons are reported based on a class of college students' performances in reading to pre-school children.

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## #241 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 225

EAB/Experimental Analysis

### **Recent Research on Delay Discounting and Timing**

Chair: Ana A. Baumann (Washington University)

**Abstract:** The goal of this symposium is to highlight recent work in delay discounting, an index of impulsive choice, in probability discounting, an index of risk taking, and on time perception. In the first presentation, Mitchell will present data on the relation between delay discounting, probability discounting and effort discounting in rats. Reynolds will next discuss delay discounting by adolescent smokers and non-smokers and the relation between discounting of delayed outcomes and stress. For the third talk, Baumann and Odum will examine relations among delay discounting, probability discounting, time perception and time perspective of undergraduate students. Finally, McClure and colleagues will discuss methodological and theoretical issues of timing studies.

### **Implications of the Tenuous Relationship Between Delay, Probability and Effort Discounting in Rats.** SUZANNE H. MITCHELL (Oregon Health & Science Univ)

**Abstract:** Understanding the relationship between discounting the value of rewards according to different costs (delay, probability, effort) will provide information about the mechanisms used to combine costs to create "unit prices", which strongly affect choice behavior, response rates and persistence. Rats (N = 30) chose between a small amount of sucrose available immediately, for certain, with a minimal level of effort and a larger amount available (1) following a delay [Delay chamber], (2)

probabilistically [Probability chamber], (3) after fulfilling an effort requirement [Effort chamber]. Rats completed 5 consecutive sessions in each chamber, allowing them to complete a series of delay/probability/effort requirements, before cycling to the next chamber until 25 sessions had been completed in each chamber. Hyperbolic equations were fit to quantify the gradient of the delay, probability and effort discounting functions. The equations fit the data well but the gradients for the different types of discounting were not well correlated. That is, individuals that discounted delayed rewards steeply did not discount effortful or probabilistic rewards steeply. This implies that individual differences in response to delayed rewards do not predict individual differences in response to other cost metrics, and that common cost currencies are weighted functions

### **Delay Discounting and Self Reported Stress in Adolescent Smokers and Nonsmokers**

BRADY A. REYNOLDS (Research Institute at Nationwide Children's Hospital)

**Abstract:** Delay Discounting (DD) is an index of impulsive choice, and research has shown that adolescent daily smokers discount more by delay than adolescent nonsmokers (Reynolds et al., 2007). However, little research has explored associations between DD and other known risk factors for cigarette smoking during adolescence. The current study compared DD and ratings of stress (Perceived Stress Scale, PSS) in two demographically matched groups of adolescents: daily smokers ( $n = 50$ ) and nonsmokers ( $n = 50$ ). Daily smokers had significantly higher cotinine levels (metabolite of nicotine) than nonsmokers, thus verifying cigarette smoking status. The daily smokers discounted significantly more by delay than the nonsmokers [ $p < .01$ ]. Similarly, smokers reported greater levels of stress than nonsmokers [ $p < .01$ ]. Also, DD and PSS ratings were significantly correlated [ $r = -.269, p < .01$ ], with higher levels of stress associated with more discounting by delay. Using a binary logistic regression, DD and PSS ratings were determined to be significant, independent predictors of adolescent smoking status. These findings generally indicate there is an association between DD and self reported stress in adolescent smokers and nonsmokers. However, when considered together, DD and stress ratings were each significant independent predictors of smoking status.

### **Relationship between Impulsivity, Risk Taking, Time Perception and Time Perspective.** ANA A. BAUMANN (Washington University), Amy Odum (Utah State University)

**Abstract:** The present study aimed to evaluate (a) the extent to which different impulsivity and risk taking measures would be related to each other and (b) the extent to which impulsivity, time perception and time perspective are related to each other. One hundred and forty three participants were exposed to the delay discounting, probability discounting and temporal bisection tasks and answered the Barratt Impulsiveness Scale (BIS-11, Patton, Stanford, & Barratt, 1995) and the Zimbardo Time Perspective Inventory (ZTPI, Zimbardo & Boyd, 1999). Results showed that the Non-Planning subscale, but not the other subscales, was related to the AUC of delay discounting. The AUCs for delay and probability discounting were positively correlated with each other. The outcomes of the temporal bisection procedure, as well as the scores on the ZTPI were correlated with the AUCs for delay discounting, and the scores on the ZTPI were correlated with the scores on the BIS, suggesting that time perception and time perspective are related to impulsivity. Interestingly, scores on the ZTPI were correlated in a similar way to probability discounting, suggesting that risk taking can also be affected by time perspective.

### **The Use of Diverse Disruptors to Inform Methodological and Theoretical Concerns of Timing.**

ERIN A. MCCLURE (University of Florida), Kathryn A. Saulsgiver (University of Florida), Clive D. L. Wynne (University of Florida)

**Abstract:** When determining how animals come to time intervals in the seconds to minutes range, a variety of disruptors have been used to provide insight into the controlling mechanisms of this adaptive behavior. The problems in this endeavor have proved to be methodological and theoretical. The most common drugs used in the study of timing in non-human animals have been compounds that affect dopamine systems in the brain, which are implicated in neurologically-based accounts of timing behavior. Recent results from our laboratory have failed to support many of the theories of timing currently popular in the literature. The current study uses various pharmacological agents (d-amphetamine, haloperidol, and nicotine), as well as non-pharmacological disruptors (pre-session feeding and extinction),

to provide evidence for a unified theory of timing that accounts for a diverse array of disruptors. The current study also assesses procedural differences in the timing literature that have been largely overlooked, but could potentially play a role in differential results and interpretations. Only when methodological and theoretical issues in the timing literature are reconciled will we be able to contribute to the understanding of the role that temporal discrimination plays in delay discounting.

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## #242 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 228

EAB/VRB; Experimental Analysis

### **Derived Relational Responding and Equivalence Class Formation: Experimental Investigations and Applications**

Chair: John M. Hyland (University of Ulster, Coleraine Campus)

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

**Abstract:** Derived relational responding has been a popular focal point of research among behaviour analysts for many years, and is an important feature of complex human behaviour. Indeed, the examination of derived relational responding can trace its roots to philosophical debates as far back as the 19th century. The selection of papers in this symposium will address a range of topics related to this behavioural phenomenon, including the behavioural processes involved in derived and arbitrary relational responding, transformation of stimulus function, and sequential development. The first paper will discuss the effects of both phonological and orthographic interference on stimulus equivalence class formation. The second paper in the series will evaluate previous behavioural analytic approaches to hierarchical categorisation, which utilised aspects of stimulus equivalence and non-arbitrary stimulus relations. Moreover, the final paper will discuss the outcomes of an investigation into the effects of 'Before' and 'After' temporal relational cues on the development of stimulus sequences.

#### **Phonological and Orthographic Interference Effects on Stimulus Equivalence Class Formation.**

IAN THOMAS TYNDALL (AMCD/NUI, Galway), Denis P. O'Hora (National University of Ireland, Galway), Jon Gretar Sigurjonsson (National University of Ireland, Galway)

**Abstract:** Stimulus equivalence describes a behavioral phenomenon that may, in part, account for the development of symbolic relations among stimuli. Two experiments are reported that examined the effects of phonological and orthographic interference on stimulus equivalence class formation. Specifically, the experiments explored whether incorrect comparison stimuli that were orthographically or phonologically similar to the sample or correct comparison stimuli in a matching-to-sample paradigm interfered with derived relational responding performance. Experiment 1 investigated the impact of sample-comparison similarity, while Experiment 2 examined the effects of comparison-comparison similarity. In both experiments, the combination of phonological and orthographic interference significantly reduced accuracy, but neither the effect of orthographic nor phonological interference alone were significant. In Experiment 2, orthographic interference increased response latency, but phonological interference did not, suggesting that orthographic interference increased the difficulty of the simple discrimination between response alternatives.

#### **Transformation of Stimulus Functions to Novel Category Members in a Model of Hierarchical Categorization.**

BRIAN WILLIAM SLATTERY (National University of Ireland Galway), Ian T. Stewart (National University of Ireland, Galway), Denis P. O'Hora (National University of Ireland, Galway)

**Abstract:** Behavior analysis is not traditionally known for theorizing in relation to high level cognitive phenomena. Phenomena such as hierarchical categorization have received little attention from within this paradigm (Zentall, Galizio, & Critchfield, 2002). However, recently, behavioral researchers have begun to use derived relations as a model of language and other complex behavior. In this vein, Griffiee and

Dougher (2002) demonstrated a model of hierarchical categorization by drawing on the concepts of stimulus equivalence and non-arbitrary stimulus relations. However, although these researchers suggested that their model of hierarchical categorization incorporated stimulus equivalence, further work remains to fully include this phenomenon and thus make their model fully verbal. For example, Griffiee and Dougher did not test for transformation of functions to novel stimuli based upon their relationship to stimuli in the category network. The aim of the present research was to extend Griffiee and Dougher (2002) by incorporating transformation of stimulus functions to novel category members. Future research and implications for a developmental analysis and training of categorization behaviors are also discussed.

**The Effect of Before and After Instructions on the Latency and Accuracy of Sequential Responding.** JOHN M. HYLAND (University of Ulster, Coleraine Campus), Denis P. O'Hora (National University of Ireland, Galway), Sinead Smyth (University of Ulster, Coleraine), Julian C. Leslie (University of Ulster)

**Abstract:** Certain features of complex human behaviour require us to identify and derive temporal relations between stimuli. Previous research on temporal relational responding has shown that order judgements are slower and less accurate when reversed. That is, when participants see two events in a sequence (e.g., circle ... square), they are quicker to report Before statements (e.g., "Circle before Square") than After statements ("Square After Circle"). The current examined whether similar differences in reaction time would be observed when participants were required to order responses when provided with Before statements or After statements. That is, when participants are provided with an instruction to choose one stimulus before another (e.g., "Circle before Square"), they will be quicker and more accurate in choosing those two stimuli in a sequence (e.g., circle ... square) than if the instruction stated that they were to choose one stimulus after another ("Square After Circle"). Twenty participants were exposed to a series of training phases and then provided with a mixed test consisting of both Before and After instructions. These findings will be discussed in light of current research in relational responding.

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## #243 Symposium

5/24/2009  
1:30 p.m. - 2:50 p.m.  
North 226 AB  
EAB/CBM; Applied Behavior Analysis

### **Using Descriptive Assessments in the Assessment and Treatment of Feeding Problems**

Chair: Peter Girolami (Kennedy Krieger Institute)  
Discussant: Cathleen C. Piazza (Munroe-Meyer Institute)

**Abstract:** Research has demonstrated the utility of descriptive assessments in assessing and treating numerous topographies of problem behavior. By identifying events that are correlated with the occurrence of behavior, descriptive assessments provide a starting point for examining relations between caregiver and child behavior. The papers in this symposium will apply the utility of descriptive assessments to the assessment and treatment of feeding disorders.

**Descriptive Analysis of Parental Attention Preceding and Following Appropriate and Inappropriate Mealtime Behavior.** JULIA N. WOODS (Kennedy Krieger Institute), John C. Borrero (University of Maryland, Baltimore County), Carrie S. W. Borrero (Kennedy Krieger Institute)

**Abstract:** Descriptive observations were conducted to record occurrences of appropriate and inappropriate mealtime behavior and various forms of parental attention (i.e., coaxing, reprimands, and statements of concern) for 26 children admitted to an intensive feeding program and their parents. Using the data from the descriptive observations, lag sequential analyses were conducted to identify changes in the probability of child appropriate and inappropriate mealtime behavior before and after specific forms of parental attention. Lag sequential analyses were also conducted to examine changes in the probability of parental attention before and after instances of child appropriate and inappropriate mealtime behavior. While the primary focus of studies assessing inappropriate mealtime behavior has focused on the role of

escape (as negative reinforcement), results of the current study will emphasize the potential links between parental attention and child behavior.

**Descriptive Analyses of Pediatric Food Refusal.** CARRIE S. W. BORRERO (Kennedy Krieger Institute), Julia N. Woods (Kennedy Krieger Institute), John C. Borrero (University of Maryland, Baltimore County), Elizabeth A. Masler (Kennedy Krieger Institute)

**Abstract:** Functional analyses of inappropriate mealtime behavior (e.g., expelling food, turning head, batting spoon) typically include conditions to determine if the contingent delivery of adult attention, tangible items, or escape reinforce food refusal. In this investigation, descriptive analyses were conducted to determine if the consequences delivered during functional analysis of inappropriate mealtime behavior were observed during more naturalistic interactions between parents and children. Descriptive analyses were conducted for 25 children admitted to an intensive feeding program for the assessment and treatment of food refusal, during parent-conducted meals. The conditional probabilities for specific forms of attention (e.g., coaxing, comforting statements), delivery of tangible items (e.g., switching to different foods or drinks, leisure items), and escape (e.g., spoon/cup removal, terminating the meal) following food refusal were compared to the conditional probabilities of those events following acceptance and the unconditional probabilities of each event. Results showed that forms of attention and escape were the most frequent events following inappropriate mealtime behavior and that the conditional probabilities of events differed depending on the topography of food refusal. Potential difficulties of such analyses are considered, and directions for further evaluations of parent-child interactions, as related to feeding problems, are discussed.

**Using Descriptive Assessments in the Assessment and Treatment of Bite Acceptance and Food Refusal.** SEAN D. CASEY (The Pennsylvania State University), Susan Banks (The Pennsylvania State University), Kasey Kotz (The Pennsylvania State University)

**Abstract:** The feeding behaviors of children who display chronic food refusal often require the use of escape extinction procedures to be successful. The main presumption for this is that food refusal is maintained by negative reinforcement. Reducing food refusal by reinforcing bite acceptance is typically an unsuccessful strategy unless such procedures are combined with escape extinction. In this study, several children were exposed to descriptive analyses of their feeding behaviors to identify the schedules of reinforcement in place by care-providers for bite acceptance and food refusal. Successful interventions were created by subsequently manipulating the existing schedules for bite acceptance and food refusal by the care-providers. The resulting data for the schedules of reinforcement from the descriptive analyses predicted when treatments would require escape extinction and when escape extinction was unnecessary. Implications for the use of descriptive analyses for assessing feeding problems are discussed.

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## #244 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 227 BC

EAB/Experimental Analysis

### **BIG SIG Symposium 4: Maintaining Variables of Gambling Behavior 2**

Chair: James W. Jackson (Southern Illinois University at Carbondale)

Discussant: Jessica L. Fouch (Western Michigan University)

**Abstract:** The present symposium is dedicated to further address mitigating factors influencing gambling behavior in various paradigms. Discussion of such variables is offered with respect to the influence and production of gambling behavior while in these various settings. Insight to ways in which gambling behavior may be influenced is offered.

**Reduction of Superstitious Behavior of Gamblers through Aversive Conditioning.** BECKY L. NASTALLY (Southern Illinois University), Mark R. Dixon (Southern Illinois University)

**Abstract:** Recreational and pathological gamblers were exposed to slot machines containing response options that had no bearing on spin outcome. In one condition players were given the opportunity to press buttons to stop the spinning wheels, though outcome was predetermined by the machine. In another condition, 5 different colored buttons were positioned below the slot reels and made auditory sounds but did not impact spin outcome. Results show that most participants chose to engage in these superstitious behaviors (button pressing) when given the opportunity to do so. A brief intervention of information regarding the independence of spins, and irrelevance of button pressing reduced superstitious behavior but did not exclusively eliminate it. A subsequent intervention of aversive conditioning suppressed superstitious behavior to a greater degree.

**Investigating the Effects of Laboratory Gambling Procedures on Risk Preference.** ANDREW E. BRANDT (Western Michigan University), Cynthia J. Pietras (Western Michigan University)

**Abstract:** Behavior analytic laboratory investigations of gambling have typically presented participants with a single or concurrent gambling task (blackjack, roulette, poker, or slot machine) on which participants may risk tokens provided by the researcher. Because the reinforcement and punishment contingencies as well as motivating variables found in these procedures may differ from those in the natural gambling environment, it may be useful to determine how such deviations influence gambling observed in a laboratory environment. The current studies used a laboratory gambling task that presented participants with concurrent gambling and non-gambling alternatives to test the effects on gambling of (a) providing participants with a concurrent non-gambling alternative and (b) requiring participants to earn tokens. Experiment 1 investigated participants' preference for a gamble when a choice for the non-gambling option terminated all remaining trials (single-schedule) or only the current trial (concurrent schedule). Experiment 2 investigated participants' preference for a gamble when (a) participants were or were not given tokens prior to the session and (b) the value of the tokens earned on the non-gambling option was varied. The extent to which the results of these investigations inform current laboratory gambling procedures will be discussed.

**Effects of Accurate and Inaccurate Contingency Specifying Rules on Slot Machine Preference and Verbal Behavior of Recreational Gamblers.** JAMES W. JACKSON (Southern Illinois University at Carbondale), Mark R. Dixon (Southern Illinois University)

**Abstract:** The current study examined the effects of contingency specifying rules on the allocation of responses to concurrently available slot machines. After initial baseline exposure to concurrently available slot machines of equal payback percentages, Participants received one of 5 randomly assigned rules, and were re-exposed to the same slot machines with the payback percentages surreptitiously adjusted to favor one slot machine. Rules delivered to participants differed based on the contingency specified and could be either accurate or inaccurate in regards to the initial contingencies experienced or the contingencies in place after the rule was delivered. After 60 trials under the new contingency the payback percentages were surreptitiously adjusted to zero to create extinction conditions. Participants' allocations of responses to each slot machine during all phases were recorded. In addition Participants were required to talk aloud during the entire study. All verbal behavior was analyzed using Protocol Analysis procedures. Results indicate that participants follow the rule provided to varying degrees regardless of the actual contingencies experienced. Result and implications in regards to managing problem or pathological gambling will be discussed.

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## #245 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 131 BC

EDC/AUT; Applied Behavior Analysis

### **Intervention in the Natural Environment for Children with Developmental Disabilities and Autism Spectrum Disorders**

Chair: Mary D. Salmon (Columbus City Schools)

**Abstract:** The search for effective intervention strategies for use in natural settings is at the core of much of our research in applied behavior analysis. This symposium offers four papers. Ben Zvi and colleagues will make recommendations for the design and implementation of behavioral interventions in natural settings for very young children with ASD. In the second paper, Jung and Sainato review the literature on instructional methods used to teach play skills to young children with autism spectrum disorders and provide implications for practice. Salmon will review the literature on "skills teacher value most" and provide implications for students as it relates to transitioning across the grade levels and promoting successful inclusion experiences for students receiving special education services. Sainato will present the results of their student on the development and evaluation of a comprehensive program for kindergarten age children with ASD. Each presenter will address future areas for research.

**Interventions for Very Young Children with Autism and Their Families.** SENNY BEN-ZVI (Ohio State University), Diane M. Sainato (The Ohio State University), Howard Goldstein (Florida State University), Sunhwa Jung (Otterbein College)

**Abstract:** Researchers suggest that early intensive intervention is necessary to change the trajectory of development for a child diagnosed with autism spectrum disorder. Recent advances have led investigators to develop early diagnostic criteria and screening protocols validated for child at two years of age. Children in this age group often exhibit behaviors such as deficits in joint attention, failing to orient, poor visual orientation, prompted/delayed response to name, aversion to social touch, visual staring and fixation on objects (Matson, Wilkins & Gonzalez, 2008). However, in spite of the activity in the area of early identification of very young children with autism Rodgers and Vismara (2008) note that there have been no empirically supported treatments (other than case studies) for these children ages 2 and under. The purpose of this presentation is to review the existing literature that may hold promise for the development of interventions in the areas of language/communication, social behavior and intervention in the natural environment. Recommendations for the design and implementation of comprehensive interventions for the youngest children diagnosed with ASD will be presented.

**Teaching Play Skills to Young Children with Autism Spectrum Disorders.** SUNHWA JUNG (Otterbein College), Diane M. Sainato (The Ohio State University)

**Abstract:** Most young children develop critical play, language and social skills by engaging with age appropriate materials and peers. However, children with autism spectrum disorders often engage in stereotypic behavior rather than typical play. As a result these children have limited experience developing a variety of skills during naturally occurring learning opportunities and when interacting with their peers during play. Research has shown that play skills should be explicitly taught to these children using a variety of behavioral methods (DTT, pivotal response training, self-management training, reciprocal imitation training, etc.) have been implemented (Ingersoll & Schreibman, 2002; Koegel et al., 1992; Newman et al., 2000; Nuzzolog-Gomez et al., 2002). The purpose of this paper is to review the literature on instructional methods used to teach play skills to young children with autism spectrum disorders, provide implications for practice, and suggestions for future research.

**The "Hidden Curriculum" and Its Implications for Students with Autism Spectrum Disorders.** MARY D. SALMON (Columbus City Schools)

**Abstract:** Given the trend toward inclusive educational programming (Fuchs & Fuchs, 1994) students receiving special education services are required to meet the behavioral expectations of both special and general educators. Lane, Givner, & Pierson (2004) identified specific skills essential for success (follows directions, works independently, gets along with others, etc.) while Walker and colleagues (1992) identified specific behaviors (disturbs others, ignores teachers, and disrupts group instruction) likely to lead to social rejection, low social engagement and referral for more specialized placements. Knowledge of teacher expectations has important implications for students as it relates to transitioning across the grade levels and promoting successful inclusion experiences for students with ASD receiving special education services (Lane, Pierson, & Givner, 2003). The purpose of this paper is to review literature on teacher expectations of student behavior, provide implications for practice as it relates to children with ASD and suggestions for future research.

**Project TASK: A Comprehensive Intervention Model for Kindergarten Age Students with Autism Spectrum Disorders.** DIANE M. SAINATO (The Ohio State University), Sunhwa Jung (Otterbein College), Judah Axe (Simmons College), Rebecca S. Morrison (Oakstone Academy)

**Abstract:** The purpose of Project TASK was to develop and evaluate a comprehensive program for kindergarten children with autism. Across the four years of the study a total of 42 children with autism from the model program and 21 students with autism recruited from four local school districts participated. Measures included standardized assessments for receptive and expressive language, cognitive functioning, social behavior, adaptive behavior and academic achievement. Direct observations of child and teacher behavior (i.e. engagement, social interaction, prompt level, etc.) were conducted once per month for six months for all children. Outcomes from Project TASK include an increase in scores on standardized assessments across all areas and improved levels of appropriate engagement in observed classroom activities as compared to the comparison subjects. This project may contribute to the establishment of more effective educational programs for children with autism spectrum disorders with reduction in the cost of services.

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## #246 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 121 A

EDC/DDA; Applied Behavior Analysis

### **Applied Behavior Analysis in Education: What Do We Gave to Offer?**

Chair: Youjia Hua (The University of Iowa)

Discussant: David L. Lee (Penn State University)

**Abstract:** The use of behavior principles to change school-based behaviors has received a great deal of support in the professional literature. Unfortunately, the link between this body of research and teachers is often weak. Two possible reasons for this disconnect are that teachers (a) often fail to buy into the idea of behavior analysis and continue with ineffective interventions that are more congruent with their educational philosophy; and (b) a lack of understanding on the part of behavior analysts on how classrooms operate. This lack of understanding has a profound impact on implementation of evidence-based strategies. What is needed is a mutual understanding of what should be done and what can be done in classroom contexts. The purpose of this symposium is to present data on three topics that are in the forefront of education today -- the use of functional assessments by classroom teachers, promoting independent assignment completion, and strategies to increase reading fluency. The presentations promote this mutual understanding by examining each strategy within the applied context of classrooms (often with teachers implementing the interventions).

### **Review of Functional Assessment and Intervention Studies: Is there a Demonstration of Contextual Fit?** BROOKS R. VOSTAL (Penn State University)

**Abstract:** The author reviews the research literature on the use of functional behavioral assessment (FBA) and function-based interventions in which teachers, rather than behavior analysts or researchers

alone actively participate in the process. Specifically, studies were examined to determine: (a) the types of students, problem behaviors, and settings in which FBA was used; (b) FBA procedures conducted and by whom; (c) interventions implemented and by whom; and (d) the degree to which teachers found the assessment process acceptable. Results found a prevalence of studies in which FBA was used with students at-risk for high-incidence disabilities and who displayed disruptive behaviors in general education settings. Researcher assistance was needed to complete the various assessment procedures in most studies, though teachers were often able to implement the interventions stemming from FBA. Social validity measures found acceptable ratings. Results are discussed in terms of the contextual fit for functional behavior assessment in school settings.

**Effects of Choosing Academic Assignments on Task Completion.** YOUJIA HUA (The University of Iowa), Samuel Stansbery (Penn State University), David L. Lee (Penn State University)

**Abstract:** Several authors have suggested that providing choice making opportunities for people with disabilities is beneficial. However, the underlying mechanism of choice-making is still relatively unknown. The researchers investigated the effects of choice-making on academic task completion when identical tasks presented on worksheets and paper slips were used as choice options. Three students with learning problems were asked to complete math problems under student choice and teacher assigned conditions. An alternating treatment design was used to evaluate the effects of choice making on academic performance. Students' math task performances were compared between teacher-assigned and student choice conditions. Results indicated little or no effect of choice-making on academic productivity.

**Science Reading Fluency and Repeated Readings.** DOUGLAS E. KOSTEWICZ (University of Pittsburgh), Richard M. Kubina Jr. (The Pennsylvania State University)

**Abstract:** The current study investigated the effects of repeated readings to a fluency criterion (RRFC) for seven students with disabilities using science text. The study employed a single subject design, specifically, two multiple probe multiple baselines across subjects, to evaluate the effects of the RRFC intervention. Results indicated that students met criterion (200 or more correct words per minute with 2 or fewer errors) on four consecutive passages. A majority of students displayed accelerations to correct words per minute and decelerations to incorrect words per minute on successive initial, intervention readings suggesting reading transfer. Students' reading scores during post-test and maintenance outperformed pre-test and baseline readings provided additional measures of reading transfer. For a relationship to comprehension, students scored higher on oral retell measures after meeting criterion as compared to initial readings. Overall, the research findings suggested that the RRFC intervention improves science reading fluency for students with disabilities, and may also indirectly benefit comprehension.

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## #247 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 121 BC

EDC/AUT; Service Delivery

### **Ontario's School Support Program: A service Model for Training Educators Supporting Students with ASD**

Chair: Catherine Chabot (ErinoakKids)

**Abstract:** The government of Ontario has made a commitment to enhance the knowledge and skills of educators of students with ASD with respect to applied behaviour analysis and use of evidence based practices in publicly-funded school systems. This symposium will provide an outline of this commitment and the service components of the School Support Program-Autism Spectrum Disorders available for school

staff, in both regular and special education. We will present the service delivery models used by the regional service providers in operationalizing and implementing the program mandate across the province of Ontario. We will also present a model of evolution of this province-wide initiative over the past 4 years and elaborate on current projects being implemented in classrooms and school boards to develop the knowledge and skills of educators with respect to classroom applications. Finally, the symposium will highlight important “lessons learned” in terms of shaping effective service delivery to school boards. Methods of program evaluation and outcome data will be included throughout.

**The Evolution of a Provincially Funded Program to Support Students with ASD.** SCOTT BARK  
(Kinark Child and Family Services)

**Abstract:** Over the past 4-years the government of Ontario has made a commitment to enhance the knowledge and skills of educators of students with an ASD with respect to ABA and evidence based practices in publicly-funded school systems. This commitment resulted in the creation of the School Support Program-Autism Spectrum Disorders. This presentation will provide a brief outline of the key service components of the School Support Program-Autism Spectrum Disorders available for school board staff, in both regular education and special education. These services include: consultation, training, planning and resource development/distribution. A brief description of the Ontario Educational System, a history of the School Support Program and the role of the ASD consultants who provide the services will be shared. The outcome measures as set out by the province will also be outlined. The presentation will conclude with an historical overview of the how the SSP services were shaped from a model of “massed training” at its inception, to increasingly individualized learner focused training and consultation.

