#6 Special Event

11/29/2001
9:00 AM - 10:00 AM
Tapestry Hall

Opening Address
Chair: M. Jackson Marr (Georgia Institute of Technology)

- MASAYA SATO (Teikyo University)
- PAOLO MODERATO (University of Parma, Italy)

#7 Symposium

11/29/2001
10:00 AM - 10:50 AM
Cloister of the Cypress Hall
EDC

Advancing the Science of Behavior Analysis in Schools: Challenges to Researchers, Teachers, and Institutions
Chair: Laura Fredrick (Georgia State University)

Currently, the United States is facing the challenge of preparing over two million teachers over the next five years to fill anticipated vacancies due to a large number of retirements and high turn over rates in urban school systems. Posted vacancies in the school leadership ranks document similar patterns. The conversation nationwide continues to focus on how to attract and retain the highest quality teachers and aspiring school leaders but many differing opinions exist as to how to accomplish this daunting task. In addition, the accountability and standards movement has gained steam with a new presidential team in Washington. Behavior Analysis has much to offer in the preparation of highly qualified school personnel and in the implementation of effective instructional systems. However, it is often difficult to bring the principles of behavior analysis to schools of education and to school systems. In our symposium we will address some of the challenges to bringing the principles of behavior analysis to teacher preparation programs, to doing research in behavior analysis in the schools, and to bringing effective instructional programs to the schools. Along with the challenges we offer suggestions for meeting the challenges.

- **Voice From the Margin: Centering the Discourse in Schools of Education with ABA Principles.** DEBORAH SHANLEY (Brooklyn College of the City University of New York)

  Schools of Education must be brought from the margins to the center of the discussions in order for change in school personnel preparation to occur systemically and to be sustained. Research in the field of applied behavior analysis provides the principles of learning and documented effectiveness across a wide range of age groups, abilities, and settings to support this approach. However, the challenge remains for a Dean in a School of Education to anchor the conversations in school personnel preparation around research validated practices when the majority of the faculty is from differing philosophical points of view. Several documented approaches used to engage non-behavioral faculty in a behavioral, outcomes driven discussion will be presented with a full disclosure of the victories and defeats along the way. Incentive systems available in institutions of higher

education will be highlighted. Partnerships with local community stakeholders will provide a foundation for an effective strategy to move to the center through non-traditional avenues. A case study using a literacy program will guide the discussion for planning for the future.

- **Issues for Behavior Analysts in Educational Research Related to Human Rights Protections for Vulnerable Participants.** MARY BOYLE (State University of New York at New Paltz)

  Behavior analysts conducting research with children face issues relative to the "vulnerability" of their participants, the ability of participants to assent to research, perspectives of "normal" educational practices by institutional review board (IRB) members, and the development of procedures to insure informed consent. These issues are often further complicated by popular misconceptions of coercion related to the practice of behavior analysis and the resultant problems in analysis of risk/benefit ratios by IRB's, as well as appropriate disclosure of alternative treatments. Risk is justified by benefit. The challenge to the researcher is to demonstrate the probability that the child will respond positively to the experimental variable. The submission of research proposals for review by boards charged with reviewing human rights protections is one of the first steps in the process of education which a behavior analyst completes in order to inform the field of education. As we become more adept at addressing issues of concern to these boards relative to benefit and risk, we will be better prepared to serve our students and assist teachers in the field.

- **Environmental Challenges to Behavior Analysts' Efforts in the Schools.** LAURA FREDRICK (Georgia State University)

  The challenges to doing behavior analytic research in the schools are many, yet without taking our research to the schools it is difficult to advance our applied science or to use what we have learned to help students and teachers. The purpose of this paper is to address some of the many challenges to conducting research and bringing best practices to the schools even after receiving IRB approval. The challenges to be discussed focus on school environment and are based on seven years of conducting reading research in public elementary and middle schools in both inner-city and rural school systems and on implementing a large federal grant for the past two years. Along with the challenges are suggestions for overcoming the challenges. Some of the challenges to be addressed include gaining access to the school, getting buy-in from the teachers, training teachers, adapting the school schedule, providing on-going technical support, gathering implementation data from teachers, doing in-class observations, and keeping everyone happy. The more prepared we are to meet these challenges the more likely we will be successful in our efforts to bring behavior analysis to our schools.

#8 Symposium

11/29/2001
10:00 AM - 10:50 AM
Bibliography Hall
TPC

Conditioning: How the Subject Learns to Look after Themselves in an Ever Changing World
Chair: Paul Andreoli (Innosearch Development Support BV; Echten, Netherlands)
Discussant: Beata Bakker (CGA Business; Den Haag, Netherlands)

When we talk about conditioning, we refer to the environmental control of behavior. Both the quantity and the variety of laboratory studies on individual behavior guarantee the experimentally based evidence to that. No wonder that the principles of conditioning come in useful for teachers, therapists, managers and anybody else who wants to do something about other people's behavior.

However, the environmental control of the subject's behavior is only one side of the conditioning story. The other side of the same story tells us about what the subject is going through while getting conditioned. Whether we look at a simple experimental design or a complicated one, the subject is always doing the same, which is: learning to take care of himself in a particular situation. For that, he learns to utilize whatever opportunities his immediate environment presents. The apparently innate ability to do so has been demonstrated by thousands of studies on conditioning, though none of those was meant for that purpose!

Reconsidering conditioning from the perspective of the subject, stimulates new reflections on (1) the impact of functionally different behavior, (2) the definition of decisive data on human everyday behavior, and (3) how to collect those data.

- **Functional Differences of Behavior in Everyday Life: the Prominent Place of Active Avoidance.** JANNA VAN DELDEN (Regional Institute for Out-patient Mental Health Care Midden-Holland; Gouda, Netherlands)

A behavioristic interpretation of human conduct requires an extrapolation of conditioning principles derived from research findings on animals. Daily human actions will be distinguished in terms of their function. People maintain their well being both by responding and non responding to environmental stimuli. Three forms of responding (approach, escape and active avoidance) and two forms of non responding (extinction and passive avoidance) will be discussed in terms of functional differences on the basis of the respective controlling stimuli and the resulting state of the individual. Active avoidance is assigned a prominent place because it results in the most "all round" good state by far. Examples of everyday human behavior will be given as an illustration.

- **Investigating the Function of Human Everyday Behavior.** BART BRUINS (Regional Institute for Out-patient Mental Health Care Midden-Holland; Gouda, Netherlands)

In the laboratory determination of the function of a response is usually no issue. In this artificial environment, the target behavior and the controlling stimuli are determined by the design of the experiment. Whether the target behavior has an approach, escape or avoidance function is dependent on the contingencies applied. On the other side, the function of behavior in natural environments is difficult to determine. The topography of the response does not provide useful clues, because topographically identical behavior can have dissimilar functions in various situations due to differences in stimulus control. Moreover, the controlling stimuli in natural environments are mostly of a complex nature. And even more complicating, the stimulus control of the present conduct has been established by contingencies in earlier situations and cannot be observed in the present situation. Therefore, determination of the function of an action in human everyday life requires a specific method. By means of a special interview technique the function of an individual's action can be detected in retrospect. The method will be explained and exemplified. Also, some related theoretical and methodological issues will be discussed.

#9 Panel Discussion

11/29/2001
10:00 AM - 10:50 AM
Council Hall
DDA

Conducting Research Investigations in School and Community Settings
Chair: Mary Louise Hemmeter (University of Kentucky)

- JENNIFER GRISHAM-BROWN (University of Kentucky)
- BELVA COLLINS (University of Kentucky)
- JOHN SCHUSTER (University of Kentucky)

#10 Symposium

11/29/2001
10:00 AM - 10:50 AM
Palladian Refectory Hall
EAB

Errorless Learning in Children, Horses, Marine Mammals, and Dogs
Chair: Lewis Lipsitt (Brown University)

The phenomenon of errorless discrimination learning was developed by Herbert Terrace in the early 1960s. Demonstrated in pigeons and rats, there has been little recent discussion of the advantages of the technique, or variations on it, as a model for learning in different species. The procedure is especially interesting because it has the advantage of avoiding delivery of punishment or protracted periods of non-reinforced behavior. In Terrace's method, a fading procedure is used; for example, negative stimuli that, in ordinary discrimination learning would draw incorrect responses, are only gradually phased in. The learner essentially declines to respond to the incorrect stimulus, such as a dim green light, which increases in brightness on successive occasions. Several advantages over traditional discrimination learning procedures. For example, the stimulus to which no errors are drawn, does not acquire an aversive quality, and thus aggressive and escape responses seldom occur. In this symposium we will explore variations, in different species (dogs, marine mammals, horses, and children), on procedures for bringing the learner to a stable criterion of perfect performance in an environment in which no or few errors occur.

- **Errorless Learning in Children.** MICHAEL CATALDO (Kennedy-Krieger Institute)

  Various procedures for minimizing errors during learning by children will be discussed. However, some advantages will be cited for presenting children with error-present learning tasks. Significant in the arrangement of learning sequences for children is that children are rapidly developing organisms. Performance criteria, as dictated by a child's culture, require rapid behavioral changes by the child. This, in combination with the less than optimal teaching situations of a culture, argues for the importance of training children to be able to acquire and modify skills in less than optimizing circumstances. Similar to the argument against insulating children from all infectious agents so they can develop an effective immune system, developing children need to acquire the skill to learn in not only errorless but also error-filled circumstances.

- **Errorless Learning in Marine Mammals and Horses.** SHAWNA KARRASCH (On Target Training)

  Shawna Karrasch works on "targeting" with horses and marine mammals, and demonstrates one form of errorless learning. This type of errorless learning is similar conceptually to modeling, following, imitation, verbal instruction, and fading. The initial stages of target training are not errorless; rather, the purpose of this training is to reduce errors in later stages.

- **Errorless Learning in Dogs.** MARK LIPSITT (Lipsitt Training Services)

  Mark Lipsitt uses another form of errorless learning with dogs. His technique, designed to reduce the animal's attention to irrelevant stimuli, is drawn from the work of Terrace, and decreases the occurrence of errors. This is done by gradual and early introduction of irrelevant stimuli. As with the Karrasch method, the initial stages of learning are not in fact errorless, but serve to reduce errors in later stages. Under laboratory conditions, Terrace was able to demonstrate close approximations to errorless learning, i.e., 100% correct responses through the process of learning. This is critical to the practitioner in ways that will be described.

#11 Symposium

11/29/2001
10:00 AM - 10:50 AM
Hall of the Ceiling
AUT

Language Intervention for Preschoolers with Autism
Chair: Ann Kaiser (Vanderbilt University)
Discussant: Craig Kennedy (University)

Depending upon the child's age and current communication skills, different modes of communication (verbal, sign, or symbol) may be selected for early communication interventions. The two papers presented in this symposium report data resulting from early interventions to teach functional communication skills to young children with autism.

The first paper describes the immediate and long term outcomes of teaching 15 preschool children with autism to use the Picture Exchange System. The PECS protocol was implemented by children's classroom teachers. The effects of the study were assessed using single subject design to assess performance in baseline, treatment and follow-up phases. All children showed increases in the forms and functional uses of communication. High levels of treatment fidelity and reliability were obtained.

In the second paper, three variations of naturalistic language teaching were used with 15 preschool children with autism who used speech as their primary mode of communication. The children were taught target language skills using one of three procedures: Enhanced Milieu Teaching (EMT) implemented by parents, EMT implemented by teachers, or Responsive Interaction implemented by parents. In a single subject design to evaluate each implementation, the effects of the three interventions were assessed during treatment, generalization and follow-up conditions spanning 1 year. Children demonstrated acquisition of targets in all three types of naturalistic teaching, however generalization and maintenance were most consistent for children who were taught using EMT procedures by their parents. High levels of treatment fidelity and reliability are also reported.

Together, these studies provide evidence of effective early communication intervention for children with autism as indicated by the acquisition, generalization and maintenance of

functional communication skills. Contrasting procedures and outcomes for children with different entry communication skills will be considered. Specific questions for future research will be discussed and recommendations for effective practice will be made.

- **The Effects of Variations in Naturalistic Language Teaching on Young Children with Autism.** ANN KAISER and Terry Hancock (Vanderbilt University)

  Naturalistic approaches to teaching language according to the extent to which prompts for functional language use are embedded in the interaction and by the agent of the intervention. For example, variations of milieu teaching typically include prompts for functional language (e.g., time delay, mands, elicitive models and incidental teaching) whereas responsive interaction approaches rely on non-elicitive models, expansions, and semantically related feedback to introduce new language. Naturalistic teaching has been applied by both teachers Kaoegel, O'Dell & Koegel, 1987; McGee, Krantz & McClannahan, l985) and parents (Kaiser, Hancock & Neitfeld, 2000) with promising results for children in with autism. Because social language use is a likely to be a long term and pervasive problem for children with autism, the effects of variations of naturalistic teaching on generalization and maintenance of language skills taught through naturalistic methods are of particular interest.

  In this paper, we report data for 15 preschool children with autism spectrum disorders who participated in three variations of naturalistic language intervention: Enhanced Milieu Teaching (EMT) delivered by therapists, Enhanced Milieu Teaching (EMT) by parents, or Responsive Interaction (RI) by parents. Children with at least 10 spontaneous words and tested receptive and productive language scores in the 20-28 month range were randomly assigned to one of the three treatments. Following 5-9 baseline sessions, naturalistic language teaching procedures were either implemented by trained therapists or the therapists taught the procedures to the parent. All children received 24 sessions of naturalistic intervention during play sessions. Generalization to interactions with parents at home was observed 9 times during the course of the study. Children returned to the clinic for six monthly follow-up observations. Observational data were collected for baseline, treatment, home generalization and follow-up conditions using an ABC design with multiple probes for generalization. Interobserver agreement of coded adult and child behaviors, collected on 25% of the observations, was high. Variations in length of baselines allowed comparisons across within the three treatment groups. All children demonstrated acquisition of their language targets during the primary intervention provided by the therapist or trainer and all children showed evidence of generalization and maintenance of their newly learned skills. Although generalization and maintenance varied across children, children who received EMT from parents most consistently generalized and maintained their skills. The results of the study are discussed in terms of the need for additional research on variations of naturalistic teaching and criteria for determining generalization and maintenance of language learning by young children with autism.

