SUNDAY, NOVEMBER 27

#54 Invited Symposium
11/27/2005
9:00 AM - 9:50 AM
OTH

Behavior Analysis in China

#55 Symposium
11/27/2005
9:00 AM - 9:50 AM
EAB; Experimental Analysis

Building a Behavioural Research Capacity in Regional/Rural Australia
Chair: Peter Wilson (Southern Cross University)

Session Abstract: Developing a new school of psychology far from any metropolitan centre is a unique (but highly rewarding) challenge. During the initial phase of this process it is particularly important to provide relevance to the local community, without the loss of scholarly rigour. Behaviour analysis, with its emphasis on pragmatism, natural science epistemology, and close linkage between experimental, conceptual and historical themes, provides a valuable framework for this task. Historical research into the contributions made by Pavlov in the early development of our field by Professor Wilson, our foundation chair, has provided a context for the emphasis upon experimental analysis of behaviour starting to emerge in the school. Provost and Dennis will describe research conducted by one of our first cohort of honours students in the new laboratory designed to allow us to explore links between traditional topics in cognitive psychology, emotion, and behaviour analysis. Finally, the research described by Bizo, Sanabria and Killeen illustrated how sound, scientific methods can be applied to issues of considerable relevance and interest to the broader community. We expect this to be the model for the future successful development and dissemination of behaviour analysis in our region.

Pavlov and the Origin of the Scientific Study of Behaviour in St Petersburg.
PETER WILSON (Southern Cross University)

Abstract: How did the scientific study of behaviour arise at the turn of the 20th century, and why in Russia? In this paper I will trace the development of the intellectual climate in St Petersburg, throughout the period of Pavlov's life and I will identify the major influences on his scientific approach. Pavlov spent most of his working life in St Petersburg during a period of political and social upheaval which saw the end of Tsarist Russia, civil war, the communist revolution, and the early years of Stalin's regime. The climate of teaching and research in universities in Russia in the middle of the nineteenth century already had some quite distinctive features which were to influence subsequent scientific developments. I will review Pavlov's main scientific and intellectual contributions to psychology and illustrate his significance to contemporary views on the study of behaviour. Pavlov's achievements are all the more striking when one considers the circumstances in which he worked, although the seeds for his contribution are contained within the intellectual development of late 19th century St Petersburg.

Cue Pre-exposure in Evaluative Conditioning Results in Latent Inhibition of Stimulus Equivalence Training. STEPHEN PROVOST (SCU), Kerrie Dennis (Southern Cross University)

Abstract: Stimulus equivalence may be slower to develop among stimuli belonging to the same functional class (e.g., fear eliciting words). We sought to determine whether the acquisition of an affective response to non-words through evaluative conditioning would produce a similar retardation effect. Participants (N=27) received standard three- class, two phase (A-B, B-C) stimulus equivalence training following either no pre-training (SE-Only), paired presentations of the equivalence cues with high-valenced positive items from the International Affective Picture System (evaluative conditioning, EC), or random presentations of equivalence cues and pictures (EC-Control). This was followed by tests for transitivity (C-A), symmetry (B-A and C-B), and equivalence (C-A). Although the evaluative conditioning procedures failed to generate a reliable effect, simple pre-exposure to the cues (in both groups EC and EC-Control) produced a reduction in stimulus equivalence obtained. The presence of this latent- inhibition effect (together with previous evidence for phenomena such as blocking) suggests that the relationship between stimulus equivalence and other forms of learning warrants further detailed consideration. The discussion will focus upon methodological issues in the investigation of equivalence that may facilitate such a research program, including the potential value of reaction-time performance as a measure of learning in this task.

Testing an Animal Model of ADHD: An application of the Mathematical Principles of Reinforcement. LEWIS BIZO (Southern Cross University) and F. Sanabria and Peter Killeen (Arizona State University)

Abstract: A model offered by Killeen (1994) posited three variables that affect The ability of reinforcement to govern behavior. First, a single Reinforcer activates a seconds of responding. Second, a response that requires a certain duration delta ä for its completion, places a temporal constraint on behavior. Third, a target response is only reinforced when it and the reinforcer are both contained within the same memory window, in which case the response is coupled with the reinforcer. The effectiveness of reinforcement is assumed to be a smooth function of the proportion of memory filled by the target behavior. Three strains of rats, Spontaneously Hypertensive, Wistar Kyoto, & Long Evans, were reinforced for responding on a progression of fixed-ratio schedules, with the ratio requirement ranging from 4 to 150. For each group as the ratio requirement increased response rate increased to a peak and then decreased with further increases in the ratio requirement. As predicted by the model response rate varied as an inverted-U shaped function of the ratio requirement and that the pattern of responding differed across the strains of rats.

#56 Paper Session
11/27/2005
9:00 AM - 9:50 AM
TPC/CSE

Contingency Analysis of Tobacco Use
Chair: Melbourne F. Hovell (San Diego State University, School of Public Health)

Markers of Contingencies to Classify Communities: The Case for Passive Smoke Exposure (Applied Behavior Analysis). MELBOURNE F. HOVELL, Ana P. Martinez-Donate, Marc A. Adams, Richard Hofstetter, Ming Ji, and Georg Matt (San Diego State University)

Abstract: Passive Smoke is a human carcinogen, and is linked to over 38,000 lung cancer and ischemic heart disease deaths annually in the U.S., and an increased likelihood of heart, respiratory, and other diseases, especially among children. We explored "contingency markers" for Passive Smoke Exposure (PSE) to estimate the direction and density of tobacco-related social contingencies in communities. Participants (N=1900) from an international tobacco study were interviewed from three cities representing differential exposure to tobacco control programs; San Diego, USA, and Tijuana and Guadalajara, Mexico. Results indicated that, across cities, prevalence of PSE at worksites (13.1% vs 25.9% vs 39.6%, $p<0.05$) and other public places (14.8% vs 27.8% vs 42.1%, $p<0.05$) varied according to differentially reported contingencies, such as criticism for smoking inside a workplace (73.7% vs 54.2% vs 47.9%, $p<0.05$), restaurant (71.8% vs 47.6% vs 32.8%, $p<0.05$), public transportation (85.1% vs 69.5% vs 65.1%, $p<0.05$), and schools (87.7% vs 72.2% vs 63.6%, $p<0.05$). Multivariate analyses confirmed these relationships. Contingency markers may allow classification of whole communities that ultimately direct preventive interventions to alter culturally-based contingencies likely to be operating throughout the community.

Cultural Practice Supporting Tobacco Use: An Introduction of Contingency Markers. (Applied Behavior Analysis). MELBOURNE F. HOVELL, Ana P. Martinez-Donate, Marc A. Adams, Richard Hofstetter, Ming Ji, and Georg Matt (San Diego State University)

Abstract: Behavior analysts must consider measures of contingencies that effect cultural practices. However, contingencies cannot be measured completely, except by experimental test. We propose use of contingency markers, similar to biomarkers, as practical tools for extending ABA to public health. A contingency marker is a measure of frequently measured "consequences" (such as praise or criticism) that may function as reinforcing consequences; where the density of “markers” represents reinforcing functions for an important proportion of the community. We explored markers for tobacco-related contingencies in an international study conducted in San Diego, USA, Tijuana and Guadalajara, Mexico (N=1900). Results indicated that the differential prevalence of smokers (10.5% vs 23.7% vs 25.8%, $p<0.05$) and former smokers (27.2% vs 20.4% vs 14.7%, $p<0.05$) varied by multiple contingency markers, such as the likelihood of spousal criticism (56.2% vs 51.4% vs 42.1%, $p<0.05$) and friends’ criticism (46.9% vs 33.7% vs 26.7%, $p<0.05$). Multivariate analyses confirmed these associations. Methodological and social significance will be discussed. Contingency markers may enable communities to be ranked for interventions in order to increase contingencies supporting healthy practices community-wide.

#57 Paper Session
11/27/2005
9:00 AM - 9:50 AM
DDA

Functional Analysis and Shaping
Chair: Yi Ding (University of Iowa)

Shaping for Hydration: Teaching a Student with a Developmental Disability to Increase His Water Intake (Service Delivery). HOPE STOECKEL and Edel Blake (Sussex Consortium)

Abstract: Students with developmental disabilities often have difficulties with attempting new skills or modifying their nutritional habits. Behavioral shaping is a useful strategy to teach a target behavior to a student when some of the components of that behavior already exist in the student's repertoire. Miguel, a seventeen-year-old student with the cognitive and adaptive behavior disabilities, expressed a strong dislike for water and refused to drink it. Miguel drank juices and sodas without issue. Parent concerns about health and a change in medication drove the need to teach Miguel to begin drinking water and then increase his intake of water on a daily basis. Initially Miguel was presented with1tablespoon of water three times per day. Differential reinforcement with high- powered reinforcers was used to motivate Miguel to drink more and within a week he drank one eight-ounce glass of water. The terminal goal of this shaping program; drinking 3 eight-ounce glasses of water per day, was achieved within 2 months. This school-based study demonstrates the robustness and effectiveness of shaping programs in applied settings.