**Many Keys for a Single Lock: Meeting the Needs of Educators across Diverse School Boards.**  
CATHERINE CHABOT (ErinoakKids)

**Abstract:** The province of Ontario spans 415,000 square miles, roughly the size of Texas and California combined. This large geographical area includes major urban centres, rural and some remote communities. In order to service the needs of this diverse area, the School Support Program-Autism Spectrum Disorders is delivered through 9 regional service providers. This presentation will outline the various service delivery models and approaches used by these agencies in operationalizing and implementing the program mandate. A description of the various tools and resources that have been developed and used to meet the wide-ranging needs of educators across diverse school boards will be provided. In addition we will present our model of how these nine regional programs collaborate provincially to ensure procedural integrity and staffing, common messaging, sharing resources through the use of provincial committees, planning and websites. Methods of program evaluation and outcome data will be included along with considerations for future outcome measures.

**From Theory to Practice: Effective Means of Training Educators in ABA.** SUE JOHNSON  
(Thames Valley Children's Centre), Sheila G. Case (Thames Valley Children's Centre)

**Abstract:** From the beginning of the program, it was believed that a strong collaborative partnership with the school boards was a critical component in order for the School Support Program-Autism Spectrum Disorders to be successful. In other words, our program needed to pair its services with reinforcement. As the partnerships have grown the emphasis has shifted from general training activities to prioritizing the application of ABA in the classroom. This presentation will discuss this evolution and will elaborate on current projects being implemented in classrooms and school boards to develop the knowledge and skills of educators with respect to classroom applications of ABA in supporting students with an Autism Spectrum Disorder. Applications of evidence based and best practice research into adult learning, coaching, and training models will be highlighted in terms of various school based initiatives used not only to enhance educators knowledge of ABA for students with ASD, but also in promoting its successful application, generalization, and maintenance.

**Lesson Learned: Working Towards More Effective Service Delivery Models to Support Educators** GERALD R. BERNICKY (Surrey Place Centre)

**Abstract:** With four years of experience delivering supports and services to educators, the School Support Programs have collectively experienced many successes as well as a few bumps in the road along the way. This presentation will highlight important “lessons learned” in terms of shaping effective service delivery to school boards in a province as geographically wide and diverse as Ontario. Included among these are: overcoming initial resistance to external service providers; teaching ABA concepts in language and practices accessible to educators with minimal ABA experience, and breaking down the barriers between imparting knowledge to ensuring effective practice. From these “lessons learned”, the foundation for a more responsive and collaborative partnership and service delivery has been established and can be used to guide similar service initiatives. This foundation makes it feasible to put a more meaningful data burden on educators, particularly in terms of student outcomes. This discussion will highlight ideas for having school staff collect such data in a method that is conducive to the typical school and classroom environment.

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## #248 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 122 BC

EDC/VRB; Applied Behavior Analysis

### **Accelerated Instruction and the Induction of Verbal Developmental Capabilities**

Chair: Yasmin J. Helou-Care (Teachers College, Columbia University)

Discussant: Joan Broto (Teachers College Columbia University)

**Abstract:** This symposium will present three papers, each devoted to the establishment of new repertoires, and in some cases, new verbal capabilities. The first paper will cover several successful tactics, protocols, and best practices for improving the listener/speaker exchanges, and the reader and writer skills of middle school students. The second paper will present protocols for inducing critical verbal developmental capabilities of middle school students. The third paper will cover new types of learn units and their impact on the verbal developmental capabilities of middle school students.

**Effective Teaching Practices Associated with the Accelerated Instruction of Middle School Students.** R. Douglas Greer (Columbia University Graduate School and Teachers College), DARCY M. WALSH (Teachers College Columbia University), Lindsay J. Cherry (Teachers College, Columbia University), Yasmin J. Helou-Care (Teachers College, Columbia University), Joan Broto (Teachers College Columbia University)

**Abstract:** This paper will provide an overview of the procedures and results of successful protocols and tactics to improve technical and aesthetic writing skills, reading comprehension skills, and speaker/listener exchanges of middle school students. Protocols and tactics include computer-based Writer Immersion, Multiple Exemplar Instruction, Peer Modeling, Intensive Tact Instruction, Yoked Contingency Game Board and Self-Monitoring.

**Beyond Best Practice Teaching Tactics: Verbal Developmental Interventions.** R. Douglas Greer (Columbia University Teachers College and Graduate), YASMIN J. HELOU-CARE (Teachers College, Columbia University), Joan Broto (Teachers College Columbia University), Darcy M. Walsh (Teachers College Columbia University), Lindsay J. Cherry (Teachers College, Columbia University), Kimberly N Mosca Franklin (Columbia)

**Abstract:** This paper will provide an overview of the procedures and results of successful protocols to induce critical, but initially missing, verbal developmental capabilities. Studies include the effects of choral responding, response cards, and intensive tact instruction on Naming, reading comprehension and the role of conditioned seeing, and the effects of choral responding on the acquisition of observational learning.

**New Types of Learn Units as Related to Verbal Behavior Development.** R. Douglas Greer (Columbia University Graduate School and Teachers College), JOAN BROTO (Teachers College Columbia University), Darcy M. Walsh (Teachers College Columbia University), Yasmin J. Helou-Care (Teachers College, Columbia University), Lindsay J. Cherry (Teachers College, Columbia University)

**Abstract:** This paper will provide an overview of the procedures and results of novel protocols to improve the math and reading skills of middle school students. Studies include the effects of choral responding on the acquisition of math facts, the use of response cards and its effects on the acquisition of novel phonemes, and model-demonstration learn units presented within group instruction.

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## #249 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 221 C

OBM/DDA; Service Delivery

### **Applications of Organizational Behavior Management Techniques with Staff in Human Service Settings**

Chair: Timothy M. Weil (University of South Florida)

**Abstract:** This symposium will consist of four papers discussing recent research on the use of OBM procedures to manage staff behavior in human service settings. Judy Mowrey will discuss procedures for increasing staff positive interactions while also assessing reactivity of observation. Jennifer Kondask will talk about research on increasing safe performance of therapists who work with children with autism. Nicole Gravina will discuss her research on the effectiveness of a Consultant Workshop Model in human services. Finally, Martin Ivancic will discuss procedures for promoting generalization and maintenance of performance by staff working with individuals with developmental disabilities.

### **Effects of Supervisor Presence on Staff Response to Tactile Prompts and Self-Monitoring in a Group Home Setting.** JUDITH M. MOWERY (University of South Florida), Raymond G. Miltenberger (University of South Florida), Timothy M. Weil (University of South Florida)

**Abstract:** This study evaluated the use of a tactile prompt and self-monitoring to increase positive interaction in a group home setting. Four direct support staff participated in a training session to increase positive interaction. In addition they each received a MotivAider, which provides tactile prompts to remind them to engage in positive client interaction. Reactivity was assessed by observing staff positive interaction when the supervisor was present and when the supervisor was absent using an alternating treatments design within a multiple probe across participants' research design. If positive interaction did not increase, supervisor feedback was provided. Results showed that positive interaction increased for 2 staff members following training and use of the MotivAider, but only when a supervisor was present. For 2 staff members, positive interactions only increased once feedback was provided

### **The Use of Task Clarification and Equipment Modification to Increase Safe Performance of Therapists at an Autism Treatment Facility.** JENNIFER KONDASH (Florida Institute of Technology), Sarah E. Casella (Florida Institute of Technology), David A. Wilder (Florida Institute of Technology)

**Abstract:** The purpose of this study was to evaluate the use of antecedent manipulations to increase safe behaviors of five therapists at an autism treatment facility. The dependent variables were key wearing, glove wearing, hand washing and cleaning. The intervention included a package consisting of task clarification and equipment modification. A multiple baseline design across behaviors with a constant series control was used to evaluate intervention effects. The results showed an overall increase across all targeted behaviors; greater effects were seen for key wearing and glove wearing. Suggestions for future research include changing the order in which target behaviors are manipulated and reducing the effort required to perform safely.

**An Evaluation of the Consultant Workshop Model in a Human Service Setting.** NICOLE E. GRAVINA (Roosevelt University), John Austin (Western Michigan University), Anne Cummings (Kinark Child and Family Services), Sarah Kupferschmidt (Kinark Child and Family Services)

**Abstract:** The purpose of the present study was to document and evaluate the consultant-workshop model commonly employed by OBM consultants. The consultation took place in a non-profit human service setting that delivers behavioral services to children diagnosed with autism and their families. Workshop attendees were 13 senior therapists each of whom oversaw 6 to 8 instructor therapists who provided behavioral services to clients. The training took place in 2005 (i.e., three years prior to this evaluation) across five months and four workshop sessions. Participants learned to pinpoint, measure, diagnose, and intervene and then they presented their project at the last workshop and these projects were documented. Pinpoint types and impact as well as effect size were evaluated. When possible, follow-up information was gathered to determine the extent to which this approach facilitated maintenance and generalization. Results indicated that projects were, in general, very effective. At follow up, some components of the projects remained in place and limited evidence indicated that the performance improvements maintained but there was little evidence of generalization. Based on the findings, recommendations for improving the workshop model are suggested.

**Repeated Within-Class Exemplar Review of Trained Staff Responding In an Attempt to Demonstrate Between-Class Generalization: A Methodology for Managing Maintenance.** MARTIN IVANCIC (J. Iverson Riddle Developmental Center) , Kimberly D. Willis (J. Iverson Riddle Developmental Center)

**Abstract:** Staff management procedures are utilized to maintain previously learned skill. Specifically, behavior that is trained must be maintained. Thirty-seven staff at a state residential facility were observed for previously trained habilitative behavior in six categories (infection control, social interaction, social appearance, following diet instructions, clean mealtime preparation area, and intake scoring) during lunch (first shift) and dinner (second shift) mealtime activities in two adjacent living areas in three homes each (six homes) providing service to 52 residents. Efforts to reduce reactivity to the observations were implemented. Observations were counter balanced across staff and residents and reliability obtained. After baseline, a particular topic was reviewed with each staff person to generate contact with at least 3 examples of that topic (e.g., infection control). Similar treatments were provided for six different topics of responding in hopes on increasing appropriate staff in general. No exemplars were directly related to target behaviors, but three topics were indirectly related to target behaviors of infection control, social interaction, social appearance and three other topics represented appropriate staff behaviors that were not targeted (i.e., following written instructions, clean environment and taking data). Increases in target behaviors following related exemplar reviews were thought to indicate within-class generalization. Increases in target behaviors unrelated to any exemplar review were thought to indicate between-class generalization.

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## #250 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 221 AB

OBM/Applied Behavior Analysis

### Recent Research on BBS and OBM

Chair: David A. Wilder (Florida Institute of Technology)

Discussant: Timothy D. Ludwig (Appalachian State University)

**Abstract:** Three papers on behavior-based safety and organizational behavior management will be presented. The first study depicts an evaluation of an intervention to improve security on a university campus. The second study examined the use of task clarification and peer feedback to increase the use of personal protective equipment by employees on a university campus. The third study evaluated the accuracy of

managerial prediction of items / activities which employees state they would be willing to work for as part of a performance improvement plan.

**Improving Security Procedures in a University Residence Hall through Training, Feedback, and Contingent Access to Money.** NICOLE J. POSTMA (Florida Institute of Technology), David A. Wilder (Florida Institute of Technology), Sarah E. Casella (Florida Institute of Technology), Anastasia Kolias (Florida Tech), Alicia Rosa (Florida Tech)

**Abstract:** The purpose of this study was to evaluate the effectiveness of training, feedback, and contingent access to money to increase a) the use of an authorized identification card to gain entry and b) “challenging” behavior in 3 university residence halls. “Challenging” is defined as occurring when the person entering or leaving the building asks another person entering the building to show identification. Participants included anyone who entered the residence halls at a small, private university. A multiple baseline design across residence halls was used to evaluate the interventions. Results suggest that all three interventions produced small improvements in the use of an ID card to gain entry but little improvement in challenging.

**Evaluating Peer Feedback on the Safety Behaviors of Landscapers.** STACEY BUMGARDNER (Appalachian State university), Timothy D. Ludwig (Appalachian State University)

**Abstract:** While many studies have researched the effects of information and feedback on safety performance, few have investigated the effects of conducting peer feedback on behavior. The current study investigated the effects of task-clarification and peer feedback on the use of proper personal protective equipment (PPE) among landscapers on a university’s campus. Using an ABC design, task-clarification and safety education was provided to all participants through a one-hour training course. The participants then collected observations of safe behavior on each other. The effects of task-clarification and peer feedback were assessed using a multiple baseline experimental design.

**Accuracy of Managerial Prediction of Employee Preference: A Follow-up Analysis.** BYRON J. WINE (AdvoServ of New Jersey), David A. Wilder (Florida Institute of Technology), Nicole J. Postma (Florida Institute of Technology), Sarah E. Casella (Florida Institute of Technology), Carelle A.D. Harris-Fortune (Florida Institute of Technology)

**Abstract:** The extent to which 100 managers could accurately predict what items / activities their employees report as preferred was examined. Managers were asked to rank items they thought employees most preferred. Next, employees indicated which items actually were most preferred. Kendall rank-order correlation coefficients were used to examine the data. As with previous research, results suggest that managers are poor at predicting employee's preferred items.

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## #251 Symposium

5/24/2009

1:30 p.m. - 2:50 p.m.

North 120 D

OTH/EDC; Applied Behavior Analysis

## International Developments in ABA: Brazil, Iceland, Italy and United Arab Emirates

Chair: D. Daniel Gould (New England Center for Children - Abu Dhabi)

**Abstract:** The field of Behavior Analysis has experienced unprecedented growth in the United States and around the world in recent years. This has been fueled by a number of developments, including emphasis on evidence-based practices, recognition of the effectiveness of early intensive behavioral intervention for young children with autism and other disabilities, the development of a professional credentialing body, and international dissemination efforts by organizations such as the New England Center for Children. The international growth of Behavior Analysis has created exciting opportunities for trainees and trainers alike around the world. This symposium will include presentations by key Behavior Analysts from Brazil, Iceland,

Italy, and the United Arab Emirates. Presenters will describe professional development and training programs, innovative service-delivery and supervision models, and the history and current state of Behavior Analysis in the respective countries.

**Behavior Analysis in Brazil.** MARTHA HÜBNER (USP Sao Paulo, Brazil)

**Abstract:** The group of behavior analysts in Brazil is considered the largest outside the USA. The Brazilian Association of Behavioral Therapy and Medicine is the official representative of the area in the country and it is also an ABA international chapter. In the last 18 years Brazil has held an Annual Convention that receives an average of 4:00 p.m. people, coming from all over the country and many from other countries. Behavior analysis started in Brazil at the University of Sao Paulo (USP) with Fred Keller in 1961, who started the first graduate program in Experimental Analysis of Behavior. Nowadays, it has undergraduate, extension and graduate courses. The graduate program is considered a center of excellence. USP's laboratories have been conducting research in stimulus control, equivalence relations and verbal behavior. The program also takes part in an international program of social inclusion and in activities to disseminate behavior analysis in the country and in the world.

**Past, Present and Future Directions of Applied Behavior Analysis in Iceland.** ATLI F. MAGNUSSON (The Diagnostic and Counselling Center), Z. Gabriela Sigurdardottir (University of Iceland), Kristin Gudmundsdottir (University of Akureyri), Anna-Lind Petursdottir (Reykjavik City Department of Education)

**Abstract:** This talk will focus on shared and specific trends in the development of the field of behavior analysis (BA) in Iceland. The opportunities for BA services within the field of developmental disabilities (DD) and education are rather unique compared to most other countries in Europe. Most educators and professionals within the field of DD have sought graduate schools in countries where little emphasis has been placed on BA (e.g. Sweden and Denmark) while more commonly those with psychology degrees seek graduate schools in countries with more emphasis on BA (e.g. US and Norway). Compared to many European countries, there is a relatively high percentage of professionals and university faculty with background in BA. However, there has been limited emphasis on BA in the field of education and DD. Partly due to reported success in treatment of autism and positive behavior support, BA has received more attention from educators and professionals in DD services. With relatively high percentage of Icelandic professionals and university faculty with background in BA, and more Icelandic students currently earning degrees in BA, there are now increasing opportunities to incorporate BA into educational and DD services as well as training programs for students in Iceland.

**MIPIA - Early Intensive Intervention for Autistic Children: the Italian Way .** PAOLO MODERATO (IULM University ITALY), Giovambattista Presti (IULM University, Milan / IESCUM, ABA Italian Chapter), Cristina Copelli (IESCUM, ABA Italian Chapter)

**Abstract:** ABA services are now more frequently requested by parents with autistic children in Italy. The long standing psychoanalytic tradition in Italian culture hindered in the last 30 years the diffusion of Science based practices. Leveraging on the BACB course work, IESCUM, the Italian chapter of ABAI and EABA, developed an integrated model of intervention called MIPIA - Italian Model of Early and Intensive Intervention for Autism. MIPIA is characterized by individual (tailor made), early, intensive, integrated and sustainable programs. Although interventions are deployed in family homes, baseline assessment and program efficacy and effectiveness evaluation procedures are centralized. This allows a homogeneous environment both for clinical and research goals. Though we may speak of a “virtual” structure, in the absence of a specific building in a specific location, the model of the project and the Association behind it may represent a feasible way to spread ABA intervention procedures and model in a wide territory, while maintaining a high quality of service within the spirit of BACB standards of quality. We will discuss procedures, tools and structure of the service, personnel involved, training issues, criticalities and advantages of such a system.

**NECC-Abu Dhabi: ABA Intervention, Professional Development, and Research in the United Arab Emirates.** D. DANIEL GOULD (New England Center for Children - Abu Dhabi)

**Abstract:** The international dissemination of behavior analysis is important for several reasons including the critical need for ABA services for individuals around the world, and for the long-term health and development of the field of Behavior Analysis. In 2007, the New England Center for Children (NECC) signed a 10-year contract with the Health Authority of Abu Dhabi to deliver world-class behavior analysis services to children with autism in the emirate of Abu Dhabi. NECC-Abu Dhabi (NECC-AD) has three parts to its mission: Service delivery, professional development and training, and applied research in autism treatment. Services are delivered in English and Arabic languages to UAE nationals following the curriculum scope and sequence developed as part of NECC's Autism Curriculum Encyclopedia (ACE®). In order to maximize the dissemination of ABA in the UAE and Gulf Region, NECC-AD is developing ABA training and professional development programs in affiliation with local universities. Applied research will be an important component of these training programs. This paper will present the NECC-AD implementation of service delivery, professional development, and research as a model for the international dissemination of ABA.

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### #252 Panel Discussion

5/24/2009  
1:30 p.m. - 2:50 p.m.  
North 129 B  
TBA/CSE; Theory

#### **The Survival of Behavior Analysis: Disseminating It and Protecting It from Threats**

Chair: Melissa Nosik (University of Nevada-Reno)

A. CHARLES CATANIA (University of Maryland, Baltimore County (UMBC))  
STEPHEN RAY FLORA (Youngstown State University)  
JOSH PRITCHARD (University of Nevada, Reno)  
KAROLA DILLENBURGER (The Queen's University, Belfast, Northern Ireland)

**Abstract:** Behavior analysis continues to deliver effective, science-based technology that has positively impacted many parts of our culture. Nevertheless, it finds limited fertile ground in an overgrowth of fad science, quick fixes, and access to inaccurate information on the internet. Vastly more popular alternative explanations for human behavior have sprung from the roots of folk psychology and currently thrive. How can our science compete with such comfortable descriptions of the human condition and enticing promises of cures for psychological ailments? If a culture prefers the reassurance of intelligent design to the science of evolution, an analysis of human behavior based on environmental determinants is often valued less than accounts based on inner causes or homunculi. A quick survey of television programming, popular media, and psychology textbooks reveals that behavior analysis is rarely mentioned and often mischaracterized. In such a climate, it is crucial that we examine the contingencies influencing the acceptance and future survival of our science. To compete we must disseminate our science effectively. We can agree that failing to do so is not an option, but what are the best ways to guarantee not just its survival but also its emergence as a major component of human culture?

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### #253 Panel Discussion

5/24/2009  
1:30 p.m. - 2:50 p.m.  
North 132 A  
TPC/Theory

#### **Professional Development Series: Future Perspectives of Behavior Analysis**

Chair: Timothy C. Fuller (Washoe County School District)

PATRICK C. FRIMAN (Father Flanagan's Girls and Boys Town)  
DAVID C. PALMER (Smith College)

ALAN D. POLING (Western Michigan University)

**Abstract:** As behavior analysis continues to grow, it is important to understand where the field is headed. To encourage dialogues on the development of the field, this panel will discuss the history of the field, current research and application trends, and the directions that the panel members feel are most important for the continued evolution of the field.

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## #254 Symposium

5/24/2009

1400 - 3:20 p.m.

North 127

VRB/EAB; Experimental Analysis

### Verbal Operants and Derived Stimulus Relations

Chair: Caio F. Miguel (California State University, Sacramento)

**Abstract:** This symposium presents basic and applied research on the emergence of novel verbal relations and novel stimulus-stimulus relations. Four studies will be presented, in which the participants were typically developing children or children diagnosed with autism. In all four studies, the training of topography-based verbal operants resulted in novel conditional discriminations, the training of conditional discriminations led to the emergence of topography-based verbal relations, or both. Applied and theoretical implications will be discussed.

**The Effects of Multiple-Tact Training on the Emergence of Naming and Categorization by Children with Autism.** CAIO F. MIGUEL (California State University, Sacramento), Vissy V Kobari (California State University, Sacramento), Katharine Woods Findlay (California State University, Sacramento)

**Abstract:** Recent studies have demonstrated that the skill of sorting objects or pictures by category develops with no direct training when typically-developing children learn to label pictures and objects with a common category name. This methodology is yet to be tested with children with developmental disabilities. The purpose of the current study was to evaluate whether multiple-tact training would produce novel categorization in children with autism. Participants included two children diagnosed with autism, ages 5 and 6. The effects of training were evaluated using a non-concurrent multiple-baseline across participants design. During pre and posttraining probes, participants were assessed on whether they would (1) correctly match pictures belonging to the same category (i.e., categorization) and (2) select the correct stimuli when hearing their category names (i.e., listener behavior). During multiple-tact training participants were taught to tact the name and category of nine pictures belonging to three different categories. Both children, who did not categorize or emit listener behaviors correctly during pretraining were able to do so during posttraining probes. These results suggest that multiple-tact training may be an efficient way to produce naming and categorization in children diagnosed with autism.

**Intraverbal Naming and Emergent Visual-Visual Conditional Discriminations.** ANNA I. PETURSDOTTIR (Texas Christian University), Charlotte Lynn Carp (Texas Christian University), Sean Peterson (Texas Christian University)

**Abstract:** Intraverbal relations between participant-supplied names have been proposed as a mechanism by which performance on stimulus equivalence tests might be facilitated. The present study evaluated the effects of experimenter-supplied intraverbal relations on children's performance on a novel visual-visual match-to-sample (MTS) task. Tact training established a unique vocal response in the presence of each of six visual stimuli, A1, A2, A3, B1, B2 and B3. Intraverbal training then established intraverbal relations between the vocal stimuli associated with A1, A2, and A3 (presented by the experimenter) and the vocal responses associated with B1, B2, and B3 (emitted by the child), respectively. Subsequently, some participants passed visual-visual MTS tests of all AB and BA relations, but failed tests of the bidirectionality of the intraverbal relations. Further, response latencies on tests of trained intraverbal

relations were longer than response latencies on MTS trials, and there was no evidence of participant-generated common naming. The most parsimonious interpretation appears to be that the emergent AB and BA relations were an outcome of prior tact and intraverbal training that did not require any verbal behavior on test trials.

**Emergence of Opposite Intraverbals Related to Tacts of Concepts.** LUIS A. PEREZ-GONZALEZ (University of Oviedo, Spain), Lorena Garcia Asenjo (University of Oviedo, Spain)

**Abstract:** Intraverbals can emerge after learning other intraverbals, but intraverbals are especially useful for a learner when they are the result of observing the non-verbal world. We analyzed the emergence of intraverbals of opposite relations (e.g., “What is the opposite of full” –“empty”) after (a) learning to tact pictures related to these concepts; (b) learning or showing the emergence of selecting these pictures when listening the word; (c) learning conditional discriminations involving the word “same” or “opposite”, a picture or a word related to a concept (e.g., an empty glass or the word “empty”), and pictures with these concepts (e.g., a full and an empty glass). Preschool children learned to tact and select figures with features related to the concepts, and the conditional discriminations. Intraverbals did not emerge initially. Some children showed the emergence of some intraverbals after learning others. Other children showed emergence of intraverbals only when novel concepts were taught and their corresponding intraverbals were probed. The results show that children demonstrate novel intraverbals after learning the concepts in the non-verbal world, when they are taught in the appropriate sequence. In other words, they generate novel language under the correct learning conditions.

**Training Intraverbal Sign Language Using Stimulus Equivalence.** JENNIFER MCGINTY (Stephen F. Austin State University), Glen L. McCuller (Stephen F. Austin State University), Shauna Swinney (Stephen F. Austin State University), Chris Ninness (Stephen F. Austin State University)

**Abstract:** Only a few empirical studies have been conducted to assess the best way to teach difficult concepts such as left and right (Lee, 1981; Lamarre & Holland, 1985; Dessalegn & Landau, 2008). The purpose of the current study was to expand on studies by Clarke, Remington, and Light (1986) and McCuller, Ninness, Rumph, and Eberle (2006) to teach three preschool children concepts of left, right, above, and below using stimulus equivalence procedures. The current study additionally aimed to test the use of generalized signing in novel situations. After being trained the relation between spoken word and picture and picture and ASL sign, participants were able to demonstrate symmetry and transitivity. Participants were also able to demonstrate generalized signing with 75% to 100% accuracy. Additionally, participants were able to maintain the initial relations learned with 66% to 100% accuracy at one week and one month follow-up. The findings from this study address the use of matching to sample procedures and the effectiveness of using stimulus equivalence and similar types of procedures directed at derived relational responding (e.g., RFT) to train difficult concepts such as left and right.

## #255 Invited Presenter

5/24/2009

2:30 p.m. - 3:20 p.m.

West 301 AB

AUT; Applied Behavior Analysis

### **“Do This,” But Don’t Do That: Moving Beyond Imitation to Observational Learning With Children With Autism**

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

BRIDGET A. TAYLOR (Alpine Learning Group)



**Dr. Bridget A. Taylor** has specialized in the education and treatment of children with autism for the past twenty-two years. She is co-founder and Executive Director of Alpine Learning Group a highly regarded education and treatment center for children with autism in New Jersey. Dr. Taylor holds a Doctorate of Psychology from Rutgers University, and received her Masters degree in Early Childhood Special Education from Columbia University. She is a Board Certified Behavior Analyst and serves on the editorial boards of the Journal of Applied Behavior Analysis, Behavioral Interventions, and Behavior Analysis in Practice. She is also a member of the Autism Advisory Group for the Cambridge Center for Behavioral Studies, is a member of the Expert panel of the National Autism Center’s National Standards Project, and is a board member of the Association for Science in Autism Treatment. Dr. Taylor has authored numerous research articles and book chapters related to autism.

**Abstract:** It is commonly recognized that children with autism present with significant deficits in imitation and observational learning. Influenced by Bear and Sherman’s 1964 study on generalized imitation, most modern curricula for children with autism incorporate instruction in a variety of imitative response topographies. Less common in applied research and practice, however, are procedures to ensure that children with autism learn to acquire novel responses through observational learning. Observational learning encompasses generalized imitation, yet exceeds it, requiring subtle discriminations about observed actions and their outcomes. To shift from learning in a one-on-one context to a group setting, for example, a child must identify contingencies as applied to another, and then incorporate into their own repertoire novel responses related to that contingency without directly contacting it themselves. While complex, observational learning is essential for the child with autism to learn more intricate social and academic repertoires. This presentation will outline instructional programs that move beyond direct imitation to the skills essential for observational learning. Specific procedures to increase observational learning in children with autism across a variety of responses will be reviewed.