- **An Experimental Investigation into the Efficacy of the Picture Exchange Communication System for Use with Young Children with Autism.** ANN GARFINKLE (Vanderbilt University), and Ilene Schwartz and Janet Bauer (University of Washington)

By definition, all children diagnosed with autism have a deficit in communication skills. While children with autism, as a group, have a wide range of communication behaviors, a substantial percentage of the population is nonverbal or minimally verbal. In recent years, the Picture Exchange Communication System (PECS; Bondy & Frost, 1994) has become a widely adopted system of augmentative communication for use with children with autism who are nonverbal or minimally verbal. While anecdotal reports of the systems efficacy are numerous and positive, there are only two published reports of the system's effectiveness (Bondy & Frost, 1994; Schwartz, Garfinkle, & Bauer, 1998). While the findings in both of these studies indicate that PECS is an effective and efficient system of communication for young children, both are descriptive studies. This methodology limits the claims that can be made about the effectiveness of the system, and illustrates the need for further study.

The proposed paper describes an intervention study, with good experimental control that was designed to investigate the efficacy of the PECS system in young children with autism. Fifteen preschool aged children diagnosed with autism or Pervasive Developmental Disorder participated in this single subject study. The study uses a repeated AB probe design. Data were collected on the form, function, and use of the child's communication behaviors in two different classroom settings (freeplay and snack). Once baseline communication behaviors were stable, the child received instruction according to the PECS protocol. All intervention was provided by the child's classroom teacher as part of the child's educational program. Data were regularly collected on treatment fidelity and amount of training need to meet mastery criteria for each phase of training. Probes on communication behaviors were collected every 6 months for 2 years on each child. Interobserver agreement, collected on 30% of the samples, was high. The results indicate that children learned to use the system, that children used more communicative functions and more then half of the sample developed speech. Results will be discussed in terms of the use of PECS and future research that is needed.

#12 Symposium

11/29/2001
10:00 AM - 10:50 AM
Carnelutti Hall
OBM

Similarities and Differences in Cultural and Behavioral Systems: Implications for Organizations
Chair: Ramona Houmanfar (University of Nevada, Reno)

Can we use a behavior analytic conceptual framework to understand complex systems? Changing cultural systems ultimately means that participants behave differently. We argue that there is more to cultural systems than behavioral contingencies. Behavior analytic understanding is essential but not sufficient to comprehend how large, complex systems are organized or function as integrated wholes. This symposium will attempt to answer three questions: What are the similarities between behavioral and cultural systems? What are the differences? And what are the implications of those similarities and differences for changing organizations?

- **Cultural and Behavioral Systems: Similarities and Differences.** SIGRID S. GLENN (University of North Texas) and Maria E. Malott (Malott & Associates)

  Behavioral systems encompass contingencies of reinforcement accounting for the

origin and maintenance of a single organism's behavior. A cultural system is a set of interlocking behavioral contingencies that function as an integrated whole and are made up of behavior from the repertoires of two or more organisms. Behavior systems and cultural systems are analogous in how they function with respective to their selecting environments. But the units that participate in their respective selection contingencies differ. We will argue that the major differences are the units of analysis, the lineages and the selecting environments. The major similarities are the selection as a cause, adaptation, and the complexity resulting from selection.

- **Orderly Complexity of Cultural and Behavioral Systems: Implications for Organizational Change.** MARIA E. MALOTT (Malott & Associates) and Sigrid S. Glenn (University of North Texas)

Behavioral systems encompass contingencies of reinforcement accounting for the origin and maintenance of a single organism's behavior. A cultural system is a set of interlocking behavioral contingencies that function as an integrated whole and are made up of behavior from the repertoires of two or more organisms. Behavior systems and cultural systems are analogous in how they function with respective to their selecting environments. But the units that participate in their respective selection contingencies differ. We will argue that the major differences are the units of analysis, the lineages and the selecting environments. The major similarities are the selection as a cause, adaptation, and the complexity resulting from selection.

#13 Panel Discussion

11/29/2001
10:00 AM - 10:50 AM
Little Theatre Hall
AUT

Speech Pathologists and Applied Behavior Analysts: Consideration for Effective Collaboration Regarding Individuals with Autism
Chair: David Celiberti (Eden II Programs)

- DAVID CELIBERTI (Eden II Programs)
- JOANNE GERENSER (Eden II Programs)
- CATHERINE FALLEO (Eden II Programs)

The language and communication deficits associated with autism are significant and warrant a comprehensive array of interventions. Unfortunately, there is often a gap between applied behavior analysts and speech pathologists that impedes their ability to adequately address such deficits. The objective of the panel is to highlight the contributions of both of these disciplines as well as the misconceptions that members of these two disciplines have for each other. Techniques and tools offered by these two disciplines with respect to assessment, goal selection, and intervention will be discussed.

#14 Panel Discussion

11/29/2001
10:00 AM - 10:50 AM
Barbantini Hall
CBM

Varying Perspectives of Parenting: Views from Foster and Adoptive Parents Who are Behavior Analysts

Chair: Jeannie Golden (East Carolina University)

- CHUCK MANNING (Pamlico Animal Hospital)
- DEBBIE STRICKLAND (East Carolina University)
- LORI STUART (Behavioral Consultations & Psychological Services)

Each presenter has a unique perspective as a foster, custodial and/or adoptive parent who uses behavior analysis in these roles. The chairperson is a first-time parent who had adopted her daughter who was, at first, a foster child with severe behavior problems. The first panelist is her husband, who has raised two children, has a grandchild and has a different perspective of parenting after having parented their adopted daughter. The second panelist was granted custody of her niece, who has experienced sexual abuse and exploitation and is exhibiting severe behavior problems and symptoms of psychological illness. Dealing with this child's difficulties, as well as familial issues, makes this situation particularly challenging. The third panelist is the adoptive parent of a young boy who was typically developing until brutal physical abuse left him medically fragile and profoundly handicapped. Providing for this child's special needs and coping with anger toward the birth parents that are now incarcerated can sometimes make this situation overwhelming. One common thread among all these parents is their reliance on behavioral techniques in coping with these unique situations and their stronger belief in behavioral principles as the result of their personal experiences.

#15 Paper Session

11/29/2001
10:00 AM - 10:50 AM
White Hall
DDA

Working with Children and Families

Chair: Joseph J. Plaud (Cambridge Center for Behavioral Studies)

- **Employing Analogue Methodology to Investigate the Determinants of Communicative Behaviors in Children with Cornelia de Lange Syndrome.** KATE ARRON, Chris Oliver, Scott Hall, and Jenny Sloneem (University of Birmingham, England)

  Few studies have examined the effect of antecedent attention on problem and communicative behaviours. In this study, the effect of antecedent attention on the behavior of eighteen children diagnosed with CdLS was examined. These children, known for their apparent disinterest in social interaction and physical contact, were exposed to two analogue conditions in which levels of social contact were systematically manipulated using a reversal design. All analogue sessions were videotaped and specific communicative and problem behaviours were operationally defined and coded using a real time data capture system. Inter-observer reliability was calculated on a 10-second interval by interval basis and Cohen's Kappa was satisfactory for all codes. Results indicated that, contrary to expectations, individuals with CdLS exhibited a number of pro-social communicative behaviours in order to elicit social interaction from others.

- **Family Orientation in a Natural Situation: A Proposal of Prevention of Mental Retardation.** SÔNIA REGINA FLORIM ENUMO (Federal University of Espírito Santo, Brazil)

Prevention has been pointed as an efficient solution for infant developmental problems in developing countries. A residential visiting program to three subjects with Down's Syndrome (2 years old), by two Psychology trainees has been proposed in order to investigate the viability and variables involved in a secondary deficiency prevention program. The intervention consisted of: a) Evaluation of development, through interviews with parents and teachers, observation at preschool, application of the Bayley Developmental Scales and the Portage inventory; b) parent orientation about developmental stimulation activities, through weekly residential visits; c) biweekly meetings with the parents for exchange of experiences and discussion of developmental and behavioral control related themes; d) biweekly meetings for integration and socialization of the subjects and their families, by furnishing socialization activity models. The evaluation showed a general average performance of 40%, with more problems in language and cognition areas. After one year in the program, a general average improvement of 49.5% on the subjects' performance was observed. Methodology aspects of the obtained data are discussed, as well as the process of ongoing the treatment and its importance on a psychosocial approach, and this proposal of integration of teaching, research, and extension activities.

#16 Paper Session

11/29/2001
11:00 AM - 11:25 AM
Hall of the Ceiling
TPC

Feminism and Behaviorism
Chair: Maria Ruiz (Rollins College)

- **The Feminist Critique of Science and Radical Behaviorism.** MARIA RUIZ (Rollins College)

  The feminist verbal community is highly diverse. Nevertheless, feminist perspectives share a series of orientating assumptions regarding science, which in turn guide feminist work. We can begin to talk about the value of a feminist perspective to radical behaviorists by examining two such assumptions. First is the notion that science is not a value-free or gender neutral enterprise. Instead, the values of a culture, including those related to gender come into play in the subset of cultural practices which we tact when we speak of scientific activity. A feminist perspective in scientific work includes an examination of both values and gender. Second, the notion that science is a means to achieving solutions to practical problems and as such it is political activity. While the assumptions do not themselves define or delineate research areas, they can influence the types of research questions that we might ask in virtually any investigation, such as, "what is the gender configuration amongst the research participants?" and "are there gender related power differentials that could influence the results?" Besides these questions relating to the research setting or context of discovery, we might also ask questions related to the context of justification. Specifically, behavior analysts adopt the pragmatic "truth criterion" of "effective action". A feminist perspective brought to bear on this process encourages us to consider potential tensions. For example, the rules of evidence we follow in justifying and validating our scientific activity explicitly authorize and privilege the scientist as sole arbiter. They do not, however require the reflexivity called for by a feminist perspective. I will argue that this

perspective brings a special prism to bear on the analysis and the process of social validation leading to very specific types of questions, which might not otherwise suggest themselves as obvious pauses for further inquiry. I will examine these questions and explore the value of a merger between feminist scholarship and radical behaviorism.

#17 Symposium

11/29/2001
11:00 AM - 11:50 AM
Barbantini Hall
CBM

Applications of Behavioral Assessment Procedures to Distinct Outpatient Clinic Settings
Chair: David Wacker (The University of Iowa)

In this symposium, we provide recent applications of behavioral assessment procedures to outpatient clinic settings. Each presenter will first describe the outpatient clinic and general setting within which they work, and the general population of individuals who receive services within those settings. Next, the presenters will describe the specific behavioral assessment procedures employed in the clinic and provide a rationale for their use in the clinic. Specific case examples and general summaries of the individuals receiving assessment will be presented with outcome data. Finally, the benefits and limitations will be discussed along with suggestions for clinicians and behavior analysts who are providing services and wish to incorporate these procedures into their clinical settings. David Wacker (The University of Iowa) will describe how functional analyses have been adapted for use with normally developing children who have common behavior problems.

- **The Behavioral Pediatrics Clinic: Applications of Brief Functional Analysis to Normally Developing Children with Behavioral Problems.** DAVID WACKER, Anne Hartson, and Linda Cooper-Brown (The University of Iowa)

  We adapted functional analysis procedures used with persons who have both developmental and behavioral disorders to an outpatient clinic specializing in behavioral problems displayed by children with normal development. As part of a comprehensive, interdisciplinary evaluation, we conducted brief functional analyses of problem behavior and generated both diagnostic and treatment recommendations. In this presentation, we will describe the children served in the outpatient clinic, the role of the behavior analysts within the team as well as the role of other team members, and how functional analyses are incorporated into the clinic. We will provide a summary of the children assessed and present specific case examples that illustrate distinct assessment protocols across subgroups of children. We will then describe how functional analysis has become a common procedure used in the clinic and how the data are used in conjunction with other analyses to diagnose and treat the behavior problems assessed within the clinic.

- **The NBU Outpatient Clinic: Intensive Services for Individuals with Developmental Disabilities and Severe Destructive Behavior.** PATRICIA KURTZ, Julia O'Connor, Michelle Chin, and Theodosia Packlawskyj (Kennedy-Krieger Institute)

  The Outpatient Neurobehavioral Programs at Kennedy Krieger Institute provide intensive clinic and home-based services to children with developmental disabilities and severe destructive behavior. Typically, patients participate in preference

assessments, analogue functional analyses, and reinforcement-based treatment analyses. Parent training as well as generalization and maintenance of treatment gains are strongly emphasized. One major focus of the program is modifying and/or extending the application of behavioral assessments. For example, over the last 2 years parents have been systematically trained to conduct extended functional analyses, and the integrity of their procedural implementation has been monitored. Parents also have been trained to conduct stimulus choice assessments in order to independently identify their children's reinforcers on a regular basis. Additionally, we have modified functional analyses and preference assessments in accordance with children's developmental and behavioral needs. A significant proportion of our current work focuses on assessments adapted to very young children.

- **The Development of In-Home and Outpatient Consultations with Parents in Assessment and Treatment of Problem Behavior.** CLAIRE LACEY, Mark O'Reilly, Margaret O'Halloran, Yvonne Barnes-Holmes, Francis Doolin, and Nicole Murray (National University of Ireland)

  We provided ongoing consultation to families of children with behavioural difficulties as part of a new treatment programme. The focus of this program was to conduct assessments both within the home and outpatient settings. Parents were trained for their involvement in assessment procedures, treatment development and implementation. A number of strategies were employed to assess problem behaviour. Assessment within the home included interviews, direct observation, parental recordings of target behaviours and functional analysis. Information and data obtained from these assessments were combined with results of outpatient functional analysis to identify the function of target behaviour(s). This facilitated ongoing analysis of behaviour in natural and analogue settings. Treatment plans were developed to match the function of behaviour. Parents were trained to implement treatment plans in the home. Ongoing consultation in the home allowed us to monitor parents' effectiveness in implementing treatments and to evaluate the long term effects of treatment on behaviour in the home.