Functional Behavior Analysis Techniques to Evaluate Problem Behaviors of Patients with Genetic Syndromes and/or Developmental Disabilities (Applied Behavior Analysis). YI DING, David Wacker, Danielle Dolezal, Wendy Berg, and Don Vandyke (University of Iowa)

Abstract: People with genetic abnormality or developmental disabilities are particularly susceptible to developing serious problem behaviors, such as self-injurious, destructive, aggressive and noncompliant behaviors, etc. Problem behaviors not only cause potential harm and actual physical injury, but also seriously diminish psychological and social development. The major purpose of our study is to identify the variables that are likely maintaining problem behaviors of patients with genetic syndromes or developmental disabilities by reviewing the medical charts of the outpatients in the Biobehavioral Outpatient Service at the University of Iowa Hospital and Clinics from 2000 to 2004. During this presentation, we will address (1) the primary behavior analysis techniques that we have applied in our clinic, (2) the identified variables that are likely maintaining patients' aberrant behaviors, (3) the major treatment packages that we have recommended, and (4) series of follow-up services and consultation that we have provided in the past few years.

#58 Panel Discussion
11/27/2005
9:00 AM - 9:50 AM
EDC; Applied Behavior Analysis

Increasing the Fidelity of Learning Outcomes to Instructional Objectives
Chair: Greg Stikeleather (Headsprout)

SATORU SHIMAMUNE (Naruto University of Education)
JOANNE ROBBINS (Morningside Academy)
JANET TWYMAN (Headsprout)

#59 Paper Session
11/27/2005
9:00 AM - 9:20 AM
EAB/TPC

The Science and Technology of Token Reinforcement Systems. TIMOTHY D. HACKENBERG (University of Florida)

Abstract: Token reinforcement systems are among the oldest and most widely used procedures in applied behavior analysis. Numerous studies have documented the therapeutic and educational benefits of token procedures across a wide range of settings and subject populations. Yet despite some 40 years of applied work on token economies, surprisingly little is known about the behavioral mechanisms responsible for their effectiveness. And despite laboratory research on token systems dating back to the 1930s, little is known about how this work relates to token reinforcement procedures in the applied realm. In short, basic and applied work on token systems has developed largely in parallel, with little substantive contact between them. The purpose of this paper is to outline an approach toward synthesizing what is known about token systems from basic and applied perspectives, and to highlight some promising avenues for future research. This type of synthesis will help reinvigorate the science and technology of token systems.

#59a Symposium
11/27/2005
9:00 AM - 9:50 AM
CSE

Understanding Cultural Change
Chair: Maria E. Malott (Association for Behavior Analysis)

Session Abstract: This symposium presents different perspectives of how cultural practices could be understood, as well as the limitations of behavior analysis in changing cultural entities.

Cultural Behavior, Cultural Practices and Cultural Groups
LINDA J. HAYES (University of Nevada, Reno)

Abstract: The sciences are differentiated by their unique subject matters, the characteristics of which determine the methods and instruments by which they may be observed and with respect to which descriptions, interpretations, propositions and other products of scientific activity are specifically formulated. The knowledge products of any given science thereby pertain only to the types of events isolated as its distinct subject matter. The scientific study of cultural phenomena, having aspects belonging to multiple scientific domains, is complicated by this circumstance. An important first step in any such enterprise, therefore, is to identify the type of event with which it is concerned and by which its disciplinary status is established. If the type of event selected by a particular enterprise is cultural behavior, its disciplinary home is psychology. Alternatively, if cultural practices are selected, the enterprise is situated in the sociological domain; if cultural groups, anthropology. The aim of this paper is to distinguish among events of these three types, and to stress the importance of making such distinctions in our attempts to achieve a greater understanding of cultural phenomena.

Distinctions Between Behavioral and Cultural Phenomena
MARIA E. MALOTT (Association for Behavior Analysis) and Sigrid Glenn (University of North Texas)

Abstract: In this paper will address the differences between behavioral and cultural phenomena in terms of units of analysis and measurement. Based on these differences, the implications for the methodology of change will be discussed.

Laws and Contingencies: Changing Cultural Practices
JOÃO CLAUDIO TODOROV (Universidade Católica de Goiás)

Abstract: Some laws work as contingencies of reinforcement and produce changes in the behavior of people. Some laws seem to be enforced only for part of the people, or are enforced only part of the time. Behavior analysis of law enforcement can help us to understand how society changes or avoids changes, and why.

#61 Symposium
11/27/2005
10:00 AM - 10:50 AM
EAB; Experimental Analysis

Establishing and Evaluating Control by the Components of Compound Stimulus with Different Procedures
Chair: Martha Hübner (USP Sao Paulo, Brazil)

Session Abstract: Three studies with different procedures with compound stimuli to establish complex stimulus control will be described and analyzed. In spite of the fact that all these procedures had utilized compound stimuli, complex control by components of the compound stimulus could also be detected. These results have implications to the future development of procedures to establish complex control and/or independent control by specifics components in different research areas.

Conditional Discrimination with Compound Stimulus.
PAULA DEBERT (Universidade de São Paulo, Brazil), Maria Amelia Matos (Universidade de São Paulo, Brazil, Emeritus)

Abstract: The aim of the present study was to evaluate the kind of control (simple or conditional) that would be established in a go/no-go procedure using arbitrary compound stimulus. Participants were six adults. Responses emitted in the presence of certain stimuli pairs (A1B1, A2B2, A3B3, B1C1, B2C2 and B3C3) were reinforced; while responses emitted in the presence of others (A1B2, A1B3, A2B1, A2B3, A3B1, A3B2, B1C2, B1C3, B2C1, B2C3, B3C1 and B3C2) were not. During tests, new configurations (BA, CB, AC, and CA) were presented resembling tests usually employed in equivalence studies. Five participants took from three to six sessions to reach accurate training performances, showed immediate emergence of symmetry relations, and revealed immediate or gradual emergence of tested relations. Therefore, this procedure can establish conditional emergent relations once that compounds stimuli presented during training were separated into components stimuli and recombined in new compounds presented during testing and five participants continued to respond according to what they learned in training.

Complex Stimulus Control in Reading: The Process of Acquiring Functional Verbal Units. MARTHA HÜBNER and Renata Gomes (Universidade de São Paulo, Brazil)

Abstract: Two main processes are involved in the complex behavior of reading: equivalence relations, to acquire reading with comprehension and conditional relations, to acquire textual behavior, which requires control by verbal units smaller than the word. The present study investigated the latter process, while the former was simultaneously tested. Considering words as compound stimulus, with

components, such as syllables and letters, the purpose of the present study was to verify critical variables to install the functional control by the components of the compound stimulus. The participants were Brazilian preschool children, the sessions were computerized and matching to sample procedures were applied to teach two syllable words, test equivalence and recombinative reading (new words composed by the components previous trained).The results of the recombinative tests showed that the functional unit control emerged after a certain amount of word sets taught. The analysis of the matrix of responses revealed that the errors are due to a possible control by equivalence relations, as Debert and Matos (2004) study showed. Considering the response required (touch the stimulus) results show that a differential observing response may be required, such as textual behavior, in order to obtain earlier functional minimal unit control.

Observing Response and Successive Presentation of Components of Compound Stimuli. MARCELO FROTA BENVENUTI (Universidade Pontifícia de São Paulo and Universidade de São Paulo, Brazil) and Gerson A. Y. Tomanari (Universidade de São Paulo, Brazil)

Abstract: One pigeons were subject in a observing response procedure with discrete trials that ended with food or no food independently of pigeons responses (p=0,5). Each trial started with white key. Responses in white key produced one components of the compound stimulus according to VI schedule. Responses in this component produced the other component according to other VI schedule. Compound stimuli which components were red plus vertical line and green plus horizontal line were related to food presentation and compound stimuli which components were red plus horizontal line and green plus vertical line were related to food omission. Subject responded in the presence of white key in almost all trials and in 50% of trials in the presence of the first component. In a situation in which opportunity to produce the second component was removed, responses in the white key reduced considerably. These results show that only combinations of two components controlled the observing responses, in spite of the fact that the pigeon did not produced the second component in all trials in the previous situation.