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## #256 Panel Discussion

5/24/2009

2:30 p.m. - 3:20 p.m.

North 122 A

EDC/Applied Behavior Analysis

### **Professional Development Series: Introductory Series: Precision Teaching**

Chair: Emily Michelle Leeming (University Of Nevada, Reno)

KENDRA L. RICKARD (University of Nevada, Reno - Center for Advanced L)

KENT JOHNSON (Morningside Academy)

MICHAEL FABRIZIO (Families for Effective Autism Treatment (FEAT) of Washington)

**Abstract:** Panelists will provide attendees with a basic overview of precision teaching.

5/24/2009  
2:30 p.m. - 3:50 p.m.  
West 301 CD  
OTH/CSE; Theory

### Responding to Global Warming...or Not: The Green Behavior Deficit

Chair: Anthony Biglan (Oregon Research Institute)

ANTHONY BIGLAN (Oregon Research Institute)

RICHARD F. RAKOS (Cleveland State University)

MARK P. ALAVOSIUS (University of Nevada, Reno)

ROBIN RUMPH (Stephen F. Austin University)



**Dr. Anthony Biglan** is a Senior Scientist at Oregon Research Institute and Director of the Center on Early Adolescence. He is the Past President of the Society for Prevention Research. He has conducted numerous experimental evaluations of interventions to prevent tobacco use both through school-based programs and community-wide interventions. He has also done experimental evaluations of school and family focused interventions to prevent aggressive social behavior and reading failure, as well as clinical interventions to prevent high-risk sexual behavior. During the 2000-2001 school years, Dr. Biglan led a team of scholars in a review of current knowledge about the development and prevention of multiple problem behaviors of adolescence (Biglan, Brennan, Foster, & Holder, 2004). He is the author of the 1995 book, *Changing Cultural Practices: A contextualist framework for intervention research*, published by Context Press. His current work focuses on fostering the beneficial evolution of societal practices through the use of behavioral science knowledge.



**Dr. Richard F. Rakos** has been faculty member, graduate program director, department chair, associate dean, and university ombudsperson in his 30 years at Cleveland State University. In addition to publishing extensively on assertive behavior and behavioral self-management, he has examined a wide range of large-scale social phenomena through behavioral and cultural analyses. Targets of these analyses have included socialism in Eastern Europe as it tottered in the late 1980s; perestroika as an ambitious behavioral experiment by the Soviet Union in the early 1990s; corporate media and the promotion of government propaganda; contingencies shaping behavior in academia; conservative and liberal political ideologies in the US; and many issues related to the promise of more just societies. Dr. Rakos edited Behavior and Social Issues and its two predecessor journals for 11 years and has served as Consulting Editor for BSI for the past 14 years. He also co-chairs Behaviorists for Social Responsibility, is on the Editorial Board of Law and Human Behavior, twice served on the Editorial Board of The Behavior Analyst, and is a Fellow in the American Psychological Association (Division 25). In recent years, Dr. Rakos has turned his attention to examining, both conceptually and empirically, the apparently resilient human belief in free will and agency.



**Dr. Mark P. Alavosius** received his BA in psychology from Clark University in 1976 and earned his MS (1985) and Ph.D. (1987) in Psychology from the University of Massachusetts at Amherst. He is an Assistant Professor of psychology in the Behavior Analysis Program at the University of Nevada, Reno and Director of Faculty for off-campus behavior analysis programs. He held faculty appointments in the Behavior Analysis and Industrial/Organizational Program at Western Michigan University and the Behavior Analysis Program at West Virginia University. He is a Trustee of the Cambridge Center for Behavior Studies and member of the CCBS Team for accreditation of behavior-based occupational safety programs. His interests are in developing behavioral and instructional systems to improve work performance particularly in the areas of health and safety. Dr. Alavosius has been Principal Investigator on Small Business Innovations Research Grants to develop and test behavioral safety technologies for employers. With over twenty-five years of experience in behavioral approaches to work

performance and occupational health & safety, Dr. Alavosius has over 120 publications and conference presentations.



**Dr. Robin Rumph** is an Associate Professor of School and Behavioral Psychology at Stephen F. Austin State University. Dr. Rumph received his B.A. in psychology from Hendrix College, M. A. in clinical psychology from University of North Texas, and Ph.D. in educational school psychology from Texas Woman's University. While attending UNT and TWU, Dr. Rumph worked with Donald Whaley in clinic/school settings that included autism, habit control and adult psychotherapy programs. While studying with Jack Michael and Dick Malott, Dr. Rumph became interested in verbal behavior and PSI. In 1978 Dr. Rumph joined Donald Cook at the Northeastern University PSI center. After returning to Texas in the 80's, Dr. Rumph established a private practice specializing in the treatment and consultation of children's behavioral, academic and developmental problems. Dr. Rumph organized the founding of TxABA, serving as president and treasurer. He has been an environmentalist since the 1970's, working in the Boston office of the Sierra Club, founding and serving as an officer of the Cross Timbers Group of the Sierra Club, and working as a member of the Public Interest Research Group in Michigan. Dr. Rumph joined behavior analysts Chris Ninness and Glen McCuller at SFA in 1998 organizing a research group focusing on relational frame theory and cultural and environmental issues. Dr Rumph with his SFA colleagues have made numerous presentations and published in JABA, Behavior and Social Issues, and the Psychological Record on topics that include relational frame theory, education, statistics, cultural design, environmental and social issues.

**Abstract:** Compelling evidence indicates that climate changes are accelerating and will, at some point in the next 30 to 50 years, be likely to impact behavior, culture, and natural ecologies in a myriad of negative ways. Nevertheless, warnings of change like those presented by Frederic Wagner in the preceding B. F. Skinner Lecture are frequently met with indifference—or even outright resistance. Such reactions impede efforts to alter the human behaviors that contribute directly to climate change and to prepare for coming cultural changes necessitated by altered environments and depleted resources. A “green behavior deficit” results, the controlling variables of which can be illuminated through behavioral analyses. Yet, relatively little conceptual work in behavior analysis has been done in regards to this complex challenge, and scarcely any empirical work examines behavior change at this scale. Panelists will discuss a variety of possibilities for fruitfully examining the “green behavior deficit” through such concepts as managing externalities, delay discounting, preparedness, habituation, rule-governed behavior, cultural practice analysis, and systems analysis.

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## #258 Panel Discussion

5/24/2009

3:00 p.m. - 3:50 p.m.

North 120 BC

AUT/TPC; Applied Behavior Analysis

### **Behavioral Cusp Analysis: The Theory, the Data, and the Narrative**

Chair: Garnett J. Smith (University of Hawaii at Manoa)

SHAHLA ALA'T-ROSALES (University of North Texas)

GARNETT J. SMITH (University of Hawaii at Manoa)

PATRICIA JEAN EDELEN-SMITH (University of Hawaii at Manoa)

**Abstract:** Behavioral cusp analysis (BCA) is proving to be a powerful social improvement procedure for directing person-centered planning and positive behavioral support exchanges for persons with autism. In this presentation, the three panel members will interactively discuss (a) the theoretical importance of BCA in terms of behavioral assessment; (b) use collected case study data to demonstrate how modest behavioral cusp changes have resulted in significant changes in the overall behavior repertoires of children; and (c) provide additional narrative of how explicit behavioral cusps, with seemingly uncertain social validity, have dramatically expanded learning opportunities, not only for persons with autism, but also for their families,

friends, caregivers, and community acquaintances. Five criteria useful for selecting and prioritizing potentially important BCA outcomes will anchor our panel discussion. These include (a) access to new reinforcers, contingencies, or environments; (b) generativeness; (c) competition with inappropriate responses; (d) number and relative importance of people affected; and (e) social validity (Bosch & Fuqua, 2001; Smith, Edelen-Smith & Olvey, 2006; Smith, McDougall & Edelen-Smith, 2006; Smith, Ala'i-Rosales & Edelen-Smith 2007).

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## #259 Symposium

5/24/2009

3:00 p.m. - 3:50 p.m.

North 124 B

AUT/CBM; Applied Behavior Analysis

### **Using Function-Based CBT to Treat OCD in Children and Youth with High Functioning Autism (HFA)**

Chair: Tricia Corinne Vause (Brock University)

Discussant: Keith D. Allen (Munroe-Meyer Institute)

**Abstract:** Research suggests that children and youth diagnosed with High-Functioning Autism (HFA) have increased risk for Obsessive-Compulsive Disorder (OCD) (APA, 2000) in comparison nonPDD clinic samples and nonclinic samples (e.g., Gadow et al., 2004). Despite these findings, few studies (N=1) have attempted to treat OCD in an exclusive PDD population (e.g., Reaven & Hepburn, 2003; Lehmkuhl et al., 2008; Sze & Wood, 2007). These studies adapted a CBT protocol (used for typical children) to fit the cognitive/developmental profiles of children and youth with HFA. Collectively, informant measures indicated positive preliminary findings.

The purpose of this symposium is to review two papers that explore a synthesis of CBT (March & Mulle, 1998) and behavior (function-based) methodology to treat OCD. In both papers, within participant multiple-baseline designs across OC behaviors are used. The first paper focuses on youths (ages 14-16), with the second describing treatment with a younger population (ages 8-10). At post-treatment, visual inspection of the data for two youths indicated that OC behaviors were at clinically acceptable levels, and parents reported an increase in quality of life. Ongoing data is being collected for school-age children. This research represents a further step towards developing empirically validated treatments for OCD in this population.

**Using Function-Based CBT to Treat OCD in Two Youths with HFA.** TRICIA CORINNE VAUSE (Brock University), Sarah E Grubb (Brock University), Shauna McCambridge (Brock University), Elizabeth Rombough (Brock University), Maurice Feldman (Brock University)

**Abstract:** The present paper will describe the results of two male youths (ages 14-16 years) with HFA who participated in Cognitive-Behavior Therapy (CBT) (March & Mulle) plus function-based behavioral intervention (Feldman et al., 2002) in an attempt to reduce targeted OC behaviors. Treatment sessions took place once or twice per week for approximately 20 weeks. CBT included awareness training, cognitive training, and exposure/response prevention. As well, hypothesized functions of OC behaviors were identified and addressed as needed. Examples of targeted obsessions and compulsions included: handwashing, fears of an unwanted event or need for exactness (with precise positioning of items), and fears of inadequate food digestion (with frequent bouts of touching and talking about the abdomen around mealtime). For both participants, at post-test, visual inspection of objective data indicated that target OC behaviors were at clinically acceptable levels; for one participant, results remained stable at 3-month follow-up (and follow-up data for the other participant will be collected shortly). Treatments were adapted to fit the cognitive/developmental needs of the participants. Identifying and addressing hypothesized functions of behaviors, as well as extensive parent involvement appeared to aid in treatment success.

**Using Function-Based CBT to Treat OCD in Two School-Age Children with HFA.** SHAUNA MCCAMBRIDGE (Brock University), Tricia Corinne Vause (Brock University), Maurice Feldman (Brock University), Heather Sheen (Brock University), Elizabeth Rombough (Brock University)

**Abstract:** The second paper replicates the first study with 2 school-age children (ages 8-10 years) who meet criteria for OCD and HFA. The CBT treatment is currently underway and being offered in weekly 1.5 hour sessions. Examples of targeted obsessions and compulsions include: worries related to death and contamination, active avoidance of objects believed to be dirty or unsafe, reassurance seeking and engaging in daily rituals, such as repeating sentences before bedtime. The objective data collected by parents will be visually inspected and will be used to supplement the information collected from standardized OCD assessments and quality of life and consumer satisfaction questionnaires. The treatment has been modified to fit the cognitive/developmental needs of the younger participants. Identifying and addressing the hypothesized functions of behaviors, as well as the inclusion of extensive parent involvement, reinforcement and adaptations to cognitive phase of the CBT are expected to aid in treatment success.

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## #260 Paper Session

5/24/2009

3:00 p.m. - 3:50 p.m.

North 125

AUT

### Language Training Approaches

Chair: Joseph Gentry (Southwest Autism Research & Resource Center)

**Pivotal Response Treatment in the Public School Setting: Increasing Communication and Decreasing Disruptive Behaviors.** (Applied Behavior Analysis) JOSEPH GENTRY (Southwest Autism Research & Resource Center)

**Abstract:** Pivotal Response Treatment (PRT) is widely known as an evidence-based treatment used to increase the communication and social abilities and decrease problematic behaviors in children with autism. PRT is implemented within the natural environment where the teacher can be allowed to follow the student's lead to gain shared control of motivating stimuli. This type of intervention is typically more difficult to implement with students with autism within general education environments, especially with older elementary students who are expected to follow more general classroom rules, such as sitting at a desk, raising their hand and not disrupting the other students; therefore, making it more difficult to follow the child's lead. In the present study, experimenters introduced a PRT-based intervention with a 4th grade student diagnosed with autism. Teacher training, paraprofessional implementation training, on-going consultation and IEP development were each used to teach school staff to implement PRT procedures with fidelity. Results indicated significant increases in language frequency, mean length of utterance as well as significant decreases in a number of problematic and disruptive behaviors.

**The Behavioral Language Acquisition Model (Part-2): New Verbal Behavior Interventions for Children Diagnosed With Autism and Other Forms of Pervasive Developmental Disorders.**

(Applied Behavior Analysis) DAVID S. LUBIN (Children's Center for Development and Behavior), Paloma Pedraza (Children's Center for Development and Behavior)

**Abstract:** The Behavioral Language Acquisition Model (BLAM) is an intervention for facilitating language development in children diagnosed with Pervasive Developmental Disorders (i.e., Autism). The model is based on Skinner's principles of Verbal Behavior and focuses primarily on the development of spontaneous tacting across all parts of speech (nouns, verbs, adjectives, pronouns, prepositions, etc.). Although four primary classes of verbal behavior are addressed, the model prioritizes the establishment of instructional control to intraverbals and finally to spontaneous tacting. Gains in 42 children ranging from two to five years, were examined using the Psycho-Educational Profile-Revised (PEP-R). The PEP-R, a standardized developmental assessment tool, gauges age equivalencies across seven domains. Subjects were assessed prior to treatment with follow-up measures at three months (17 subjects), four months (two subjects), five months (two subjects), six months (19 subjects) and seven months (two subjects). Data revealed a mean doubling to tripling in months of development across all language related

domains over the amount of intervention time, e.g., over six months development in three months of treatment and over 12 months development after six months of treatment. The results exemplify the effectiveness of new verbal behavior models focusing primarily on tacting and intraverbals as opposed to manding.

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## #261 Paper Session

5/24/2009

3:00 p.m. - 3:50 p.m.

North 124 A

AUT

### Whole Language and Direct Instruction

Chair: Craig A. Thomas (TCLC MS Behavior Clinic)

**Using Whole Language Models to Increase Verbal Behavior in Children with Autism.** (Applied Behavior Analysis) CRAIG A. THOMAS (TCLC MS Behavior Clinic)

**Abstract:** This paper compared the use of delaying the delivery of reinforcement until after the completion of a whole language model to conventional language training without the use of reinforcer delay and whole language models. Investigators used whole language models following receptive language training and delaying the delivery of reinforcement until after the language model was complete. This procedure resulted in increased use of tacts and intraverbals as well the acquisition of new tacts faster than separate tact and intraverbal training alone. Additionally, when whole language models were used in conjunction with mand modeling, tacts and intraverbals in conjunction with the use of mands increased over separate mand, tact, and intraverbal training alone. The paper outlines the methods for conducting training using this technique as well as the differences in these training methods. Treatment outcomes are presented using these methods in conducting receptive, mand, tact, and intraverbal training with children with autism.

**Direct Instruction for Teaching Language to 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 effects of a Direct Instruction (DI) language program implemented with elementary students with autism spectrum disorders (ASD). Students with ASD frequently demonstrate language delays (American Psychiatric Association, 2000). Though DI has been demonstrated to be effective in addressing reading and math skills in individuals with a variety of disabilities, there is little research in the area of DI as a language intervention for students with ASD. Three early-elementary-aged children with ASD participated in this study. This study examined the effectiveness of DI with regard to students' oral language skills, specifically the identification of materials of which objects were made. A single-subject changing criterion design was employed. A functional relation between DI and oral language skills was demonstrated through replication of skill increase over three criterion changes and across three students. The results and their implications will be discussed further.

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## #262 Paper Session

5/24/2009

3:00 p.m. - 3:50 p.m.

North 126

AUT

### Communication Training Issues

Chair: Summer Ferreri (Michigan State University)

**Evidence-Based Practices to Increase Language and Communication in Children with Autism Spectrum Disorder.** (Applied Behavior Analysis) SUMMER FERRERI (Michigan State University), Joshua Plavnick (Michigan State University)

**Abstract:** Young children with Autism Spectrum Disorders (ASD) often demonstrate a restricted range of communication skills such as limited speech to initiate comments, request for information or items from others, listen and respond to others, and interact in simple social interactions. As a result, they experience restricted learning opportunities for social interaction and independent functioning. Additionally, deficits in language and communication skills frequently co-occur with severe problem behavior that can become progressively more difficult to manage without effective intervention. Current federal legislation (NCLB, IDEA) requires the use of evidence-based practices in the public education of students with ASD. Several behaviorally based interventions for teaching communication competencies to children with ASD have been successfully demonstrated in research, yet have not found widespread support in educational practice. We examined the process of identifying and implementing evidence-based practices based on the principles of applied behavior analysis to address language and communication deficits for children with ASD in public school settings. Findings suggest these practices can be implemented in public schools though several barriers to implementation in the school environment should be considered.

**Overcoming Severe Deficits in Vocal Behavior with The Association Method.** (Applied Behavior Analysis) Judy Pollard-Licklider (Pollard-Licklider Clinic), TERESA A. GRIMES (Whole Child Consulting, LLC)

**Abstract:** The Association Method (Dubard & Martin, 2000) has proven to be an effective paradigm for establishing vocal repertoires after other approaches have failed. The Association Method is an intensive multisensory approach, emphasizing coordination between listener skills, tacts of letter sounds, writing, matching, and echoing. Speaking skills are established in strictly “bottom-up” programmatic fashion, beginning with single sounds, and gradually introducing sound combinations across the operants listed above. Brief case studies of 2 learners will be presented in this paper. Lecture, video, and data will be utilized to familiarize attendees with the techniques of The Association Method. An example of a scope and sequence will be provided, as will time to prepare materials and role play. The presenters will describe how the Association Method can be integrated with the rest of a learner’s programming. For example, though special considerations apply, the authors have successfully integrated manding (requesting), natural environment training, and play into programs emphasizing the Association Method.

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## #263 Symposium

5/24/2009

3:00 p.m. - 3:50 p.m.

North 120 D

AUT/OTH; Applied Behavior Analysis

### State of Practice in Behavior Analysis

Chair: Michael J. Dougher (University of New Mexico)

**Abstract:** This symposium is organized by the ABAI Practice Board to address issues and developments in the field as they relate to practice and practitioner issues. Presenters will provide information on recent strategic development being made by the Practice Board to advance applied behavior analysis. Presenters will report on data from consumers of behavior analysis services and technologies, issues of and trends within the ABAI membership, and information about the education of practicing behavior analysts.

#### **Consumer Assessments of ABA Services.** MICHAEL J. DOUGHER (University of New Mexico)

**Abstract:** This presentation will show data from a consumer assessment study conducted by members of the ABAI Practice Board. The results of the research presented will help guide the efforts of the Board in support of practice.

#### **Practitioner Trends among ABAI Members.** MARIA E. MALOTT (ABA International)

**Abstract:** In the fall of 2008, ABA International conducted a survey of members, past members, and other constituents to define and determine some of the most critical issues facing the field of behavior analysis. A total of 1,900 behavior analysts responded to the survey. The information provided has been critical to defining ABA International's priorities for promoting practice and its unparalleled commitment to continue supporting practice and practitioners while developing and defending the science of the field. Survey results will be presented.

#### **Who Will Train Qualified Behavior Analysts in the Future?** R. DOUGLAS GREER (Columbia University Graduate School and Teachers College)

**Abstract:** This presentation will address long term issues facing the field with regard to the education of future generations of practitioners and scientists in the field, and how efforts today to address the needs of practitioners have far reaching implications. Some data and discussion will be presented.

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## #264 Paper Session

5/24/2009

3:00 p.m. - 3:50 p.m.

North 221 C

OBM

### Performance Management in Human Service Settings

Chair: Thomas G. Szabo (University of Nevada, Reno)

#### **Improving Performance in Special Education Services: Effects of In-Service Training, Verbal Behavior, and Practice Opportunities.** (Applied Behavior Analysis) GILIAN V. CUNNINGHAM (Temple University/BCIU #22), Donald A. Hantula (Temple University)

**Abstract:** The effect of a standard training workshop for behavioral instruction staff in a public school system, and other variables effecting staff performance were evaluated. Participants' performance on written assessments presented during a typical didactic 3-day in-service workshop, follow-up written assessments 2-4 weeks later, and post-workshop observations conducted at their worksites were analyzed.

All participants improved on written assessments conducted during the workshop and were highly satisfied with the training. In post-workshop measures, performance on written assessments (verbal behavior) was better than performance on observed assessments of task proficiency; the more rigorous the evaluation criteria, the worse the results. Further analysis suggests that the level of opportunity the participants had to apply and practice the information at their worksite had more of an effect on post-workshop written assessments and task performance than participants' educational and experience levels.

**Technical Evaluation of the Service Review Model with Performance Scorecards.** (Service Delivery) THOMAS G. SZABO (University of Nevada, Reno), W. Larry Williams (University of Nevada, Reno), Donny Newsome (University of Nevada-Reno), Sharlet D. Butterfield (University of Nevada, Reno)

**Abstract:** Although the need for staff training in effective behavioral programming is well documented, training by itself is rarely sufficient to bring about lasting behavior change in human service organizations. Systematic and regular service review of staff activities by middle and senior management has been related to increased data collection and acquisition of consumer program objectives. In the current study, we combined the service review model with performance scorecards to augment staff and consumer behavior changes. Eleven supervisors and 56 front line staff working at a large agency that provides services to adults with disabilities were trained and offered on-going behavioral consultation and service review for work with 10 adult consumers with significant behavioral issues. The package intervention for staff included the use of performance scorecards, public posting, and reinforcement. Staff engagement in pinpointed behaviors climbed rapidly, whereas supervisor behaviors were slow to reach criterion, after which desired consumer outcomes met criterion. Maintenance probes revealed sustained performance at ceiling levels. Results suggest service review may serve as an establishing operation that increases the effectiveness of reinforcers presented in the form of data points on publicly posted graphs, diminishing the need for other, more costly conditioned reinforcers.

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## #265 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 129 B

AUT/CSE; Applied Behavior Analysis

### **Comprehensive Assessment of Quality of Early Intensive Behavioral Intervention**

Chair: Adrienne M. Perry (York University)

Discussant: Nancy Freeman (Surrey Place Centre)

**Abstract:** Early Intensive Behavioural Intervention (IBI) is increasingly recognized as the most effective treatment intervention for children with autism. As a result, a proliferation of IBI programs has been witnessed world-wide. These programs endeavor to achieve outcomes equivalent to those described in the behavioural literature. However, although there is research linking treatment quantity to outcome, few attempts have been made to link characteristics of treatment quality to outcome. This gap makes it difficult to know which treatment characteristics are essential to producing best outcomes and even harder to know how these characteristics should be measured. Our research team at York University has developed two measures, based on an extensive review of the literature, existing IBI staff evaluation tools, data from a survey of clinicians and parents, and clinical experience. Together, these tools, the York System of Quality Assurance (YSQA) and the York Measure of Quality of IBI (YMQI) provide a comprehensive system for measuring the quality of IBI programs at various levels. This symposium will introduce participants to the YSQA and YMQI and describe the empirical and theoretical foundation of the YSQA and the psychometric properties of the YMQI.

**Indicators of Quality Teaching in Intensive Behavioral Intervention: A Survey of Parents and Professionals.** HELEN E. FLANAGAN (York University), Adrienne M. Perry (York University), E. Alice Prichard (York University)

**Abstract:** Serious concerns have been expressed about the future of the field of Early Intensive Behavioural Intervention (IBI) if quality is not defined and measured. This presentation will address the need to evaluate quality when providing IBI programs. In addition, it will review our research team's efforts to determine factors relevant to high quality teaching. We consulted a number of sources, such as training manuals published by expert clinicians, experimental research, and rating scales used by treatment providers to monitor staff performance.

In addition, we carried out a survey of 52 professionals (11 clinical directors, 28 supervisors, and 13 others professionals knowledgeable about autism treatment) and 20 parents to obtain input about characteristics of quality teaching and how these characteristics should be measured. Results emphasized the importance of evaluating factors such as generalization, adopting appropriate behavior management strategies, and selecting reinforcers of the appropriate type.

This research has informed the development of the York Measure of Quality of Intensive Behaviour Intervention and the York System of Quality Assurance.

**The York Measure of Quality of Intensive Behavioural Intervention: A Valid and Reliable Measure of Quality.** E. ALICE PRICHARD (York University), Adrienne M. Perry (York University), Helen E. Flanagan (York University)

**Abstract:** The YMQI is a rating scale that evaluates the quality of video-taped segments of IBI. It contains 30 items grouped into nine categories. Each item is rated on a Likert scale that ranges from 1 to 3. Measures of internal consistency, inter-rater reliability and criterion-related validity suggest that the YMQI is a psychometrically valid measure of overall IBI quality. In addition, combinations of items on the measure can be used to evaluate the following constructs: Organization, Pacing, Teaching Level, and Generalization. This presentation will introduce participants to the structure and content of the YMQI. In addition, the psychometric properties of the current version of the YMQI will be described. The YMQI may be useful in a range of research and clinical contexts. Clinical uses could include staff training, staff evaluation, goal setting for performance improvement, and program evaluation. In research studies, the YMQI could be used to compare different types of IBI in different settings, explore the degree to which quality of IBI predicts different outcomes, and determine active ingredients of intervention.

**The York System of Quality Assurance: A Comprehensive Measure of Service Quality.** JULIE L. KOUDYS (York University), Kate Sheese (York University), Adrienne M. Perry (York University)

**Abstract:** The YSQA is a comprehensive quality assurance system designed to assess service quality within IBI programs. Modules were designed to measure performance in different service areas, including quality of direct teaching, quality of curriculum programming, and administrative and organizational factors, such as supervision and training. Each module is designed to meet the following objectives: establish empirically based standards of practice for the provision of high quality IBI ; identify indicators of these standards (i.e., operationalize target behaviours and set performance criteria); provide a comprehensive system which may be used to assess performance in relation to the standards; and provide information which may be used to improve service delivery.

This presentation will describe the theoretical framework and empirical foundations of the YSQA, describe the sources of information required in order to complete the YSQA (i.e., live observation, video observation, local data files such as binders, central clinical files and organizational/human resource files), review the YSQA checklists and describe the different ways the YSQA may be used (i.e., as a comprehensive measure of program quality, or as a means to assess performance within specific program areas).

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## #266 Paper Session

5/24/2009

3:00 p.m. - 4:20 p.m.