#18 Symposium

11/29/2001
11:00 AM - 11:50 AM
Little Theatre Hall
AUT

Applied Behavior Analysis and Creative Play in Children with Autism
Chair: Robert Stromer (Eunice Kennedy Shriver Center)
Discussant: David Palmer (Smith College)

- **Applied Behavior Analysis and the Teaching of Creative Play: The Road Less Traveled.** MARK A. GREEN and Robert K. Ross (Behavioral Education Assessment and Consultation, Inc.)

  Children with autism and related disorders often exhibit profound skill and behavioral deficits. Appropriately, behavior analysis research with these children has focused on areas such as behavior reduction and the direct teaching of communication, academic, social, and self care skills. However, the present review of the literature shows that less attention has been focused on the teaching of play skills. Furthermore, in the literature and in practice, applications of instructional procedures to teach generative, novel, and variable responses in play are rare. This

deficit, we suspect, supports the widespread view outside of the behavior analytic community that the methods may be appropriate and effective in the area of behavior reduction, but are not well suited for the teaching of play skills and activities that are perceived to require "creativity," not "rote responding." In contrast, our analysis of the literature highlights research suggesting that behavior analysis has much to offer in the area of creative play or variable responding, and provides the foundation for subsequent changes in the delivery of early intervention services by our agency.

- **Teaching Creative Play: Just A Different Emphasis.** ELISABETH M. KINNEY and Ann Filer (BEACON Services)

    We evaluated the play skills of 40 children with diagnoses of Pervasive Developmental Disorder or autism (aged 2 to 7 years) using the Vineland Adaptive Behavior Scale, BEACON Services Curriculum Checklist, and parent reports. The results revealed the presence of significant deficits in play at the beginning of services for nearly all children. We then reevaluated these children after receiving home-based behavior analytic services, including instruction in creative play. Creative play can be defined as the demonstration of novel responses, or the variation of responses, with the same toy. These data suggest that directly teaching play skills provides a number of benefits, including acquisition, generalization, and adult satisfaction with the results. So, the purpose of this talk is to (a) describe a curriculum for teaching creative play that is being used by BEACON Services, (b) overview the empirical literature that provides the rationale for the particular procedures being used, and (c) describe illustrative cases from an ongoing evaluation of our interventions to increase creative play in children with autism and related disorders.

#19 Paper Session

11/29/2001
11:00 AM - 11:50 AM
Bibliography Hall
TPC

Contingencies of Reinforcement
Chair: Richard W. Malott (Western Michigan University)

- **The Corollaries of Reinforcement and Punishment and Their Implications for Behavioral Intervention.** GARY LAVIGNA (Institute for Applied Behavior Analysis)

    Reinforcement, punishment, and extinction are defined by their effects on the future probability of behavior. In this paper, the corollaries to reinforcement, punishment, and extinction will be stated in terms of their effects on the immediate probability of behavior. The implications of these more immediate effects will be discussed in terms of their impact on the selection and design of a comprehensive behavior support plan. Additionally, a multielement model, which includes proactive and reactive strategies, will be presented. Among other things, this model will establish the effects of these operations on the immediate probability of behavior as a critical measure of outcome success. Illustrative examples will be provided and a research agenda for the future will be discussed.

- **The Protagonist of Contingencies, or, Who is Behind Behavior?** NUNO SILVA (Alameda da Universidade, Portugal)

As a kind of "marginal" behaviorist, there are some questions that I would like to raise in the presence of paradigmatic representatives of behavior analysis. These are not rhetorical questions, instead, they express certain contradictions experienced when trying to interpret and explain behavior in terms of contingencies of reinforcement. My present conviction is that behavior analysis can offer a great contribution to the enhancement of human freedom, but why is our culture so diffident towards our proposals? Is it because the insistence on the laws relating environmental variables to behavior concealed the being behind behavior? May be "autonomous man" is a metaphysical and mischievous illusion, but why all living things, and specially humans, try to be autonomous in order to control and master situations, instead of being controlled and enslaved by outside events? Does our language take accent of this fact? How deal with stoic philosophy, when it says that the exterior has no meaning and that good and bad things depend on our way of thinking? Can we change the world without changing ourselves? Instead of changing behaviours through the scientific manipulation of contingencies could not we led people to change willingly, trough reasonable and rational discussion and persuasion? Do we live to be reinforced, or are we reinforced to live? Is behavior more than a strategy or a tactic of an organism that has to take into consideration the characteristics of the world in order to persevere? Philogenetic and environmental variables explain why we are different and behave differently in different circumstances, but do they explain the constants of the behavior of complex living systems, especially humans? Those are some of the questions of a solitary behaviorist. They all turn around the quest for interior and exterior freedom of the human person.

#20 Symposium

11/29/2001
11:00 AM - 11:50 AM
Council Hall
DDA

Effects of Living Room, Snoezelen Room, and Outdoor Activities on Stereotypic Behavior and Engagement by Adults with Profound Mental Retardation
Chair: Anthony Cuvo (Southern Illinois University)
Discussant: Giulio Lancioni (University of Leiden; The Netherlands)

Two experiments were conducted to test the effect of a room with sensory equipment, or Snoezelen room, on the stereotypic behavior and engagement of adults with profound mental retardation. In Experiment 1, participants were observed in their living room before and after attending the Snoezelen room. Results showed that there tended to be a reduction in stereotypy and increase in engagement when participants went from their living room to the Snoezelen room, and a return of these behaviors to pre-Snoezelen levels in the living room. Positive effects in the Snoezelen room did not carryover to the living room. In Experiment 2, the living and Snoezelen rooms were compared to an outdoor activity condition with the same participants and target behaviors. Results showed that the outdoor condition was superior, the Snoezelen condition intermediate, and the living room least effective in their impact on stereotypic behavior and engagement. Conceptualizations regarding factors that maintain stereotypic behavior and engagement were discussed in the context of the three experimental conditions.

- **Effects of Living Room and Snoezelen Room on Stereotypic Behavior and Engagement by Adults with Profound Mental Retardation.** TIFFANY POST, Anthony Cuvo, and Michael May (Southern Illinois University)

Two experiments were conducted to test the effect of a room with sensory equipment, or Snoezelen room, on the stereotypic behavior and engagement of adults with profound mental retardation. In Experiment 1, participants were observed in their living room before and after attending the Snoezelen room. Results showed that there tended to be a reduction in stereotypy and increase in engagement when participants went from their living room to the Snoezelen room, and a return of these behaviors to pre-Snoezelen levels in the living room. Positive effects in the Snoezelen room did not carryover to the living room. In Experiment 2, the living and Snoezelen rooms were compared to an outdoor activity condition with the same participants and target behaviors. Results showed that the outdoor condition was superior, the Snoezelen condition intermediate, and the living room least effective in their impact on stereotypic behavior and engagement. Conceptualizations regarding factors that maintain stereotypic behavior and engagement were discussed in the context of the three experimental conditions.

- **Effects of Living Room, Snoezelen Room, and Outdoor Activities on Stereotypic Behavior and Engagement by Adults with Profound Mental Retardation.** MICHAEL MAY and Anthony Cuvo (Southern Illinois University)

#21 Symposium

11/29/2001
11:00 AM - 11:50 AM
Palladian Refectory Hall
EAB

Facilitating Receptive Language in Children with Autism and Problem-Solving in Normally Developing Children
Chair: Marie Tieghi-Benet (University of Kansas)
Discussant: Irene Grote (University of Kansas)

Techniques for facilitating skill acquisition are important assets for teaching language, or for the use of language for problem-solving at different levels of complexity. The first presentation demonstrates the use of fading techniques for teaching receptive language skills to children with autism to maximize their correct responding; the second paper addresses task-analytic teaching of self-instruction (SI) to normally developing children to produce complex problem-solving.

The two presentations demonstrate the importance of generalization for testing the effectiveness of teaching. The first presenter demonstrates experimental control across multiple formats across reversals, and extension to novel stimuli; the second presenter shows task-analytically taught SI and the extent to which it can solve similar and dissimilar novel problems of increasing complexity. The second presenter then explores the conditions under which same stimuli of apparently same complexity, despite the same use of SI, evoke different strategies for problem-solving.

The extent of both teachings invites examination of concept formation.

- **Teaching Receptive Language Discriminations to Children with Autism Utilizing Trial Expansion and Collapsing.** KARA RIEDESEL and Tom Holter (University of Kansas)

  The current study investigated the effects of trial expansion and systematic collapsing on successive full reversal discriminations in receptive language tasks with children with autism. This procedure was developed in order to systematically

fade the number of trials between full reversal discriminations until the child responded correctly to successive full reversal discriminations. One child with autism demonstrated chance responding in a variety of successive full reversal receptive language discrimination tasks (i.e., 1-term adjective labels, 1-term preposition labels). In a multiple probe across skills design, trial expansion and systematic collapsing were manipulated across conditions. During baseline, successive full reversal discriminations were presented. Second, during the intervention, trials were expanded and systematically collapsed between the full reversal. Third, the generalization condition tested the child's responding under baseline conditions and with novel stimuli. Percent of correct responding increased for each of the three skills, from chance responding during baseline conditions to an average of 90% (range 80-100) responding during the trial expansion and systematic collapsing intervention. In addition, the child's responses generalized to baseline conditions in which back to back full reversals were presented with novel stimuli. Reliability across a variety of independent measures and dependent measures approximated 90%.

- **Teaching Generalized Compliance with Self-Instruction and Exploring Categorization Skills in Preschoolers.** IRENE GROTE (University of Kansas)

  Self-instruction (SI) can be an important mediator of generalized cognitive functioning, and a skill it constantly involves, categorization, is one of the most important ingredients of intellectual competence. This paper evaluates the conditions under which 1) SI enhances intellectual competence in children and 2) children's' differential categorization is selected by the instructional and physical dimensions of the research situation. Specifically, this paper explores whether we can 1) when SI occurs but fails to mediate correct problem-solving, remediate failures by teaching the skill of self-compliance with SI and 2) when SI occurs but fails to mediate correct sorting of compound stimuli, remediate failure with the same SI, but by presenting the same stimuli in component format. Four normally developing preschoolers solved perfectly twelve problems. Following task-analytic teaching of SI, including compliance with SI, for three problems, they demonstrated nine instances of generalized self-instructed problem-solving for recombinations and for novel stimuli. Two of these children experienced more complex problems and more complex instructions: After initial failure with compound stimulus dimensions, they showed successful problem-solving with the same but component dimensions. Similarly, after initial failure with naming these dimensions, five preschoolers showed near-perfect naming of component dimensions. Reliability for all measures averaged 95%.

#22 Paper Session

11/29/2001
11:00 AM - 11:50 AM
Cloister of the Cypress Hall
EDC

Interventions in University Settings
Chair: Claudia E. McDade (Learning Services)

- **Celerating Skills Development in College Students.** CLAUDIA E. MCDADE (Learning Services)

For over twenty-four years Learning Services (formerly Center for Individualized Instruction) at Jacksonville State University (AL) has served as a human operant laboratory in developing effective instructional strategies. Based on Precision Teaching/Learning and Direct Instruction, these strategies will be described and their results shared in the following areas: motivational strategies, the effect of preference on performance, the effect of fluency on performance, and retention/application of skill over time. Results have been used to develop an outcomes assessment paradigm to ascertain the extent of skills mastery across disciplines. Handouts will provide participants with suggestions for applying this paradigm in their teaching activities.

- **Catching Up Poor Readers: A University-Based Model Intervention Program.** Jane S. Howard, CATHY L. WATKINS, and Harold Stanislaw (California State University, Stanislaus)

For the past 22 years, the Center for Direct Instruction at California State University, Stanislaus has provided short-term, intensive intervention to more than 1,500 school age children with significant reading difficulties. We describe a low cost (40 hours of intervention) after school program, with college students as teachers, that integrates programming from Direct Instruction with practices derived from theory, research, and practice in Behavior Analysis. Changes in pre- and post intervention learning rates (change in standardized test of reading achievement/time) for more than 700 children between the ages of 9 and 18 are presented. The mean learning rate at baseline was below typical learning rates and averaged less than 7 months gain for every school year. Measures at post intervention revealed learning rates that exceeded normal learning rates (more than 1 month gain for each month of instruction) on all measures. Acquisition rate for basic skills doubled. In addition, more than 100 of these children returned to the Center after a period of non-attendance, creating a natural ABAB program design. For these children, learning rates were functionally related to receiving intervention at the Center. Implications for measuring and accelerating the learning trajectory to prevent and address reading difficulties are reviewed.

#23 Symposium

11/29/2001
11:00 AM - 11:50 AM
White Hall
DEV

Language Acquisition and Individual Development
Chair: M. Jackson Marr (Georgia Institute of Technology)

In behavior analysis the verbal behavior, especially the acquisition of verbal behavior has been studied with particular focus on the effects of the verbal community. There are, however, and broad sets of phenomena that also merit investigation, such as the natural environment, and the established patterns of behavior and customs of the culture broader than the verbal community interacting directly with the developing infant. This symposium presents papers that consider these factors and discuss some of the evidence concerning their effects on language development, the earlier theories that have been based on the observation of such phenomena, and the range of functional relations that affect language acquisition.

- **Developmental Factors in Language Acquisition: Culture, the Natural Environment, and the Verbal Community.** PETER HARZEM (Auburn University)

Some evidence is considered concerning the effects of the broader culture and the natural environment in the context of which it exists, upon language acquisition. The ways these extensive sets of phenomena influence language, in interaction with the direct influence of the verbal community are discussed.

- **Language Acquisition: What Is Acquired.** EMILIO RIBES-INESTA (University of Guadalajara)

  Language has been traditionally approached as a type of behavior with special topography. Studies of language acquisition have been primarily concerned with the appearance of vocally-articulated behavior in relation to objects and actions. Written forms of language behavior have been neglected. An alternative analysis, as the emergence of episodic interactions satisfying different functional criteria is presented.

- **Behavioral Theories of Language Learning: Bloomfield, Whorf, Vygotski, Watson, and Skinner.** ERIN RASMUSSEN and Peter Harzem (Auburn University)

  This paper briefly describes the evolution of behavioral theories, occurring independently but forming a cohesive progression. The data on which these theories have been based are compared and related.