#62 Paper Session
11/27/2005
10:00 AM - 10:50 AM
EDC

Instructional Strategies in Education and Academic Performance
Chair: Angelika Anderson (University of Auckland)

Cooperative Learning as an Instructional Strategy in Complex Problem Solving by Graduate School
Teachers (Applied Behavior Analysis). BEATRIZ LEPAGE (Universidad Central de Venezuela)

Abstract: The purpose of this paper was to analyze the influence of cooperative strategies in complex meaningful learning. A total of 140 teachers of different disciplines (medicine, engineering, business administration, economy, psychology, physics, law, mathematics, architecture and education) distributed in small groups of 20, used an instructional strategy based on cooperative solution searching in a classroom setting. The problems presented by the teachers originated from their own professional experience and three response dimensions were observed:

individualistic vs. cooperative behaviors, level of complexity of the problem and quality of the solution. Teacher performance indicated that 60% showed cooperative behaviors which corresponded with higher quality solution and levels of complexity of the problem in terms of conceptual elements and information organization. Of the remaining participants, 25% solved the problems without significant involvement in cooperative solutions and 15% were uninterested in cooperative performance. In general, the results indicated that cooperative learning as an instructional strategy provides a useful framework for problem solving in complex meaningful learning. Implications for developing a learning curriculum in teacher training are discussed.

Task Difficulty and Behaviour in Classrooms: An Examination of the Relationship (Applied Behavior Analysis). ANGELIKA ANDERSON (University of Auckland), Dennis Moore (Monash Universitry), and Dennis Rose (University of Auckland)

Abstract: Though it is evident that there is a relationship between behaviour in class and academic performance we know little about the nature of this relationship. One possibility is that a causal relationship exists between inappropriate task difficulty and inappropriate behaviour. When student seat work is not set at an appropriate level of difficulty (i.e. either too hard or too easy) this may be associated with a reduction in levels of engagement and in learning opportunity, and an increase of inappropriate behaviour. The present study was an initial investigation of this relationship. Teachers in Year 3 and Year 4 classes identified the four students rated as most likely, and the four least likely to exhibit problem behaviour in a mathematics class. The students' performance on a mathematics seatwork task was then analyzed in terms of task completion and accuracy. The students were subsequently assessed individually on the same task. The analysis provides a comparison of the two groups on accuracy rates in class and under one-to-one conditions. The results lead us to conclusions about the effects of task difficulty and classroom stimuli on performance.

#63 Paper Session
11/27/2005
10:00 AM - 10:50 AM
AUT

Teaching Self-Help Skills to Children with Developmental Disabilities
Chair: Jeongil Kim (Daegu University, South Korea)

Making Appropriate Choices: Teaching a Student with Autism to Independently Follow His Daily Schedule (Service Delivery). JO CAROL HAWTHORNE, Edel Blake, and Hope Stoeckel (Sussex Consortium)

Abstract: All students are presented with various choices throughout the school day. Sometimes students make the choice to respond to teaching activities by attempting to escape or avoid the activity. In this context, these behavioral responses create conflict for the student. Ultimately, engaging in avoidant or escape maintained behaviors causes the student to loose valuable instructional time. Marco, a seventeen-year-old student with autism, frequently engaged in escape-driven off-task behavior - from September 2004 to November 2004 his rate of Off-task behavior ranged from 7.2 minutes to 146.5 minutes per school day. This study sought to establish conditions that would promote appropriate choice making by the student. If Marco chose of follow his schedule independently, (an appropriate

choice), then he gained access to a variety of desired rewards. The objective of school for this student is to teach independent task persistence that leads to productive and independent functioning. In order to achieve independent task persistence, Marco needed to make appropriate choices that included following his daily schedule. This single-subject experimental design highlights the challenges and effectiveness of applying the principals of behavior analysis in a public day school setting.

Effect of Video Modeling for Children with Autism Spectrum Disorders to Improve Self-Help Skills
(Applied Behavior Analysis). JEONGIL KIM (Daegu University, South Korea)

Abstract: This study examined the effect of video modeling to improve the self-help skills of preschoolers with autism spectrum disorders. Using a multiple baseline design across subjects, the study targeted increase in self-help skills of toileting, teeth brushing, and getting dressed using modeled scripts on a video. The results showed that the intervention improved the level of self-help skills with all the subjects.

#64 Paper Session
11/27/2005
10:00 AM - 10:20 AM
TPC/EAB

Implications of the Term Motivating Operations for the Functional Analysis of Consumer Behavior (Theory). ASLE FAGERSTRØM (The Norwegian School of Information Technology) and Gordon Foxall (Cardiff University)

Abstract: Radical behaviorist terminology relating to the concept of motivation have not yet achieved serious attention in consumer psychology. This paper introduces the concept of Motivating Operations (MO) to the context of consumer choice, tracing the evolution of the term motivating operations in behavior analysis generally, and then discussing the function of the motivating stimulus in the context of the Behavioral Perspective Model, which is the most comprehensive attempt to integrate behavior analysis with consumer research. Particular attention is accorded the verbal behavior of the consumer, particularly the following of augmentals.

#65 Paper Session
11/27/2005
10:00 AM - 10:50 AM
EAB

On the Classic and Modern Theories of Matching (Theory). JACK J. MCDOWELL (Emory University)

Abstract: Classic matching theory, which is based on Herrnstein's (1961) original matching equation and includes the well- known quantitative law of effect, is almost certainly false. The theory is logically inconsistent with known experimental findings, and experiments have shown that its central constant-k assumption is not tenable. Modern matching theory, which is based on the power function version of the original matching equation, remains tenable, although it has not been discussed or studied extensively. The modern theory is logically consistent with known experimental findings, it predicts the fact and details of the violation of the classic theory's

constant-k assumption, and it accurately describes at least some data that are inconsistent with the classic theory.

#66 Paper Session
11/27/2005
11:00 AM - 11:20 AM
EDC

What ABA Brings to Us: A Brief Introduction of the Activities in the Institute of Mental Health, Peking University (Applied Behavior Analysis).
YANQING GUO (Institute of Mental Health, Peking University)

Abstract: Since Dr. Yanqing Guo finished his training programs in University of Reno, Nevada, some changes have been seen in the Institute of Mental Health. This article give a brief introduction of these changes. A discussion of how can ABA be well developed in China is also provided.

#67 Symposium
11/27/2005
11:00 AM - 11:50 AM
TPC; Applied Behavior Analysis

Beyond Assessment and Treatment Protocols: Understanding the Behavioral Underpinnings at Work in Applied Settings
Chair: William J. Warzak (University of Nebraska Medical Center)

Session Abstract: Applied behavior analysis has led to the development of effective assessment and treatment procedures for a wide variety of target behaviors. As behavioral technology has advanced it has been disseminated to an ever wider audience of providers. In so doing, many behavioral approaches have become systematized, promulgated through the professional literature, and disseminated through graduate training programs and in behavioral pediatrics clinics. Many of these procedures have become routine and have been packaged into assessment and treatment protocols that are easily implemented. However, the conceptual underpinnings of these protocols are often lost in the translation from their origins in experimental analysis to consumer friendly approaches to assessment and treatment. Exceptions to protocol driven procedures may require analytic skills or special content knowledge not commonly available to the community clinician who may lack extensive behavioral training. This symposium addresses this phenomenon by providing the behavioral foundations underlying select assessment and intervention techniques in three disorders commonly seen in behavioral pediatric clinics, namely, ADHD, autism, and nocturnal enuresis. Each presenter will provide information related to one of these select populations and discuss behavioral principles underlying the basic clinical phenomenon, and aspects of its assessment and treatment.

Behavioral Explanations for the Effectiveness of Moisture Alarms in the Treatment of Enuresis. WILLIAM WARZAK (Munroe-Meyer Institute for Genetics and Rehabilitation, University of Nebraska Medical Center) and Karen Ditmer-McMahon (Childrens' Hospital, Omaha)

Abstract: Moisture alarms have become the predominant behavioral intervention for primary nocturnal enuresis since their introduction by Mowerer and Mowerer in 1938.

Today's alarms typically consist of a small alarm box worn on the wrist or shoulder with wires attaching to snaps separated by the child's sleep garment. The child's urine completes the connection and the alarm sounds, waking the child. It is well accepted that the success of the alarm is based on learning principles. For example, it has been proposed that the alarm works through classical conditioning and that through repeated pairings of a full bladder, the child wetting, the alarm sounding, and the child waking, the child learns to wake to the sensation of a full bladder prior to voiding. Others have argued that operant conditioning is a factor in that children respond to the alarm and waking as an aversive consequence and successfully avoid this consequence by learning to avoid wetting. However, there is much of the moisture alarm phenomenon which not only remains unexplained by these learning processes but which appears to contradict these well worn behavioral adages. The relevance of conditioning phenomena to the effectiveness of moisture alarms comprises the basis of this presentation.