North 227 A

AUT

### **Milieu Strategies and Fluency Training**

Chair: Robyn Jeanne Christensen-Sandfort (University of West Florida)

#### **The Impact of Milieu Strategies on the Communication Skills of Young Children with Autism Spectrum Disorders.** (Applied Behavior Analysis) ROBYN JEANNE CHRISTENSEN-SANDFORT (University of West Florida)

**Abstract:** Due to the growing presence of young children with autism spectrum disorders (ASD) in early childhood special education (ECSE) classrooms, practitioners must implement strategies that are effective among this population and adaptable to the ECSE environment. The purpose of this study was to examine the effect of teacher-implemented milieu strategies on the communication skills of young children with ASD in an ECSE classroom. A single-subject multiple-baseline design across participants replicated across settings was used. The participants were three children between the ages of 3- and 6-years-old. Milieu strategies were implemented in two activities per day. Generalization and maintenance effects were determined. Data was collected through direct observation of prompted and spontaneous occurrences of targets. Interrater agreement was calculated for 28% of the total observations and averaged 94.5%. Visual analysis of the data indicated that, at the end of the intervention phase, all participants used their targets spontaneously in all routines. Participants' use of targets generalized to novel settings and was maintained over time. These results demonstrate the positive impact of milieu strategies on the communication skills of young children with ASD and provide support for the feasibility of implementing specialized instruction for this population in an ECSE classroom.

#### **Fluency to Teach Individuals with Autism Tacts via Error Correction and Goal Setting with Reinforcement.** (Applied Behavior Analysis) PATRICIA I. WRIGHT (Easter Seals National Headquarters), Nick Miles (Easter Seals Chicago Metropolitan), Robert J. Alexander (Easter Seals-Chicago)

**Abstract:** A multiple probe design across 3 school-aged individuals with autism was used to assess the effects of error correction and goal setting with reinforcement to teach participants to tact form and function of unknown nouns. The intervention occurred in a typical educational setting serving individuals with autism. Participants were taught within a fluency instruction procedure with one-minute timings. The timings included goal setting with reinforcement. Findings conclude that the procedure produced positive results for all three participants. Social validity data was collected for normative standards; this intervention resulted in normative results for two of the participants. A generalization probe was completed for each subject for the form and function tacts of each of the nouns. Participants performed similarly in the generalization probe as within the fluency instruction sessions, demonstrating transfer of learning to the generalized environment. Discussion of the results and the use of fluency based instruction with individuals with autism will occur.

#### **A Comparison of Fluency Based Instruction Versus Discrete Trial Teaching of Multiple Exemplars to Assess Retention of Acquired Picture Labels.** (Applied Behavior Analysis) JAIME M. NICKLAS (Brooklyn Autism Center), Ray Cepeda (The Brooklyn Autism Center)

**Abstract:** The present study utilized an AB design to assess whether 2 children diagnosed with Autism could retain acquired picture labels expressively. Ten picture cards that each learner could not correctly label were chosen for the research. Five cards were assigned to the teaching multiple exemplar condition and the other five cards were assigned to the fluency condition. The targets were all taught with errorless teaching using transfer trials. Once all picture cards were mastered the next condition was introduced. In the multiple exemplar condition five additional picture cards that were not mastered were selected. The

additional picture cards were of the same object, but a different representation of the object. During this procedure the multiple exemplars of the first exemplar were taught utilizing the identical teaching techniques that were employed to teach the first exemplar. The fluency condition was also introduced. Once the timer the instructor presented the first SD, the timer was started. Once the learner responded to the item, it was then discarded and the next item was immediately presented. This continued until all 5 cards in the pile were labeled. The reinforcer was delivered contingent upon the child responding within the targeted time. The first time to be targeted for each participant was the average time the learner scored during the three baseline sessions. Retention probes were conducted 1 time per week as items completed each phase. Retention probes continue to be collected to assess which condition promotes the strongest. Currently two learners have demonstrated stronger retention within the multiple exemplar condition and one learner has demonstrated stronger retention within the fluency condition.

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## #267 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 222 AB

CBM/VRB; Applied Behavior Analysis

### **Mindfulness for Two (Part II): Manipulating the Therapist**

Chair: Jonathan Weinstein (University of Mississippi)

Discussant: Daniel J. Moran (Trinity Services)

**Abstract:** Researchers have long been interested in different factors relevant to the process and outcome of therapy (Smith & Glass, 1977). This symposium will present findings from a series of studies involving an analogue of a first therapy session. In each of these studies, particular therapist variables that are theoretically important to the practice of Acceptance and Commitment Therapy were manipulated (See Wilson, in press). Some of the variables on the part of therapist include: personal disclosure, asking for permission to discuss something difficult, and performing a brief mindfulness exercise prior to beginning the session. Data were collected and scored from a video-tape recording of the session. Self-report data were collected post-interview from both interviewers and interviewees using measures of therapeutic alliance and personal experiences, such as positive/negative mood and physical sensations.

**The Effects of a Pre-Session Mindfulness Exercise for the Therapist.** JONATHAN WEINSTEIN (University of Mississippi), Kelly G. Wilson (University of Mississippi), Kate Kellum (The University of Mississippi), Emily Kennison Sandoz (University of Mississippi)

**Abstract:** This study examined how manipulating the interviewer's behavior prior to the interview effects a number of different process variables believed to be relevant to the practice of Acceptance and Commitment Therapy (Wilson, in press). Specifically, this study manipulated the instructions the interviewer received before conducting the interview. The interviewer was randomly selected to receive either mindfulness instructions or control instructions for ten minutes prior to the interview. Next, the interviewer was instructed to ask the interviewee about a disagreement they had with someone who is important to them. Self-report data were collected post-interview from both interviewers and interviewees using measures of therapeutic alliance and personal experiences, such as positive/negative mood and physical sensations.

**The Effects of Therapist Disclosure.** STEPHANIE L. NASSAR (University of Mississippi), Kelly G. Wilson (University of Mississippi), Kate Kellum (The University of Mississippi), Emily Kennison Sandoz (University of Mississippi)

**Abstract:** This study examined how manipulating the interviewer's behavior during the interview effects a number of different process variables believed to be relevant to the practice of Acceptance and Commitment Therapy (Wilson, in press). Specifically, this study manipulated the pre-interview instructions given to the interviewers. Interviewers were randomly assigned to one of two conditions: interviewer disclosure or no disclosure. Interviewers in both conditions were instructed to ask the

interviewee to discuss a disagreement they had with someone who is important to them. Additionally, the interviewers in the disclosure condition were instructed to disclose a personal experience of a disagreement with someone important to them before they asked the interviewee to disclose. Interviewers in the no disclosure condition did not receive these additional instructions to disclose. Data were collected and scored from a video-tape recording of the session. Self-report data were collected post-interview from both interviewers and interviewees using measures of therapeutic alliance and personal experiences, such as positive/negative mood and physical sensations.

**The Effects of Asking for Permission.** REGAN M. SLATER (University of Mississippi), Kelly G. Wilson (University of Mississippi), Kate Kellum (The University of Mississippi), Emily Kennison Sandoz (University of Mississippi)

**Abstract:** This study examined how manipulating the interviewer's behavior during the interview effects a number of different process variables believed to be relevant to the practice of Acceptance and Commitment Therapy (Wilson, in press). In this study the interviewer was instructed to ask permission to ask the interviewee about something difficult before the beginning of the session. Next, the interviewer was instructed to ask the interviewee about a disagreement they had with someone who is important to them. Data were collected and scored from a video-tape recording of the session. Self-report data were collected post-interview from both interviewers and interviewees using measures of therapeutic alliance and personal experiences, such as positive/negative mood and physical sensations.

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## #268 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 131 A

CSE/Applied Behavior Analysis

### **Applying Behavior Analysis to Achieve Sustainability**

Chair: Patricia Watson (University of Ulster)

Discussant: Julian C. Leslie (University of Ulster)

**Abstract:** This symposium presents the work to date a research group that was set up in Northern Ireland some three years ago to investigate the use of behavior analysis methods in changing human behavior that is currently leading to a range of environmental problems. We have initiated projects concerned with changing consumer behavior so that energy-efficient products are purchased, enhancing recycling of domestic wastes, and reducing domestic energy consumption. Each project presents challenges in interfacing with agencies in the community and in developing appropriate methodologies. We will report our data and share our experiences.

**Using Behavioral Interventions to Reduce Carbon Emissions by Inducing Purchasing Decisions That Have a Medium-Term Impact on Energy Use.** DEBORAH ROY (University of Ulster), Julian C. Leslie (University of Ulster)

**Abstract:** Applied Behavior Analysis has been used with relative success to tackle a range of pro-environmental behaviors. In the United Kingdom, fuel used within the home accounts for 30% of CO<sub>2</sub> emissions. Previous research has focused mainly on management of behaviors associated with residential energy consumption, but appliance purchase is also a behavior which has an important role in the regulation of electricity consumption. As a one-off behavior, the purchase only has to occur once to be effective in reducing energy consumption. Little behavioral research to date has systematically investigated investment or consumer-choice decisions concerning energy saving appliances. . In the first study, participants in a web-based survey were asked to make a number of hypothetical choices between purchases. They were given information about initial purchase prices and subsequent running costs over various time intervals bands for energy-saving or conventional light bulbs or electric kettles. One half of participants were exposed to pro-environmental prompts, information about the emissions impact of different choices. Results are related to the delay discounting literature, and will form the basis of a

second study where an informational prompt will be used in a naturalistic study in local supermarkets, using an ABAB reversal design, to promote purchases of energy-saving appliances.

**The Use of Applied Behavior Analytic Interventions in Addressing Environmental Consumption Behavior.** ANJA SCHUMANN (University of Ulster), Stephen Gallagher (University of Ulster), Julian C. Leslie (University of Ulster)

**Abstract:** The present study compared different behavior analysis techniques aimed at encouraging recycling behavior among students living in university accommodation. Data obtained from actual measurements of recycling behavior were matched with data from a questionnaire measuring attitudes towards recycling. Different interventions such as prompts, briefing, continuous feedback and incentives were tested to compare antecedent and consequence strategies. All interventions were tested on a multiple baseline design to control for extraneous variables. The study set out to find the most suitable intervention for students to increase recycling behavior. Preliminary results suggest that usual approaches taken by Borough and City Councils (e.g., providing households with information on recycling) might not be the most suitable approach for students living in term residences. Results are discussed in relation to the theory of pro-environmental research and in relation to practical approaches to promote recycling participation within student residences.

**Changing the World: Adapting Behavior Analytic Strategies to Achieve Interventions in Addressing Environmental Consumption Behavior.** JULIAN C. LESLIE (University of Ulster), Patricia Watson (University of Ulster), Deborah Roy (University of Ulster), Anja Schumann (University of Ulster)

**Abstract:** The primary focus of behavior analysis is achieving measurable change in the behavior of individuals in controlled environments. The need to change everyday behaviors in the population at large, in order to move towards more sustainable future use of the small planet we inhabit, raises a large number of challenges for applied behavior analysis. This paper will review a number of the problems we have encountered in the last few years in venturing beyond the laboratory and clinic. These include ensuring co-operation of outside agencies, explaining the methods and goals of behavior analysis to those agencies and the wider public, selecting appropriate methodologies, conducting long term studies, and presenting findings effectively. Presentation of findings raises the question as to whether the goals of this type of research should be contributions to the scientific literature or influencing the behavior of opinion formers and policy makers.

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## #269 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 120 A

DDA/Applied Behavior Analysis

### **Behavioral Assessment for Covert Behavior Problems**

Chair: Timothy R. Vollmer (University of Florida)

Discussant: Raymond G. Miltenberger (University of South Florida)

**Abstract:** Many severe behavior problems displayed by individuals with developmental disabilities (or people in general for that matter) occur frequently when no one is watching or especially when no one is watching. The three papers in this symposium are based around the common theme of evaluating such covert behavior problems. The first paper, presented by Jorge Reyes, reports a behavioral assessment of covert problem behavior (viewing and stealing child-related photographs from magazines) displayed by adult male sex offenders. The second paper, presented by Meagan Gregory, reports a behavioral assessment and intervention for covert self-injurious behavior maintained by automatic reinforcement. The third paper, presented by Amanda Rone, reports a behavioral assessment and intervention for covert food stealing displayed by individuals diagnosed with Pradi-Willi Syndrome. The discussant is Raymond Miltenberger, who

is well known for the development of behavioral assessment models for covert behavior. Many of the assessment components in this symposium were based at least in part on Miltenberger's work.

**The Use of In Situ Assessments for Sex Offenders with Developmental Disabilities.** JORGE RAFAEL REYES (Westfield State College), Timothy R. Vollmer (University of Florida), Cristina M. Whitehouse (University of Florida), Gregory Jansen (State of Florida/Seguin Unit)

**Abstract:** The assessment and treatment of sex offenders has typically revolved around evaluating and attempting to eliminate arousal to inappropriate stimuli (i.e., individuals under the age of 18). Whereas focusing on arousal is critical, it may only capture features of sexual offending that are respondent in nature. Other factors may be operant in nature and also important to consider in the sexual offense process. For example, how an individual behaves while in potentially high-risk situations (e.g., presence of children), would be important to determine. Furthermore, how an individual behaves in social situations (e.g., presence of appropriately aged peers) may have important implications as well. For example, having the necessary social skills to engage in conversation with a potential sexual partner of a similar age may make them less likely to pursue inappropriate sexual targets. The present studies involved assessing sex offenders diagnosed with developmental disabilities in high-risk and social situations. Specifically, we investigated how individuals responded while in the presence of high-risk materials (e.g., magazines with pictures of children) and when given the opportunity to interact with appropriately aged individuals. Assessment results showed a range of responses; however, in all cases, the methodology proved useful in identifying targets for behavior change.

**Treatment of covert Self-Injury Maintained by Automatic Reinforcement.** MEAGAN GREGORY (University of Florida), Griffin W. Rooker (University of Florida), Brian A. Iwata (University of Florida)

**Abstract:** Problem behavior that occurs solely under covert conditions can be difficult to assess and treat because it may be seen rarely. The purpose of this study was to evaluate two procedures that may produce reductions in covert self-injury (SIB) maintained by automatic reinforcement: stimulus control training and contingencies on response products (i.e., tissue damage). The effectiveness of these interventions was examined both during sessions and across the day. First, stimulus control was established during sessions by pairing a stimulus with the appearance of a therapist who delivered a verbal reprimand contingent on self-injury. If this produced reductions in SIB, the signal was placed throughout the subject's environment. If SIB reemerged, contingencies were placed on the appearance of tissue damage.

**Assessment and Treatment of Food Stealing in Individuals With Prader-Willi Syndrome.** AMANDA J. B. RONE (University of Florida), Brian A. Iwata (University of Florida)

**Abstract:** The most significant behavioral characteristic of the Prader-Willi Syndrome (PWS) is hyperphagia, or excessive food consumption, which can result in life-threatening health conditions. Food stealing is a commonly reported problem behavior in individuals with PWS that occurs covertly; thus, the behavior has been examined in very few studies. One purpose of this study was to develop a procedure for assessing covert food stealing in individuals with PWS under different types of conditions: (a) a natural setting where food was present but a therapist was absent, (b) a task condition (not involving the handling of food) during which food was present but the therapist was absent, and (c) a task condition involving the handling of food, during which the therapist was present but periodically "distracted." The second purpose of the study was to evaluate a differential reinforcement procedure for reducing food stealing.

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## #270 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 128

DDA/Applied Behavior Analysis

### Variations of Functional Analysis Methodology

Chair: Jeff Tiger (Louisiana State University)

**Abstract:** Functional analysis is a widely researched behavioral assessment procedure used to identify the operant mechanisms responsible for the maintenance of problem behavior. There have been a number of procedural variations and refinements described in the published literature since the initial publication describing this assessment technique in 1982. The 4 talks in this symposia evaluate some of the variations that may result in more rapid and accurate determinations of behavioral function.

**Evaluation of False Positive (Tangible) Functional Analysis Outcomes.** GRIFFIN W. ROOKER (University of Florida), Brian A. Iwata (University of Florida), Erin Camp (University of Florida)

**Abstract:** Functional analysis (FA) methodology has been extremely effective in identifying the maintaining variables for problem behavior. However, the results of a FA may be influenced by idiosyncratic sensitivities to aspects of the assessment conditions. For example, Shirley, Iwata, and Kahng (1999) demonstrated a false positive FA outcome associated with exposure to the tangible condition. However, the extent to which tangible reinforcement routinely produces such outcomes is unknown. The purpose of this study was to examine susceptibility to tangible reinforcement by determining (a) whether a new response is acquired more readily when exposed to tangible reinforcement than when exposed to other contingencies commonly used in a functional analysis, and (b) whether problem behavior known not to have a social function nevertheless emerges quickly when exposed to tangible reinforcement. Results suggest that the inclusion of items in the tangible condition should be done with care and be based on those items in the individual's environment.

**Using Discriminative Stimuli to Facilitate Condition Differentiation During Brief Functional Analyses.** KELLY MCCONNELL (New England Center for Children), Eileen M. Roscoe (New England Center for Children), William H. Ahearn (The New England Center for Children), Jason C. Bourret (New England Center for Children)

**Abstract:** Previous research has shown that including salient stimuli (e.g., different colored rooms or different therapists associated with each condition) may enhance differential outcomes during a functional analysis (FA). However, clinicians may not have the resources necessary for using discriminative stimuli when conducting a FA. Therefore, the purpose of this study was to evaluate the effects of using practical stimuli, (e.g., different colored shirts, poster boards, and photos of the participant contacting antecedent environmental events associated with FA conditions) on FA outcomes. In addition, because the inclusion of salient stimuli may be most helpful when conducting brief or nonstandard FAs, we evaluated the effects of using such stimuli during brief or latency-based FAs. Four individuals with autism, who exhibited severe problem behavior, participated. A multielement design was used to demonstrate experimental control, and a block of 4 conditions (alone, attention, play, and demand) paired with discriminated stimuli was alternated with a block that was not paired with these stimuli. Results indicate that the inclusion of salient stimuli may serve as a practical enhancement when conducting brief functional analyses. Interobserver agreement was conducted for over 30% of sessions and averaged over 90%.

**Expediting the Brief Functional Analysis by Using Hypotheses Derived from Descriptive Assessments.** MATTHEW O'BRIEN (The University of Iowa Children's Hospital), Brenda J. Engebretson (University of Iowa Children's Hospital), David P. Wacker (University of Iowa Children's Hospital), Kelly M. Schieltz (University of Iowa), Melanie H. Bachmeyer (University of Iowa), Patrick Romani (University of Iowa)

**Abstract:** The Behavioral Pediatrics Clinic at the University of Iowa Children's Hospital is a clinic for young children who are typically developing and who engage in disruptive behaviors (e.g., noncompliance, aggression). Because of appointment time constraints, an alternative to the extended functional analysis was needed so that response-reinforcer relations could be assessed within a 90-minute evaluation. In the early 1990's, the brief functional analysis (BFA) was developed as this alternative, testing the response-reinforcer relationship between different sources of negative and positive reinforcement on target behaviors via a multi-element design. Studies have since demonstrated the BFA to be efficient and often correlated with extended functional analyses. The current clinic assessment protocol consists of descriptive assessment (e.g., A-B-C interview), a BFA, and treatment evaluation. Inter-observer agreement is collected during assessment and treatment evaluations. The sequence of test conditions (e.g., demand, attention) in the BFA is based on the hypothesized response-reinforcer relation identified via the descriptive assessment. Using hypothesis-based analyses allows us to test and confirm response-reinforcer relationships in an expeditious fashion and initiate treatment more quickly. This presentation will include a discussion of the assessment protocol, a summary of the outcomes from utilizing the assessment protocol, and a case example demonstrating this approach.

**A Comparison of Fixed and Random Session Sequences During Functional Analyses.** JEFF TIGER (Louisiana State University), Megan L. Kliebert (Louisiana State University), Karen A Toussaint (Louisiana State University), Joslyn N. Cynkus (Louisiana State University), Carolyn Barahona (Louisiana State University), Kristen Abbondante (Louisiana State University)

**Abstract:** Multielement designs are the most common format for conducting functional analyses. While highly efficient, these designs introduce potential of carry-over effects between conditions which researchers have accounted for in 2 ways. One approach has been to randomize session order such that carry-over effects are likely to be equally distributed across conditions. The other approach has been to conduct sessions in a fixed sequence designed to capitalize on the impact of carry over; possibly expediting the analysis (i.e., alone conditions are likely to establish the value of attention; so they are beneficial to conduct prior to attention sessions). The current study was designed to determine if functional analysis outcomes may be determined more rapidly when sessions are conducted fixed relative to a random sequence. Each participant experienced 2 simultaneous functional analyses of their problem behavior. During one analysis sessions were sequenced in a random order, and during the other analysis, sessions were sequenced in a fixed order (alone-attention-toy play-escape). The resultant data from each analysis were then inspected with structured criteria to determine how quickly a determination of behavioral function could be made. Interobserver agreement was collected for at least 25% of each analysis and averaged above 90%.

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## #271 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 129 A

DDA/Applied Behavior Analysis

### Factors Influencing Preference and Response Allocation

Chair: Melanie H. Bachmeyer (University of Iowa)

Discussant: Henry S. Roane (University of Nebraska Medical Center & Munroe-Meyer Institute)

**Abstract:** From an operant perspective, the analysis of choice is concerned with the distribution of behavior among alternative sources of reinforcement. When an alternative is chosen more frequently over other alternatives, preference has been demonstrated. Various factors (e.g., motivating operations, biasing) may influence preferences for reinforcement and, thus, response allocation. This symposium will provide a discussion of such factors and implications for treatment across a range of behaviors. The first presentation will discuss the differential effects of changes in preferences for food reinforcers as a result of motivating operation effects (i.e., relative states of satiation and deprivation) in the treatment of food selectivity. The second presentation will discuss the influence of factors such as, schedules of reinforcement, response effort,

and stimulus control on choice allocation among different topographies of manding in the treatment of problem behavior. Finally, the third presentation will discuss the effects of manipulations specific to response effort (i.e., amount of food, food preference, bite presentation procedures) on choice allocation in the treatment of self-feeding skills.

**Differential Effectiveness of Two Assessments of Preference for Assessing Food Reinforcers.**

MELANIE H. BACHMEYER (University of Iowa), David P. Wacker (University of Iowa), Linda J. Cooper-Brown (The University of Iowa), Anuradha Salil Kumar Dutt (University of Iowa), Brenda J. Engebretson (University of Iowa)

**Abstract:** Although escape extinction is a common treatment component for food refusal, a few researchers have demonstrated that positive reinforcement (i.e., contingent access to preferred foods) in the absence of EE may increase the consumption of non-preferred foods for some children who exhibit selectivity by food type. One approach to using positive reinforcers to treat food refusal is to manipulate relative states of reinforcer satiation and deprivation, as these manipulations have been shown to influence their effectiveness as reinforcers. Therefore, in the present study contingent access to preferred foods (in the absence of EE) was used to treat the food selectivity exhibited by two children under two conditions: (a) conducting free-operant preference assessments of potential food reinforcers prior to meals, and (b) re-assessing preference throughout meals. Reinforcer conditions were conducted within a reversal design and the results indicated that food consumption increased more when preference for the potential reinforcers was re-assessed throughout meals, suggesting that changes in preference for food reinforcers occurred within meals. Inter-observer agreement was collected during at least 30% of the sessions with at least 90% agreement. Results will be discussed in terms of methodological variations to assess relative preference for potential reinforcers and motivating operation effects.

**Factors that Affect Response Allocation Among Different Mand Topographies.** KELLY M. VINQUIST (University of Iowa), David P. Wacker (University of Iowa), Anuradha Salil Kumar Dutt (University of Iowa)

**Abstract:** Information presented in this study will extend the current literature on functional communication training and factors that influence responding. The purpose of this study is to evaluate the effects of three variables: reinforcement schedules, effort, and stimulus control on the response allocation among different mand topographies. Data were collected in a combination multiple baseline (across functions) and multielement (across mand topographies) design to evaluate the participant's responding across three mand topographies: card touch, sign, and vocalizations. A reversal design was used to verify that changes in responding were due to changes in stimulus conditions. Allocation was initially evaluated using an FR1:FR1:FR1 reinforcement schedule. When each mand topography was concurrently available, participants' demonstrated a relative preference for one mand topography. Schedules of reinforcement, effort, and stimulus properties were then manipulated to evaluate changes in relative preference for specific mand topographies. Interobserver agreement was conducted across 30% of all sessions. Results demonstrated that schedules in reinforcement and stimulus conditions influenced participant's response allocation, and thus need to be considered in evaluations of mand preference.

**An Examination on Response Effort Manipulations to Increase Self-Feeding in Children**

**Diagnosed with Feeding Disorders.** VICTORIA STEWART (University of Nebraska Medical Center), Kristi Rivas (Munroe-Meyer Institute), Heather Kadey (Munroe-Meyer Institute, University of Nebraska Med), Cathleen C. Piazza (Munroe-Meyer Institute)

**Abstract:** Past research has demonstrated that children with feeding disorders engage in inappropriate mealtime behaviors to gain access to negative reinforcement in the form of escape from eating. Moreover, the motivation to escape eating may alter as a function of modifications in the response effort associated with eating. The purpose of this research study was to examine different response effort manipulations to increase self-feeding of three children diagnosed with feeding disorders. Specifically, a choice paradigm was developed to manipulate the effort associated with self-feeding versus non-self-feeding. The response effort manipulations explored in this study included alterations in (a) the amount of food, (b) food preference, and (c) bite presentation procedures. Results demonstrated that the use of a

concurrent schedule was an effective treatment procedure for increasing self-feeding in all participants. However, different levels and types of response effort manipulations were required to increase self-feeding in all children who participated in this study.

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## #272 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 228

EAB/TPC; Experimental Analysis

### Recent Advances in Self-Control Research

Chair: Patrick M. Ghezzi (University of Nevada)

Discussant: Rachel S. F. Tarbox (Chicago School of Professional Psychology, Los Ang)

**Abstract:** Three papers will be presented that discuss areas of research in self-control and impulsivity that take a different perspective than traditional studies of self-control. The papers range from basic research, to applied and clinical perspectives.

**Negative Reinforcement and Self-Control in Adult Humans.** ALICIA N. MACALEESE (Advanced Child Behavior Solutions, LLC), Patrick M. Ghezzi (University of Nevada)

**Abstract:** Typical self-control experiments involve conditioned positive reinforcers such as points or money for humans, and unconditioned positive reinforcers such as food for nonhuman organisms. The standard preparation involves manipulating the magnitude (small vs. large) and/or delay (short vs. long) to the reinforcer. Unlike the impulsive responding observed in nonhuman organisms (selecting the shorter, smaller reinforcer), humans almost always respond in a self-controlled fashion (selecting the larger, longer reinforcer). The self-control observed in humans might be due to the type of reinforcer. The current experiment examines how a negative reinforcer (noise) affected self-control in adult humans. The first experiment establishes the reliability of previous findings in self-control using a negative reinforcement preparation. The second experiment focuses on the magnitude of the negative reinforcer by systematically varying its intensity. The third experiment examines the effects on responding when the preferred activity is varied and the magnitude of the negative reinforcer remains constant.

### Reducing Task-Related Problem Behavior in Young Children by Teaching Self-Control.

JENNIFER A. BONOW (University of Nevada, Reno), Christine M. Coffman (University of Nevada Reno), Jessica Bearsto (University of Nevada, Reno), Patrick M. Ghezzi (University of Nevada)

**Abstract:** There is potential that teaching children to make self-control responses in the presence of aversive events may lead to decreased occurrences of problem behavior related to those events. For many children, engaging in problem behavior may function to delay or avoid a task altogether. In doing so, the child is making an impulsive response, while completing the task initially would be considered a self-control response. This study assessed self-control in children who demonstrated escape-maintained problem behaviors and then taught them to make self-control selections in the presence of aversive tasks. The tasks selected were analogues of those which often preceded problem behavior in the natural environment. Self-control was reassessed at the end of the teaching phase. Also, parents conducted generalization probes in the home throughout the study.

### The Relationship between Self Control and Measures of Psychological Health and Distress.

THOMAS J. WALTZ (University of Nevada, Reno), William C. Follette (University of Nevada Reno)

**Abstract:** Problems of impulsivity and shortsightedness have been linked to several clinical phenomena. The present study used several delay, probability, and social discounting repetitive choice assessments to characterize the impulsivity and shortsightedness of a college student sample. These subjects were also provided with a series of assessment instruments focusing on different aspects of quality of life, and psychological distress (e.g., depression, anxiety, social functioning). We will present the relationships

among these measures and discuss the potential usefulness of using discounting assessments in clinical psychology.