#24 Symposium

11/29/2001
11:00 AM - 11:50 AM
Carnelutti Hall
OBM

People Management Requires the Emphasis on Behavior Which Gives Personal Satisfaction
Chair: Peter Wieringa (Altrecht, Institute for Mental Healthcare, Utrecht, Netherlands)
Discussant: Beata Bakker (CGA-Business, Den Haag, Netherlands)

Though the phrase 'people management 'comes from business circles, its subject matter applies to all settings dealing with people in need of guidance. Its goal is always the same: improving the quality of a person's life, whether or not including his productivity. Basically, people management equals quality management as to the individual. The most direct approach to quality management is to start from the quality already present in a person's life. The quality of life has nothing to do with the amount of money you have or your social position or having time to relax or to do what you like. On the contrary: the quality of everybody's life lies in getting personal satisfaction out of it. That is why a focus on behavior which gives personal satisfaction, is required for effective people management. The details on how it is done will be explained with reference to (1) the management of in-patients, who are suffering from severe mental illness, and (2) managing personnel from a healthcare Institution.

- **Functioning-Oriented Rehabilitation: Focus on 'Successful' Behavior and a Challenging Environment.** LIESBETH BAAS (GGZ Heerenveen; Heerenveen, Netherlands)

  In current rehabilitation models the main focus is on problem solving and development of skills. The functioning-oriented method stands for inducing self management of well being by the individual. An individual is able to do so when he is directed outwards, to those aspects of his environment that enables him to react

in a satisfactory way. In this presentation we will consider this approach in in-patient care and treatment programs for people with so called 'major psychiatric diseases'. A great advantage in residential settings is the possibility to influence the environment directly i.e. to offer a 'rich' environment with a lot of leads for functioning. In long term outreaching programs we try to optimize the influence of the environment for clients indirectly. A mixed approach will be revealed consisting of: - recovering or strengthening the functioning of the client by reflection (in a face tot face contact) on recent successful behavior; - supporting the client in exploring leads for functioning; - caring for the client by bringing him in contact with potential leads for functioning, if the client is not able to explore his potencies.

- **A Behavioristic Model for People Management: Everything Under Control?**
  PAUL ANDREOLI (Innosearch Development Support BV, Echten, Netherlands)

  Models for management in the business community are usually of a pure conceptual nature: the complex reality is simplified by the introduction of a set of concepts, placed in a plausible connection. These concepts and their supposed connection are rarely if ever experimentally tested. Most of these conceptual models have a short life, depending on how attractive they are as a source of inspiration in everyday practice of people management. Behaviorism, seen as the philosophy underlying behavior analysis, holds to the proposition that natural science of behavior is possible: this means that conceptualizing is based on experimental testing. The use of terms based on behavior analysis about the relations between behavior and the environment (in particular how individuals safeguard their well being in their actual environment) has proved to offer tools for a good model for management of human resources. In this presentation it will be demonstrated by some examples of everyday practice in business management like: coaching and directing, conflict management, management of absenteeism, staff-training philosophy, professional self management and responsibility.

#25 Paper Session

11/29/2001
11:30 AM - 11:55 AM
Hall of the Ceiling
OTH

Understanding Schizotypy
Chair: Michael B. Ehlert (University of Guam)

- **Detection of Fast Moving Words and Dimensions of Schizotypy.** ELIAS TSAKANISOS and Phil Reed (University College of London)

  The present studies examined the effect of schizotypy on performance in a signal detection task. The Oxford- Liverpool Inventory for Feelings and Experiences (O-LIFE) was administered to seventy undergraduate students. The subjects were classified into high or low scorers on the basis of the median split on four measures of schizotypy contained in the O-LIFE questionnaire relating to the positive and negative symptoms of schizophrenia: Unusual Experiences (UnEx), cognitive disorganization, (GogDis), Impulsivity nonconformity (ImNon), and Introverted Anhedonia (InAn). The subjects were then tested on a yes-no signal detection procedure. The task involved detection of fast moving words among fast moving string of letters. To analyse performance indices for sensory sensitivity and response bias were estimated. Results indicate that high scorers in terms of the

UnEx dimension reported more false alarms (hallucinations than low scores. The results are discussed in terms of past findings, and future directions for the study of schizophrenia based on learning-theoretic paradigms.

#26 Special Event

11/29/2001
12:00 PM - 1:00 PM
Outside Garden

Banquet Lunch

#27 Paper Session

11/29/2001
1:00 PM - 1:50 PM
Little Theatre Hall
AUT

Autism I
Chair: Jack Scott (Florida Atlantic University)

- **The Alice Project: The First UK Pilot Project to Evaluate the Picture Exchange Communication System (PECS).** SUE BAKER (Pyramid Educational Consultants UK, Ltd.)

  The Picture Exchange Communication System (PECS) is an approach, based on principles from ABA, for developing early communication skills using pictures in a fundamentally different way from other picture-based systems. Following its introduction into the UK by the author in 1996, PECS is rapidly becoming established as a significant new initiative in the field of autism, with interest spreading from the UK into Europe and internationally. As in the USA, where PECS was first developed over 10 years ago, PECS in the UK is being successfully extended to a wide range of children with significant communication difficulties and also to older pupils and adults.

  This paper will describe the first pilot project in UK to consider the effectiveness of PECS with a group of children with autism attending special schools or units in the south of England. Staff from one class in each of 8 schools received the initial 2-day PECS training workshop, followed by monthly consultancy support over a period of six months. The training and consultancy visits were conducted by 2 consultants from Pyramid Educational Consultants UK Ltd., under the supervision of Andy Bondy & Lori Frost, the co-developers of PECS in USA. The evaluation was independently co-ordinated by Patricia Howlin, Professor of Clinical Psychology, St. George's Hospital, London, and questions investigated included:

  - Does access to PECS result in enhanced communication skills in the children (i.e. an increased frequency of spontaneous communicative acts, by verbal or non-verbal means)?

  - Does access to PECS result in behavioural changes in the children involved?

  - Is PECS used across the day by teaching staff following attendance at a 2-day training workshop?

  - What were the views of the teaching staff on the benefits of the training, the consultancy support, and the use of PECS with their students?

- **Sundberg and Partington's Language Assessment as a Basis for Choice of Mode of Communication.** SILJE HAUGLAND and Tone Kristensen (Glenne Senter, Norway)

  The Behavioral Language Assessment (Sundberg and Partington 1998) was administered to 6 preschool children diagnosed with Autism who were enrolled in a Lovaas program. 4 out of 6 children had no vocal play or vocal imitation. Vocal communication was chosen as a mode of communication for all of these children. Outcome of treatment was compared to advice given in the manual "Teaching Language to Children with Autism and Other Developmental Disabilities."

#28 Panel Discussion

11/29/2001
1:00 PM - 1:50 PM
Cloister of the Cypress Hall
EDC

Graduate Training Programs in the U.S. and Abroad
Chair: Paolo Moderato (University di Parma)

This panel will provide information about a sample of graduate training programs at the Master's and Doctoral levels in the United States. Dr. Paolo Moderato will serve as panel chair, and will provide information about graduate preparation in Italy. Panelists and attendees will provide information about similarities and differences in training approaches across countries.

- JACOB GEWIRTZ (Florida International University)
- R. DOUGLAS GREER (Teachers College Columbia University)
- LINDA HAYES (University of Nevada, Reno)

#29 Paper Session

11/29/2001
1:00 PM - 1:50 PM
Photographs Hall
DEV

Infants and Young Children
Chair: Anthony DeCasper (University of North Carolina)

- **Generalised Imitation in 1-2 Year Old Children?** MIHELA ERJAVEC, Pauline J. Horne, and C. Fergus Lowe (University of Wales, Bangor)

  This study employed single participant operant methodology to investigate the development of generalised behavioural matching (or 'imitation') in 1-2 year old children. In Phase 1, a baseline of 4 Control Matching Behaviours (i.e. modelled behaviours that the child could reliably match) was established. In addition, 4 Target Matching Behaviours (modelled behaviours to which the child responded but not with matching behaviours) were identified. In Phase 2, the child was trained to produce the response component of the Target Behaviours under discriminative control that did not include the sight of the experimenter modelling those behaviours. In Phase 3, the child was presented with experimenter-modelled probes for the 4 Control Matching Behaviours and the 4 Target Matching Behaviours. Though matching of the 4 Control Behaviours was reliable and

comparable across Phases 1 and 3, the children did not produce the 4 Target Matching Behaviours. These data are consistent with a radical behavioural explanation of imitation in which infants gradually learn a minimal behavioural matching repertoire. No convincing evidence for a higher order and generalised class of imitation was found in the 1-2 year olds studied.

- **Whether Maternal Speech Heard by the Fetus will be a Reinforcer for the Newborn Depends on the Reinforcement Contingencies.** ANTHONY DECASPER (University of North Carolina)

    Research has shown that human fetuses' experience with naturally-occurring maternal speech can affect their postnatal behavior. Specifically, it makes the maternal voice a more potent reinforcer [of the newborns' operant behavior] than a stranger's voice; it makes the sounds of the mother's language a more potent reinforcer than the sounds of a foreign language; and prenatal experience with one specific passage from the native language makes it a more potent reinforcer than some other passage from the language. However, whether the prenatal stimulus actually functions as a potent reinforcer after birth depends on properties of the auditory system and on properties of the reinforcing environment. We will present data showing that a female speaking the newborn's native language is a reinforcer in simple operant learning tasks only when the speech is delivered to the right ear/left hemisphere. In contrast, the same stimulus is more reinforcing than a foreign language in a choice task only when the stimuli are delivered to the left ear/right hemisphere. A large body of data indicates the ear x task interaction probably reflects the fact that the right hemisphere is better for mediating discrimination between familiar and unfamiliar speech sounds. Prenatal exposure to maternal speech may make many dimensions of the speech potentially useful after birth, but the environmental contingencies surrounding the child's behavior determines which dimensions will be relevant as reinforcing stimuli or as discriminative stimuli (e.g., sometimes its emotional tone, sometimes its the sound of a specific word, or sometimes it's a specific order of words.) The environmental contingencies of childrearing select the interactions between behavior (e.g. simple response or choice response or attention response) and biology (e.g., left auditory substrate, right auditory substrate) that will occur during infancy and childhood. In a very real sense, from the moment of birth, the contingencies of child rearing determine which perceptual and linguistic skills will develop and thus, which cerebral substrates of behavior will be most affected by the contingencies of rearing.

#30 Paper Session

11/29/2001
1:00 PM - 1:50 PM
Carnelutti Hall
OBM

Occupation, Economics and Behavior Analysis
Chair: Vincenzo Russo (Libera Universita de Lingue e Comunicazione)

- **Behavior Analysis and Occupational Stress.** NED CARTER (University Hospital; Uppsala, Sweden) and Thomas E. (Ted) Boyce (University of Nevada, Reno)

    This paper will examine how behavior analysis can contribute to a more complete description of the conditions producing occupational stress reactions. Conditions

influencing acute, transitory and chronic reactions will be described. Some of the implications for performance management and organizational behavior management will be discussed.

- **Economics and Applied Behavior Analysis.** ANTHONY CUVO (Southern Illinois University)

  Economic concepts, particularly those from consumer and labor economics, have been adopted by behavior analysts to help explain behavioral phenomena and to guide behavioral research. The field of behavioral economics has been developed in the animal laboratories of scientists working in the experimental analysis of behavior tradition. Although great strides have been made in behavioral economics during the past two decades, nevertheless a limited number of variables have been studied in highly controlled laboratory situations. Many of the economic concepts studied in the experimental analysis of behavior are of potential interest to applied behavior analysts. This presentation will take economic concepts and findings from the experimental analysis of behavior literature and extend them to humans in natural environments encountered by applied behavior analysts. A reinforcement-response cost ratio will be discussed as a basis for making choices in a concurrent schedule situation. It will be argued that choices are made based on the relative marginal reinforcement-response cost ratios of the alternatives. Applied behavior analysts should be sensitive to the components of the reinforcement-response cost ratio and actively manipulated these variables within training sessions. Recommendations based on economics will be made for which variables applied behavior analysts should manipulate.

#31 Paper Session

11/29/2001
1:00 PM - 1:50 PM
White Hall
CBM

Prevention and Risky Behavior
Chair: Hector E. Ayala-Velazquez (National University of Mexico)

- **Dissemination of a Secondary Prevention Program for Problem Drinkers in the Mexican Health System.** HECTOR E. AYALA-VALEZQUEZ (National University of Mexico)

  Behavioral programs aimed at the prevention and treatment of alcohol abuse have shown to be effective and cost-efficient. However these programs have not been adopted by governmental health agencies in most countries as the programs of choice to address this growing public health problem. This paper describes the results of a systematic dissemination effort by researchers at the National University of Mexico to procure the adoption of behavioral brief intervention program for problem drinkers as the model of choice to address alcohol abuse by the Mexican Health System. Research on barriers for diffusion of innovation, supervision of program fidelity and training procedures is described and discussion of overall results in terms of the development of public health policy as an appropriate area of endeavor for behavior analysis is presented.

- **Prevention and Risk Like Ways of Behaving.** ELSA RITTER and Ana Redondo (Caracas, Venezuela)

The competition of other disciplines apart from the medical ones is increasingly necessary for the solution of complex health problems. Psychology expands on the range of action of medicine adding new trends in the understanding and attacking them. In this work health and illness are conceived as a psychological behavior feasible to explain from their contingency relationships (where psychological and social aspects are integrated). An instrument that examined the assessment of knowledge about health and prevention repertoires and risk of university students was elaborated. From the assessment of theses results we may conclude about the importance of establishing and strengthening prevention behaviors rather than reporting and reinforcing the knowledge about health.

#32 Paper Session

11/29/2001
1:00 PM - 1:50 PM
Council Hall
DDA

Self-Injurious Behavior
Chair: Raimo Lappalaine (University of Tampere, Finland)

- **Descriptive Analysis of Multiple Topographies of Self-Injurious Behaviors in Individuals with Cornelia de Lange Syndrome.** JENNY SLONEEM, Kate Arron, Chris Oliver, and Scott Hall (University of Birmingham, England)

  Self-injurious behavior (SIB) is commonly reported in individuals with Cornelia de Lange syndrome. Few studies however have investigated the environmental factors maintaining these behaviours. In this study, individuals diagnosed with CdLS who showed high rates of SIB were observed for four hours interacting with their teachers at school. Comparison children without CdLS were also observed. Different topographies of SIB were carefully coded and related to environmental events using the methodology described by Lerman & Iwata (1993). Results suggested that across children, some topographies of SIB (e.g., skin picking) were unrelated to environmental events whereas for other topographies, the SIB appeared to indicate a social function. These data support the need for an analysis of separate topographies of SIB when conducting functional assessments.