Behavioral explanations for the effectiveness of Social Stories. SUSAN WILCZYNSKI (Munroe-Meyer Institute for Genetics and Rehabilitation, University of Nebraska Medical Center)

Abstract: Social Stories represent an intervention for Autism Spectrum Disorders that provide a description of a life activity that is intended to guide the child in making the correct social decisions. The components of the story include: (a) the target behavior, (b) the conditions under which the behavior should occur, and (c) probable consequences for performing the behavior. The consequence for correct performance typically involves 'pleasing' important individuals in the child's environment. For this reason, many have argued that Social Stories are effective because they improve 'perspective-taking.' This presentation will consider behavioral explanations for the effectiveness of Social Stories. Three behavioral mechanisms are forwarded. First, Social Stories may be a strategy for delivering contingency-specifying stimuli that regulate the child's behavior. Second, the response effort required to obtain the information in the form of a Social Story may be lower than when information is presented orally because a Social Story does not require a high level of social interaction in addition to the communication demands. Third, the schedule of reinforcement for the same target behavior may be greater after a Social Story has been introduced because adults are (a) attending to and (b) responding more consistently to demonstrations of the target behavior.

#68 Paper Session
11/27/2005
11:00 AM - 11:50 AM
EAB

Environmental Functions of Stimulus Events
Chair: Gerson Y. Tomanari (University of Sao Paulo)

Reinforcement: A different Conception? (Experimental Analysis). MICHAEL DAVISON (University of Auckland)

Abstract: Three recent pieces of research question conventional wisdom about the effects of reinforcers on behaviour and suggest that contingent primary and conditional reinforcers may not invariably increase behaviour. The research has also again shown that stimuli not temporally associated with reinforcers can increase behaviour. The effects of contingent events may be more a function of what they

signal in terms of the likelihood of future events than a direct effect of the nature of the events themselves. Thus, depending on their discriminative properties, reinforcers may decrease behaviour and punishers may increase behaviour – and non-hedonic events may also have behaviour-increasing or decreasing effects depending on whether they predict or counterpredict future hedonic events.

Pigeon's Observing Responses Maintained by S- (Experimental Analysis).
GERSON Y. TOMANARI, Luana T. Hamilton, and Lucas R. Napolitano (University of São Paulo)

Abstract: Food-deprived pigeons were given a series of 50-s discrete trials. Half of the trials ended with response- independent food presentation and half without food presentation; the sequence of food and no-food trials was random. At the beginning of each trial, the single response key available in the operant chamber was illuminated with white light. During a trial, pecking the key could change the key color from white to red or green, depending on whether food or no food was programmed. Once produced, the key remained red or green until the end of the trial. Baseline and experimental conditions alternated. In baseline conditions, pecks produced both stimuli on a 15-s variable-interval schedule. In two different conditions, maximum interresponse intervals were required after the completion of the VI (tand VI DRH) in order to produce one of the stimuli. Results showed that the introduction of the tandem contingency resulted in a general decrease in the stimulus production. However, the decrease markedly happened when the tandem contingency was applied to production of S+, and not so much when it was applied to the production of S-. Apparently the results are not consistent with the delay-reduction model, but rather with the uncertainty-reduction one.

#69 Symposium
11/27/2005
11:00 AM - 11:50 AM
AUT; Service Delivery

Longitudinal Research of Autism Treatments: Outcomes, Measurement, and Financial
Considerations.
Chair: Gerald Harris (Texas Young Autism Project)

Session Abstract: Current treatment outcome literature is sparse, does not address significant methodological problems in assessing this population, and has not well documented the financial benefits of providing effective treatment. The first data-based presentation is a discussion of findings from the first 2 years of data in an ongoing longitudinal investigation comparing several different modalities of treatment for a large sample in several different skill domains. The second presentation concerns the use of standardized tests when evaluating treatment outcome in children with autism. Due to the unique characteristics of children with autism, there are significant methodological problems in using tests designed for other populations. These problems are discussed within the context of reliability, validity, and the interpretation of results. The final presentation raises issues related to the financial costs and benefits resulting from early ABA interventions for children with autism. This presentation includes a detailed breakdown of budgeted and actual costs incurred for one state with Special Education versus early behavioral intervention, and presents some strategies that have been shown to be helpful in approaching state and agency policy-makers.

A Longitudinal Comparison of Treatment Modalities for Children with Autism: Including 2-Year Data from Multiple Sites. GERALD HARRIS, Wendy Neely, and Gregory Chasson (Texas Young Autism Project)

Abstract: While a respectable number of studies exist that focus on only one treatment modality for autism, they typically cover only a short period of time, use a narrow range of measures, and have a small sample size. In this study, over 140 young children with autism were recruited from five different treatment settings, which include an intensive discrete trial in-home ABA program, two intensive ABA center-based programs with differing treatment delivery methods, an "eclectic" private school that specializes in children with autism, and a school with an ABA-oriented teaching approach. Each child received an initial, 6-month, then annual assessment of cognitive and motor abilities, language skills, adaptive behavior functioning, and the level of symptomatology associated with autism. Two years of treatment data have been collected to date across multiple sites. Repeated measures analyses of the data thus far show interesting differential benefits between treatment modalities. Implications of these results are discussed, along with a brief review of the historical and present state of treatment outcome research on children with autism, and several unique methodological issues involved in conducting large-scale longitudinal research on this population

Issues Unique to the Measurement of Intelligence in Children with Autism. WENDY NEELY and Gerald Harris (Texas Young Autism Project)

Abstract: Historically, researchers and clinicians have struggled with unique issues related to measuring the intelligence of individuals with autism. There has been a great deal of controversy surrounding the validity of even the most frequently used measures when testing the autism population. While some research indicates there is a particular pattern of scores on measurement indices, the validity of interpreting specific strengths and weaknesses has been heavily challenged. In this study, information was consolidated from an extensive literature review of autism outcome literature on the most widely utilized measures of intelligence, mean intelligence scores of these tests, the indices of variability, and details of administration of the measures. This information was compared to available norming data and standardization information. Overall, there are several problems in the interpretation of these tests, such as discounting floor effects and disregarding standardized procedures. Implications for the use of standardized outcome measures in research on children with autism are discussed in the context of an ongoing longitudinal outcome study.

Societal Cost and Benefits of State-Provided ABA Intervention for Young Children with Autism . GERI HARRIS, Wendy Neely, and Gerald Harris (Texas Young Autism Project)

Abstract: One very important element associated with intervention for children with autism is the financial burden associated with treatment. Whether paid for by individuals or by the government, intensive behavioral intervention is expensive. Recent epidemiological data reflect a dramatic increase in the rates of autism diagnoses worldwide. The current study consisted of a financial analysis of treatment expenses and associated cost benefits for children with autism for one state. The costs associated with providing Early Intensive Behavioral Intervention (EIBI) versus the expenses associated with public schools' Special Education programs are

presented. With a conservative estimate of 10,000 children with autism in one state, despite the high initial cost of behavioral treatment, over $2 Billion dollars could be saved over an 18-year span. Findings are incorporated into a proposed demonstration project for implementing universal ABA treatment for this population.

#70 Symposium
11/27/2005
11:00 AM - 11:50 AM
EAB; Experimental Analysis

Meanwhile Back in the Home Cage: The Role of Food in Schedule-Induced Drinking
Chair and Discussant: Carlos A. Bruner (National University of Mexico)

Session Abstract: Schedule induced drinking (SID) occurs when in a given session food deprivation is combined with food delivery. While the role of food deprivation has been studied in our lab to some extent, much less is known about the role of food delivery. In the following experiments we tried to determine the relation between drinking and food availability as well as its relation to meal size. One methodological problem concerning the study of food delivery is that in order to keep constant the specified level of food deprivation it is necessary to balance the amount of food delivered in both, the experimental chamber and in the rat's home cage. This procedural feature has in the past lead to some questionable conclusions about the nature of SID (e.g., its putative excessiveness). To solve this problem, in the following experiments rats deprived at 80 % of their weight remained in the experimental chamber for periods of 24 hours, with water constantly available. Food was delivered in episodes at chosen times of the day and meal size was varied on certain episodes. The feeding episodes replicated a typical one-hour SID session, delivering a number of food pellets according to a 180 s fixed-time (FT) schedule.

Effects of Meal Size in One Feeding Episode per Day. ALICIA ROCA and Carlos A. Bruner (National University of Mexico)

Abstract: On alternate days rats were given food in either the experimental chamber or in their respective home cages so that their weight remained constant at 80 % of ad lib. For three rats each the feeding episode provided either 2 or 10 g of food pellets. The amount of food given in their respective home cages in alternate days was the complement necessary to sustain the deprivation level. Those rats given 2 g during the feeding episode drank less water within the experimental chamber than the rats given 10 g. Because the rats that received 2 g in the chamber required more food in their home cages to maintain the level of food deprivation these rats in turn drank more water in their home cages than the rats given 10 g in the experimental chamber, that received consequently less food in their home cages. For all rats drinking was largely confined to the feeding episode and occurred between successive food deliveries. These data showed that whether rats drink more in the experimental chamber or in their home cages depends on the amount of food given in each; i.e., the rats given 10 g in the chamber appeared genuinely "polydipsic" while the rats given 2 g in the chamber appeared "hypodipsic" during the SID session.