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## #273 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 226 AB

EAB/OTH; Experimental Analysis

### On Equivalence Relations

Chair: Erik Arntzen (Akershus University College)

**Abstract:** The first paper by Vaidya will present data from studies investigating the relation between stimulus discriminability and equivalence relations. The second paper by Fields et al. are going to describe a measurement instrument that documents attention to each of the elements in the graphs and descriptions of the graphs which represents the effects of two independent variables on some dependent variable. Thus, procedures that result in the formation of conditional relations between graphs and textual descriptions wherein participants attend to all six elements of each stimulus and thereby identify accurate and complete descriptions that correspond to the graphs. The third paper by Tomanari and Velasco is presenting their work on trying to assess symmetry and transitivity under reinforcement conditions. They have analyzed the acquisition of inter-related conditional discriminations during a training procedure that would supposedly establish stimulus classes according to the equivalence paradigm. The fourth paper by Arntzen et al. is concerned with different effects of titrating and fixed delays in delayed matching-to-sample and the subsequent responding during the equivalence tests.

### **Stimulus Discriminability and Equivalence Relations.** MANISH VAIDYA (University of North Texas)

**Abstract:** Conceptual and empirical analyses of conditional discrimination performances suggest that the successive and simultaneous discriminability of sample and comparison stimuli, respectively, is an important precursor in the development of accurate performances. The central role of conditional discrimination learning in the derived relations literature suggests that stimulus discriminability may also play an important role in the development of equivalence relations. Indeed, conceptual analyses have suggested that one mechanism for the superiority of the MTO training method is that it trains more of the discriminations necessary to pass tests for equivalence than either OTM or Linear training methods. This address will present data from studies investigating the relation between stimulus discriminability and equivalence relations. In some studies, subjects learned conditional relations consisting of simple, one-element stimuli or complex, two-element stimuli. In other studies, subjects learned conditional relations with a mix of simple and complex stimuli. The results show a slower rate of acquisition for conditional relations involving complex stimuli. These results will be related to the development of equivalence relations.

### **Attending to All Elements of Complex Stimuli in Conditional Relations: Describing Statistical Interactions.** LANNY FIELDS (Queens College, CUNY), Robert Travis (The Graduate Center and Queens College, City University of New York), Ivana Krstovska (Queens College, CUNY), Jack Spear (Queens College, CUNY)

**Abstract:** Interactions are described by viewing the effects of two independent variables on some dependent variable. They can be represented by a graph or with a textual description. Comprehension of the interaction can be inferred if an individual can select a description that corresponds to a graph and vice versa. That is, a conditional relation should exist between graphs and textual descriptions of given interactions. A complete and accurate description of an interaction requires the inclusion of at least six informational elements: the interactive relation between the effects of the two variables, the names of the two independent variables, the directional effects of the two independent variables and the name of the dependent variable. Identification of a complete description then requires attention to all six of the above

mentioned elements in the graph and inclusion of corresponding language in the description. Conversely, the absence of all six correspondences implies that the participant is not attending to all of the elements in the graphs and descriptions. We will describe a measurement instrument that documents attention to each of the elements in the graphs and descriptions of the graphs. In addition, we describe procedures that result in the formation of conditional relations between graphs and textual descriptions wherein participants attend to all six elements of each stimulus and thereby identify accurate and complete descriptions that correspond to the graphs. The generality of this repertoire was evaluated by performances evoked by novel graphs and descriptions of interactions. Results have implications for the education of students in natural sciences and will also extend our understanding of the variables needed to induce attention to elements in and between complex stimuli.

**Evaluating Symmetry and Transitivity During the Acquisition of Inter-related Conditional Discriminations.** GERSON A. Y. TOMANARI (University of Sao Paulo), Saulo Missiaggia Velasco (University of São Paulo, Brazil)

**Abstract:** The use of extinction often interferes with the flow of responding in tests for emergent relations, particularly when non-human and mentally retarded people are subjects. In our Laboratory, we have worked on trying to assess symmetry and transitivity under reinforcement conditions. To do that, we basically analyze the acquisition of inter-related conditional discriminations during a training procedure that would supposedly establish stimulus classes according to the equivalence paradigm. In a particular research, for example, a matching-to-sample procedure involving 9 sets (ABC / DEF / GHI) of 4 stimuli each was employed. Four normal adults were exposed to the training of 48 conditional discriminations, out of which 24 were AB, BC, BA, CB, AC, CA (Sub- set 1); 16 were ED, FE, DF, FD (Sub-set 2); and finally 8 were GH e HI (Sub-set 3). These three sub-sets were compared in order to evaluate the mutual effects of the acquisition of inter-related conditional relations. Basic results showed that all subjects correctly responded to the symmetry and transitivity relations derived from the trained AB and BC relations in Sub-set 1 (that is, BA, CB, AC, CA) with higher frequency and earlier in training than they did to the corresponding relations in Sub-set 2 (that is ED, FE, DF e FD), which was derived from the non-trained relations DE and EF. Similarly, AB and BC relations in Sub-set 1 were faster acquired than the corresponding GH and HI relations in Sub-set 3. These data seem to demonstrate the possibility of evaluating symmetry and transitivity in conditions where extinction is not employed.

**On Titrating of Delays in Delayed Matching-to Sample (DMTS) and Stimulus Exuivalence (SE).** ERIK ARNTZEN (Akershus University College), Christoffer Eilifsen (Akershus University College), Manish Vaidya (University of North Texas)

**Abstract:** As far as the authors of the current paper have noticed no studies have been done with titrating delays in the delayed matching-to-sample and testing for stimulus equivalence. Therefore, the purpose of the current experiment was to (1) expand the literature on human behavior in studying the effects of titrating versus fixed delays, (2) study if the use of fixed and titrating delays would make any difference in subsequent responding on testing for emergent behavior, (3) study the effects of fixed and titrating delays on number of responses to criterion, and (4) study if fixed or titrating delays made in difference in reaction time to comparison stimuli in training and testing. In the current study, we have used three different delays 100 ms, 3000 ms, and 18:00 p.m. ms both for the fixed and the titrating delays and 10 participants in each condition. For the conditions with fixed delays, the value of the delay was the same for all training trials. For the conditions with titrating delays all participants started with 0-sec delay and increased by intervals of 8 ms, 250 ms, and 10:00 a.m. ms, respectively for the 100 ms, 3000 ms and 1212:00 a.m. ms. The titration was done in twelve equal steps until the upper limit of 100 ms, 3000 ms or 18:00 p.m. ms was reached. Both the training of fixed and titrating delays were followed by testing for responding in accord with equivalence and during testing there was no delay, i.e., simultaneous presentation.

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## #274 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 227 BC

EAB/VRB; Experimental Analysis

### **Motivational Operations in Choice and Mand Studies**

Chair: A. Celso Goyos (Fed. Univ. of S. Carlos)

Discussant: Rachel Nunes da Cunha (University of Brasilia)

**Abstract:** This symposium gathers three experimental reports each one summarizing data collected from three different areas in which motivational operations play a major role. Two of these reports present data from choice studies, one of which related with decision making regarding risks and the other related with choice and preference of reinforcers. The third report involves the role of motivational operation in teaching mands for mentally disabled students. The three reports are linked in that they present different experimental operations to analyze motivational variables.

**Establishing Operations – Some Empirical Studies.** RACHEL NUNES DA CUNHA (University of Brasilia), Geilson Isidro-Marinho (University of Brasilia), Cecilia de Sena (Universidade de Brasilia)

**Abstract:** Since the articles Establishing Operations was published by Michael in 1982 and in 1993 we have been carried out studies about motivating operations as independent variables and to development experimental procedures. This presentation aim to report the studies I have been doing about reflexive conditioned establishing operation (CEO-R) on the risk behavior. The first study exposed twelve university students to five experimental conditions: Forced Choice, Baseline, Low Risk, Middle Risk and High Risk. The experimental task consisted in moving a colorful square within matrix 5 x 5, from the left side up to the right side down. During the task, the edge of the matrix eventually was flashing with different colors depend to signalize loss of points or avoidance. The participants were distributed in three groups according different experimental conditions. The results demonstrated the effects of the reflexive conditioned establishing operations under the risk behavior. The second study was a continuation of the first study and its thirty participants were arranged in six groups according the order of risk conditions (CEO-R). This study demonstrated the CEO-R control with more robust data.

**Establishing Operations Control and the Study of Choice and Preference with Mentally Disabled Adults.** A. CELSO GOYOS (Fed. Univ. of S. Carlos), Giovana Escobal (Federal University of Sao Carlos)

**Abstract:** This study aimed to investigate choice and preference of four adults with mentally disabled adults for items and assessed whether choices made initially under test conditions remained stable throughout the study. A forced choice test was conducted first to establish preference hierarchy: all eight items previously identified from a list were presented in pairs against each other. Following each choice the participant had 15 seconds to consume the item or to have contact with it. The items were then classified according to the number of choices, at high (H), medium (M) and low (L) levels of preference. The same items and consequences procedure were used across the study. Next, the participants were taught two work tasks. After each correct work task completed, the participant was presented with the eight items of preference and asked to choose one. Finally, a multiple schedule condition coupled with a concurrent-chains schedule condition was introduced and reinforcement for both conditions consisted of choosing one from the eight-item list. During the teaching condition the participants chose items of the three groups of preference; H (34.3%), M (42.9%) and L (22.9%). Under the schedules condition participants chose H (48.6%), M (37.8%) and L (13.5%) preference items.

**Motivational Operations and Mand Acquisition Through Conditional Discriminations by Mentally Disabled Adults** DANIELA MENDONCA RIBEIRO (Special Education Graduate Program

- UFSCar), Rebeca Lopes Cavaletti (Psychology Department - UFSCar), Nassim Chamel Elias (Federal University of Sao Carlos), A. Celso Goyos (Fed. Univ. of S. Carlos)

**Abstract:** Motivational operation may be described as an environmental variable which momentarily alters the reinforcement effectiveness of a stimulus. The concept of motivational operation is crucial for the understanding of the concept of the verbal operant mand. Mand may be defined as a verbal operant reinforced by specific consequences and controlled by motivational operations. The objective of this study was to introduce an experimental manipulation of motivational operations controlling mand responses. Three mentally disabled participants were taught selection-based tact responses through conditional discriminations through video presentations of signs and their corresponding pictures. They were then tested first on the emergence of topography-based tacts and secondly on mands. During tact tests, participants emitted a sign in the presence of a corresponding picture. During mand tests, they were shown an object which stored a preference item. By emitting a sign corresponding to the absent object the participant was given access to the preference item. It was observed the emergence of three signs, as topography-based tacts and mands. Results suggest that acquiring selection-based tacts through conditional discriminations may give rise to topography-based tacts and mands, and that motivational operation manipulation may facilitate mand response emission with no need of direct teaching.

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### #275 Paper Session

5/24/2009

3:00 p.m. - 4:20 p.m.

North 225

EAB

### Choice II

Chair: Nathalie Jeanne Boutros (University of Auckland)

**Reinforcer Predictability and Schedule Availability after Reinforcement Affect Local Preference.** (Experimental Analysis) NATHALIE JEANNE BOUTROS (University of Auckland), Douglas Elliffe (University of Auckland), Michael C. Davison (University of Auckland)

**Abstract:** Six pigeons responded in a variant of a switching-key concurrent schedule. Across conditions we arranged that reinforcers either strictly or randomly alternated between the two alternatives. We also varied the alternative that was available immediately after reinforcement, that is, which of the two alternative schedules and stimuli appeared on the main key at the end of reinforcement. In some conditions, the alternative that delivered the last reinforcer continued to be available; in others, the other alternative became available; and in yet others, the alternative available after reinforcement was determined randomly. We investigated local choice after each reinforcer both at the level of changing preference across time (preference pulses), and at the level of visit durations. Local preference was a dual function of the alternative that became available immediately after reinforcement and the arranged probability of a same-alternative reinforcer. There was little effect of the location of the previous reinforcer. These results confirm that changeover contingencies and events after reinforcement can interact with signaled local probabilities of reinforcement to produce the often-observed local pattern of increased preference for the just-reinforced alternative.

**The Stay/Switch Model: One Pair of Stay and Switch Schedules and Magnitudes of Reinforcers.** (Experimental Analysis) JAMES S. MACDONALL (Fordham University), Samantha Gons (Fordham University)

**Abstract:** The stay/switch model views concurrent choice as consisting of two pairs of choices, one pair at each alternative where one chooses to stay at the current alternative or switch from it. Research shows this model describes data when A) rates of reinforcers for staying at and switching from each alternative varied and B) magnitudes of reinforcers varied. The present experiment extends the model by showing it describes data obtained when only one pair of schedules were present and magnitudes of reinforcer for staying at and switching from that alternative varied. In addition, these data showed that concurrent

performances that were described by the generalized matching law were synthesized from selected pairs of these data.

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## #276 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 122 BC

EDC/VRB; Applied Behavior Analysis

### **Verbal Behavior Development: An Overview of Scientific-Based Strategies for Developing Listener, Speaker, Reader, and Social Functions of Language from Infancy to Independence**

Chair: Jessica Singer-Dudek (Teachers College, CU and CABAS)

Discussant: Nirvana Pistoljevic (The Fred S. Keller School)

**Abstract:** This symposium will present effective strategies for teaching language functions to preschool-aged students with and without developmental delays, as well as research-based protocols and tactics for advancing children's verbal behavior development. Papers will focus on strategies for inducing and expanding complex communication in children, inducing and improving listener and speaker repertoires as well as protocols for inducing important verbal capabilities, such as Naming and observational learning.

**Tactics and Protocols to Teach Preschool Students Who Are at the Pre-listener Level of Verbal Behavior.** ANANYA GOSWAMI (Teachers College, Columbia University), R. Douglas Greer (Columbia University Graduate School and Teachers College), Nirvana Pistoljevic (Fred S. Keller School)

**Abstract:** This paper will provide an overview of the procedures and results of successful tactics for teaching students at pre-listener levels of verbal behavior, including development of early observing responses, and induction of listener skills.

**Tactics and Protocols to Teach Students Who Are at the Listener-Speaker Level of Verbal Behavior.** CLAIRE S. CAHILL (Teachers College, Columbia University CABAS), R. Douglas Greer (Columbia University Graduate School and Teachers College), Nirvana Pistoljevic (The Fred S. Keller School)

**Abstract:** This paper will provide an overview of the procedures and results of successful tactics for teaching students at listener-speaker levels of verbal behavior, including development and induction of Naming, speaker immersion, and intensive tact procedure to increase spontaneous speech.

**Tactics and Protocols to Teach Students who are at the Early Reader/Writer Level of Verbal Behavior.** MIKA FAS (Teachers College, Columbia University), Jessica Singer-Dudek (Teachers College, CU and CABAS), R. Douglas Greer (Columbia University Graduate School and Teachers College), Nirvana Pistoljevic (The Fred S. Keller School)

**Abstract:** This paper will provide an overview of the procedures and results of successful tactics for teaching students at early reader levels of verbal behavior, including development of phonemic based instruction for preschoolers, observational learning, and Naming.

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## #277 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 121 BC

EDC/Applied Behavior Analysis

### **Four Empirical Investigations Evaluating the Efficacy of Interactive Technology in Mastery-Based College Instruction**

Chair: Daniel Reimer (University of Nevada, Reno)

Discussant: Eric J. Fox (Western Michigan University)

**Abstract:** Historically, the large size of college instructional settings has made implementation of mastery based teaching difficult. Use of behavioral techniques in large scale class rooms has become more practical with the advent of readily available technology. The four studies discussed here provide empirical support for the use of interactive technology in college classrooms. The current studies aim to utilize technologies already available at most universities and supported by the institutions. The primary goal to increase levels of student course mastery through online chapter review quizzes, homework, on-line fluency training, active responding and immediate feedback during lectures. Data collection focused on student's grades as well as the efficiency of course staff resource allocation. It is the primary goal of the researchers to provide empirically supported course materials and curriculum that have been shown to facilitate student success despite their entering repertoires and individual histories that may have previously led to poor performance.

#### **Implementing a Mastery Model through Self Quizzing in an Online Learning Environment.**

AMY E. SCRIMA (Western Michigan University), Eric J. Fox (Western Michigan University), Megan Knight (Western Michigan University)

**Abstract:** Mastery may or may not be a stated goal of instruction, but most instructors would agree it should be. Whether instructors hope for it or arrange for it is a choice they can make. To help instructors with this choice, two things must be established: how mastery can most efficiently and effectively be achieved and how such an arrangement can best be implemented. The use of technology is central to this investigation. The question is not whether technology is going to be a part of higher education instruction; it is whether sound educational methodology is going to be at the base of it. The current study is an evaluation of a format that uses a course management system, already in place at most colleges and universities, to encourage mastery of course content through frequent, online chapter review quizzes. The effectiveness of this strategy was measured using an alternating treatments design with conditions cross-balanced across two sections of an introductory psychology course at a community college. Chapter and final exam scores were examined to measure impact on learning, and social validity data was collected.

#### **Impact of Clickers on Active Responding and Academic Performance.** DANIEL REIMER (University of Nevada, Reno), Ramona Houmanfar (University of Nevada, Reno)

**Abstract:** The purpose of this study was to examine the impact of the electronic voting devices (i.e., clickers) on immediate and delayed performance of students in an introductory psychology course. The clickers were used to promote students' active responding in small-group lectures/discussion sessions during the target semester. The performance of this group was compared to the performance of a group of students from a previous semester that experienced the traditional style of instruction. We also conducted an analysis of students' performance in accordance to their participation in discussion sessions (exposure vs. lack of exposure to active responding promoted by clickers) during the target semester. The dependent variables included students' performance associated with discussion session quizzes, chapter quizzes, mid-term and final exams. In addition, we compared grade distribution across target semesters. Our findings will have implications for using clickers as an effective tool for promotion of active responding in educational settings.

**Learning Based and Outcome Oriented Approach to Course Development: A Systematic Research Program to Improve Student Performance.** THOMAS WADE BROWN (University of Nevada, Reno), Emily Michelle Leeming (University Of Nevada, Reno), Mark P. Alavosius (University of Nevada, Reno)

**Abstract:** The current studies aim to evaluate student performance in an undergraduate statistics course. Specifically, these studies utilized fluency modules and on-line pretests to evaluate the potential effects on performance in course exams. In one study, two courses received fluency modules in which one course's materials were color coded, and the second group received the same materials in black and white. In the second study, a group received online pre-tests and was evaluated against a standard control group in order to assess the effects of guided study materials on course exams. These studies serves as a continuation in a series of course evaluations whose results discovered that student success may not be contingent upon mastery of prerequisite skills, but instead on efficient and correct study behavior. By utilizing course programming to institute homework, in the forms of fluency training and pre-tests, as well as utilizing basic behavioral principles it is the goal of the researchers to improve student's grades when compared to historical data, and simultaneously improve the efficiency of the course system.

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### #278 Paper Session

5/24/2009

3:00 p.m. - 4:20 p.m.

North 121 A

EDC

### Identification and Intervention with Students At Risk

Chair: Kathleen L. Lane (Vanderbilt University)

**A Comparison of Systematic Screening Tools for Emotional and Behavioral Disorders.** (Applied Behavior Analysis) KATHLEEN L. LANE (Vanderbilt University), M. Annette Little (Belmont University)

**Abstract:** Early identification of students who might develop emotional and behavioral disorders (EBD) is essential in preventing multiple negative outcomes for this population. Fortunately, systematic screening tools are available for identifying elementary-age students with EBD, two of which include the Systematic Screening for Behavior Disorders (SSBD; Walker & Severson, 1992) and the Student Risk Screening Scale (SRSS; Drummond, 1994). The SSBD is recognized as the gold standard for systematic screening for EBD; whereas, the brevity of the SRSS is often favored with respect to resource allocation. In this paper we evaluated the concurrent validity of the SRSS to predict results from the SSBD when used to detect school children with externalizing or internalizing behavior concerns. When comparing students scoring in the low versus high risk categories, the SRSS had excellent accuracy for predicting both externalizing (95%) and internalizing (93%) problems on the SSBD. While sensitivity (94%) and specificity (95%) were both excellent for externalizing behavior, for internalizing behavior, sensitivity was lower (44%), while specificity was excellent (95%). Analysis of receiver operating characteristics curves suggest that suggests that the SRSS is more accurate for detecting externalizing (AUC = .952) than internalizing behaviors (AUC = .802). We present recommendations for implementing systematic screening.

**An Intervention-Based Approach to the Identification and Treatment of Adolescents At-risk for Emotional/Behavioral Disorders.** (Applied Behavior Analysis) RAMON B. BARRERAS (Azusa Pacific University)

**Abstract:** Empirical evidence indicates that schools under-serve adolescents with emotional/behavioral disorders (EBD). Specifically, over 20% of the school-age population demonstrates deficits that would qualify them for a psychiatric diagnosis, but only 1% receive special education services. There is an urgent need for schools to identify and intervene adolescents as early as possible. In the present study, a middle school was universally screened, and at-risk adolescents were identified via indirect and direct behavioral

assessments. Social skills training (SST) programs were specially designed to match the adolescents' social deficits. Direct observations of positive and negative social interactions, and disruptive behaviors served as dependent variables. A multiple-baseline across two groups was utilized to determine a functional relationship between the implementation of each SST program on student outcomes. Effect size estimates suggests that using SST programs matched to student's social skills deficits lead to higher rates of positive social interactions, and reductions in negative social interactions and disruptive behavior. Gains were maintained at four-month follow-up. The presentation will help behavior analysts, (1) conduct effectiveness research within applied school settings, (2) utilize existing behavioral technology in the identification of adolescents at-risk for EBD, and (3) consult with schools in need of service delivery design and support.

**A Behavioral Approach to School Dropout Prevention (Theory)** JOHN M. MCKEE (Institute for Social & Educational Research)

**Abstract:** While current educational theories attempt to explain school dropout by personality factors such as the lack of parental support and general notions about student motivation, a behavioral approach will be presented on the causes of dropout and its prevention.

This approach first calls for the development of a system that accurately identifies the potential dropout and then analyzes and measures 12 contributory factors, such as academic achievement, economic status, attendance, legal problems, and academic failure, found to be most highly predictive of dropout. The presentation will conclude with proposals to mitigate school failure and thus contribute significantly to dropout prevention.

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## #279 Symposium

5/24/2009

3:00 p.m. - 4:20 p.m.

North 132 A

TPC/EAB;Theory

### **Stimulus and Response Substitution in Interbehavioral Perspective**

Chair: Linda J. Hayes (University of Nevada, Reno)

**Abstract:** The principles of stimulus and response substitution, as articulated by J. R. Kantor, are identified and exemplified in the context of investigations of perceptual behavior and remembering. It is argued that these principles are foundational for the science of behavior.

**Stimulus and Response Substitution.** LINDA J. HAYES (University of Nevada, Reno)

**Abstract:** Kantor distinguishes the functional properties of stimuli and responses from their object and organizational properties, respectively. These distinctions permit more coherent descriptions of complex human interactions such as perceiving, imagining, dreaming, and remembering than have been proposed under the auspices of Radical Behaviorism. The value of these distinctions for the investigation of complex human behavior is addressed.

**Substitution of Perceptual Functions.** MARIA ISABEL MUNOZ BLANCO (University of Nevada), Erick M. Dubuque (University of Nevada, Reno), Michael C. Clayton (Youngstown State University), Linda J. Hayes (University of Nevada, Reno)

**Abstract:** The present study examines the process of stimulus substitution directly. Previous research has demonstrated substitution, but only indirectly in the context of other processes. This study proposes that the relationship among homophone words may be transferred to other stimuli. In order to demonstrate this, 100 participants were exposed to a series of observational learning trials. By using a respondent-type training procedure, a letter was paired with a word. After this training the participants were exposed to a series of simple math problems in which they were required to replace the unknown symbol in the

equation with a number from 1 to 9. The results were analyzed in terms of the concordance between the number substituted for the unknown and the corresponding homophone word that had previously been trained.

**An Investigation of Factors Influencing Remembering Interactions.** MITCH FRYLING  
(University of Nevada, Reno), Linda J. Hayes (University of Nevada, Reno)

**Abstract:** Memory research in behavior science has almost exclusively focused on memorizing interactions. This paper builds upon the memory literature by investigating factors that influence remembering conceptualized as completing an act in the future. Experimental data evaluating factors that influence the development and operation of substitute stimuli within the context of an interbehavioral field perspective are reviewed. Implications for understanding complex remembering interactions are provided.

**An Interpretation of Operant Processes in Terms of Substitution of Functions.** DIANA M. DELGADO (University of Nevada, Reno), Linda J. Hayes (University of Nevada, Reno)

**Abstract:** Traditionally, respondent and operant conditioning have been understood as different types of learning processes that account for different types of behaviors. While substitutive operations have been considered characteristic of S-S associations, reinforcement has been considered to be the main principle in operant conditioning. Current research on the study of complex human behavior using respondent procedures indicates that behaviors which have been categorized as operant may be acquired without the use of reinforcers. We challenge the operant-respondent dichotomy and propose that substitution of functions is the fundamental process that accounts for psychological events. In this context, reinforcement is best understood as a procedure and not as a distinct type of conditioning.

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## #280 Paper Session

5/24/2009  
3:00 p.m. - 4:20 p.m.  
North 131 BC  
TPC

**Theory of Mind, Preference, Behavior Function, and Consent: Issues in Assessment**  
Chair: William F. Potter (California State University, Stanislaus)

**Behavior Analytic Interpretations of Theory of Mind.** (Theory) Andrea Duroy (Stanislaus County Office of Education), WILLIAM F. POTTER (California State University, Stanislaus)

**Abstract:** Theory of Mind (ToM) has been proposed as a deficit for children diagnosed with Autism. A variety of methods have been designed to assess whether or not a child (or adult) demonstrates ToM. Most of this research and assessment has been done from a cognitive point of view, with few behavioral researchers interpreting the phenomenon from a behavior analytic perspective. In this presentation we will examine the various assessments used to determine if ToM is present and provide a behavioral interpretation in terms of skills needed, as well as the behavioral processes that are likely underlying this phenomenon. Particular emphasis will be placed on the skills and stimulus control involved in the successful completion of the ToM tasks.

**Preference in Applied Behavior Analysis: Are We Being Mentalistic?** (Theory) TAMARA L. PAWICH (Eastern Michigan University), James T. Todd (Eastern Michigan University)

**Abstract:** It has become common practice to conduct preference assessments prior to implementing skill acquisition programs and certain response suppression contingencies (e.g., DRO) in applied settings. Yet, contextual factors are often disregarded. These stimulus preference assessments often employ paired-comparison or duration of engagement tests conducted prior to the intervention, usually using procedures that are quite different than those that the stimuli will be embedded in. Assumptions are

made that if a child “likes” a certain stimulus in one setting, preference will generalize to unrelated settings or the same setting later after other things have occurred. Despite numerous basic studies demonstrating the contextual variables that influence reinforcer effectiveness, these studies are often ignored or neglected in applied behavior analysis literature. This presentation will focus on the differences between “preference” as it is expressed in basic research and “preference” as it is expressed in applied literature. Recommendations will be made for a more consistent terminology and usage in applied research.

**Behavior Function Scale: Re-conceptualization of Behavior Functions.** (Theory) JOHN R. LUBBERS (CIBA, INC.), Lyre Caruz (California Institute of Behavior Analysis, Inc.), Avazeh Chehrazi (California Institute of Behavior Analysis, Inc.), Rania Wood (California Institute of Behavior Analysis, Inc.), Victor De Leon (California Institute of Behavior Analysis, Inc.)