- **On the Relationship between Self-Restraint and Self-Injurious Behavior.** DEBBIE FOREMAN, Chris Oliver, and Scott Hall (University of Birmingham, England)

  Self-restraint is often associated with self-injurious behaviour (SIB) and has been described as an attempt to prevent or escape from SIB. Research into the determinants of self-restraint is limited and this single case study attempted to assess the maintenance of one individual's self-restraint and SIB and to describe the relationship between the two behaviours. The individual was observed in his natural environment for 16.5 hours and data were collected on SIB, self-restraint and environmental events. Results showed SIB and self-restraint to be unrelated to environmental events, but self-restraint was significantly associated with the non-occurrence of SIB. Sequential analysis showed low levels of SIB prior to self-restraint and high levels after the offset of self-restraint suggesting that the self-restraint was terminated to allow SIB.

  These results provided indirect evidence to support the hypothesis that self-restraint was negatively reinforced by the avoidance of SIB. The implications of these findings for the behavioural theory of SIB were discussed as well as new ways

to conceptualise self-restraint.

#33 Paper Session

11/29/2001
1:00 PM - 1:50 PM
Palladian Refectory Hall
EAB

The Role of Stimuli and Responses
Chair: Deirdre Beebe Fitzgerald (Eastern Connecticut State University)

- **The Relation of the CS to Behavior is Fundamental in the Pavlovian Procedure.** ROCÍO VEGAS (Universidad Central de Venezuela) and John Donahoe (University of Massachusetts at Amherst)

  The Pavlovian procedure commonly studies learning by varying the temporal relation between the conditioned stimulus (CS) and the unconditioned stimulus (US). However, when the CS-US relation is varied, the relation between the CS and the unconditioned response (US) necessarily changes as well. Thus, the effects on conditioning that are attributed to the relation between the two stimuli are inevitably confounded with any effects of the temporal relation between the CS and the UR. A new conditioning preparation used water - or air-puff-elicited throat movements in restrained pigeons to assess the contribution of the relation of the CS to the UR in the Pavlovian procedure. Because the UR in this preparation has a substantial latency and duration, the relation of the CS to the US and UR could be independently manipulated. A series of experiments demonstrated that CS--UR overlap is sufficient to produce conditioning and that the CS need not precede either the US or the UR in order for conditioning to occur. These results support the relation of the CS to US-elicited behavior as the critical variable in the acquisition process in a Pavlovian arrangement and promotes a unified view of conditioning in Pavlovian and operant procedures.

- **Dissociating the Three-Term Contingency: The Role of the Response.** IVER H. IVERSEN (University of North Florida)

  In spite of its popularity, the three-term contingency is not well researched. Does the subject learn about the stimulus or does the subject learn about the response? In other words, does a subject learn that the stimulus signals reinforcement and that the absence of the stimulus signals absence of reinforcement, or does the subject learn to emit a certain response to the stimulus and withhold that response when the stimulus is absent? Rats were trained with food reinforcement to press a lever when a light turned on; pressing was not reinforced in the absence of the light (inter-trial intervals were 60 s). When the discrimination was acquired with prompt pressing when the light turned on and absence of pressing when the light was absent, the contingency was shifted to another response while the original stimulus was the same. Thus, when the light turned on pressing another lever now produced the food while pressing the original lever merely turned the stimulus off. Pressing the new lever was acquired quickly during the light. However, the rats also pressed the new lever at a high rate when the light was absent. Thus, the rats had to acquire the discrimination again when a new response was introduced; the rats had not leaned that absence of the light "signaled" no reinforcement. When the contingency was switched back to the original response the rats quickly switched the response. Interestingly, the rats immediately switched back to absence of responding during

the absence of the light. This shows that the S-delta function of a stimulus is response specific. Additional responses were introduced in subsequent phases of the experiment while keeping the stimulus the same. In each case, the rats went through extinction of the new response in the absence of the light. The rats apparently never learned that the absence of the light signaled absence of reinforcement; instead the rats had to lean that the absence of the light was an S-delta for each response. Apparently the rats had to acquire the discrimination anew each time a new response is introduced even though the stimulus was kept the same. The results illustrate some of many complexities involved in the "simple" three-term contingency and suggest that rats do in fact no learn that stimuli "signal" reinforcement or absence of reinforcement.

#34 Paper Session

11/29/2001
1:00 PM - 1:50 PM
Hall of the Ceiling
BPH

Understanding and Treating Drug Consumption
Chair: Steven Dworkin (University of North Carolina at Wilmington)

▪ **Behavioral Mechanisms of Drug Tolerance.** MARC BRANCH (University of Florida)

The concept of behavioral mechanisms of drug action has had limited success. One domain, however, in which it has been very successful is in the study of drug tolerance. There is overwhelming evidence that Pavlovian processes can contribute to the development of drug tolerance, and there is considerable indirect evidence that operant processes can contribute, as well. This presentation reviews the concept of behavioral mechanisms of action, the contribution of Pavlovian processes to drug tolerance, and how operant processes appear to be involved. Future research directions, especially in characterizing how operant processes are involved, are suggested.

▪ **Nicotine Self-Administration: Potential Treatment Compounds.** STEVEN DWORKIN and Dustin Stairs (University of North Carolina, Wilmington)

Rodent and non-human primate models have been developed to evaluate the potential abuse liability of psychoactive substances. These animal models consist of evaluating the effects of a compound using several different behavioral procedures. The most direct assessment of the reinforcing effects of a psychoactive compound is the operant self-administration paradigm. In this test subjects are given the opportunity to respond on a lever that results in the administration of a compound. Several investigators have demonstrated that the reinforcing effects of nicotine using the self-administration procedure. In this study we discuss some of the behavioral conditions that can be used to optimize nicotine self-administration and the effects of potential treatment compounds on the reinforcing effects of nicotine. Male Fisher rats were trained to self-administer either nicotine or food under a fixed-ratio schedule of reinforcement. The dose-effect curves for nicotine showed a relative shallow inverted "U" shaped function. Several different compounds with dopaminergic activity were evaluated for their selective effects on nicotine self-administration by comparing their effects on food and nicotine self-administration.

11/29/2001
1:00 PM - 1:50 PM
Bibliography Hall
TPC

Units of Measurement
Chair: Emilio Ribes-Iñesta (University of Guadalajara)

- **Time-, Space-, and Operandum-Correlated Contingencies: Effects on Spatial and Discrete Response Measures.** EMILIO RIBES-IÑESTA (University of Guadalajara)

    With few exceptions, most studies on operant behavior have used contingencies and response measures correlated with specific operands. This dominant methodological strategy has conceived behavior as varying only in time, since even response-dependent contingencies have reduced behavior to a fixed location represented by the operandum. However, since behavior consists of the organism moving in tridimensional space, changes in time should be seen as coextensive with space changes. The results of various experimental studies analyzing discrete response and spatial location changes under time-, space-, or operandum correlated contingencies suggest that looking at behavior-environment interactions in terms of correlated spatial and temporal dimensions could increase our understanding of behavioral processes.

- **The Meme and the Operant.** SANDY HOBBS (University of Paisley, Scotland) and David Cornwell (University of Strathclyde, Scotland)

    Dawkins as a cultural equivalent to the gene. Blackmore addresses such major issues as the origins of language, altruism, religion and the concept of the inner self. She argues that there are two types of reason for the success and failure of memes. One is the nature of human beings as imitators and selectors. The other is the nature of memes themselves, such as "the way they group themselves together" (p 16) and "the general processes of memetic evolution" (o 16). These, she claims, have not previously been studied by psychology. Although Blackmore states that "much of human learning is Skinnerian and not memetic" (p 45) and acknowledges Skinner's treatment of creativity and of learning as selection processes, she does not attempt any systematic examination of the relationships between her approach and behaviorist treatment of the topics she considers. This paper critically examines the concept of the meme and discusses whether Blackmore's proposals are compatible with behavior analysis.

11/29/2001
2:00 PM - 2:50 PM
Barbantini Hall
CBM

Behavior Therapy: Let Natural Reinforcers Do Their Job
Chair: Elbert Van Der Meijde (Altrecht, Location Utrecht City)

Behavior Therapy by natural reinforcers is probably the smoothest way for both therapist and client to get rid of symptoms and getting back to a sense of being o.k. It may look like

working the other way around, but the first step is: highlighting the moments from a client's daily life when he already felt reasonably o.k. about himself and being rather symptom free as well. It comes down to getting underlined the effectiveness of natural reinforcers without actual interference from the therapist. It happens unobtrusively, just like natural reinforcers do! Consequently generalization will occur under control of reinforcers that already are on a certain operative level for the particular client. The particulars of this approach are maybe unusual but quite explainable and comprehensible too. A case study will illustrate how it is done in practice. A pilot study on the effects of this approach shows some promising results on decrement of all sorts of symptoms referring to various kinds if mental illness.

- **The Exclusive Use of Natural Reinforcement in the Treatment of Clients with Mental Symptoms.** PETER WIERINGA (Altrecht, Institute for Mental Healthcare; Utrecht, Netherlands)

  To maintain his well being every person develops an individual pattern of behavior regulation. We can recognize this personal style by defining the stimuli controlling it. Best circumstances enable a person to do something which guarantees he will not be disqualified in social respect. Doing so yields a feeling of fulfillment, or, in other words: the assurance that he is all right as a human being. As long as the circumstances offer opportunities of this kind, the person will function without any serious existential problems. However, in the absence of those opportunities, his pattern of behavior regulation will fail and dysregulation is bound to occur. So the lacking of regulating stimuli is responsible for the occurrence of mental symptoms. Underlining the pattern of successful behavior in a specific way appears to be a very strong instrument in increasing a person's ability to safeguard his well-being. We make use of the client's present pattern of behavior regulation as the natural result of his individual conditioning history.

- **Restoring and Strengthening Present Patterns of Behavior Regulation.** HENDRIK VLAMINGS (Regional Institute for Ambulatory Mental Health Care, Midden Holland; Gouda, Netherlands)

  Clients ask for treatment when their symptoms occupy their minds and consequently obstruct their habitual pattern of behavior. The basic strategy in behavior therapy by natural reinforcers is both to restore and to strengthen a client's habitual pattern of successful behavior. It is done by enhancing the prominence of the controlling stimuli. Three different treatment techniques, called: Discrimination of States, Response Search and Opportunity Scan, are suited to achieve the required strengthening. In this way symptoms disappear without direct attack. The procedure, the rationale and the impact of the fore mentioned techniques will be explained and illustrated with a case study.

- **Does Behavior Therapy by Natural Reinforcers Really Work? A Pilot Study.** FRED PRINS (Regional Institute for Ambulatory Mental Health Care; Zaanstreek/Waterland, Netherlands)

  In this study the results of strengthening the individual-specific functioning of psychiatric patients were measured. The study was conducted in a Mental Health Institution in the Netherlands, where outpatients receive treatment for a variety of symptoms. It equaled the "one-group pretest-posttest" design. Fortunately there had been conducted a highly similar study of treatment-effects in general ("care-as-usual"), with the same measurements and the same patient-characteristics (sort of complaints/symptoms and disorders, social demographic features, and so on) just two years before. That presented an outstanding opportunity to compare the

results of the Behavior Therapy by Natural Reinforcers with those of general treatment. So, actually, the study took the form of a controlled and randomized pretest-posttest experiment! Concerning the outcome of the study it is clear that the Behavior Therapy under study does not yield to "care as usual". In fact there is a slightly better result of its experimental condition when looked at the percentage of patients who fully recovered from their complaints: 42% vs. 24%. The experimental design, the methodology as well as the outcome will be outlined in detail.

#37 Paper Session

11/29/2001
2:00 PM - 2:50 PM
White Hall
CBM

Clinical Applications of Behavior Analysis
Chair: Elsa Ritter

- **Evaluation of a Behavior Therapy Preventive Treatment for Chronic Pain.**
  JOANNE DAHL and Anita Nilsson (University of Gävle, Sweden)

  Due to the great increase of sick listing, reports of work disabilities and early retirement due to the muscularskeletal chronic pain, prevention studies at the work-site are greatly needed. The purpose of the present study was to investigate the effects of a behavioral work-site intervention on a group of public health workers judged to be at risk for developing chronic pain. Following baseline measurements, a group of 29 practical nurses with daily pain symptoms working at services for the elderly were randomized into two conditions: an active treatment based on cognitive behavior therapy and a passive treatment based on traditional symptom alleviation. The two treatment conditions provided by a registered nurse and a physical therapist, took place 30 minutes a week respectively, once a week, on an individual basis for four weeks at the work-site during work-time. Results at 4 and 8 weeks and at a 6, 12 and 24 month follow-ups showed improvements for those individuals receiving the active treatment with regard to the reduction of: use of pain-killers, perception of one-self as being sick and the fear-avoidance response to work-related activities. It was concluded that short-term work-site programs for the prevention of chronic pain for individuals at risk may show to be a promising development in the treatment of pain.

- **The Role of Verbal Behavior in Clinical Applications of Behavior Modification.** ESTHER CONTRERAS R.

  The practice of clinical psychology, including the behavioral version of it, is based on the verbal interchange between the individual who requires this type of assistance and the psychologist. Since only a small fraction of an individual's life occurs in front of the therapist, clinical practice is centered on a set of recommendations that are usually taken as a communicational act. However, in the training of behavioral therapists as well as the applications in clinical practice, the nature of verbal or linguistic behavior and its links with other dilemmatic behavior as well as its role as a fundamental instrument in clinical situations is often overlooked. In the light of these considerations, a comparison is made between the most frequent behavioral practices in clinical settings and the concepts that support them and between these and alternative behavioral models, in order to identify

possible inconsistencies between theoretical considerations and their technological derivatives. In addition, the functions that verbal mediation can have in this type of professional applications is examined.