Effects of Meal Size in Four Feeding Episodes per Day. ROGELIO ESCOBAR and Carlos A. Bruner (National University of Mexico)

Abstract: Shifting the rats from the experimental chamber to their home cages is a cumbersome maneuver that can potentially introduce foreign variables in the experiment. In addition, there is no obvious reason to conduct only one SID session or episode per day. For this experiment three rats at 80 % of their ad lib weight remained continuously in the experimental chamber (24/7). Four one-hour feeding episodes were programmed each day. On the first episode the amount of food necessary to maintain the deprivation level was given to each rat on the 180 s FT schedule. On the remaining three one-hour episodes either 1, 3 or 8 g of food were given scrambling the order of the meal sizes. As meal size increased drinking increased, remaining largely confined to the feeding episode for the three rats. Also for the three rats, drinking occurred between successive food deliveries. The results showed an impressive constancy between the total amount of food delivered in the four feeding episodes and the volume of water drank by each rat, so that each feeding contributed a constant amount to the rat's total daily water intake. These data argue in favor of the view that water consumed in SID experiments is not excessive relative to total daily intake but rather that food availability redistributes total daily drinking in proportion to meal size.

#71 Symposium
11/27/2005
11:00 AM - 11:50 AM
BPH; Experimental Analysis

The Economics of Choice: A Simplified Model of Demand and Human Polydrug Self-Administration
Chair: Ralph Spiga (Temple University School of Medicine)
Discussant: Michael Davison (University of Auckland)

Session Abstract: During this Symposia Steven Hursh, Ph.D. and Ralph Spiga, Ph.D. will present talks respectively entitled "Consumer demand: A simplified model" and "A Behavioral Economic Analysis of Human Polydrug Self-administration". In the first talk a "new demand law", a simplified model of consumer demand that uses a 1 or 2 parameter equation will be presented. Data will be presented that demonstrate that this model has broad generality across reinforcers and species. In the laboratory we can eliminate the natural market forces constraining price and manipulate price over a wide range in order to visualize the full extend of the demand curve and define its underlying shape. The second talk will focus on application of the Demand Model to human laboratory polydrug self-administration. Polydrug abuse is the most prevalent pattern of drug use in the substance using population. The effects of price and availability of alternative reinforcers on consumption and choice will be examined. Models of consumer demand will be used to examine the economic relations of substitutability, independence and complementarity. Knowledge of the underlying shape of the demand curve and reinforcer interactions helps shape public policy that seeks to influence consumption through price manipulations, such as policies to reduce drug abuse.

A Behavioral Economic Analysis of Human Polydrug Self-Administration.
RALPH SPIGA (Temple University School of Medicine)

Abstract: Polydrug abuse is the most prevalent pattern of drug use in the substance using population. The temporal pattern of polydrug use includes simultaneous and sequential use of multiple drugs. Studies of nonhuman and human drug self-administration have demonstrated orderly relations between drug dose and the

responses procuring the drug. These observations establish drug-taking as an operant behavior, a behavior shaped and maintained by contingent consequences. Prototypical drugs of abuse function as positive reinforcers. Although a substantial literature describes the quantitative relationship between relative reinforcer frequency and response allocation, rarely has choice or interactions between different classes of concurrently available drug reinforcers such as marijuana and ethanol been examined. Basic economic concepts of demand, price, elasticity, substitutes, complements and independents. Economic concepts are applied to the analysis of human drug self- administration in single or multiple drug environments. A unique human drug self-administration paradigm using methadone-maintained patients and methadone, nicotine, valium, ethanol and caffeine as reinforcers describes drug interactions using economic concepts. The data illustrate the basic predictions of the unit price theory, interactions of drugs when available sequentially and concurrently, the effects of pharmacotherapies on demand elasticity of drug consumption and analysis of simulated drug market exchanges on demand for drug.

Consumer Demand: A Simplified Model. STEVEN R. HURSH (Johns Hopkins Department of Experimental Biology)

Abstract: In the first talk a "new demand law", a simplified model of consumer demand that uses a 1 or 2 parameter equation will be presented. Data will be presented that demonstrate that this model has broad generality across reinforcers and species. The biological shape of the demand curve will be defined, even though, in practice, it is difficult if not impossible to observe the entire demand function for a single commodity in the natural economy. In practice, natural processes limit the normal range of prices. In the laboratory we can eliminate these processes and manipulate price over a wide range in order to visualize the full extend of the demand curve and define its underlying shape. Knowledge of the underlying shape of the demand curve helps shape public policy that seeks to influence consumption through price manipulations, such as policies to reduce drug abuse.

#72 Paper Session
11/27/2005
11:30 AM - 11:50 AM
EDC

The Triad Model of Education and Instructional Engineering.
ERNEST A. VARGAS (B. F. Skinner Foundation)

Abstract: It is assumed that new and effective instructional technologies will solve the problems of teaching. As instructional results continue to reveal, the assumption is wrong. More than an effective instructional technology is needed. Effective instruction will be possible only with the proper organization, science, and instruction. A Triad Model of educational innovation is necessary. A brief overview of the Triad Model is presented. Amplified is the relation between organizational structure and a contingency-based system of instruction with special emphasis on the characteristics of the latter.

#73 Paper Session
11/27/2005
1:00 PM - 1:20 PM
OBM

Self-Monitoring: A Review of the Literature and Critical Analysis of the Issues (Applied Behavior Analysis).
JEANNE MARSHALL (University of Nevada, Reno/Judevine Center for Autism) and Cristin D. Harrison and Linda J. Hayes (University of Nevada, Reno)

Abstract: This paper reviews the literature on Self-Monitoring as a form of performance feedback. It is proposed that this may be an excellent tool for small agencies and school districts to implement as a follow-up to staff training, but it gets very little attention as a viable procedure. The presentation will highlight the findings of the research which lend support to the use of this strategy as well as keys to using it effectively. In addition, we will discuss use of the procedure as a performance feedback to at The Judevine Center for Autism with parents and staff.

#74 Invited Symposium
11/27/2005
1:00 PM - 1:50 PM
EDC

Behavior Analysis in Education

#75 Paper Session
11/27/2005
1:00 PM - 1:50 PM
EAB/DDA

Computerized Programs in Behavior Analysis
Chair: Oliver Mudford (University of Auckland)

A Computational Model of Selection by Consequences (Theory). JACK J. MCDOWELL (Emory University)

Abstract: Darwinian selection by consequences was instantiated in a computational model that consisted of a repertoire of behaviors undergoing selection, reproduction, and mutation over many generations. The model in effect created a digital organism that emitted behavior continuously. The behavior of this digital organism was studied in 3 series of computational experiments that arranged reinforcement according to random-interval (RI) schedules. The quantitative features of the model were varied over wide ranges in these experiments, and many of the qualitative features of the model were also varied. The digital organism consistently showed a hyperbolic relationship between response and reinforcement rates, and this hyperbolic description of the data was consistently better than the description provided by other, similar, function forms. In addition, the parameters of the hyperbola varied systematically with the quantitative, and some of the qualitative, properties of the model in ways that were consistent with findings from biological organisms. These results suggest that the material events responsible for an organism's responding on RI schedules are computationally equivalent to Darwinian selection by consequences. They also suggest that the computational model developed here is worth pursuing further as a possible dynamic account of behavior.

Observer Agreement and Accuracy with Computer-Recorded Behavioral Data (Applied Behavior Analysis). OLIVER C. MUDFORD (University of Auckland, New Zealand), Neil T. Martin (TreeHouse Trust, London, UK), and Sarah A. Taylor and Philippa J. Hall (University of Auckland, New Zealand)

Abstract: Direct observational recordings of behavior may be facilitated by providing observers with portable computers programmed to record observations. In many settings, this method has replaced the traditional paper-and-pencil recordings using time-sampling and interval recording. There is a paucity of research on methodological issues with computer-recorded data, i.e., interobserver agreement, observer accuracy, and observer training. The results of our preliminary studies in these areas will be presented. The observational materials were video recordings from analogue functional analyses with adults with mental retardation and children with developmental disabilities. Recommendations for practice and further research will be made.

#76 Paper Session
11/27/2005
1:00 PM - 1:50 PM
EAB

Experimental Analysis of Behavior
Chair: Jeffrey N. Weatherly (University of North Dakota)

Investigating the "Illusion of Control" When People Play a Video-Poker Game (Experimental Analysis). JEFFREY N. WEATHERLY and Holly Dannewitz (University of North Dakota)

Abstract: The study of gambling behavior has largely occurred outside of behavior analysis. Fortunately, the advent of modern computers has allowed for the rigorous study of such behavior under the controlled conditions typically employed in behavior-analytic research. The present experiment employed non-pathological, legal-aged adults to play a video poker game for money. All participants played the game under three separate conditions. In one, the choice of which cards to hold or discard was under complete control of the player. In another, the game indicated to the player the best cards to hold, but the player had the option of disregarding this information. In the third, players were told they had to hold the cards identified by the game. Results indicated that these manipulations altered not only the rate of play, but also the number of hands players opted to play during the session and the total amount gambled during the session. These findings are thus consistent with the idea that the "illusion of control" found in the cognitive literature can be conceptualized as an alteration in the reinforcing contingencies programmed by the game of chance.