**Abstract:** The purpose of the present study is to develop a psychometrically sound functional assessment scale that can be utilized for neuro-typical children and children with developmental delays. In an earlier study, an exploratory analysis of the Behavior Function Scale (BFS) was conducted to determine the factor structure and factor loadings. Three points were noted from previous analyses of the BFS: (1) behavior functions were interrelated to each other, (2) a dichotomous response format was necessary to avoid centering the data, and (3) an age stratification approach was best suited when assessing behavior functions of children. The current study addresses these points and focuses on challenging behaviors (i.e., aggression, tantrums and self-stimulatory behaviors) of children between the ages of 1.5 years to 6 years. Parents of neuro-typical children and children with autism completed three questionnaires (BFS, Questions about Behavioral Functions-QABF, and Motivation Assessment Scale-MAS). Additionally, program supervisors and instructional aides completed the same questionnaires for children with autism. The psychometric properties of the modified version of the BFS will be discussed in further detail.

**Assessment of the Capacity to Consent for Decisionally Impaired Subjects in Behavior Analytic Research.** (Theory) MARY E. BOYLE (SUNY - New Paltz)

**Abstract:** Critical research in behavior analysis often concerns patients who are minors, adults with temporary shifts in decision making ability due to shock or stress, or patients with fluctuating or diminished capacity to consent. In order to develop informed consent or assent of subjects, investigators need to develop procedures for assessing the subject's capacity to consent and for presenting complex information in a simplified way.

Procedures for assessing capacity to consent will vary according to the nature of the subject's impairment, temporal aspects of the impairment, needs of the subject, risks in the research, benefits to the subject, and availability of the subject's legally authorized representatives. The assessment may be carried out by the investigator or a third party capable of making an objective decision dependent upon the risk/benefit ratios inherent in the study. The procedure may be ongoing to assure continued consent/assent. Assessment also assures that merely because subjects are diagnosed with neurologic or psychiatric disabilities, they are not presumed to be decisionally impaired.

The procedures are based upon an analysis of the subjects' abilities to differentiate the role of behavior analyst as therapist and researcher, as well as the risks and benefits to the individual. Additional safeguards may be required.

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## #281 Panel Discussion

5/24/2009  
3:30 p.m. - 4:20 p.m.  
North 122 A  
EDC/Service Delivery

### Professional Development Series: Giving Effective Professional Presentations

Chair: Calvin J. Gage (Western Michigan University)

RICHARD W. MALOTT (Western Michigan University)  
TIMOTHY D. LUDWIG (Appalachian State University)  
C. BAKER WRIGHT (Behavior Management Consultants, Inc.)  
REBECCA A MARKOVITS (Western Michigan University)

**Abstract:** Panelists will provide advice on giving effective professional presentations including what to avoid and personal tips. The audience will be invited to ask questions and hold discussions with the panel members.

## #282 B. F. Skinner Lecture Series

5/24/2009  
3:30 p.m. - 4:20 p.m.  
West 301 AB  
TBA

### Applications of Behavior Analysis in Urban Education

Chair: Denise E. Ross (Chicago School of Professional Psychology)

**Applications of Behavior Analysis in Urban Education** (Applied Behavior Analysis) BETINA JEAN-LOUIS (Harlem Children's Zone, Inc.)

As Director of Evaluation, **Dr. Betina Jean-Louis** has spearheaded the Harlem Children's Zone's evaluation efforts since March 2002. Prior to starting her position as an internal evaluator at HCZ, Dr. Jean-Louis worked as an independent evaluation consultant with a variety of organizations, including Safe Horizon, The New York City Department of Education, Sports and Arts in the Schools, Children's Television Workshop, and Homes for the Homeless. She also worked for three years at Metis Associates, a consulting company with a focus in educational evaluation. Dr. Jean-Louis earned a bachelor's degree at Columbia College and a Ph.D. in developmental psychology at Yale University. While at Yale, Dr. Jean-Louis was a Zigler Center Fellow, received several University Fellowships, obtained a John F. Enders Research Grant, was awarded a Franklin S. Cooper Fellowship Award, and earned an American Psychological Association Dissertation Research Award. Dr. Jean-Louis served on the advisory board for the national expansion of Safe Horizon's Project Safe Harbor, a youth violence prevention and reduction program. She is currently a Board Member of Dwa Fanm ("the Rights of Women"), an organization that is dedicated to improving the lives of women and girls in Haiti and in the United States.

**Abstract:** The Harlem Children's Zone is an innovative and unique community service program that has served the educational and social needs of children and families in New York City's Harlem since 1970. As Director of Evaluation, Dr. Betina Jean-Louis has spearheaded the Harlem Children's Zone's evaluation efforts since March 2002. In this capacity, she assesses the implementation and impact of a variety of programs, including: 1) The Harlem Children's Zone Project, Geoffrey Canada's innovative approach to improving the lives of thousands of children living in Harlem, 2) Beacon Schools, 3) Preventive (family preservation) programs, and 4) Charter Schools. In this lecture, Dr. Jean-Louis will describe the programs of Harlem Children's Zone and the behavioral philosophy that guided the organization's development. Specifically, Dr. Jean-Louis will discuss the role that principles of behavior have had in the development of the organization's programs along with applications of its principles to educational and social issues in urban communities.

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## #283 Symposium

5/24/2009

3:30 p.m. - 4:50 p.m.

North 226 C

BPH/CBM; Applied Behavior Analysis

### **Developing behavior analytic interventions for medical application: Examples and lessons from the treatment of drug addiction.**

Chair: Anthony L. DeFulio (Johns Hopkins University School of Medicine)

**Abstract:** Contingency management interventions for the treatment of drug addiction are based on the principles of operant psychology and are part of the practice of applied behavior analysis. However, much of the work in contingency management has been conducted in departments of psychiatry, behavioral medicine, and in general medical settings rather than in traditional settings such as psychology departments on university campuses. Even when working in traditional settings, investigators working to develop contingency management interventions for the treatment of drug addiction have necessarily concerned themselves with the medical community, often in the interest of widespread dissemination of their interventions and in pursuit of federal funding from agencies such as the National Institutes of Health, including the National Institute on Drug Abuse. This symposium offers examples and lessons learned from working in these novel settings that may be adopted by any behavior analysts who wish to advocate for the adoption of behavior analytic interventions in medical settings.

### **By Any Means Necessary: Substance Abuse Interventions as a Case study in Radicalizing Behaviorism.** ANTHONY L. DEFULIO (Johns Hopkins University School of Medicine)

**Abstract:** Contingency management interventions for the treatment of substance abuse are firmly rooted in the principles of operant psychology. From its inception, operant psychology has been guided by the philosophy of radical behaviorism espoused by B. F. Skinner, but it is equally true that the philosophy was constructed on the basis of the substantive aspects of operant psychology. This latter point was identified by E. F. Malagodi in a call-to-arms published in *The Behavior Analyst* in 1986 that described the unfulfilled promise of behavior analysis as a source of solutions for social problems, and offered strategies for rectifying the situation by “radicalizing behaviorism.” While Malagodi’s sage advice has gone largely unheeded, contingency management interventions for substance abuse stand as a particularly lucid example of the successful radicalization of our behaviorism. This presentation reviews Malagodi’s suggestions and describes how behavioral scientists working in the area of substance abuse have unknowingly adjusted their own practices to accord with those advocated by Malagodi. When viewed as a case study in radicalizing behaviorism, the lessons learned in the development of contingency management interventions for substance abuse are potentially applicable to any social problems addressed by behavior analysts.

### **Using Contingent Incentives to Reduce Smoking in People with Schizophrenia: From Laboratory to Treatment Interventions.** JENNIFER TIDEY (Center for Alcohol & Addiction Studies, Brown University)

**Abstract:** There is an unusually high rate of cigarette smoking among people with schizophrenia (= 70%). Furthermore, these smokers have very low smoking cessation rates, even when they are motivated to quit and enroll in supportive smoking treatment programs. These smokers are likely to require a combination of pharmacological and behavioral treatments to produce significant changes in their smoking behavior. Contingency management interventions have been effective at reducing cigarette smoking in short-term laboratory-based studies, but few such interventions have been translated into treatment interventions for smoking. In a series of studies, we have examined the effects of alternative monetary reinforcement on smoking behavior in smokers with schizophrenia under laboratory and real-world conditions. Results from these studies indicate that (1) smoking by people with schizophrenia is orderly behavior that responds systematically to changes in environmental variables; (2) smoking by

people with schizophrenia is reduced when access to an alternative reinforcer is contingent upon smoking abstinence; (3) combining a medication (bupropion) with abstinence-contingent reinforcement appears to be a feasible and effective method of reducing smoking in people with schizophrenia. Future directions and challenges of this research will also be addressed.

**Using the Internet to Overcome Barriers to Contingency Management: Applications and Extensions.** BETHANY R. RAIFF (University of Florida), Jesse Dallery (University of Florida)

**Abstract:** Contingency management interventions are highly effective at increasing drug abstinence and are becoming increasingly popular; however, in some cases it is impractical to employ such interventions because frequent monitoring is necessary to ensure treatment integrity. For example, smoking abstinence is often verified by breath carbon monoxide, but because of the short half-life of carbon monoxide it is necessary to collect at least two carbon monoxide samples per day. We recently developed an internet and web-camera based contingency management intervention to overcome the barriers to applying the treatment with this population (e.g., accessibility, fidelity, acceptability, and efficacy). The system has been effective at increasing smoking abstinence and participants report that the intervention is easy to use and convenient. Importantly, this internet-based system can be applied to any behavior that can be observed directly or that results in a visible outcome measure (e.g., breathalyzer testing with alcoholics, medication adherence, etc). As an example, details regarding how internet-based contingency management can be extended to diabetics who do not adhere with self-monitoring of blood glucose testing will be discussed.

**Delay Discounting by Adolescents Experimenting with Cigarette Smoking.** BRADY A. REYNOLDS (Department of Pediatrics, The Ohio State University)

**Abstract:** Delay discounting is an index of impulsive choice, and research has shown that adolescent daily smokers discount more by delay than adolescent nonsmokers (Reynolds et al., 2007). However, it is not known if the more extreme delay discounting seen in smokers predates their regular use of nicotine; or, alternatively, if high levels of nicotine use increase delay discounting. The current cross-sectional group-design study compared delay discounting in three demographically matched samples of adolescents: daily smokers (n = 50), never smokers (n = 50), and experimenters (n = 41; reporting initial experimentation with smoking within three months of participation). Daily smokers had significantly higher cotinine levels (metabolite of nicotine) than nonsmokers and experimenters, but the latter two groups did not differ in cotinine level. The daily smokers and experimenters both discounted more by delay than the never smokers [ $p = .001$  and  $p = .047$ , respectively]; however, the daily smokers and experimenters did not differ [ $p = .153$ ]. These findings indicate that adolescents who are experimenting with cigarettes are similar to daily smokers with respect to delay discounting; suggesting delay discounting may be a behavioral risk factor for the initiation of smoking that predates any significant use of nicotine.

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**#284 Panel Discussion**

5/24/2009

3:30 p.m. - 4:50 p.m.

North 222 C

CBM/Applied Behavior Analysis

**Professional Development Series: APA-Accredited Predoctoral Internship Programs in Behavior Analysis**

Chair: Jennifer Delaney Kowalkowski (Eastern Michigan University)

AMY DRAYTON (Eastern Michigan University)

REBECCA K. ARVANS (Munroe-Meyer Institute)

BRETT V MEHRTENS (Munroe Meyer Institute)

JENNIFER L. CROCKETT (Kennedy Krieger Institute)

**Abstract:** During this event, panelists will discuss how to apply and what their experiences were while in attendance in an APA-accredited internship program in behavior analysis.

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## #285 Symposium

5/24/2009

3:30 p.m. - 4:50 p.m.

North 132 BC

DEV/EAB; Experimental Analysis

### **New Evidence on Emergence of Naming, Reinforcement for Tacts, Autoclitic Frames, Capacity for Sameness**

Chair: R. Douglas Greer (Columbia University Graduate School and Teachers College)

**Abstract:** We present findings from three sets of experimental analyses on emergent verbal developmental cusps or foundation cusps for verbal development. Two experiments will be presented on the effects of monitoring training on the emergence of observational learning and Naming with middle school students lacking one or both of these capabilities. The next paper describes two experiments on the emergence of novel usage of autoclitic frames as a function of multiple exemplar training. The third presentation concerns experimental analyses of the effects of the intensive tact protocol on the emergence of conditioned generalized reinforcement for tacts. The final paper presents experiments on the effects of the emergence of the capacity of sameness on accelerated learning. These findings add to the evidence on the identification and induction of verbal developmental cusps and verbal developmental cusps that constitute new learning capabilities. The findings have relevance to the basic science of verbal behavior and applied interventions to advance verbal development.

#### **Effects of a Monitoring Protocol on Observational Learning and the Emergence of Naming.**

DARCY M. WALSH (Teachers College Columbia University), R. Douglas Greer (Columbia University Graduate School and Teachers College)

**Abstract:** Two Experiments were conducted with middle school students from disenfranchised families with poor academics. In Experiment 1, a counterbalanced multiple probe design across 6 participants was used to test the effects of the 3 stages of the Observational System of Instruction (peer tutoring, yoked-contingency, peer monitoring) on Naming, Observational Learning, and social verbal interactions. In Experiment 2, a multiple probe design across participants was used to test the effects of the 3 stages of the Observational System of Instruction on Naming and Observational Learning in Lecture form. The results showed that the Naming and Observational Learning repertoire emerged as a function of the 3 stages of OSI and appropriate verbal interactions among peers increased. These data suggest that middle school students with academic delays may be missing either Naming or observational learning and that a monitoring intervention for resulted in wither the emergence of Naming or observational learning or both.

#### **The Effects of Multiple Exemplar Instruction on the Acquisition and Subsequent Abstraction of Autoclitic Frames.**

NICOLE LUKE (Columbia University Teachers College), R. Douglas Greer (Columbia University Graduate School and Teachers College)

**Abstract:** This study tested the effects of the use of multiple exemplar instruction on 8-typically developing preschoolers ability to use autoclitic frames for spatial relations (on, under, beside, above, below) using novel tacts and novel stimuli. Pre-intervention unsequenced probes (20-trial probes) showed participants were missing novel usage of autoclitic frames of specificity. They demonstrated age appropriate verbal developmental cusps and capabilities but were missing novel usage of autoclitic frames of specificity. Subsequently, the participants received multiple exemplar training sets with known tacts until mastery. Post interventions probes tested for the participants' use of autoclitic frames and found that teaching training sets of tacts using the frames of specificity with multiple exemplar instruction occasioned the use of frames in novel functions and with novel stimuli. The results demonstrated the effectiveness of the multiple exemplar instructional protocol suggesting that such experiences result in the emergence of autoclitic frames. The evidence advances our understanding of the verbal

developmental theory further extending contemporary treatments of Skinner's verbal theory as it pertains to the development of verbal behavior in typically developing children.

**The Effect of Adult Approvals As Conditioned Reinforcers Through The Implementation of The Intensive Tact Procedure.** JEANINE SCHMELZKOPF (Box 76 Teachers College Columbia University), R. Douglas Greer (Columbia University Graduate School and Teachers College)

**Abstract:** I report two experiments on adult approvals as conditioned reinforcers as a result of the implementation of the intensive tact procedure. In the first experiment, procedures used in previous studies were used to determine if adult approvals function as conditioned generalized reinforcers for three pre-school aged students for a performance and three learning tasks both prior to and following the implementation of the intensive tact procedure. That is, pre and post intervention functional analyses of approval as reinforcement for learning and performance were conducted. The intensive tact procedure was consistent with the procedures used in prior studies and consisted of 100 tact learn units were presented to each of the participants daily in addition to their baseline numbers of instructional presentations. Following the mastery of five sets of tact learn units, the participants were again presented the performance and three learning tasks to determine if the intensive tact procedure was effective in conditioning adult approvals as reinforcers. The data demonstrated that intensive tact intervention resulted in acquisition of conditioned reinforcement for learning and performance

**Effects of Acquisition of Crossmodal Abstraction on Rate of Learning and Generalized Imitation.** SHIRA A. ACKERMAN (Columbia University Teachers College), R. Douglas Greer (Columbia University Graduate School and Teachers College)

**Abstract:** We tested the effects of inducing the verbal developmental cusp for cross modal abstraction for sameness across the senses on the rate of learning curriculum goals with 6 preschool aged children diagnosed with autism. Pre and post probes were conducted to test for the emergence of developmental capabilities and cusps including generalized body movement imitations, generalized object use imitation, and early speaker operants. All 6 participants were taught to match to sample across all 5 senses and acquired cross modal abstraction with novel stimuli. Prior to the implementation of the capacity for sameness procedure, all 6 students were presented with learn unit instruction across visual match to sample and pointing as a listener response. The participants were matched based on the number of learn units to criteria, the number of learn unit presentations required to achieve objectives, across learn unit instruction during baseline. Following the acquisition of cross modal abstraction, learn unit instruction for the same curriculum areas were represented to test for learning rate. The data showed that the rate of acquisition for curriculum goals increased as well as the assessed developmental capabilities and cusps for generalized body movement imitation and generalized object usage imitations for all 6 participants.

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## #286 Symposium

5/24/2009

3:30 p.m. - 4:50 p.m.

North 127

VRB/TPC; Experimental Analysis

### **Empirical and Conceptual Issues in Normally Developing Children's Learning of Verbal Behaviour: Tact and Intraverbal**

Chair: J. Carl Hughes (Bangor University)

Discussant: Greg Stikeleather (Palo Alto, California)

**Abstract:** In his book *Verbal Behavior*, Skinner (1957) described several different types of verbal operants. This symposium focuses on two: the tact and the intraverbal. Adema presents two studies with normally developing children involving tact training (e.g., exemplars of fish and fruits) and emergent listener behavior. The novel procedure for tact training in these studies is compared in effectiveness with a procedure in earlier tact training studies. Following this, Adema presents two studies involving training of intraverbal relations between lower-level category names and higher-level category names (e.g., "fish-animal") and emergent

higher-level listener behavior. Catania discusses how, via intraverbal behavior, verbal entities can be created that do not correspond to entities in our nonverbal environments. He explores examples of entities that were originally verbal and later became related to environmental events in the history of science. These verbal entities can create difficulties for the psychological sciences, and he discusses the implications for behavior analysis in particular.

**Tact Training and Emergent Listener Behavior.** MARLEEN T. ADEMA (Bangor University), J. Carl Hughes (Bangor University), Pauline Horne (Bangor University)

**Abstract:** The naming account of Horne and Lowe (1996) predicts that during tact training for novel stimuli children learn the corresponding listener behavior without this being explicitly taught. Two studies tested this with normally developing 3- to 4.5-year-old children. In the first study, the children were trained to tact (see alien-say name) eight different, newly designed, “alien” animals randomly allocated to four two-member common name categories (hib, feb, tor, and lup). The stimuli were presented four at a time, one from each category. There was also a training phase with mixed sets. After tact training, all 11 children who were tested showed the corresponding untrained listener behavior (hear /name/-select alien). The second study replicated the first, but included pre-training with familiar stimuli. Alien tact training now required fewer trials. All 12 children who were tested passed the listener behavior test. When compared with tact training involving pairwise presentation of stimuli (Lowe, Horne, Harris & Randle, 2002; Lowe, Horne, & Hughes, 2005), these studies show that presenting four stimuli at a time, and adding a phase with mixed sets, significantly reduces the number of trials needed to establish that the child can discriminate each stimulus from all others in the set.

**Intraverbal Training and Emergent Listener Behavior.** MARLEEN T. ADEMA (Bangor University), J. Carl Hughes (Bangor University), Pauline Horne (Bangor University)

**Abstract:** Skinner (1957) points out that intraverbals play an important role in the development of a verbal repertoire. The purpose of these studies was to see if higher-level category relations can be brought about by children learning intraverbal relations between lower-level category names (e.g., fish, fruit) and higher-level category names (e.g., animal, food). Normally developing 3- to 4.5-year-old children who had already learned to tact eight “alien” animals belonging to four two-member common name categories, took part in this follow-up study. This study linked the lower-level names (hib, feb, tor, and lup) to potential higher-level names (zaag and noom) in an echoic and intraverbal game. When tested, 5 out of 8 children showed correct listener behavior at the higher name level in Leg 1 of the study, and 3 out of 5 in Leg 2. A further study replicated this, but employed echoic and intraverbal pre-training with names of familiar stimuli before the alien word games. All 8 children who were tested showed correct listener behavior at the higher name level in Leg 1, while 3 out of 7 passed for Leg 2. The findings show that intraverbal naming may be one way to establish higher-level categorization.

**Are Meanings Hobbits?: The Reality of Verbal Entities.** A. CHARLES CATANIA (UMBC)

**Abstract:** Tacts are anchored in nonverbal environments, but intraverbals are anchored to verbal behavior itself. To the extent that units created as tacts can enter into intraverbal relations, verbal entities can be created that do not correspond to entities in our nonverbal environments. The different groundings are usually obvious in our distinctions between fiction and truth, but when created verbal entities enter into our science we must be alert to similar distinctions. The history of science has many examples of entities that began as verbal ones and later became more tightly related to environmental events (e.g., neutrons, synapses). Verbal entities can be useful, but in the behavioral and psychological sciences they have often created difficulties. We will explore the creation of verbal entities, their antecedents and consequences, and their bearing on behavior analysis and its applications.

5/24/2009  
4:00 p.m. - 4:50 p.m.  
West 301 CD  
CSE; Theory

**The Courage to Actively Care for People and their Environment: How Behavior Analysis Can Do More to Save the World**

Chair: Michael Weinberg (Orlando Behavior Health Services, LLC)

E. SCOTT GELLER (Virginia Tech)



**Dr. E. Scott Geller**, Alumni Distinguished Professor and Director of the Center for Applied Behavior Systems at Virginia Tech (VT) has authored 31 books, 43 book chapters, 38 training manuals, 203 magazine articles, and over 350 research articles addressing the development and evaluation of behavior-change interventions to improve quality of life. His extramural grant funding, totaling more than \$6 million, has involved the application of behavioral science to benefit corporations, institutions, government agencies, or communities in general. He is a Fellow of the American Psychological Association, the Association for Psychological Science, and the World Academy of Productivity and

Quality Sciences. He is past Editor of the Journal of Applied Behavior Analysis (1989-1992), current Associate Editor of Environment and Behavior (since 1982), and current Consulting Editor for Behavior and Social Issues, the Behavior Analyst Digest, the Journal of Organizational Behavior Management, and the Journal of Safety Research. In 1982, Scott Geller received a teaching award from the American Psychological Association, and since then won every university teaching award offered at VT. In 2001, VT awarded him the University Alumni Award for Excellence in Research. In 2002, VT honored him with the Alumni Outreach Award for exemplary real-world applications of behavioral science; and in 2003, he was awarded the University Alumni Award for Graduate Student Advising. In 2005, Dr. Geller was awarded the Virginia Outstanding Faculty Award by the State Council of Higher Education. And last May 2007, he received the Lifetime Achievement Award from the International Organizational Behavior Management Network.

**Abstract:** In the 1960's, researchers and teachers of applied behavior analysis (ABA) were optimistic they had a practical technology for dramatically improving quality of life wherever and whenever behavior is relevant. "Saving the World with ABA" was a common theme at the Midwestern Association of Behavior Analysis, now ABAL. Successful applications of ABA were evidenced in schools, hospitals, prisons, businesses and throughout entire communities. What happened?

While ABA researchers continue to demonstrate beneficial impact on behavior in select settings, our science and technology has fallen far short of its world-saving potential. The number of behavior analysts who teach and research the large-scale and life-improving applications of ABA has seemingly decreased markedly. This presentation will inspire a reconsideration of how ABA can save the world, and suggest strategies for applying our science and technology on a larger scale in diverse domains.

After specifying basic principles of ABA, the presenter will show their direct relevance to various societal problems and situations. Then, specific ways to increase community-wide acceptability and appreciation of ABA will be considered. Finally, the presenter will discuss the relevance of courage and compassion in realizing the potential of ABA to save the world. The need for more "actively caring" will be addressed, as well as how applications of behavior analysis can increase actively caring throughout families, organizations, communities, and beyond. This is the theme of the presenter's latest book, coauthored by Bob Veazie and entitled The Courage Factor: Leading People-Based Culture Change. Copies of this storybook will be available at ABAL.

## #288 Special Event

5/24/2009  
4:00 p.m. - 5:20 p.m.  
North 120 D  
AUT

### **Legal Reform and Autism: How to Shape Public Policy**

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

LORRI UNUMB (Senior Policy Advisor and Counsel, Autism Speaks)

**Abstract:** It is clear that Autism Speaks and ABAI have much in common in working together to ensure that all children diagnosed with autism are provided appropriate services and that the insurance mandate bills, both at the state and federal levels, are passed. She will provide a clear picture of the state of the situation, as well as advocacy efforts that we behavior analysts can engage in to help this effort.

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## #289 Symposium

5/24/2009  
4:00 p.m. - 5:20 p.m.  
North 124 B  
AUT/Applied Behavior Analysis

### **The Changing Role of Social Skills Groups for Learners with Autism from Childhood to College**

Chair and Discussant: Daniel Adam Openden (Southwest Autism Research & Resource Center (SARRC))

**Abstract:** In the past decade the success of social skills groups for learners with autism has resulted in an increasing popularity with parents, educators, and researchers alike. While early research described groups primarily with younger children, their popularity has promoted the development of groups of varying ages. The question remains, however, "How do these groups change as children get older?" This symposium will address the developmental trajectory of social skills groups for learners with autism from childhood to college. Specifically, these three presentations will demonstrate how groups differ with respect to structure, goals, and content. In the first presentation, Mr. Vernon will describe his multiple baseline design study showing how the introduction of personally motivating extracurricular group activities resulted in increased social engagement and initiations with peers. Next, Mr. Dotson will describe the design of and procedures used in his recent groups with adolescents focusing on strategies for generalization and maintenance of social engagement. Dr. Jones will follow describing his groups with college students concentrating on assessment, curriculum, and group structure. Taken together, this symposium forms a compelling demonstration of the initial steps in developing a scope and sequence of the changing role of social skills groups for learners with autism.

**Using Social Clubs to Increase Engagement between Children with Asperger's/HFA and their Typical Peers.** Lynn Kern Koegel (University of California, Santa Barbara), TY VERNON (University of California, Santa Barbara), Robert L. Koegel (University of California, Santa Barbara), Brittany Koegel (University of California Santa Barbara), Annie Paullen (University of California Santa Barbara)

**Abstract:** Children with Asperger's Syndrome and High-Functioning Autism tend to exhibit relatively high levels of communicative and cognitive competence, but continue to show evidence of difficulties with the motivation and/or skills to socialize. As a consequence, these populations often avoid social encounters with peers that serve as important learning opportunities to build social competence. The purpose of this study was to assess if developing a lunch-time social club built around the preferred interests of the participants would improve socialization between children with Asperger's/HFA and their typically developing peers. Participants were three children with ASD who consistently spent their free-periods in isolation and made no attempt to engage with peers. Using a multiple baseline design, this study demonstrated that the introduction of a motivating extracurricular activity that incorporated

mutually reinforcing activities was effective in increasing dependent measures related to the target children's social engagement and initiations towards peers. The theoretical and applied implications are discussed as they relate to social motivation and development.