#38 Symposium

11/29/2001
2:00 PM - 2:50 PM
Photographs Hall
DEV

Clinical overview of Alzheimer's Disease with Experimental and Applied Behavior Analyses
Chair: Bruce L. Bakke (Minnesota Veterans Home--Minneapolis)

While science has dramatically increased life expectancy over the past century, the number of people with chronic disabling conditions has increased correspondingly. One of those conditions, Alzheimer's disease (AD), is the leading cause of dementia and is a common diagnosis among residents living in long term care facilities. AD produces a progressive loss of cognitive abilities and an increase in problem behavior that destroys quality of life. This symposium provides an introduction to the cognitive and behavioral changes characteristic of AD, describes our current programs of experimental and applied behavior analysis, and suggests promising areas of AD research. In the overview, Dr. McCarten describes the clinical presentation and symptoms of AD.

Dr. Cleary relates the effect of new anti-inflammatory treatments using a transgenic mouse model for AD. Dr. Bakke presents treatments based on functional assessment of problem behaviors in a series of nursing home residents with AD.

- **The Clinical Features and Course of Alzheimer's Disease.** J. RILEY MCCARTEN (Minneapolis Veterans Affairs Medical Center)

  Alzheimer's disease (AD) is a degenerative brain disease that is responsible for up to 80% of dementia cases in the elderly. AD begins insidiously and progresses gradually over many years. Typical early symptoms of AD relate to memory loss for recent events and are manifest as repetitious questions and comments, increased reliance on notes and calendars, and getting lost while driving. As the disease progresses, memory loss becomes more severe and a variety of other cognitive problems emerge, including difficulties with language, motor skills, spatial and temporal orientation, and executive functions (e.g., reasoning and judgment). Eventually, even basic functions such as walking, eating, and toileting are compromised. In the end stages of AD patients are bedridden and minimally responsive and succumb to concurrent illnesses. Behavior problems also are recognized as a fundamental part of AD and are largely responsible for the heavy demand for health care resources. Sleep disturbances, irritability, restlessness, aggression, apathy, and psychotic symptoms are among the common behavior changes that may develop even early in AD. Medications to manage behaviors are the mainstay of treatment, and sophisticated behavioral assessment is largely absent in the Alzheimer's literature.

- **Cyclooxygenase-2 Inhibition of Inflammation in a Mouse Model of Alzheimer's Disease.** JAMES P. CLEARY, J. Hofmeister, D. Zimprich, K. Hsiao Ashe, and W. Gibson Wood (Minneapolis Veterans Affairs Medical Center) and Eugene O'Hare (University of Ulster-Jordanstown),

The characteristic neuropathology of Alzheimer's disease is the presence of neuritic plaques and neurofibrillary tangles in the brain. Recent models employing Aß as a primary pathogenic agent postulate a chronic inflammatory process due to Aß plaques that eventually exceeds the brain's ability to protect itself. As in arthritis, the inflammation is the source of the pathology.

While treatment with NSAIDs has shown promise in AD, their use has not been recommended because of potentially serious untoward effects due to inhibition of the protective COX-1 enzyme. Newer COX-2 inhibitors that exhibit substantial anti-inflammatory activity without inhibiting the COX-1 enzyme are promising therapeutic agents for the elderly.

Transgenic mice (Tg 2576) overexpressing amyloid precursor protein and littermate controls were trained to stable performance under a fixed consecutive number 5 schedule of reinforcement (FCN 5). Mice were required to press 5 times or more on the left lever, then switch to the right lever which delivered food reinforcement for a single press.

Starting at 4 months of age and through the 12th month, mice were fed a diet containing a COX-2 inhibitor or vehicle.

CNS inflammatory markers and immunohistochemistry were assessed. (Supported by an Unrestricted Grant from Merck & Co., Inc.).

- **Functional Assessment and Treatment of Problem Behaviors in People with Alzheimer's Disease.** BRUCE L. BAKKE and Susan A. Parenteau (Minnesota Veterans Home - Minneapolis), and Angela K. Hochhalter (University of Minnesota)

Agitation, aggression, and other problem behaviors seen in individuals with developmental disabilities are also commonly exhibited by people with Alzheimer's disease (AD). These behaviors reduce quality of life and often lead to placement in a nursing home. Applied behavior analysis is now the predominant nonpharmacological approach to problem behaviors in people with developmental disabilities, but is just beginning to be used for similar behaviors in people with AD. In applied behavior analysis, "functional assessment" describes the process of identifying environmental and other factors influencing a problem behavior, including especially the function or purpose the problem behavior serves for the individual. To illustrate this method we describe a series of cases employing interventions based on functional assessment.

A variety of problem behaviors--including agitated speech, disruptive table shaking, and entering other residents' rooms--were addressed in men with AD and moderate to severe dementia. Promising approaches to overcoming the memory and learning deficits seen in AD are also discussed, including spaced retrieval and the differential outcomes

#39 Paper Session

11/29/2001
2:00 PM - 2:50 PM
Bibliography Hall
TPC

Culture & Sexuality
Chair: Richard W. Malott (Western Michigan University)

- **A Behavior Analysis of Culture.** MASAYA SATO (Teikyo University, Japan)

  From the standpoint of behavior analysis, a culture is a set of behavioral contingencies, behaviors shaped and maintained by the contingencies, and products of these behaviors. This cultural set is passed on generation after generation in a given group. By this definition, a culture consists of three components: behavioral contingencies, behaviors, and behavioral products. There are three kinds of behavioral contingencies: Natural contingencies, social contingencies, and accidental contingencies. Although, in the analysis of culture, social contingencies have been emphasized, all of these three kinds of contingencies should be examined. However, social contingencies might be the most important among three kinds of behavioral contingencies in the analysis of culture. Social contingencies are the contingencies whose discriminative stimulus, operant, and/or consequence (reinforcement or disinforcement) are social.

- **Sexuality.** RICHARD W. MALOTT (Western Michigan University)

  Through a tortuous, convoluted, behavior-analytically based argument, I suggest that: sexual reinforcers are unlearned, sexual behavior is learned, the value of the sources of sexual stimulation is learned, and sexual style is learned. From that I conclude that the differences between so called, heterosexuality, homosexuality, bisexuality, and transexuality are learned. IMHO (This is a multi-media presentation, filled with dirty pictures and sensuous music.)

#40 Symposium

11/29/2001
2:00 PM - 2:50 PM
Hall of the Ceiling
DDA

Functional Literacy for Adults with Developmental Disabilities
Chair: Casey Hudson (University of Kansas)

The definition of "literacy" keeps shifting, but without doubt some basic literacy is one of the most important keys to wider forms of communication. Communication offers access to resources. Limited access to resources typically limits the lives of individuals with developmental disabilities. Individuals with developmental disabilities typically experience difficulties with writing, or do not write at all, due to a pervasive lack of opportunities in their learning histories. Technologies of instruction and of computers offer investigation of a combined technology for teaching self-managed, generative skills for acquiring and for improving writing to individuals with unusual histories of learning.

This symposium explores conditions under which access to relevant electronic and instructional technologies will improve skills by adults with developmental disabilities and produce opportunities for self-expression and for exchange with communities typically limited for them. The presenters aimed at teaching task-analytic self-management of basic literacy skills for transferring skills from initial formal settings to increasingly independent functioning in naturalistic settings.

The three speakers present teaching increasingly independent functioning through 1) improving generalized basic syntax of self-modeled spoken sentence units, 2) learning dialing telephone numbers prompted by self-constructed written cues, and 3) extending generalized shopping skills with self-constructed written words guiding independent shopping.

- **Individualized Task-Analysis for Improving Computer Processed Writing Skills.** CASEY HUDSON and Irene Grote (University of Kansas)

  Computers as writing tools can contribute to the quality of life of adults with developmental disabilities. Such claims about this recently emerged tool are mainly anecdotal due to its even more recent application to populations with developmental disabilities. Improvement in quality of life remains to be underscored by scientific applications. Quantitative analysis of bringing writing repertoires in step with otherwise adult repertoires, require specific task-analysis for instruction different from traditional teaching of young, normally developing writers. Our participant was a self-referred adult with severe developmental disabilities for whom keyboarding is a highly preferred activity. He was verbal but had minimal composition skills. Measured by his writing baseline, we tailored a task-analysis to teach him self-instructed editing.

  Writing skills (e.g. period placement) during baseline was less than 9% on randomly selected probes, while comprehension was 87%. After instructing him to say each complete idea (what the experimenter judged to be a close approximation to a sentence) before beginning to type, his appropriate period placement increased to 80% (reliability approximated 100%). Generalization to other components of a sentence (e.g. capitalization) appears promising. In our individualized task-analyses, self-instruction is a crucial technique combined with computers as writing tools for producing generalized

- **Identifying and Teaching Skills Leading to Self-Instructed Telephone Skills.** MARIE TIEGHI-BENET and Irene Grote (University of Kansas)

  Self-managed daily activities are important to the quality of life of individuals with developmental disabilities. Our participant was a self-referred adult man with severe developmental disabilities, displaying no reading or writing skills and limited verbal articulation skills, who expressed a high preference for learning independent telephone skills. The goal of this study was to teach this Participant how to telephone based on his self-contracted list of telephone numbers of his friends. Under baseline conditions, our participant did not qualify for independent dialing. We combined an equivalence and self-instruction paradigm to establish generalized calling. Receptive identification of numbers improved from chance to near perfect levels after teaching number-number matching. His copying of numbers matched the models in his telephone book almost perfectly. Reliability approximates 95%. His progress promises that he may be learning generalized number skills, which can be extended to other activities of daily living. Further teaching of matching formats and their testing for symmetry and for transitivity are in progress.

- **Extending Generalized Shopping Skills for an Adult with DD**. JULIE WALDOCH and Irene Grote (University of Kansas)

  Independent functioning in the form of self-managed daily activities is an important aspect of the quality of life of individuals with developmental disabilities. Our participant was a self-referred adult woman with mild developmental disabilities, who expressed high preference for learning independent shopping with her own written list of items.

  We taught this Participant with severely limited reading and writing skills, but with high verbal skills, how to shop based on her self-constructed list. We used a combination of equivalence and self-instruction paradigms procedure for teaching self-instructed shopping with 14 items. The 14 words functioned as instructional stimuli for generalized self-instructed shopping.

In addition to the impressive generalization shown at this level of self-instructed shopping, we taught our Participant to construct her own shopping list with the same set of words using a novel set of pictures and/or words -- selected from her preferred items. This resulted in 95% reliable, near-perfect performance.

This skill generalized to many items needed in her household with similarly reliable results. This accomplishment fulfilled her desire to become-and to be respected-as an effective shopper by her staff and her roommates, the goal of self-referral was fulfilled. What a quality-of-life dream came true!

#41 Panel Discussion

11/29/2001
2:00 PM - 2:50 PM
Cloister of the Cypress Hall
EDC

Graduate Training Programs in the U.S. and Abroad, Part II
Chair: Paolo Moderato (Universita di Parma)

- R. MARK MATHEWS University of Kansas
- PAMELA OSNES University of South Florida
- CAROL PILGRIM University of North Carolina Wilmington

This panel continues the presentation of information about more graduate training programs at the Master's and Doctoral levels in the United States. As with the previous panel, Dr. Paolo Moderato will serve as panel chair, and will provide information about graduate preparation in Italy. Dr. Moderato and panelists will provide information about similarities and differences in training approaches across countries. Attendees will be encouraged to participate and provide additional information.

#42 Symposium

11/29/2001
2:00 PM - 2:50 PM
Little Theatre Hall
AUT

Improving the Communicative Competence of Children with Autism
Chair: Nicholas Kyparissos (Private Practice)
Discussant: Angeliki Gena (University of Athens)

The social adjustment of youths with autism is affected predominantly by deficits in the social and communicative domains. This symposium addresses specifically such deficits and intervention strategies that may contribute to the improvement of communication skills. The first investigation looked for the development of contextual language after eighteen months of intensive home-based treatment for two boys and one girl, 3-6 years of age. The second investigation used scripts which were later faded to teach two adolescent boys and an adolescent girl, 15-19 years of age, to converse extensively on topics of their interest.

- **Intensive Behavior Intervention and Language Development for Three Children with Autism.** ANNA PLESSA and Anne Rushton (University of Manchester)

   This study focuses on three case studies of children with autism (two boys, one girl; 3-6 years) after eighteen months of intensive home-based treatment based on ABA

principles and methodology developed by I., O., Lovaas. The main aim was to investigate how the above intervention facilitated their language development to be used in the appropriate content. A qualitative case-study methodology was adopted. Each individual ABA therapist and each mother participated in semi-structured interviews and completed a modified Portage language developmental checklist. Also the researcher conducted a three-hour session with each child to establish an overall picture of his/her language performance and to triangulate the data. Detailed reports written by educational psychologists before and during the intervention were also utilised. Lastly, each child was assessed using the British Picture Vocabulary Scale (BPVS) and the Expressive One- Word Picture Vocabulary Test. A reliable and substantive profile of each child language development pre- and post-treatment was therefore obtained by using multiple tools and informants. In depth analysis of the case studies shows that language development has improved in all three cases and that there was common agreement amongst therapists and mothers that the specific type of behavioural intervention was the determining factor for each child's progress. Each case study will be presented separately to illustrate how language development was enhanced through the treatment and will be discussed according to its applications.

- **Increasing Contextual Conversational Exchanges Among Adolescent Peers with Autism.** NICHOLAS KYPARISSOS (Private Practice), Claire Poulson (Queens College), and Patricia Krantz and Lynn MacClannahan (Princeton Child Development Institute)

  The purpose of the present study was to teach conversational skills to adolescents with autism to enable them to participate in extended conversations with their peers. All participants were between 15 and 19 years of age diagnosed with autism. Three served as target students, two as confederate peers. The experimenter constructed 36 scripts, each providing the target student 10 opportunities to ask wh-questions embedded in the ongoing conversation. The confederate peers initiated and conducted four scripted conversations per session with each target student. A within-subject multiple-baseline design across six types of wh-questions was used to assess whether the systematic introduction and later fading of scripted exchanges would increase the number of contextual verbal exchanges of the target students. Training was across three types of questions (what, where, when) and generalization was assessed across three other types of wh-questions (who, why, how). Interobserver agreement measures were conducted on 100% of the study's sessions. The average interobserver agreement score was 91% on the number and type of exchanges uttered across the 3 target students. All target students reached a level of 8 to 10 scripted exchanges per conversation. With fading, unscripted exchanges gradually increased while scripted exchanges decreased. All target students showed substantial generalization to the untrained scripts.