Training Symmetry and Transitivity: The Acquisition of Inter-Related Conditional Discriminations (Experimental Analysis). Saulo M. Velasco and GERSON Y. TOMANARI (University of São Paulo, Brazil)

Abstract: The research describes the acquisition of inter-related conditional discriminations along a training procedure that would supposedly establish stimulus classes according to the equivalence paradigm. 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), 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.

#77 Paper Session
11/27/2005
1:00 PM - 1:20 PM
OBM

Human Performance Technology (Applied Behavior Analysis). DONALD TOSTI (ISPI)

Abstract: Every organization is at its most fundamental level a Human Performance System. It was started by people, run by people for the sole purpose of delivering value to the people who are it's stakeholders Just as a physician must understand that the body is basically a biological system so should managers understand their organizations as Human Performance Systems. All other views such as an economic system , an operational system , a business system and so on are all second order viewpoints that arise from the actions of people. Human performance may be defined as "The valued results produced by people working within a system." In this paper we will explore how Human Performance Technology can be a powerful tool for optimizing the results an organization can obtain.

#78 Paper Session
11/27/2005
1:00 PM - 1:50 PM
TPC

The Problem of Agency in Behaviour Analysis and Historical Materialism (Theory). FREDERICK FURNISS (The Hesley Group)

Abstract: Although typically focusing on different levels of analysis (individual vs cultural), behaviour analysis and historical materialism share a common core problem, namely the relationships between social relationships and the behaviour of individuals or classes. Furthermore, the subjective experience of the self as agent has been a major barrier to acceptance of both approaches. This paper compares the approaches of contemporary behaviour analysis and historical materialism to the experience of the self, and proposes the materialist concept of "determination in the last instance" as a principle which may contribute to behaviour analytic understanding of relationships between verbal and contingency-shaped behaviours.

#79 Paper Session
11/27/2005
2:00 PM - 2:50 PM
EDC/TPC

Behavior Analysis Technology in Large Classrooms
Chair: Joanne K. Robbins (Morningside Academy)

Effective and Efficient Teaching and Learning: Strategies For Classrooms With More Than 40 Learners, Part 1 (Service Delivery). KENT JOHNSON and Joanne K. Robbins (Morningside Academy)

Abstract: In part 1 of this 2-part presentation we will present a general model of learning that guarantees students will learn a teacher's curriculum to mastery, and be able to apply what they've learned in their everyday lives. Such a model requires grouping students together who have very similar skills, strengths and weaknesses, to create as much homogeneity of skills and deficits as possible. Homogeneity of skills allows the teacher to focus on teaching specific goals & objectives at the same academic level, and not attempt to teach students who are functioning at several different levels of achievement. Homogeneous groupings will change from subject to subject. For example a student may function successfully in a higher level reading group, and a lower level math group. Homogeneous groupings are dynamic not static, and change month-to-month based upon continuous monitoring of student growth. We will describe methods of assessing your students in any subject, and creating a dynamically changing arrangement of smaller homogeneous groups. We will also describe 3 stages of teaching and learning: instruction for establishing new skills and concepts the learner is not at all familiar with, practice of these skills and concepts to fluency or automaticity, and application of the skills and concepts to everyday life.

Effective and Efficient Teaching and Learning: Strategies for Classrooms with More Than 40 Learners, Part 2 (Service Delivery). JOANNE K. ROBBINS and Kent Johnson (Morningside Academy)

Abstract: With a class of 40 students or more, how can the teacher effectively and efficiently teach several smaller groups of homogeneously skilled students? We will describe a multi-level, small-group approach to managing a classroom to accommodate multi-level needs. Our system includes teacher-instruction time for each small group, peer-managed practice sessions, and independent work. The result is student mastery of the teacher's curriculum. Parents and paraprofessionals can provide assistance in managing such a classroom, but they are not absolutely necessary. We will also describe a school-wide approach to homogeneous grouping, one that groups students from different grade levels according to strengths and needs, with the overall effect of significant school-wide achievement gains.

#80 Paper Session
11/27/2005
2:00 PM - 2:50 PM
EAB/VRB
Conditional Discriminations
Chair: Bill Potter (California State University, Stanislaus)

Emergence of Conditional Discriminations by Joint Control of Stimuli in Compound Samples (Experimental Analysis). Benigno Alonso-Álvarez and LUIS ANTONIO PEREZ-GONZALEZ (University of Oviedo, Spain)

Abstract: We designed two conditional discriminations each one composed by two-stimuli samples and four comparisons with the goal of testing whether learning a conditional discrimination would result in the emergence of the other one. First, we taught a conditional discrimination in which each sample pair PQ (P1Q1, P1Q2, P2Q1,

and P2Q2) controlled selections of a specific comparison A1, A2, B1, or B2. Thereafter, we tested whether participants should select among the PQ stimuli when the AB stimuli formed compound samples. Specific selections would be possible because each stimulus pair AB had been selected in the taught conditional discrimination in the presence of only one P or Q stimuli. Thus, it was expected that participants selected each specific P or Q stimuli in the presence of each AB pair. Three of four participants showed immediately the emergence of the novel conditional discrimination; the fourth participant did so after receiving tests of single-sample conditional discriminations. These results showed basic processes involved in categorization. For example, after learning that Goya was a Spanish painter and learning that Renoir was a French painter, people respond that Goya and Renoir have in common have been painters.

Second-Order Conditional Discriminations (Experimental Analysis). BILL POTTER and Andrea Duroy (California State University, Stanislaus)

Abstract: The authors will present some preliminary data on second-order conditional discriminations with humans and nonhumans. Some of the ramifications and implications of the data will also be discussed.

#81 Symposium
11/27/2005
2:00 PM - 2:50 PM
EAB; Theory

Hardwired Impulsiveness and Strategic Control: Why Insight Isn't Enough
Chair: Pamela Toppi (Veterans Affairs Medical Center)

Session Abstract: Parametric research has found that both people and nonhuman animals have an innate tendency to value future rewards in inverse proportion to their delay, that is, in a hyperbolic curve of amount as a function of delay, rather than in the "rational" exponential curve assumed in most theories of motivation. Such evaluations result in temporary preferences for smaller, sooner over larger, later rewards, arguably the mechanism of motivational impulses. These temporary preferences in turn can be expected to create conflicts between successive selves and an incentive to commit choice in advance, arguably a major rationale for coping mechanisms In this symposium we will review the evidence for hyperbolic discounting in health and addiction, and people's responses to it. In particular we propose a mechanism for that elusive faculty, willpower, and describe how compulsive traits may be a natural side-effect of will: In effect successive selves engage in an intertemporal variant of the bargaining game, repeated prisoner's dilemma. Cooperation in this game resembles both "self-enforcing contracts" between individuals and common descriptions of willpower; but it also creates incentives for a legalistic personal style, circumscribed avoidance symptoms, dynamic repression, and overcontrolled characters such as obsessive-compulsive personality disorder and anorexia nervosa.

Hyperbolic Discounting in Normal and Clinical Populations. RUDY VUCHINICH (University of Alabama, Birmingham)

Abstract: Hyperbolic temporal discounting of reward value produces preferences that shift temporarily from larger, later rewards to smaller, sooner rewards (impulsiveness). Such intertemporal choice dynamics resulting from a relatively

simple principle can make a substantial contribution to understanding "everyday" impulsiveness in normal humans, as well as impulse and impulse control disorders in clinical populations. The empirical fact of hyperbolic discounting has been well established in the behavioral science laboratory, especially with animal participants, as discussed in other parts of this symposium. This presentation will focus on two areas of research with humans. First, research demonstrates that hyperbolic discounting describes normal humans' reward preference in intertemporal choice situations. Second, numerous studies have shown that certain clinical populations show steeper temporal discount functions than comparable control groups. Clinical problems studied to date include addiction to heroin and other opiates, cocaine, alcohol, nicotine, compulsive gambling, and high-risk sexual behavior. In each case, clinical populations discount the value of delayed rewards more than normal controls do. The implications of these findings for clinical assessment and treatment will be discussed.