**Designing a Social Skills Group for Adolescents on the Autism Spectrum: Promoting Generalization and Engagement.** WESLEY H DOTSON (University of Kansas), Justin B. Leaf (University of Kansas), Jaime Kohlmeyer (University of Kansas), Kaitlyn Bilovesky (University of Kansas), Jan B. Sheldon (University of Kansas), James A. Sherman (University of Kansas)

**Abstract:** Adolescents with autism often struggle to develop positive social relationships with peers. One approach to helping adolescents build such relationships involves directly teaching social skills relevant to getting along with and engaging in common activities with peers. Prior research suggests that while direct instruction in social skills can result in learning, there often is limited generalization of skills taught from the teaching environment to more naturalistic situations. This presentation will describe the design of and procedures used within a social skills group for higher-functioning adolescents with autism to increase the likelihood of generalization of the social skills taught and to maintain participant motivation to remain in the group. Some examples of procedures and design elements to be described include: teaching skills in group contexts, using role plays as teaching tools, offering naturalistic opportunities to socialize with peers, providing choices about activities and reinforcers, and building knowledge of age and peer-appropriate activities and interests. Data from previous and current groups will be presented.

**The College Social Skills Club: Why "Fitting In" has Never Been So Important.** CHRISTOPHER JONES (University of Puget Sound), Melanie Arthur (University of Puget Sound), Ivey West (University of Puget Sound)

**Abstract:** Social skill deficits are often described as the key to understanding the true nature of autism. As research has progressed in this area, educators are becoming more skilled at teaching to these deficits. Unfortunately, one area that has seen little attention from educators and researchers is the social issues of college students with autism. Up until recently this population of students was relatively unheard of. However, with early childhood ABA interventions now reliably being used with children with autism for more than 20 years, we are seeing a greater increase of students with autism attending colleges and universities. This presentation will look at the changing role of social skills groups for four college students with Asperger's syndrome or high functioning autism. The social issues facing these students are qualitatively different from those of children in the public education system. Consequently, the role of assessment procedures, curriculum development, and group time structure will be described. Preliminary assessment and outcome data will be presented though the focus will remain descriptive in nature.

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## #290 Symposium

5/24/2009

4:00 p.m. - 5:20 p.m.

North 120 BC

AUT/EDC; Applied Behavior Analysis

### **Best Practice and Social Validity Issues in Providing Services to Children with Autism**

Chair: Cammarie Johnson (The New England Center for Children)

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

**Abstract:** Identifying best practice intervention strategies for children with autism is a subject of considerable research. With an increase in autism diagnoses, educators are looking for program models and techniques that provide clear direction and demonstrate successful outcomes. Many factors must be considered when designing a treatment program. This symposium will examine a number of key features when designing and providing effective behaviorally - based programs for children with autism. The first paper presented by Renee Mansfield reviews social validity data on a set of high priority skills identified as core learning targets for children with autism. The second paper presented by Meghan Hinchey presents a meta-analysis comparing highly structured interventions with more naturalistic approaches used to teach spoken language.

The third paper presented by Philip Hinline reviews behaviorally-based intervention techniques within publicly supported education models. Bill Ahearn, Director of Research at the New England Center for Children, will serve as the discussant.

**Identifying Priorities for Teaching Children with Autism: Do We All Agree?** RENÉE C.

MANSFIELD (The New England Center for Children), Rebecca P. F. MacDonald (The New England Center for Children), Cammarie Johnson (The New England Center for Children), Susan N. Langer (The New England Center for Children)

**Abstract:** Identifying and prioritizing skills to teach children with autism is a critical first step to providing effective treatment. Skill deficits are often present across all areas of adaptive functioning, with communication and social skills being areas of greatest need. Over the past several years a group of professionals at NECC has developed a Core Skills Assessment. This assessment includes 48 high priority skills across 7 domain areas. Each skill is evaluated using direct assessment methods. The assessment also includes protocols for determining learning objectives for a student's Individualized Educational Program. To determine the social validity of these as high priority skills, a survey was conducted to assess agreement by other professionals and parents of children with autism. Results from 275 professionals across the United States indicated that a majority of the respondents agreed that the skills identified represented core or foundational skills. Results of the survey and the Core Skills Assessment will be discussed.

**Meta Analysis for Autism Interventions.** MEGHAN HINCHEY (Temple University), James Connell (Temple University), Melanie Pellecchia (Elwyn)

**Abstract:** Research and services continue to expand out to community-based programs serving individuals diagnosed with autism. A focus of great interest in those efforts is that of language acquisition and functional usage. A recent meta-analysis evaluated the Picture Exchange Communication System (PECS) literature for its reported effectiveness for mand initiations (Devis & Tincani, 2008). Using the percentage of non-overlapping data (PND) method, the authors reported that of the studies that were included, PECS proved to be effective in establishing mands (i.e., functional communication). The present meta-analysis focuses on interventions for children with autism that lead to acquisition of spoken language. Highly structured interventions, such as discrete trial instruction (DTI) were compared to more naturalistic approaches, such as pivotal response training (PRT), natural environment teaching, and incidental teaching. Intervention, maintenance, and generalization effects were measured by calculating the percentage of non-overlapping data (PND). The results suggest that both structured and naturalistic interventions are effective for teaching language skills to these children. However, the data indicate that naturalistic approaches result in greater maintenance and generalization than result from highly structured interventions. These observations have implications for generalization of acquired language skills, for the importance of treatment integrity, and for future research on effectiveness of autism interventions.

**Best Practice in Interventions for Autism: A Moving Target.** PHILIP N. HINELINE (Temple University)

**Abstract:** During the two decades since the ground-breaking Lovaas 1987 report documenting the extraordinary potential of a behaviorally-based intervention for autism, there have been substantial advances and developments in both basic and applied behavior analysis. As relevant to interventions for autism, these have ranged from specific principles and techniques, to "models" or "packages" of varying comprehensiveness, which have been evaluated to varying degrees. Appropriately, these innovations have been developed mainly within research and clinical settings, with adequate student/instructor ratios and well-qualified staff. We have been studying some of them as implemented within publicly supported education, where fewer resources are available, but where a lion's share of interventions must ultimately be accomplished. We have been finding that, as implemented within these settings, features or techniques introduced as characteristic of one model often have come to be included within nominally different models. In addition, methods of promulgation and implementation (e.g. of staff training or of performance management), as distinct from instructional procedures and curriculum design, should be recognized as integral components of any comprehensive approach to intervention. These are important

especially as they affect staff expertise and performance, which can strongly affect what actually occurs, and thus complicate systematic evaluations of the models.

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## #291 Symposium

5/24/2009

4:00 p.m. - 5:20 p.m.

North 124 A

AUT/Applied Behavior Analysis

### **Reducing Challenging Behaviors in Children with Autism Receiving Intensive Applied Behavior Analysis (ABA)**

Chair and Discussant: Janet Yi (JBA Institute)

**Abstract:** Lacking the appropriate skills to communicate their needs, individuals with developmental disabilities often demonstrate challenging behaviors. This problem can be exacerbated in an intensive, high-demand educational program in which 20 to 40 hours per week are devoted to teaching appropriate skills. While research on addressing challenging behaviors within strict functional analytic methods is growing, there remains a paucity of research that addresses how such behaviors are reduced in the context of intensive ABA programs. Participants in the present studies were two boys (aged 5 years and 6 years) enrolled in intensive (30 and 40 hours per week) ABA programs, who demonstrated multiply-controlled challenging behaviors. An intervention entailing 1) differential reinforcement and 2) time out was used to address noncompliance in Participant 1. An intervention entailing 1) an antecedent strategy (i.e., prompting for use of appropriate responses), 2) differential reinforcement, and 3) positive practice of a replacement response was utilized to address self-injurious behavior in Participant 2. An intervention entailing 1) an antecedent strategy (pre-task choice-making), 2) positive reinforcement, and 3) positive punishment (redirection to a completion task) was used to address non-responsiveness in Participant 2. Results indicated clinically-significant reductions in rates of these challenging behaviors for both participants.

### **Treating Escape and Attention Seeking Behavior in a Child with Multiple Diagnoses.** LISA A. TOPP (JBA Institute), Janet Yi (JBA Institute)

**Abstract:** Time out has been demonstrated to be an effective procedure for reducing noncompliant behaviors. Although most of the literature examines the efficacy of time out from positive reinforcement alone, more recent research (e.g., Everett et al., 2007) has begun to address the application of time out procedures to reduce escape-motivated challenging behaviors. Nonetheless, research on the use of time out within the context of an intensive (20 to 40 hours per week) comprehensive ABA program in which demands are high is limited. The current study examines a procedure that combines differential reinforcement of alternative behaviors, a token economy and secluded time out for severe challenging behaviors that serve the dual functions of escape and attention in a six-year old boy diagnosed with 3Q Trisomy with Chromosome 14, seizure disorder and Autism-NOS, who receives 30 hours of intensive ABA. Results of this study showed a clinically significant decrease in challenging behaviors. Additional research is needed to examine the efficacy of time out procedures in combination with other strategies to address multiply-controlled challenging behaviors in an intensive ABA program.

### **Treating Multiply-Controlled Self-Injury in a Child with Autism.** ELIZABETH SUSANNAH BAKER (JBA Institute), Janet Yi (JBA Institute)

**Abstract:** Self-injurious behavior (SIB) is a common and serious problem for individuals with autism (Matson & LoVullo, 2008). While there has been a movement toward more research on positive behavioral interventions for individuals exhibiting destructive and dangerous behavior, research on positive behavioral interventions for multiply-controlled SIB, especially within the context of an intensive (20-40 hours per week) comprehensive ABA program, is scant. An initial function-based intervention which relied solely on positive practice of replacement behaviors produced minimal decreases in the frequency of SIB in a 5-year-old boy diagnosed with autism. A multicomponent intervention using both antecedent (prompting for use of alternative behaviors) and consequent strategies (DRA and positive

practice of replacement behaviors) was employed to achieve a clinically significant decrease in rates of SIB. Future research should include an in-depth examination of SIB interventions entailing both antecedent and consequent strategies delivered in the context of an intensive ABA program.

**Treating Escape-Motivated Non-Responsiveness in a Child with Autism.** ELIZABETH SUSANNAH BAKER (JBA Institute), Lisa A. Topp (JBA Institute), Janet Yi (JBA Institute)

**Abstract:** A lack of motivation to engage in less-preferred activities is very common in individuals with autism, which often leads to non-responsiveness. Non-responsiveness is a serious problem as it can significantly interfere with an individual's ability to learn new skills. The problem can be compounded by enrollment in an intensive (i.e., 20 to 40 hours per week) comprehensive ABA program where demands are high across developmental domains. However, there is a paucity of literature about effective interventions for escape-motivated non-responsive behavior in children with autism. A multicomponent treatment package consisting of antecedent (pre-task choice-making and visual schedule) and consequent (positive reinforcement and positive punishment via redirection to a completion task) strategies was utilized to effectively reduce the rate of escape-motivated non-responsiveness in a 5-year-old boy with autism. Follow-up data indicated durable near-zero rates of non-responsiveness with progressively thinning and variable reinforcement schedules. Additional research is needed to examine and validate methods for addressing non-responsiveness in intensive ABA programs.

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## #292 Symposium

5/24/2009

4:00 p.m. - 5:20 p.m.

North 125

AUT/DDA; Applied Behavior Analysis

### **Three Different Behavioral Procedures to Reduce Problem Behavior for Children with Autism**

Chair: Mitchell T. Taubman (Autism Partnership)

Discussant: John James McEachin (Autism Partnership)

**Abstract:** Typically, children with autism engage in various forms of problem behavior ranging from aggression, to self-injurious behavior, to non-compliance. These problem behaviors can cause physical harm to the child, to the child's staff members, and to the child's family. In addition, these maladaptive behaviors can interfere with the learning process. Therefore, behavioral procedures are typically implemented to reduce problem behavior during therapy sessions. Research has shown that a variety of behavioral procedures are effective in reducing problem behavior. This symposium will discuss three behavioral procedures that have been found to be effective in reducing problem behaviors for children and adolescents with autism, as well as provide empirical support on their effectiveness. The first presentation will discuss the implementation of a differential reinforcement of other behaviors (DRO) procedure in reducing problem behavior for children and adolescents with autism. The second discussion will describe procedures on teaching children with autism learning to learn skills and how they relate to decreasing problem behavior. The final presentation will describe a time-in procedure and its effects on decreasing problem behaviors. Each presentation will provide a conceptual basis for the procedure being discussed, as well as provide evidence on their effectiveness.

### **Doing Nothing as Replacement Behavior: An Intensive DRO Procedure Using Tokens to Increase Self-Control.** JOHN JAMES MCEACHIN (Autism Partnership)

**Abstract:** DRO and other differential reinforcement procedures have been widely used to decrease a wide range of disruptive and detrimental behaviors by making reinforcement contingent on the absence of target behavior. It is often used in conjunction with reinforcement of specific alternative or topographically incompatible behavior, often referred to as replacement behavior. We suggest there may be times when the appropriate alternative behavior is doing nothing, which can be construed as self-control. We have used rapid delivery of token reinforcers to effectively teach children with autism to refrain from engaging in high rate stereotypic, off-task and other behaviors that interfere with learning. This intensive DRO procedure differs from other applications because it uses nonstop delivery of tokens

paired with extremely high rate of praise in a topographically distinctive manner. The aim is to establish the movement of the teacher, words of praise, tone of voice and presentation of teaching materials as a conditioned reinforcer. In effect the act of teaching becomes a sufficiently powerful reinforcer that interruption of teaching contingent on undesired behavior becomes a highly effective decelerating consequence. Video demonstration will be provided along with data demonstrating the procedure's effectiveness and generalization.

**Sitting without Tears: A Rapid Procedure for Establishing Cooperation with Instruction.** TOBY MOUNTJOY (Autism Partnership HK), Ronald B. Leaf (Autism Partnership), John James McEachin (Autism Partnership), John Rafuse (Autism Partnership)

**Abstract:** Teachers and parents are often eager to teach children language and academic skills; however, in order for children to be successful their disruptive behaviors must not interfere in the learning processes. Therefore, behaviors such as aggression, non-compliance and self-stimulation must be targeted prior to teaching more formal skills. Another critical prerequisite skill that is essential in order to maximize learning is "learning how to learn" skill, which is teaching children the process of learning. It is the foundation, perhaps the pivotal skill necessary for them to acquire all other skills. Often when a child is struggling in learning beginning or advanced skills it is because the child is deficient in this area. If a child does not understand that when a teacher issues an instruction they are to make a response it can slow the learning process. Perhaps even more critical is their understanding of feedback. That is, when they receive "reinforcement" they should repeat the response and if they receive corrective feedback then they need to change their response. We have developed programs specifically designed to quickly teach these skills. Children often acquire understanding of the fundamental learning process within hours which has resulted in acceleration of their learning.

**Time-In to Reduce Impulsive and Other Problematic Behaviors in Children with Autism.** AMBER RAMER (Autism Partnership), John James McEachin (Autism Partnership), Mitchell T. Taubman (Autism Partnership), Ronald B. Leaf (Autism Partnership)

**Abstract:** We present here a conceptual understanding of Time-In and describe its application for the reduction of undesired behaviors in children with autism of widely varying intellectual levels in a variety of settings. Time-In is a variation of Time-Out procedures that have been described and demonstrated as effective by Foxx and Shapiro (1978), Olmi, Sevier & Nastasi (1997), and others. Time-Out is a deceleration procedure typically implemented by removing a child from the opportunity to earn reinforcement or otherwise reducing availability of reinforcement contingent upon the occurrence of target behavior. Its effectiveness is dependent on the contrast between the time-in condition and the time-out condition. The Time-In procedure uses a distinctive stimulus such as a wrist band whose presence is paired with an extremely rich availability of reinforcers, thereby establishing it as a conditioned reinforcer, which can be removed contingent upon the occurrence of undesired behavior. We describe procedural details to maximize the effectiveness of the procedure, along with video illustration and data demonstrating its effectiveness and discussion of situations where it may be advantageous.

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## #293 Symposium

5/24/2009

4:00 p.m. - 5:20 p.m.

North 126

AUT/VRB; Applied Behavior Analysis

### **Enhancements in Intervention for Verbal Behavior and Social Skills in Children with Autism**

Chair: Carrie Katherine Zuckerman Sloo (Center For Autism and Related Disorders, Inc.)

**Abstract:** Behavioral intervention is a treatment of well-established efficacy for children with autism. While comprehensive behavioral intervention programs are well-validated as a whole, there are many details of such programs that remain unevaluated and may be amendable to improvement. This symposium consists of four

presentations that describes studies which were targeted at improving behavioral intervention for verbal or social skills. The first paper attempts to establish a preliminary repertoire of rule-governed behavior in children with autism. The second paper evaluates the contributions of peer-mediated and self-management components in the treatment of social skills. The third study attempts to teach children with autism to predict what emotions others will feel, based on nonverbal events that have just transpired. The final paper examines beliefs and false beliefs in children with autism.

**Rule-Governed Behavior: Teaching Children with Autism a Preliminary Repertoire of Rule-Following.** Jonathan J. Tarbox (Center for Autism and Related Disorders, Inc.), CARRIE KATHERINE ZUCKERMAN (Center For Autism and Related Disorders, Inc.), Denis P. O'Hora (National University of Ireland, Galway)

**Abstract:** The purpose of the current study was to evaluate a procedure for teaching basic prerequisite skills which may be necessary for developing a repertoire of rule-governed behavior. Specifically, children with autism were taught "conditionality," by reinforcing compliance with instructions containing "if/then" statements. The emergence of untrained instances of following if/then rules is evidence for the formation of the generalized operant class of rule-following, rather than merely the acquisition of particular behaviors under stimulus control. A multiple baseline design across participants assessed the effects of multiple exemplar training on generalization to novel rules that specify antecedents and behaviors. Results will be discussed in terms of implications for autism intervention as well as the learning history which may lay the foundation for the development of a repertoire of rule-governed behavior.

**Using Peer-Mediated and Self-Management Interventions to Increase Social Success of Children with Autism within Inclusive School Settings.** Douglas Moes (Support and Treatment for Autism & Related Disorder), Nicolette Nefdt (Support and Treatment for Autism & Related Disorder), Michelle E. Coulter (Support and Treatment for Autism and Related Disorders (STAR), Inc.), Maria F. Wynne (Support & Treatment for Autism & Related Disorders), Quy Tran (Support and Treatment for Autism & Related Disorders), LOUISE A. MCHUGH (University of Wales Swansea)

**Abstract:** While Applied Behavior Analysis has tremendous potential to address the social needs of children with autism, literature reviews on the efficacy of social skills training suggests that there are limitations that need to be overcome (Gresham, Sugai, & Horner, 2001). Three variables that appear to be important considerations to optimize the benefits of social skills training for children with autism are (1) teaching within the natural environment, (2) using peer mediated interventions, and (3) teaching the child with autism how to regulate their own behavior within social routines. The current study was designed to combine these approaches to increase the social skills of students with autism during typical peer interactions within school routines. A multiple baseline design across students was utilized to evaluate the impact of specific peer mediated and self-management interventions on the social success of three students with autism during school routines. Design features were added to contrast the relative effects of the peer mediated and self-management intervention approaches. Results are discussed in terms of (1) the benefits to participants, and (2) the importance of developing further empirical support for practical social skills training that can be readily applied in school settings.

**Teaching Children with Autism to Predict Others' Emotions** EMILY BARNOY (Center For Autism and Related Disorders, Inc.), Jonathan J. Tarbox (Center for Autism and Related Disorders, Inc.), Adel C. Najdowski (C.A.R.D., Inc.), Dennis Dixon (Center for Autism and Related Disorders)

**Abstract:** Autism is characterized by deficits in socialization, often including delayed development in the ability to understand and respond to the emotional states of others. In his analysis of private events, Skinner (1974) discussed the difficulty the verbal community faces in teaching its members to tact private events, both their own, and the private events of others. Specifically, in order to respond to the private events (e.g., emotions, thoughts, etc.) of others, one can only respond to overt stimuli and an accurate correlation between overt stimuli and private events is by no means guaranteed. In typical child development, children presumably learn to label the emotions of others by receiving reinforcement for stating emotions in the presence of multiple overt stimuli, such as a second person smiling and third

person asking “How does he feel?” In developmental disabilities such as autism, this learning history may be delayed or absent altogether. Nevertheless, the ability to tact the emotions of others is likely crucial for successful social interaction in our culture. In this study, we used multiple exemplar training to teach children with autism to predict how others would feel, based on recent nonverbal overt events. That is, children were not taught to label emotional facial expressions, but were taught to respond to events that were common causes of particular emotions in our culture. Results are discussed in terms of verbal behavior intervention for children with autism and in terms of Skinner’s analysis of private events.

**A Behavioral Examination of False Belief Tasks.** ERIN SARGENT (NEU / NECC), Shayna L. Grindle (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:** Previous research has examined false-belief tasks to evaluate development with respect to Theory of Mind (e.g., Baron-Cohen, 2002) in typically developing children, as well as those with autism and other developmental disabilities. Studies have examined various methods of teaching performance in false-belief tasks. These tasks have been modified in several ways and while some studies showed moderate success teaching false-belief skills with particular false-belief tasks, generalization to other, novel tasks has consistently failed to emerge in children with autism. This study focused on teaching children to perform false-belief tasks and examined whether generalization to untrained tasks could be produced. Pretest sessions were run on three false-belief tasks, followed by teaching sessions on one of the three tasks. Posttest probes were run on the remaining two tasks. Pretest pass/fail results among typically developing children showed a clear age divergence around 4 years of age. Pretest results for children with autism (ages ranging from 4 to 6) yielded no passing results. Two typically developing children under 4 years of age and all 4 children with autism were exposed to teaching sessions. The different discriminations comprising the test were analyzed and teaching procedures developed. These discriminations were subsequently taught. Posttest probes yielded mixed results. The 2 typically developing children did not pass either posttest probe. Two children with autism passed the same posttest probe, but failed the other, and the remaining two did not pass either posttest.

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## #294 Symposium

5/24/2009

4:00 p.m. - 5:20 p.m.

North 224 A

CBM/OBM; Service Delivery

### **Improving the Quality of Healthcare and Reducing Medical Errors: Contributions from Behavior Analysis**

Chair: R. Wayne Fuqua (Western Michigan University)

**Abstract:** In the United States, estimates indicate that instances of medical harm occur at a rate of approximately 15 million per year (40,000 per day). Additionally, an estimated 90,000 deaths per year occur due to errors in the delivery of health care services. These alarming statistics indicate the need for further research and intervention in the healthcare arena. This symposium presents four papers which address patient safety issues throughout the United States by applying behavior analysis principles and procedures. The first talk will discuss applying simulation to pre-hospital pediatric care in order to identify and correct errors. The second paper describes the use of simulation and other elements (e.g., modeling, feedback, role play) to train team coordination and communication skills to hospital healthcare workers. The third paper addresses the importance of infection control by way of proper hand hygiene. Finally, the last paper discusses a study that applied Organizational Behavior Management techniques to various safety concerns throughout a hospital system. Through these presentations, authors will show the effectiveness of various behavioral interventions to decrease medical errors, presumably increasing patient safety.

**Medical Error in Pediatric Pre-hospital Emergency Care.** AMY GROSS (Western Michigan University), Krystyna A. Orizondo-Korotko (Western Michigan University), R. Wayne Fuqua (Western

Michigan University), Richard Lammers (Michigan State University, Kalamazoo Center for Medical Studies), William Fales (Michigan State University, Kalamazoo Center for Medical Studies)

**Abstract:** Pre-hospital health care providers (i.e., emergency medical technicians and paramedics) face numerous obstacles delivering quality medical services, including the presentation of highly diverse and serious symptoms, lack of history with presenting patients, emotionally charged and difficult working conditions and intense time pressures. These obstacles are further complicated by the need to operate in highly variable, unstructured environments in which medical support is not readily available. Pediatric patients may be particularly challenging to pre-hospital care providers due to the relatively infrequent occurrence of childhood medical emergencies (thus allowing skills to degrade as a function infrequent practice). This presentation describes the development of simulation based training program to provide pre-hospital healthcare workers the opportunity to practice and improve emergency pediatric medical skills. We also describe the manner in which these simulations allow for the identification of errors and the factors that contribute to the occurrence of errors.

**The Use of Simulation for Team Training in Healthcare.** KRISTYNA A. ORIZONDO-KOROTKO (Western Michigan University), Amy Gross (Western Michigan University), R. Wayne Fuqua (Western Michigan University)

**Abstract:** In the United States, an estimated 90,000 deaths per year occur due to errors in the delivery of health care services. Many of these deaths are traceable to failures in team coordination and communication among health care workers. We suggest that the health care industry can utilize simulation-based training and quality control strategies to address this issue. We describe the development of a simulation-based assessment and training system for health care workers which includes the development of simulation scenarios designed to challenge critical health care skills (e.g., problem solving, team coordination, and error detection and correction). Simulations are conducted in the health care setting in an effort to increase the fidelity of the surrounding environment and to sample the real-world interface between health care workers and support services (e.g., lab and blood services). We explain the development and validation of a taxonomy of skills that we use to guide the training and evaluation of health care teams. We also describe our training model that includes facilitated debriefing (with detailed feedback), instruction, self-evaluation, and role play.

**Adherence with Infection Control.** MOLLI LUKE (University of Nevada, Reno), Mark P. Alavosius (University of Nevada, Reno)

**Abstract:** Recently in the state of Nevada, health and safety risks associated with the health care industry have become a major concern with the apparent use of questionable safety practices. Difficulty in maintaining a healthy environment in health care settings is nothing unique to Nevada. Within this setting, the importance of proper hand hygiene and infection control procedures are vital to the health and safety of patients and staff. Infection control procedures, such as washing hands and wearing gloves, are imperative in decreasing the spread of infectious diseases in a setting that is easily vulnerable to transmission of bacteria. Despite this, the literature indicates frighteningly low adherence rates, issues with data collection, and ambiguous definitions of "adherence". This presentation will describe direct observation used to define and record adherence with infection control procedures by health care personnel in a community clinic. This includes the procedures used to train observers and checks of inter-observer agreement. The effects of immediate, personalized feedback delivered by an investigator, aimed at increasing adherence with hand hygiene behaviors are examined.

**Fool Me Once, Shame on the System - Fool Me Twice, Where Is the Intervention? Improving Patient Safety Through Responses to Error.** THOMAS R. CUNNINGHAM (Virginia Polytechnic Institute and State University), Rennie LeRoy Arnold (Virginia Tech University), Phillip A. Randall (Virginia Polytechnic Institute and State University), E. Scott Geller (Virginia Tech)

**Abstract:** Instances of medical harm are estimated to occur at a rate of approximately 15 million per year in the US, or 40,000 per day. There remains a lack of patient-safety-focused behavioral interventions

among healthcare workers. OBM interventions are often applied to needs already identified within an organization, and the means by which these needs are determined vary across applications. The current research addressed gaps in the literature by applying a broad needs assessment methodology to identify patient-safety intervention targets in a hospital and translating OBM intervention techniques to identify and improve the prevention potential of corrective action for reported medical errors. A content analysis of 17 months of error report follow-up action descriptions for the nine types of most-frequently-occurring errors was conducted, and follow-up actions were coded according to a taxonomy of behavioral intervention components, with accompanying prevention scores based on criteria developed by Geller et al. (1990). Two error types were pinpointed based on highest frequency of reporting and lowest average follow-up prevention score. Over a three-month intervention period, managers were instructed to respond to these two error types with active communication, group feedback, and positive reinforcement strategies. Results indicate improved prevention potential for responses to targeted errors.

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## #295 Symposium

5/24/2009

4:00 p.m. - 5:20 p.m.

North 221 C

OBM/AUT; Service Delivery

### **Organizational Behavior Management in Agencies for Persons with Autism**

Chair: Sarah M. Dunkel (Southern Illinois University)

**Abstract:** Behavior analytic techniques have a demonstrated history of improving the lives of persons with autism and related disorders. However, the unique needs of large-scale agencies serving persons with autism present difficult obstacles for behavior analysts. Maintaining and documenting acquired skills can be problematic with inadequate program implementation, cumbersome data collection, and unhealthy stress levels of direct care workers. With the aid of organizational behavior management research, however, behavior analytic techniques can guide staff training, performance management, and systems analysis thereby improving the lives of persons served by autism agencies.