#43 Paper Session

11/29/2001
2:00 PM - 2:50 PM
Palladian Refectory Hall
EAB

Resurgence and Derived Relational Responding
Chair: Deirdre Beebe Fitzgerald (Eastern Connecticut State University)

- **Fluency and the Facilitation of Derived Relational Responding.** DEIRDRE BEEBE FITZGERALD (Eastern Connecticut State University)

  The effects of fluency in trained relations on subsequent derived relational behavior was examined to test the claim that fluency in the component skills of a repertoire would produce untrained increases in composite skills. First, the fluency of conceptual experts in stimulus equivalence and matching-to-sample methods was assessed in order to produce a fluency criterion for later conditions. The effect of fluency in the acquisition of conditional relations, symmetric relations, and equivalence relations on derived relational responding in subsequent stimulus classes was examined. Performance of participants who worked to a fluency criterion was contrasted with another overlearning group whose performance was yoked to the fluency group in number of trials, but not rate or accuracy criteria. A final control condition worked only to mastery. A second group of control participants who did not receive training for the derived relations of symmetry and equivalence was included for each of the three learning conditions. Results indicated that training exemplars of the derived relations of symmetry and equivalence did not produce significant increases in the emergence of these relations. Additionally, providing training to a fluency criterion did not produce significant increases the in the emergence of derived relations as compared to either the yoked practice overlearning condition or the mastery only condition. Finally, how readily contextual control could be established given the different learning histories were examined. Contextual control over responding was established in all participants. Derived relations predicted from this training emerged at an equal probability across groups. Implications for both instructional design and descriptions of effective behavior in novel settings are addressed.

- **Resurgence and Recency of Practice.** FRANCIS MECHNER and Laurilyn Jones (The Mechner Foundation)

  Resurgence is defined as the reappearance of antiquated behavior patterns (those observed earlier in a subject's learning history). How recently a skill has been practiced has been shown to be an important variable in determining which behavior patterns will resurge. In several experiments, subjects typed non-word sequences of letters on a computer, each containing both criterial (required) and non-criterial (optional) keystrokes. Several "history" sessions were followed by a final "test" session in which subjects chose which patterns of letters to type. Three groups consisting of three patterns each were learned, separated in some experiments by elapsed time (days without a session) and in others by sessions spent learning unrelated but similar patterns. The objective was to determine the effect of recency of practice on resurgence during the final session. In both experiments, the largest resurgence occurred for patterns from the first and last groups, with almost no resurgence of the middle group of patterns, a finding that is in line with research from the serial learning literature. In further experiments, prefacing the presentation of the first group of patterns with a single session spent learning unrelated patterns was sufficient to wipe out almost completely any preference for the first group.

#44 Symposium

11/29/2001
2:00 PM - 2:50 PM
Carnelutti Hall
OBM

Two Years Later, The Development of a Private Residential School Based on the Principles of Applied Behavior Analysis, What Does the Data Tell Us?
Chair: Frank Bird (Melmark New England)

Applied behavior analysts have been effective in ameliorating a variety of unsafe behavior for consumers. The literature is replete with examples of individual treatment strategies for a myriad of disorders and problems. Despite the effectiveness of our practices, there is little information on the "how-tos" of overall organizational development for new programs. That is, research has documented effective technologies, but these reports have typically focused on very specific target behaviors. Less documented is the undertaking of new program development in an educationally based community settings. This symposium will provide an overview of the first two years of a start up private school whose foundation is based on the principles of Applied Behavior Analysis.

The purpose of this symposium shall be to address this critical dimension of behavior analysis: the development of empirically based, field-tested, and disseminable technologies, which demonstrably enhance students' quality of life. The presenters will address progressive strategies focused in the areas of the development of Clinical Infrastructures within a new organization, staff development and Quality Improvement.

Each presentation will provide specific data on the outcomes of program development.

- **Developing Behaviorally Based Interdisciplinary Teams: Application with Community-Based Program Development.** FRANK BIRD, Rita Gardner and Helena Maguire (Melmark New England)

  The presentation will review the application of Applied Behavior Analysis principles in conjunction with Interdisciplinary teams. Specifically, the clinical intervention infrastructure that requires the clinical staff members to enter into an on-going partnership addressing personal and environmental assessment, skills training, social-interpersonal skill development, behavior management and the provision of additional supports during crisis situations. An emphasis was directed toward establishing a foundation of Applied Behavior Analysis principles with all team members. A clinical and supportive environment was developed that enabled students to actively participate in all aspects of their life, while ensuring a focus on improving the student's capabilities and skill competencies. Programming included developing in vivo interventions with a focus on everyday life problems and challenges, establishing peer support and peer lead rules committees, providing core helping skills and identifying social supports and networks to promote inclusion within the community. These program objectives were implemented within a behavioral paradigm, emphasizing functional analysis, comprehensive individualized treatment for behavior disorders and the teaching of alternate functional skills.

  The success of this approach will be contrasted to a historical review of past strategies that were ineffective with these students, including the reliance of a pharmacological perspective and the application of mechanical restraints.

- **Improvement Programs: The Application of Continuous Quality Improvement Practices During Initial Program Development.** RITA GARDNER (Melmark New England)

  The purpose of this presentation is to demonstrate practical, data-based methods of quality assessment and improvement. The goal is for administrative and clinical managers of human service agencies to understand that data-based operational

standards need to be maintained throughout their organization, not solely in the development of individual behavioral strategies. The process of designing and maintaining a quality assessment and improvement process specific to the needs of human service agencies will be demonstrated. Specific tools and data-collection samples that can be universally adapted to agencies serving persons with behavioral impairments will be displayed. The presentation will also reflect on leadership development, provision of services, and responsiveness to the internal and external customers of the organization. The impact of utilizing assessment of program quality and its resulting improvements in an organization will be demonstrated. Methods for disseminating this information for staff development and public awareness and education will also be presented.

- **Developing Quality Services During Initial Program Development--The Use of Performance-Based Training Systems.** HELENA MAGUIRE (Melmark New England)

  This presentation will describe a performance-based staff-training program in the framework of initial program development. The training program was established during early program development to establish specific guidelines for direct service in the programs. An important function of any organization is the training of staff and interns to provide services to individuals who experience a range of disabilities. The program presented will discuss the training of staff by providing initial orientation and task-analyzed checklists to be used to train while they worked in their assigned positions. Initial steps involved the identification of specific tasks relevant to the role of the Special Education and Residential teachers, such as: case management, behavioral interventions, IEP development, off-grounds trips, and emergency procedures. The schedule of training was arranged with the most essential, work performance tasks trained first. Tasks repeated frequently throughout the first six months to maintain the most critical skills for program management. Training on all identified checklists is the responsibility of an employee's immediate supervisor. If criterion is not met, a series of steps are followed to ensure mastery. Corrective feedback was provided immediately to the employee, indicating which areas of the checklist were performed well and which areas need improvement. This represents the core of the training program. Mastery is required in order to achieve salary changes after the first three months of employment. In this way, the checklist system serves a dual purpose, training and evaluation.

#45 Paper Session

11/29/2001
3:00 PM - 3:25 PM
Barbantini Hall
CBM

Behavior Management Flow Chart
Chair: Thomas Gumpel (The Hebrew University of Jerusalem)

- **Unique Characteristics of the Behavior Management Flow Chart.** JEFFREY S. DANFORTH (Eastern Connecticut State University)

  A review of component analyses that isolated different child behavior management strategies was conducted. Based upon this review, a task analysis of the steps adults can take to manage child misbehavior was completed. The task analysis

conceptualizes the adults' behavior as a chain of responses. The Behavior Management Flow Chart (BMFC) is a flow chart of the task analysis. The BMFC provides a synthesis of behavior management literature; a clear portrayal of responses adults may emit to manage child misbehavior. This address highlights critical differences between the BMFC and well-known behavior management training programs that are based on the Hanf (1969) model. The BMFC is not a 2-step program. The child-focused component is eliminated. Instead, adults are taught skills in a forward chaining manner based upon the task analysis. Differences between the BMFC and other behavior management programs include (a) characteristics of the form of the command, (b) timeout in locations other than a chair, (c) de-emphasizing physical controls to backup timeout resistance, and (d) options that allow adults to adapt to acute demands. Any adult in any setting may use the BMFC, and there is no token system. The component analysis reveals unresolved issues in child behavior management research.

#46 Paper Session

11/29/2001
3:00 PM - 3:50 PM
Bibliography Hall
TPC

A Re-Examination of Latent Learning and Ambivalence
Chair: Maria Ruiz (Rollins College)

- **Re-Introductory Psychology: Behaviorism and "Latent Learning".** ROBERT JENSEN (California State University, Stanislaus)

  An examination of 10 years of introductory psychology texts shows that textbook authors repeatedly claim that it is necessary to "go beyond" B. F. Skinner and behaviorism in order to adequately explain behavior. The cognitive element is then presented by successive generations of textbook authors as the key element "beyond" Skinner's behaviorism. Evidence in support of this claim, consistent across years, authors, and editions, is the research of Tolman & Honzik (1930) investigating what they referred to as "latent learning." Textbook writers commonly assert that Skinner's learning principles cannot account for this latent learning; therefore cognition is necessary to close the explanatory gap. In contrast to the content of the standard introductory psychology textbook, the present paper demonstrates that the Tolman & Honzik findings are quite consistent with the principles of a science of behavior. A re-examination of Tolman & Honzik's study and Tolman's subsequent writings indicate that the salient behavioral principles that will explain their 1930 findings include (1) the identification of a proper dependent variable (probability of response vs. error rate); (2) phylogenic contingencies; (3) punishment; and (4) establishing operations. Suggestions for encouraging the revision of textbooks will be included in the presentation.

- **A Reinterpretation in Cognitive-Behavioral Terms of the Concept of "Ambivalence".** DAVIDE DETTORE (University of Florence, Italy)

  The classic psychoanalytical definition of the ambivalence concept bases itself on the second Freudian drive theory (Eros and Thanatos) and on a hydraulic model of mental operation; both such theoretical frames are demonstrated not only phenomenologically wrong but also experimentally false. Nevertheless, in clinical and psychotherapeutic field, behavioral and emotional reactions are often met that

would seem to confirm and to justify the use of this psychoanalytical concept, that, therefore, turns out of some at least descriptive usefulness. Consequently, we review some clinical examples of "ambivalence" and, then, offer a reconceptualization of those cases from a cognitive-behavioral perspective, hopefully able to explain them in a more acceptable way. Within such a theoretical effort we propose, therefore, to replace the old term "ambivalence", by now too much connoted, with the new one "alternation of operating schemata", much more congruent with the cognitive-behavioral point of view and its needs of conceptual exactness. Finally, we draw some concluding remarks, that, in our opinion, can be of some clinical and applicative relevance.

#47 Paper Session

11/29/2001
3:00 PM - 3:50 PM
White Hall
DEV

Age and the Elderly
Chair: Vanessa Jensen (The Cleveland Clinic Foundation)

- **Age as a Dispositional Category from a Behavioral Perspective.** ROSA LACASELLA (Universidad Central de Venezuela)

   Early in the 20th century, most psychologists working in the area of development devoted their research efforts to the verification of cognitive and psychomotor skills in children in relation to age. Possibly, the interest in age for the interpretation of development events has its origins in a biological conception of man. This notion has undoubtedly had important conceptual, methodological and practical implications in the approach to development. The present work discusses three aspects: the usefulness of this approach for the explanation of developmental-related events, the conception derived from a behavioral perspective and its paradigmatic application to linguistic behavior.

- **Differences in Stimulus Equivalence Performance Amongst the Institutionalized and Independently Living Elderly.** STEPHEN MICHAEL GALLAGHER and Michael Keenan (University of Ulster), Karola Dillenburger (The Queen's University of Belfast)

   Differences in stimulus equivalence performance were shown amongst the institutionalized and independently living elderly. These differences were also shown in Mini Mental State Examination (MMSE) performance and levels of independent behavior assessed by care staff. Overall findings from these experiments suggest that equivalence performance is highly correlated to MMSE scores. Of the 30 residents who scored 27 or above on the MMSE, 27 responded equivalently (90%). More interestingly, the data from these experiments have also shown that equivalence performance is also correlated to levels of independence in behavioral repertoire. Of the 31 subjects who scored highly in the independent behavior assessment survey, 27 responded equivalently (87%). These findings may have implications regarding the use of the equivalence paradigm as a diagnostic tool in assessing elderly clients' needs in institutional care.

   All 45 subjects tested in the above experiments had no difficulty in discriminating the test stimuli as they correctly responded to reflexive relations. These data suggest

that the problem may lie in sensitivity to changes in contingencies. Such difficulties may be the result of the high levels of non-contingent reinforcement that occur in institutional settings.

#48 Symposium

11/29/2001
3:00 PM - 3:50 PM
Carnelutti Hall
OBM

Applications of Behavior Analytic Methods to Changing Important Behaviors in Organizations.
Chair: Michael Magoon (Auburn University)

Organizational behavior management is faced with need to expand its capsule of proven approaches to changing organizational performance and addressing cultural phenomena. The experimentally evaluated approaches have often involved direct involvement of an applied behavior analyst working at the immediate level of an initiative. However, OBM practice extends far beyond this, involving client control of parts or all of technologies, initiatives that extend through multiple layers of organizations, and complex performance systems. Further, the principles underlie cultural phenomena. This symposium features experimental evaluations of technologies that may be useful for such more complex applications, including client assessment of problems and opportunities, that are applied at one level of an organization with the intent of affecting other levels, and that involve relatively complete performance systems as well as data-based analyses of cultural practices.

- **Results from Small-Scale PM Projects Using Descriptive and Informant Assessment.** JOHN AUSTIN and Austin Jackson (Western Michigan University), and Nelson R. Eikenhout (Behavioral Science Technology, Inc.)