Choice Bundling is the Principal Mechanism of Self-Control. JOHN MONTEROSSO (David Geffen School of Medicine, University of California)

Abstract: Impulsivity is built into the way consequences are devalued given delay (see foregoing abstract). And yet, the everyday notion of self-control holds that impulsive choices are avoidable. It is argued here that the strongest, most versatile self-control requires the grouping of particular choices (e.g., whether to have a cigarette) with categories of related choices (e.g., whether or not to be a smoker). Human and animal data will be presented confirming that impulsive preference is diminished when subjects choose all at once between temporally extended series of alternatives, as compared to when subjects choose case by case. A mechanism will be suggested for the spontaneous bundling of choices into categories. It will be argued that people have preferred overall expectations for their own future behavior (e.g., not to be a smoker), and find that being able to maintain these expectations depends on how they see themselves choosing currently. As a result, current choices take on additional relevance as precedents, determining the credibility of planned future choices. Willpower emerges as a bargaining solution: the de facto cooperation of successive selves. Additional data will be presented using an interpersonal bargaining game (the prisoner's dilemma) to model this intertemporal bargaining theory of self control.

Effects of Hyperbolae: Intrapsychic Conflict as Intertemporal Bargaining. GEORGE AINSLIE (Veterans Affairs Medical Center, Coatesville)

Abstract: The universal finding of hyperbolic discounting, a pattern that contradicts rational choice theory, provokes re- examination of conventional theories of the self. The likelihood that will is a bargaining stance adopted by successive selves to gang up on potential impulses has been discussed. The ego may not be the hierarchic structure depicted in most cognitive theories, but rather a set of strategic compromises among successive, partially conflicting agents, by analogy to Adam Smith's "hidden hand" that makes competitive markets behave rationally. Extensions of this hypothesis coincide remarkably with much of Freud's metapsychology, with the major exception that impulses are caused not by repression but by the innate curvature of our future valuation function. Despite the effectiveness of intertemporal bargaining in making behavior consistent, it can be expected to have four side effects with serious clinical consequences: 1. The implications of choices as test cases may come to overshadow their intrinsic value, making thought legalistic and behavior compulsive. 2. The need to preserve general self-control in the wake of

lapses may lead to encapsulated areas of dyscontrol. 3. The importance of behaviors as test cases creates incentives for repression and denial. 4. Poorer but enforceable principles may dominate better, more intuitive ones.

#82 Symposium
11/27/2005
2:00 PM - 2:50 PM
OBM; Applied Behavior Analysis

Productive, Profitable and Sustainable Socially Responsible Development: Value-Based 360° Assessments Leads the Way!
Chair: Alan Stevens (Vector)

Session Abstract: The case for Value-Based 360 ° Assessments is presented through: 1 A discussion of the relationship between corporate ethics and sustainable development.2. A description of how a Value-Based 360° assessment instrument generates significant financial and ethical ROI by informing responsible and valid management practices. 3. A case study testimony illustrating how the tool yielded ways of addressing: change, protect organizational investments for future generations and maintain a reputation for reliability, integrity, and fairness.

Productive, Profitable and Sustainable Socially Responsible Development: Part ALAN STEVENS and Camille Ferond (Vector)

#83 Paper Session
11/27/2005
2:00 PM - 2:20 PM
TPC

Verification Versus Exploitation in the Application of Science (Theory).
LINDA J. HAYES (University of Nevada, Reno)

Abstract: Applications of science are of two general sorts, distinguished by their underlying assumptions as to function of science. In one case, it is assumed that the function of science is to generate propositions pertaining to the relational features of particular sorts of events. Operating on the basis of this assumption, the function of applied science is to verify these propositions by establishing their predictive capacity. In the other case, it is assumed that the function of science is to generate results which are capable of being exploited by applied science for personal or social benefit. This paper will examine these two types of applied sub-systems in detail, including their influences on scientific systems, with the aim of promoting the verification function of applied science.

#84 Paper Session
11/27/2005
2:00 PM - 2:50 PM
AUT/DDA

Treatment of Children with Autism and Developmental Disabilities
Chair: Joyce C. Tu (Center for Behavioral Science)

Home Programs for Developmental Disabilities: Interventions to Support Parents and Other Family Members (Service Delivery). TONY BALAZS (ABA Consultant)

Abstract: A child with a developmental disability has an enormous impact on parents, siblings and other family members. The impact is inevitably emotional and is also likely to involve behaviors that affect both family life and the effectiveness of a home-based ABA program. I am the father of a 5 year old boy who has autism, am a therapist on his home program, and am studying for ABA board certification. I help UK parents implement their own ABA home programs. I therefore have experience, both first-hand and professionally, of these family implications. I was formerly a psychotherapist, counselor, and college teacher of therapists. Few ABA professionals delivering home programs have experience of therapeutic counseling. As well as designing and implementing ABA programs, for which they have the repertoire, and delivering training, for which they may, they must often respond to emotionally charged requests for help from parents and may well find themselves involved in a highly stressed family situation. In this paper I will explore the forms family issues can take and their impact on home programs. I will suggest strategies for enabling analysts to respond more effectively to reduce distress and increase parents' effectiveness in their children's programs.

The Role of Joint Control in the Manded Selection Responses of Non-vocal Children with Autism (Applied Behavior Analysis). JOYCE C. TU (Center for Behavioral Science)

Abstract: In the present study, joint control training was applied when teaching selection responses to four non-vocal children with autism. This study is a systematic replication of Tu(2001). The children were two males (age six and seven), and two females (ages twelve and thirteen). The result showed that it was only after the joint tact/self-mimetic/sequelic control training that the symmetrical performance of manded selection responses appeared with no additional training.

#85 Paper Session
11/27/2005
02:30 PM - 02:50 PM
TBA

The Current Status of Behavior Analysis and Special Education in India: A Pilot Study (Theory). Rangasamy Ramasamy and MICHAEL WOODS (Florida Atlantic University)

Abstract: There are over 2500 special education schools in India catering to about two million children with moderate to severe disabilities. For this study, the authors selected ten special schools that had psychologists to work with students and classroom teachers during behavioral outbursts. To identify their involvement in assisting teachers on behavioral interventions, the first author interviewed several special education teachers and found out that they lacked training in applied behavior analysis. When specifically asked about their practice to identify a target behavior and come up with intervention techniques, they all said that they rely on their school psychologists. To improve the special education teacher's behavioral intervention skills, the first author is working with a university in Tamil Nadu to teach a behavior principles course this summer. Before and after they take this course, they will be surveyed to identify their comfort level in applying behavioral principles with their students. Again, two months later, they will be randomly observed in their classrooms to evaluate their use of (taught) behavior principles. The results will be shared with all the teacher training colleges in the state of Tamil Nadu, India, with the importance of the use of behavior training principles in their programs emphasized.

#86 Panel Discussion
11/27/2005
3:00 PM - 3:50 PM
OTH

A Tribute to Fred Keller
Chair: Sherman Yen

SHERMAN YEN (Asian American Anti-Smoking Foundation)
R. DOUGLAS GREER (Columbia University Teachers College)
MARTHA HUBNER (Universidade de São Paulo)

#87 Symposium
11/27/2005
3:00 PM - 3:50 PM
EAB; Experimental Analysis

Essential Control Procedures in Studies of Imitation in Human Infants
Chair and Discussant: Pauline Horne (University of Wales Bangor)

Session Abstract: There are several potential threats to the validity of existing studies of imitation in human infants, both in the developmental and the behavior analytic literature. The first study presented in the symposium is relevant to studies that have investigated infants' imitation of actions on objects. This systematic replication of a published study of imitation in 6-month-old infants suggests that object affordances, social stimulus enhancement, and these two variables combined, may result in false positive outcomes. Other studies, that have employed empty-handed gestures as target behaviors and are not compromised by object affordances and social stimulus enhancement, still have limitations when it comes to identifying the provenance of any target behaviors produced in the experimental setting. The second study investigated imitation of empty-handed gestures in infants aged from 9- to-17-months. Whereas the infants imitated the baseline gestures trained in the experimental setting, they did not imitate interspersed probe target gestures that, it was established at the outset of the study, were not already in the infants' trained matching repertoires. This suggests that, even in late infancy, generalization of imitation responses may only occur to modeled gestures that already feature in the trained matching repertoires.

Imitation of Actions on Objects by Six-Month-Old Infants: Control by Object Affordances and Social Stimulus Enhancement. VICTORIA LOVETT, Mihela Erjavec, and Pauline Horne (University of Wales, Bangor)

Abstract: This study investigated imitation by 6-month-old infants of a particular action-removal of a mitten from the arm of a glove puppet- modeled by an adult. In a groups design, infants were allocated on a random basis to see one of four 30-s demonstrations. In the baseline control condition, the experimenter inserted her hand into the glove puppet, held it just out of the infants' reach, and shook it from side to side, five times. For the affordance control condition, the puppet's right-hand mitten was displaced by means of a hidden mechanism, then replaced out of the infant's view, five times. In the social stimulus enhancement condition, the experimenter pointed five times to the puppet's mitten. In the target behavior modeling condition, the experimenter removed the mitten, then replaced it out of the infants' view, five times. For 21 infants (at least 5 per condition), performance of the

target behavior-mitten removal-in each of two subsequent 90-s response periods was at least as frequent in the control groups as in the modeling group. The implications for the infant imitation literature of these false positives, attributable to object affordances, or social stimulus enhancement, or both, are discussed.