**Training Staff to Use Personal Digital Assistant (PDA) Data Collection Systems in an Agency for Persons with Autism.** SARAH M. DUNKEL (Southern Illinois University), Mark R. Dixon (Southern Illinois University), Susan Szekely (Illinois Center for Autism)

**Abstract:** The emphasis on evidence-based practice and accountability within human service agencies has increased the need for easy-to-implement data collection systems. Although traditional paper and pencil methods are commonly used, recent technological advancements have proven useful in progressive agencies. The use of this new generation of technologies, however, may prove problematic when experienced practitioners with technological inexperience must be trained to collect data. The purpose of the current study was to train inexperienced program staff at an agency for persons with autism to use the Archer Ultra-Rugged PDAs to reliably collect data on student and staff behaviors. Both PDA use and reliability of data collected were trained using a combination of techniques including video modeling, group training, individual training, and feedback. Results will be discussed regarding necessary components of PDA training.

**The Utility of a Computerized Observation System to Measure Client Engagement in an Agency for Persons with Autism.** MICHAEL BORDIERI (Southern Illinois University Carbondale), Mark R. Dixon (Southern Illinois University), Sarah M. Dunkel (Southern Illinois University), Stephanie A Norgard (Southern Illinois University), Susan Szekely (Illinois Center for Autism)

**Abstract:** One of the greatest challenges faced by behavior analysts in applied settings is the sheer number of consumers served. In large settings, complex data collection systems are needed to track multiple measures across hundreds of participants. Such systems, driven by legal and practical necessity, tend to focus on individual problem behaviors targeted for reduction and, in many settings, the utilization of physical restraint. While such measures are central to evaluating client progress, they are not sufficient.

This presentation will evaluate the merits of a large scale data collection system designed to measure positive client behaviors as well as measures of more complex staff and client system dynamics. Specifically, the utility of a hand held computerized data collection system used to measure the on task engagement of over one hundred clients served by a non-profit treatment and educational agency serving people with autism will be explored. Implications for individual client data tracking, classroom engagement evaluations, and feedback based staff behavior interventions to increase client engagement will be discussed.

**Comparison of Mindfulness and Acceptance versus Relaxation Training on Direct Care Staff Self-Reports of Stress.** JOHN C PINGO (Goldie B. Floberg Center), Mark R. Dixon (Southern Illinois University)

**Abstract:** Human services organizations often face multiple variables that can increase workplace stress. Many variables, such as staff turnover, inadequate financial support from state funding sources, and external regulations that limit flexibility of service delivery are beyond the control of direct care staff and front-line managers. It then becomes important to teach staff methods for dealing with the stress that they will encounter in the work environment. This study compares the impact of two interventions on staff self-reports of workplace stress, mental health, and psychological flexibility. Interventions consisted of a condensed mindfulness and acceptance training class and a relaxation training class consisting of progressive muscle relaxation training and related techniques. A statistical analysis is presented and further applications of the training interventions are discussed.

**Environmental Re-structuring and Video Teaching Strategies to Enhance Data Collection Procedures for Staff in an Autism Treatment Facility.** JOHN M. GUERCIO (Judevine Center for Autism), Rebecca Rubie (Judevine Center for Autism), Brooke Diane Walker (Southern Illinois University), Mark R. Dixon (Southern Illinois University)

**Abstract:** The current level of staff training that is required in the autism field is immense. Given the array of behavioral challenges presented by this population, the need for a comprehensive data collection system is present. This project will examine the use of a video training procedure and environmental restructuring to impact the accuracy of data collection by staff working in a day treatment center for adults with autism spectrum disorders. Baseline measures were taken on the accuracy of staff collected data that were documented on facility data forms across 2 group therapy rooms. Intervention consisted of video samples of behavioral issues that had occurred in the therapy rooms and requests of staff to record what had occurred both right after viewing the video and the day after viewing the video. Their accuracy in recording was then presented to them after both recording opportunities. Their accuracy of recording was then evaluated via a reversal design. An environmental restructuring phase was implemented whereby the schedule for data recording and the data sheets themselves were more accessible to all of the staff. The data showed an increase in the accuracy of data collection during the environmental restructuring condition as compared to baseline.

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## #296 Symposium

5/24/2009

4:00 p.m. - 5:20 p.m.

North 221 AB

OBM/CSE; Applied Behavior Analysis

### Behavioral Approaches to Sustainability

Chair: Jeanine Plowman Stratton (Furman University)

Discussant: H. Allen Murphy (Florida State University at Panama City & FABA)

**Abstract:** One of the most popular topics of concern in our society relates to issues of the environment and rising approaches to promoting a sustainable environment. This symposium will discuss aspects of this socially significant issue by presenting ways behavior analysis has been used to promote sustainability efforts. Presenters will discuss various projects related to the promotion of environmental awareness and reduction of

human consumption of natural resources and energy. Interventions include applications of behavior analysis, specifically those commonly used in the area Organizational Behavior Management, such as performance feedback on consumption rates. All studies were conducted on college campuses and all involve a focus of reduction of consumption. Two projects investigated the use of performance feedback on reducing paper printing, targeting specific campus departments and measuring amount of paper used. Both of these studies also used unique graphic feedback features to represent the depletion of natural resources. The other project examined the use of antecedents (prompts) and performance feedback on the light usage in a public campus building. Cost benefit analysis, long-rang impact of continued results, and implications for research in this area will be discussed.

**Improving Light Usage in a University Building Through the Use of Task Clarification and Feedback.** Stephen Shea (Furman University), Jeanine Plowman Stratton (Furman University), JENNIFER H. REINOVSKY (Furman University)

**Abstract:** As energy prices climb to their highest rates in history, both at home and abroad, energy conservation and sustainable practices have become socially responsible behaviors. This study investigated the effects of task clarification and feedback on energy consumption in a university building, specifically dealing with reducing unnecessary lighting. The participants included the staff of the building as well as students who regularly used the building. Data were collected through direct observation of the daily light settings. An additive ABC design was used. The first phase of intervention consisted of verbal task clarification with prompts, and the second phase included delivery of performance feedback to participants on their light use. Preliminary data suggests that task clarification has an immediate, but modest effect on power usage. The data are still being collected for the academic semester during the feedback phase. Implications of energy reduction strategies, cost benefit analysis, and reliance on technology with inclusion of behavioral emphasis for sustainable efforts will be discussed.

**Behavior-Based Sustainability: Reducing Paper Use in an Academic Setting.** GREG J. CLOONAN (Furman University), Jeanine Plowman Stratton (Furman University)

**Abstract:** Forests are being destroyed at an unsustainable pace. Every year the United States uses 4 million tons of copy paper (woodconsumption.org), and universities are some of the largest consumers in the country. In their sustainability efforts, most academic institutions recycle and use post-consumer paper, but could they be doing more? This study examines the application of behavior analysis for the purpose of decreasing excessive paper use in secondary education, focusing on paper used for printing. The project was conducted in a multiple baseline design across two academic and one administrative department on a University campus. Baseline data of daily copy paper use was taken before a multiple phase intervention was implemented. The intervention included an initial phase with suggestion of alternatives to excessive printing followed by a phase of graphic feedback of weekly paper use. Unique visual representation of trees was used to illustrate the depletion of natural resources consumed by the department due to printing. Data are still being collected for the academic semester. Implications for reduction in consumption of natural resources, impact of behavior change for reduced consumption, and cost benefits analyses will be discussed.

**The Use of Visual Prompts and Graphic Feedback to Decrease Printer Use and Increase Paper Recycling in Academic Departments.** DANIEL A. DAWSON (Youngstown State University), Michael C. Clayton (Youngstown State University)

**Abstract:** Printer use is an overlooked and resource intensive activity in both business and education. The current study used a multiple baseline design to decrease the amount of paper used in three college departments and increase the amount of paper recycled in both. The first intervention used a plain sign to inform faculty and staff of the average costs, in terms of paper and toner used, of the items printed most, as well as a reminder to conserve paper and recycle. The second intervention used a more elaborate sign, consisting of a popular culture icon delivering the reminder and graphical feedback of the number of trees saved if the previous week's decrease were to continue for the remainder of the year. An additional intervention for two of the departments was the addition of a recycle bin in a more accessible

area. The interventions were effective for increasing conservation and sustainability, and are discussed in terms of increasing responsible use of finite resources on college campuses.

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### **#297 Panel Discussion**

5/24/2009

4:30 p.m.- 5:20 p.m.

North 222 AB

CBM/Applied Behavior Analysis

#### **Professional Development Series: Introductory Series: Functional Analytic Psychotherapy**

Chair: Jordan T. Bonow (University of Nevada, Reno)

WILLIAM C. FOLLETTE (University of Nevada Reno)

JONATHAN W. KANTER (Department of Psychology/University of Wisconsin,-Milwaukee)

GLENN M. CALLAGHAN (San Jose State University)

**Abstract:** Functional analytic psychotherapy (FAP) is one of the few comprehensive therapies belonging to the clinical behavior analysis (CBA) tradition. FAP involves the direct application of behavioral principles within the context of the therapeutic relationship. In FAP, the therapist is conceptualized as a provider of social contingencies that can shape more interpersonally effective client behaviors during therapy sessions. This allows the FAP therapist to contribute to the development of a functional interpersonal repertoire of the client that will generalize to settings outside of treatment and lead to improvements in the client's relationships. Each panelist in this event has had direct experience in the development of FAP techniques, the research of FAP's efficacy, the training of students in implementing FAP, and the dissemination of FAP to a professional audience. They will discuss the basic theory underlying FAP, its empirical support, and techniques and strategies for effectively implementing this behavioral treatment.

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### **#298 Panel Discussion**

5/24/2009

4:30 p.m.- 5:20 p.m.

North 131 A

CSE/DEV; Theory

#### **Constructing a Caring, Just, and Sustainable Society**

Chair: Mark A. Mattaini (Jane Addams College of Social Work-UIC)

ANTHONY BIGLAN (Oregon Research Institute)

MARK A. MATTAINI (Jane Addams College of Social Work-UIC)

DENNIS D. EMBRY (Peace Builders)

**Abstract:** The presenters will present and discuss their work related to emerging science-based strategies for influencing the beneficial evolution of cultural practices. The first strategy we will explore involves increasing the prevalence of nurturing environments in society as a means of preventing the entire range of psychological and behavioral problems of youth, and promoting successful development. Such environments are characterized by (a) high rates of reinforcement for prosocial behavior, (b) low levels of aversive stimulation accompanied by gentle limits on behavior, and (c) fostering psychological flexibility. Second, we will explore a functional taxonomy scaffolding an emerging science of nonviolent power, which may have potential for reducing collective coercion and violence while furthering justice. Third, we will describe a strategy for the creation of a consumer-driven approach to the diffusion of proven mechanisms of behavioral influence which have been dubbed "kernels". Evidence-based kernels are simple, experimentally validated methods of influencing diverse behaviors. A recent paper (Embry & Biglan, 2008) provides a taxonomy of 52 such kernels, which can be used to increase or decrease behavior, or even to create "programs" of change. By promoting these strategies, behavior analysts may contribute to the evolution of societies that are more caring, less punitive, and more sustainable.

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## #299 Paper Session

5/24/2009  
4:30 p.m.- 5:20 p.m.  
North 129 A  
DDA

### Technology Driven Clinical Accountability- Electronic Health Records

Chair: Robert A Jr Nass (Devereux)

**Technology Driven Clinical Accountability – Electronic Health Records (EHRs) with a Punch”:  
Part I Configuration.** (Service Delivery) ROBERT A JR NASS (Devereux), April J. Bramell (Devereux New Jersey)

**Abstract:** As this nation moves closer to the full implementation of an electronic health record (EHR), technology will be the driver to ensure sound clinical accountability in treatment. The integration of core record requirements, coupled with specific practice guidelines within a clinical information system make assessment and data collection manageable, reduce redundancy and support treatment planning. The configuration of multidisciplinary domains, assessment detail and ‘behind the scenes’ rules, enable technology to drive and dictate a process which can be circumvented in a paper world. During the assessment phase, a comprehensive view of the client’s current status is recorded, identified strengths and need information is conveyed to the formulation phase. Within the clinical formulation phase, priorities for a focus of treatment are established and ensure that no critical piece of the data will be left behind or forgotten. Finally, relevant functional outcomes that relate to the original domains are collected, considered, and aggregated across clients and used to inform programmatic improvements. Utilization of the power and efficiency of clinical informatics, the three current trends in behavioral healthcare are uniquely supported: 1) collection of outcome data, 2) adoption of empirically-based practices, and 3) the linkage of assessment results to the treatment plan.

**Technology Driven Clinical Accountability – Electronic Health Records (EHRs) with a Punch”:  
Part II Implementation.** (Service Delivery) APRIL J. BRAMELL (Devereux New Jersey), Robert A Jr Nass (Devereux)

**Abstract:** The technology used to provide clinical accountability and the three primary trends in behavioral healthcare: 1) collection of outcome data, 2) adoption of empirically-based practices, and 3) the linkage of assessment results to the treatment plan, is only powerful in the result it has on improving the lives of those seeking service. Three examples of the implementation of this technology driven formulation are presented to illustrate the tools in action and their positive influence on the lives of some special individuals. The initial focus will present the assessment results and integrative review of all identified strengths and needs across critical program domains (Challenging Behaviors, Daily Living skills, Socialization, Communication) and how then treatment priorities are set to drive the treatment planning process. Specific functionality will be highlighted, including a Behavioral Frequency Rating (BFR) tool, risk assessments, and cross client aggregate reports. Finally, discussion on ‘real time’ data, consistency and coordination of care, as well as the implication to the continuous quality improvement process will be presented. With the wealth of client information available electronically to analyze, program evaluation and effectiveness prove an invaluable example for an automated clinical accountability system.

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### #300 Paper Session

5/24/2009  
4:30 p.m.- 5:20 p.m.  
North 128  
DDA

#### **Evaluating Mindfulness and Teaching Self Expression**

Chair: Jessica Claire Bradford (University of Plymouth)

##### **Impulsivity and Mindfulness in Adolescents with Emotional and Behavioural Difficulties.**

(Applied Behavior Analysis) JESSICA CLAIRE BRADFORD (University of Plymouth), Phil Gee (University of Plymouth), Stephen Lea (University of Exeter)

**Abstract:** This study examined relations between measures of impulsivity and other factors in adolescents with emotional and behavioural difficulties. A simple computerised choice task was designed in which different delays and outcome values were presented to pupils at a residential school for boys with BESD. Indifference points were recorded for each participant and compared with other measures of impulsivity including self-report measures, teacher reports and classroom observations. Comparisons were also made between these measures of impulsivity and reflective ability using a self-report measure of mindfulness (CAMM). The relationship between reflective ability and impulsivity is not clear, however, it might be expected that more reflective individuals are less impulsive. Mindfulness involves conscious non-judgemental reflection in the present moment and is increasingly being applied to clinical work with children and adolescents. If reflection and impulsivity are related, the possibility of increasing reflection and self-control through techniques such as mindfulness training may be beneficial to adolescents with emotional and behavioural difficulties.

##### **Assessing Self-Expression & Self-Advocacy Training to Facilitate Effective Human Rights**

**Assertion: A Pilot Study.** (Applied Behavior Analysis) LAURA E MULLINS (Brock University), Leanne Gosse (Brock University), Carol Sales (Brock University), Frances Owen (Brock University)

**Abstract:** Human rights education is likely to be more effectively applied in everyday life if training participants are able to express themselves in a way that will allow others to receive their message. The purpose was to teach individuals with intellectual disabilities how to express themselves clearly, using effective and appropriate verbal, para verbal and nonverbal behaviors to match the message being communicated. The Self-Expression and Self-Advocacy Training program (SeSa) used drama-based educational activities to teach individuals with intellectual disabilities how to express themselves effectively in front of groups. Trainers made use of modeling, positive reinforcement and role-play to facilitate learning. This pilot study examines changes in individual participant's behavior by comparing interviews recorded prior to and following training. Target behaviours were measured using 10 second interval recordings. Changes on other measures relating to social validity, self-expression knowledge and self-esteem will also be discussed. The results indicated a general increase in self-expression behaviors in response to the SeSa training.

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### #301 Paper Session

5/24/2009  
4:30 p.m.- 5:20 p.m.  
North 226 AB  
EAB

#### **Conditional Discriminations**

Chair: Charlotte N. Dack (Swansea University)

##### **Exclusion Based on Visual-Visual and Auditory-Visual Baselines of Conditional**

**Discriminations.** (Experimental Analysis) ALINE ROBERTA ACEITUNO COSTA (Universidade

Federal de São Carlos), Claudia K B Oshiro (Universidade Federal São Carlos), William J. McIlvane (University of Massachusetts Medical School), Deisy G. de Souza (Universidade de São Carlos)

**Abstract:** Responding by exclusion is observed when, in the presence of an undefined sample, participants immediately select the undefined comparison item (among defined ones) without explicit training to do so. “Exclusion” has been replicated after conditional auditory-visual discriminations in which participants learn to relate a single sample to a single comparison. This study, conducted with normally developing children, asked whether exclusion would occur with visual stimuli used both as samples and comparisons. We also asked whether establishing multiple correspondences (multiple names or pictures related to a single picture) would interfere with responding by exclusion. In Experiment 1 participants learned one-to-one visual-visual or auditory-visual conditional discriminations followed by exclusion and control probes. Experiment 2 established a baseline of many-to-one visual-visual or auditory-visual conditional discriminations, followed by exclusion and control probes. All children learned the baseline and selected the undefined comparison when the sample was an undefined stimulus. Children also rejected defined comparisons (and selected a blank comparison) when the sample was an undefined stimulus, but there was no undefined comparison available for selection. Results support the conclusion that responding by exclusion occurs under a baseline of both visual-visual or auditory-visual conditional discriminations, whether the baseline includes one-to-one or multiple-to-one relations.

**Generalisation of Causal Efficacy Judgments after Evaluative Learning.** (Experimental Analysis)  
CHARLOTTE N. DACK (Swansea University), Louise A. McHugh (Swansea University), Phil Reed (Swansea University)

**Abstract:** Three experiments examined the effect of outcome probability on human ratings of causal efficacy, and demonstrated that such ratings transfer to novel situations through derived stimulus relations. Experiment 1 varied the probability of an outcome given a response (75%, 50%, 25%) in a between subject design. Participants had to press the space bar to earn points and received reinforcement according to the group they were assigned to. Participant’s causal efficacy rating was higher in the 75% probability condition compared to the other conditions. This rating was also found to transfer to a stimulus present in the task. Experiment 2 repeated these findings using multiple trials of the task. The ratings were also found to transfer to other stimuli participating in an equivalence class with the stimulus presented on the screen. Experiment 3 also manipulated the probability of an outcome given no response. Three groups were compared (75/0, 75/75, 0/75). A learned helplessness effect was observed in the 75/75 group. The results corroborate the view that outcome probability is a determinant of causal efficacy ratings. However, the novel demonstration of a mechanism of generalization of these ratings via derived relations has clinical implications.

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### #302 Panel Discussion

5/24/2009  
4:30 p.m.- 5:20 p.m.  
North 122 A  
EDC/Service Delivery

#### **Professional Development Series: How to Obtain Grant Funding**

Chair: Alayna Theresa Haberlin (The Ohio State University)

KAREN G. ANDERSON (West Virginia University)  
JENNIFER M. GILLIS MATTSON (Auburn University)  
RON VAN HOUTEN (Western Michigan University)

**Abstract:** The need to secure project funding is becoming prominent in today’s volatile financial markets. Students, faculty, and other applied researchers need to be adept at obtaining funding for their research. The panelists will discuss how to search for funding sources, write a successful grant proposal, and manage grant funded projects. Panelists will provide recommendations and advice drawn from their experiences in the grant development process.

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## #303 Paper Session

5/24/2009

4:30 p.m.- 5:20 p.m.

North 121 A

EDC

### Issues in Mainstreaming and Inclusion

Chair: Steven J. Ward (Whole Child Consulting)

**Elements of Staff Training in Social Intervention Programs Using a Consult Model.** (Applied Behavior Analysis) THOURAYA AL-NASSER (Washoe County School District), Jody M. Silva (Washoe County School District)

**Abstract:** Research indicates that effective classroom consultations should include on-site technical assistance two to four times a month (Northup, Wacker, Berg, Kelly, Sasso, & DeRaad, 1994, 27, 33-47, Journal of Applied Behavior Analysis), as well as school principal's involvement of visiting classrooms, emphasizing achievement and training as well as supporting the teachers (Gillat & Sulzer-Azaroff, 1994, 27, 115-129, Journal of Applied Behavior Analysis). The focus of the staff training worked on including the principals, teachers and school staff to observe a model Day Treatment program, read the program manual and implement language specific feedback to the students. The staff were required to record the student's responses on their point sheets that were also used as a measure of behavioral changes, which shaped the student's behavior to move levels and be able to gradually move back to a 'normal' class environment. The consultants also modeled effective strategies in the classroom as well as provided feedback via email and weekly clinical meetings.

**Correlating The Inventory of Good Learner Repertoires with Restrictiveness of School Settings.** (Applied Behavior Analysis) STEVEN J. WARD (Whole Child Consulting)

**Abstract:** The Inventory of Good Learner Repertoires describes learners in terms of: behavioral excesses, supports required to maintain appropriate behaviors, quality of task-related effort, and accommodations necessary for maintaining quality responding. This inventory is currently being used with a number of students to design behavior plans that increase the ease with which they can be taught. Sometimes, these plans address repertoires that would provide learners with access to a greater variety of settings, such as public restaurants, public pools, and regular education classrooms. The argument is made that access to natural settings improves the efficiency with which a variety of functional repertoires are acquired.

This paper presents the responses of 20 public school administrators to questions regarding the types of behaviors and behavioral supports deemed appropriate for public school settings of varying degrees of restrictiveness. The results of this study have implications for practitioners planning to advance their students to less-restrictive settings. The results of this study may impact both placement decisions of educational teams and programming to improve a learner's "fit" with a less-restrictive setting.

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## #304 Paper Session

5/24/2009  
4:30 p.m.- 5:20 p.m.  
North 122 BC  
EDC

### Staff Development and Service Delivery Systems

Chair: Jason L. Gibson (University of Kentucky)

**Using Desktop Video-Conferencing to Deliver Consultation Services in Applied Settings: Outcomes and Opportunities.** (Service Delivery) JASON L. GIBSON (University of Kentucky), Robert Pennington (University of Kentucky)

**Abstract:** Current research has provided initial support for the use of web-based videoconferencing to deliver educator support. Often reported in the literature are: (a) technology complications that delayed or minimized the quality of interactions with teachers, (b) complexity of the equipment that required technology support personnel, and (c) the significant financial cost associated with videoconferencing.

Consultation services were requested to reduce elopement of a four-year-old student with autism in an inclusive preschool classroom. Using an ABAB design, the presenters delivered a behavioral consultation using a webcam and free web-based videoconferencing software package. Initial observation data, intervention training, implementation fidelity, outcome data, and inter-observer agreement were conducted using the videoconferencing software. Outcome data supported: (a) implementation of functional communication training with response interruption significantly reduced elopement, and (b) the teacher was able to be trained in the intervention and implement with fidelity using a free web-based videoconferencing software package.

The presenters will: (a) describe the technology used during the investigation, (b) discuss confidentiality and ethical concerns associated with this type of service delivery, (c) explain technology barriers that are common with these technologies, and (d) provide information how this application of technology could be used in a variety of applied settings.

**Special Education Staff Mediator Responses to Students Exhibiting Challenging Behavior.** (Service Delivery) KATHLEEN M. GILL (Northern Illinois University)

**Abstract:** The purpose of this paper is to discuss the impact of knowledge of behavior principles, causal attributions and control style on the emotional responses and intervention selection of special education staff who work with students with developmental disabilities and challenging behavior.

Special education teachers, support staff and related services staff who work directly with students with developmental disabilities in public schools participated in this study. Participants completed questionnaires on knowledge, attribution style, and control style and then viewed a DVD of a boy described as exhibiting a developmental disability engage in severely challenging behavior. The educators then completed an emotional reaction questionnaire, a locus of control measure, a student future adjustment scale, and rated their potential use of a variety of behavior interventions.

The impact of behavior knowledge, perceived control over care-giving outcomes, and control style on emotional reactions and behavior intervention selection will be discussed. Although the research is plentiful on the efficacy of behavioral interventions based on the principles of applied behavior analysis, the appropriate use of these interventions in educational settings remains a challenge. Therefore, it is critical to understand how to best train staff working with students who have developmental disabilities and exhibit challenging behavior.

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## #305 Paper Session

5/24/2009  
4:30 p.m.- 5:20 p.m.  
North 121 BC  
EDC

### **Innovations in Math Instruction**

Chair: Megan Knight (Sterne School)

**Experts in Mathematics: Teaching math to preschoolers in Mexico.** (Applied Behavior Analysis)  
FERNANDO R. ARMENDARIZ (University of Arizona), Maria Elena Barajas Olvera (Nuevos Horizontes), Elisa Eugenia Corrales Vargas (Nuevos Horizontes)

**Abstract:** Typical mathematics instruction for preschoolers in Mexico is limited to writing the numbers from 1 to 10 and counting up to 25 and exceptionally to 100. This limited curriculum focus may be due to an assumption that preschool children are not ready developmentally to handle more complex mathematical skills. In this project 3 to 5-year-old children in a Mexican school learned math competencies typically expected of students in the third grade. The intervention featured logically coherent "big ideas," thoughtfully designed instructional sequences, and a high frequency of active student responding throughout each lesson. This presentation will include data and video clips comparing the performance of children in the project classrooms to the achievement of students in classrooms with the traditional curriculum and teaching practices. The data show that the project children make academic gains considerably above the other children and the video clips demonstrate how the project develops children who can reliably perform complex operations and solve orally presented word problems.

## #306 B. F. Skinner Lecture Series

5/24/2009  
4:30 p.m.- 5:20 p.m.  
West 301 AB; Service Delivery  
EDC

### **Barriers to the Preparation of Highly Qualified Teachers in Reading**

Chair: Ronnie Detrich (Wing Institute)

DANIEL J. RESCHLY (Vanderbilt University), Susan M. Smartt (Vanderbilt University)

**Abstract:** Despite the fact that early reading proficiency for all children has become a national mandate captured in both the No Child Left Behind Act (NCLB) and the Individuals with Disabilities Education Act (IDEA), the poor performance of America's fourth graders on national examinations of reading proficiency indicates that the nation is far from achieving that goal. This is all the more disappointing given that advances in research now provide a scientific basis for reading instruction that promises to enable nearly all students to become proficient readers by Grade 4.

Both NCLB and IDEA have invoked scientifically based reading research as the basis not only for mandating the adoption of scientifically based reading instruction but for related changes in education policy. Coupled with the emphasis in the federal legislation on putting "highly qualified" teachers who teach core content in all of the nation's classrooms, scientifically based reading research has become central to the requirement that all elementary and special education teachers be adequately prepared to teach reading. Presently, not only are far too few teachers proficient in scientifically based reading instruction, but far too many of the programs that prepare the nation's teachers are failing to give them the grounding they need in order to become proficient.

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## #307 Paper Session

5/24/2009

5:00 p.m.- 5:20 p.m.

North 222 C

CBM

### **Medication Mania**

Chair: W. Joseph Wyatt (Marshall University)

#### **Medication Mania: A Look at Our National Love Affair with Psychotropic Medications.**

**Implications for Behavioral Practice.** (Service Delivery) W. JOSEPH WYATT (Marshall University)

**Abstract:** Behavior analysts must contend with the variables that tend to make psychotropic medication a more frequent, but often less effective and less efficient, means of changing behavior. Aware that knowledge is power, this presentation will review tactics of both the pharmaceutical industry and of organized medicine that maintain a preference for "pills over skills" among professionals and the populace.