Generalized Imitation of Gestures in Nine- to Seventeen-Month-Old Infants: The Role of Prior Target Behaviour Matching Training? MIHELA ERJAVEC, Pauline Horne, and Fergus Lowe (University of Wales, Bangor)

Abstract: A multiple-baseline-across-behaviors design was employed to investigate generalized imitation of empty-handed gestures by 5 infants aged from 9- to 17-months at the start. The infants were first trained to match four baseline gestures. Next, probe trials that were interspersed with intermittently reinforced baseline gesture trials identified four target gestures that the infants repeatedly failed to match. To demonstrate that the infants were nevertheless able to produce the target responses, albeit outside a matching context, they were next successively trained to produce each target behavior without exposure to the corresponding behavioral model (e.g., to demonstrate a hand touch to the contralateral shoulder, the infant learned to remove a sticker placed on that body part). After each target behavior was trained in this manner, further matching tests were conducted for all four target behaviors, making five such tests in total by the time all four target behaviors were trained. The infants failed to show generalized matching at any stage in the multiple baseline procedure; even infants just under 2 years old at the final test did not show untrained imitation. This suggests that "generalized imitation" may occur only for target behaviors that already feature in the infants' trained matching repertoires.

#88 Paper Session
11/27/2005
3:00 PM - 3:50 PM
EDC/DEV

Field Systems Analysis in School Settings
Chair: Andrew Hawkins (West Virginia University)

Field Systems Analysis of an Instructional Strategy Employed in Developmentally Distinct Physical Activity Settings (Applied Behavior Analysis). ANDREW HAWKINS (West Virginia University) and Carolyn Crislip-Tacy (Fairmont State College)

Abstract: A field systems analysis (FSA) was employed to study how one instructional strategy, verbal rehearsal plus verbal model, was implemented in teaching a complex novel motor skill in intact kindergarten and third grade classes taught by the same teacher. The FSA was developed from two videotapes of the instructional sessions for each class. One videotape captured the entire class, and the other focused on one student in their respective class. The FSA consisted of 1) a descriptive narrative of each instructional session; 2) the development of a category system including contextual, stimulus and behavioral elements; 3) sequential behavior analyses of element chains; and 4) graphs depicting the flow of behavioral and contextual elements across time. The FSA revealed developmental differences between the students in 1) the use of mnemonic strategies; 2) effectiveness of instructional modalities; 3) attentional capacities; 4) correctional capabilities; and 5) effectiveness of skill practice. Differences in teacher behaviors between the two settings were also apparent, including 1) management processes; 2) velocity of

feedback; 3) pace of instruction; and 4) complexity of instructional elements. Developmental implications flowing from this investigation regarding behavioral instruction focused on kindergarten v. third grade children are described.

Field Systems Analysis of a Parent-Child Dyad in Two Disparate Preschool Motor Skill Learning Environments (Applied Behavior Analysis). ANDREW HAWKINS (West Virginia University) and Wallace Neel (Bethany College)

Abstract: Field systems analysis (FSA) was employed to study contextual, stimulus and behavioral differences as one parent-child dyad encountered two disparate learning environments. The subjects were part of Kinderskills, a parent-child preschool motor skill development program in which parents guide their children in various movement activities in both gymnasium and swimming pool environments. One complete instructional session in both the gymnasium and pool were videotaped. Similar movement tasks were used in each setting, including balancing, throwing, kicking, climbing and jumping. The FSA consisted of 1) a descriptive narrative of each setting; 2) the development of a category system identifying contextual, stimulus and behavioral elements; 3) sequential behavior analyses of element chains for each setting; and 4) graphs revealing the flow of contextual, stimulus and behavioral elements across time. Multiple systemic differences between the settings were apparent. The gymnasium seemed to support an system which was more conducive to sound learning and enjoyment, while the pool provided more opportunities for child-initiated play. Moreover, subtle and seemingly insignificant events appeared to have a major impact on system responses in each setting.

#89 Panel Discussion
11/27/2005
3:00 PM - 3:50 PM
EAB/BPH; Experimental Analysis

Instrumentation for Basic Behavioral Research
Chair: Steven I. Dworkin (University of North Carolina, Wilmington)

STEVEN I. DWORKIN (University of North Carolina, Wilmington)
MICHAEL DAVISON (University of Auckland)
KARL ZURN (MED Associates, Inc.)

#90 Paper Session
11/27/2005
3:00 PM - 3:50 PM
OBM

Organizational Behavior Management
Chair: John Austin (Western Michigan University)

Improving Work Safety (Applied Behavior Analysis). JOHN AUSTIN (Western Michigan University)

Abstract: This talk will discuss the behavior analysis techniques involved in reducing work and community injuries. The presentation will go through the steps involved in implementing behavioral safety and discuss some data showing the successful application of the techniques in organizational settings.

An Overview of Publishing in the Journal of Organizational Behavior Management (Applied Behavior Analysis). JOHN AUSTIN (Western Michigan University)

Abstract: The Journal of Organizational Behavior Management, founded in 1977, publishes work involving demonstrations and theoretical analyses of performance improvement techniques in organizations and in the community. This presentation will review the guidelines for submitting articles to the Journal and review the types of articles sought by the Journal.

#91 Paper Session
11/27/2005
3:00 PM - 3:50 PM
TPC/DDA
Positive Behavior Support
Chair: Jie Zhang (Tennessee Technological University)

Positive Behavior Supports: Applications of Behavior Analysis to Severe Behavior Problems (Applied Behavior Analysis). GARY W. LAVIGNA (IABA)

Abstract: One area in which the contribution of Applied Behavior Analysis (ABA) has been especially notable is that of challenging behavior. This includes the more recent development within ABA of Positive Behavior Supports (PBS). However, some behavior analysts have recently challenged PBS as ineffective with the most severe forms of challenging behavior. This paper adds to the evidenced based assertion that positive practices based on the principles of ABA are fully capable of supporting people with the most challenging behavior, without the inherent problems associated with the more traditional punishment strategies recommended by some behavior analysts. Data to support the thesis of this presentation include a series of Type III case studies in which the challenging behavior was life threatening, for which qualified behavior analysts had previously determined aversive procedures would be necessary, and/or for which the focus person had a developmental disability, a mental health problem, or both. The last case presented involves charges of criminal assault. Positive ABA practices appear to be effective, even with the most challenging behavior. The implications of this for the ethical practice of ABA for practitioners in the area of challenging behavior are discussed, given the principle of the least restrictive method.

The Possibility of Positive Behavior Support in Early Childhood Education in China (Applied Behavior Analysis). JIE ZHANG, John Wheeler, Xiuchang Huang, and Yanhui Pang (Tennessee Technological University)

Abstract: Young children's problem behaviors have negative impact not only on children themselves and their families, but also on educators. Thus, it is important to implement early identification and early intervention on children with behavior problems. Instead of trying to "fix" the child with behavior problems, positive behavior support (PBS) tries to replace inappropriate behaviors with more socially acceptable ones, and ultimately to improve quality of life through environmental modification and teaching new skills. It has been proved to be effective and economical in educational settings by Western researchers. This study illustrates the power of PBS on problem behaviors of young children in U.S.A. Related to the unique circumstances of the early childhood education in China, this article examines the possibility of implementing PBS in China to prevent or reduce behavior problems in

young children (between 0 and 8 years old). Several recommendations are provided regarding the possibility of implementing PBS in China's early childhood education with an expectation that it will be useful for future studies.

#92 Paper Session
11/27/2005
3:00 PM - 3:50 PM
AUT/EDC

School Programs for Children with Autism
Chair: Toby Mountjoy (Autism Partnership)

An ABA Based Day School for Children with Autism in China (Applied Behavior Analysis). Joyce Tu, Steve Richardson, and JOSEPH E. MORROW (Applied Behavior Consultants)

Abstract: This paper examines some historical and philosophical basis of applied behavior analysis. It delineates the specifics of establishing and conducting a day school for children with autism based on behavioral principles

Little Learners: A Comprehensive ABA Pre-School Program for Students with Autism in Hong Kong (Applied Behavior Analysis). TOBY MOUNTJOY, Angel Au, Kathleen Man, Ronald B. Leaf, John James McEachin, and Mitchell T. Taubman (Autism Partnership)

Abstract: The presentation is concerned with a unique, intensive ABA pre-school program for children with autism located in Hong Kong. The program includes such components as discrete trial teaching, comprehensive behavior programming, individual, small group, and large group instruction, imbedded and concentrated teaching, layered curriculum, and a schedule and classroom environment which closely approximates a typical pre-school. Although occurring in a classroom setting, instruction and programming are intensive and applied throughout the day. The model is unique to the Hong Kong area. Data will be presented on the impact of the program on students' progress.

#93 Invited Event
11/27/2005
4:00 PM - 5:00 PM
Closing Event