  We will present the findings of two small-scale, short-term, applications of performance management. The novelty of the studies is that each used a form of functional assessment to determine the appropriate intervention. Study 1 used an informant assessment (i.e., a combination of interviews and direct observation) to develop an intervention effective at increasing the customer service at a local branch of a nationally (US) known department store. Using a multiple baseline across behaviors and departments, we evaluated the effects of a performance matrix and posted feedback on the customer service behaviors of floor employees at the location. Study 2 used a descriptive assessment to develop an intervention to help employees check electronic notices sent by managers in a university computer lab. The descriptive assessment measured the occurrence and non-occurrence of a variety of stimuli relative to the occurrence and non-occurrence of the target behavior. The assessment results, though ambiguous, suggested a prompting strategy to alter the target behavior. We evaluated the effects using a reversal design (ABAB). The utility of various applied behavior analysis functional assessment methodologies as applied to organizational phenomena will be discussed.

- **Just One Kiss for a Pretty Dress of Blue: The Evolutionary Consumption of Fashion.** DIANE F. DICLEMENTE, Aimee Adams, and Jennifer Britton (Dickinson College), and Donald A. Hantula (Temple University),

  Using the theories of evolutionary psychology and consumption, the function of fashion may be explained. Just as animals in the wild have evolved specific ornamentation for adaptive purposes, the tenets of evolutionary theory and sexual

selection may be used to explain differences in the distinctiveness of ornamentation and dress of humans. While functionally, one only needs a pair of pants and shirt to cover the body and protect it from the elements, the excessive amount of clothing purchased each year serves a much different function: to signal both the long term and short term mating strategies of both males and females. However, fashion may be adjusted due to the increase and decrease of one's own sex or in other words, a high or low sex ratio in addition to specific mating strategies. To this end, sex ratio may be an establishing operation for the clothing consumption of the different sexes. This research investigates the distinctiveness of dress in relation to marital status. Issues involving sex ratio of the demographic group used in the study will also be discussed.

- **Balancing Academic Performance Measures: A Significant Application of the Total Performance System.** HOUMANFAR RAMONA (University of Nevada, Reno), Kristen Magleiri (University of Nevada, Reno), Horacio Roman (University of Nevada, Reno)

  Important academic performance outcomes, i.e., publication, thesis defense, dissertation defense, are too infrequent to be effective measures of student and faculty performances in graduate programs. One effective way to target the problem of infrequency is to evaluate process measures as well as outcome measures. In addition, many academic institutions promote a balance between quality and quantity for their academic products. However, subjectivity in measuring and comparing the quality of academic products is particularly challenging. Further, performance criteria and standards vary between and within academic activities. This presentation will demonstrate and discuss the strategic development and implementation of an academic performance evaluation system through the utilization of the Total Performance System (TPS) in the Behavior Analysis Program at the University of Nevada, Reno.

#49 Paper Session

11/29/2001
3:00 PM - 3:50 PM
Palladian Refectory Hall
EAB

Choice
Chair: Carlos F. Aparicio (University of Guadalajara, Mexico)

- **On Choice Dynamics.** CARLOS F. APARICIO (University of Guadalajara)

  It has been suggested that under conditions in which the reinforcing environment remains constant for long periods, behavioral adaptation to changes in the reinforcing environment might be slow, whereas when the reinforcing environment changes frequently behavior might change rapidly. These ideas were tested with 24 rats responding in a choice situation that varied the speed of environmental change between and within sessions. For one group (8 rats), a series of seven reinforcer ratios was arranged within each session. The reinforcer ratios were not signaled, but a 1 min black-out was used to signal the start of each new reinforcer ratio. For another group (8 rats) the reinforcing ratio varied from one session to another, each day the rats were exposed to a different reinforcing ratio. Two restrictions applied: a) The reinforcer ratio was randomly selected by the experimenter, and b) no reinforcer ratio operated for two consecutive sessions. The last group (8 rats)

was exposed to the same reinforcing ratio for 15 consecutive sessions, after which, a different reinforcing ratio was picked up for the next 15 sessions. This procedure was repeated until the whole series of seven reinforcer ratios was completed. Generally, the results supported the notion that under some conditions behavioral adjustment occurs very rapidly. The implications of these results for a dynamic model of choice were discussed.

- **Melioration and Optimization as Explanations of Choice Behavior**. MICHAEL B. EHLERT (University of Nevada, Reno)

   Objective
   Optimal choice theory permeates most of the natural and social sciences, from Fermat's principle of least time in physics to fitness maximization in evolutionary biology to utility maximization in economics. Herrnstein and Vaughan (1980) proposed an alternative to optimization, called melioration. Although in most situations melioration and optimization predict the same outcome, some special circumstances allow different outcomes. Operant behavior provides a ready-made experimental setting to test choice behavior. This paper considers multiple experiments that used operant procedures to pit melioration against optimization.

   Methodology
   White Carneaux pigeons served as subjects in operant chambers. The pigeons pecked either of two response alternatives to gain access to grain reinforcement based on complex feedback functions. In the initial phases, reinforcement conditions were such that both optimization and melioration predicted identical results. Subsequent phases instituted reinforcement conditions that tested whether optimization or melioration best described choice behavior.

   Results
   In the initial phases, the pigeons reliably allocated behavior consistent with both optimization and melioration. Those phases that provided different outcomes for behavior allocation produced results consistent with melioration rather than optimization.

   Conclusions
   The results support melioration as the more general explanation of choice behavior.

#50 Paper Session

11/29/2001
3:00 PM - 3:50 PM
Council Hall
DDA

Developmental Disabilities I
Chair: Carlos Bruner (National University of Mexico)

- **The Use of a Descriptive Probe Assessment Procedure and Subsequent Manipulation of Establishing Operations to Treat Multiply Controlled Maladaptive Behavior.** JAMES PORTER, W. Larry Williams, Brian Lawton, and Jenn Goodis (University of Nevada)

   In Study 1, a descriptive assessment will be performed that utilizes conditional probabilities associated with pre-determined antecedent variables for determining

the multiple functions (e.g. attention, escape, etceteras) of maladaptive behaviours (e.g. aggression, disrobing, self-injurious behaviours, etceteras) exhibited by participants from varying clinical populations (e.g. developmental disabilities, dementia, traumatic brain injury). An experimental (analogue) functional analysis that involves manipulations of consequences was also conducted for the same participants for purposes of comparison with the descriptive assessment. Following the completion of Study 1, Study 2 will be implemented. In Study 2 an intervention was implemented for all participants based on the results of Study 1. The interventions in Study 2 involved manipulations of establishing operations thereby producing abolishing operations for the targeted maladaptive behaviours. The effectiveness of the interventions was determined by dependent measures that include the frequency and duration (as applicable) of the maladaptive behaviours. Additionally, where applicable, rates of maladaptive behaviour were used. Lastly, for those participants for which skill acquisition programs are run, the number of completed training sessions per day was calculated and for those individuals for whom participation in ADL's and recreational activities are relevant, these formed dependent measures.

- **An Examination of the Determinants of the Organisation of Behaviors within a Response Class.** CHRIS OLIVER (University of Birmingham, England)

  Challenging behaviors rarely occur in isolation and are often members of a response class. Within a response class some behaviors can evoke socially reinforcing responses from others more frequently and, in accordance with the matching law, this can influence the relative frequency of responding (Oliver et al., 1999). The determinants of the distribution of social responses to behaviors within a response class warrant examination, with particular reference to the parameters of response efficiency. In this single case study of a man with developmental disability, social responses to challenging and non-challenging behaviors were evaluated in the natural environment and examined in terms of the schedule, latency and magnitude of responses. These parameters of response efficiency differed across challenging and non-challenging behaviors and were significantly associated to how aversive carers found the behaviors. These results are discussed with reference to the role of the aversive properties of challenging behaviours as determinants of differential social responding and 'choice' within response classes.

#51 Paper Session

11/29/2001
3:00 PM - 3:50 PM
Hall of the Ceiling
BPH

Drug Effects on Timing and Self-Control
Chair: Marc Branch (University of Florida)

- **Timing and Non-Timing Variables that Determine Drug Effects on Temporally Organized.** DAVID SCHAAL (West Virginia University)

  Although it has become popular to attribute drug-induced changes in temporally organized behavior to alterations in an underlying timing process, these interpretations are complicated by the fact that drugs often alter operant behavior in a manner that depends on baseline response rates. If timing is indicated by the distribution of different response rates in time, then rate-dependent effects of

drugs may be interpreted, mistakenly, as timing-dependent effects. Even when timing is indicated by changes in the proportion of responses on one of two keys or levers, drugs may alter the behavior without necessarily altering an underlying timing process. In this presentation, data from our laboratory using pigeons and rats responding under various operant procedures that produce temporally organized behavior are presented. Effects of the drugs morphine and d-amphetamine, which produce large and reliable changes in timed performance under these procedures, are examined with the goal of determining to what extent timing-based variables vs. non-timing-based variables are involved in these drugs' effect.

- **Quantitative Analyses of Drug Effects on "Self-Control" Choices: Implications for Behavioral Mechanisms.** RAYMOND PITTS (University of North Carolina at Wilmington)

  It has been suggested that a major goal of behavioral pharmacology is to identify "behavioral mechanisms" of drug action. Presumably, this approach involves elucidating the ways that drugs alter the variables of which behavior is a function. Identification of behavioral mechanisms, however, is complicated by the fact that behavior nearly always is multiply determined. For example, patterns of behavior maintained under "self-control" procedures involve at least the combined effects of reinforcement amount and reinforcement delay. Thus, it is difficult to determine whether a given drug effect under these conditions reflects a change in control by reinforcement delay, reinforcement amount, or both. The purpose of this address is to present a quantitative approach for identifying behavioral mechanisms of drug effects on self-control choices. By applying the logarithmic form of the generalized the matching law, and incorporating a hyperbolic delay-discounting model, it is proposed that drug-induced changes in delay discounting might be separated from drug-induced changes in "reinforcement efficacy." It is hoped that quantitative analyses of this sort can help elucidate behavioral mechanisms of drug action and, thus, provide direct empirical support for the notion as a theoretical framework in which to understand behavioral actions of drugs.

#52 Symposium

11/29/2001
3:00 PM - 3:50 PM
Little Theatre Hall
AUT

Improving the Social Competence of Children with Autism
Chair: Angeliki Gena (University of Athens)
Discussant: Nicholas Kyparissos (Private Practice)

The social and school inclusion and adjustment of children with autism is affected predominantly by deficits in the social domain. This symposium addresses specifically such deficits and intervention strategies that may contribute to the improvement of social skills. The first investigation documents the effectiveness of verbal and physical prompting in conjunction with verbal praise, provided by a shadow teacher, in teaching a girl with autism to remain on task, to make social initiations, and to respond appropriately when addressed by her peers. The improvement of the affective responding of three preschoolers with autism using various prompting and reinforcement strategies and generalization of the treatment gains was demonstrated in the second investigation.

- **Improving the Attending and Social Skills of a Girl with Autism during Inclusion in Kindergarten.** Angeliki Gena (University of Athens) and ELEANA LOGOTHETIS (Athenian Center for Child Developmental and Education)

  The goals set in the present study for the inclusion of a girl with autism in Kindergarten were based on prior research findings regarding both normative data and the assessment of the needs of children with autism who were included in regular Kindergarten settings in Athens, Greece. Those findings have clearly indicated that children with autism who attend regular Kindergarten lag behind in several areas, such as taking the initiative to interact with their peers and to respond to their peers' attempts for communication, as well as attending to the tasks presented by the teacher. Such deficits impede both the academic as well as the social advancement of children with autism. The purpose of the present study was to help a girl with autism, who was mainstreamed in Kindergarten, to develop a repertoire that would advance both her social adjustment and her availability for learning. The findings of this case study are very encouraging as they demonstrate a progressive improvement in all target areas, specifically: "on-task behavior", "social initiations to peers", and "responding to peer initiations", when provided with a systematic intervention (I.e., verbal and physical prompting, and verbal praise) delivered by a shadow teacher. Interobserver reliability measures were collected on 33% of the data.

- **Modifying the Affective Behavior of Preschoolers with Autism Using reinforcement Contingencies, In-Vivo Modeling and Video Modeling.** Angeliki Gena (University of Athens), and SOPHIA COULOURA and Effie Kymissis (Long Island University at C.W.)

  The purpose of this study was to modify the affective behavior of three preschoolers with autism in home settings and in the context of play activities, and to compare the effects of video modeling to the effects of in-vivo modeling in teaching these children contextually appropriate affective responses. A multiple-baseline design across subjects with a return to baseline condition was used to assess the effects of treatment that consisted of reinforcement, video modeling, in-vivo modeling, and prompting. During training trials, reinforcement in the form of verbal praise and tokens was delivered contingent upon appropriate affective responding. Error correction procedures differed for each treatment condition. In the in-vivo modeling treatment condition, video segments of a peer modeling the correct response and verbal prompting by the therapist were used as corrective procedures. Participants received treatment in the three response categories - sympathy, appreciation, disapproval - and were presented with a total of 140 different scenarios. The study demonstrated that both treatments - video modeling and in-vivo modeling - systematically increased appropriate affective responding in all the response categories for the three participants. Additionally, treatment effects generalized across responses to untrained scenarios, the child's mother, new therapists, and time.

#53 Symposium

11/29/2001
3:00 PM - 3:50 PM
Cloister of the Cypress Hall
EDC

Infusing Behavioral Interventions into Classroom Settings
Chair: Barbara Mallette (SUNY College at Fredonia)
Discussant: William Jenson (University of Utah)

The New Millennium poses significant instructional challenges for all educators. Teaching a rapidly diversifying student population with an ever-expanding curriculum to higher levels of application and generalization will be challenging enough. Doing so in the absence of substantially more instructional support may prove even more daunting. It is clear, therefore, that classroom teachers need more powerful instructional interventions. Interventions that not only "work", but also that are feasible to implement on a class-wide basis and that are socially acceptable to pupils, teachers, and the community at large. One source of such intervention strategies may emerge from the collaborative interactions between the classroom teachers and applied researchers.

This symposium will present two presentations that address the use of behavioral interventions in classrooms settings. Findings from two research studies will document improvements in student performance as well as acceptability by the students involved. Ease of implementation will be addressed. Discussion will touch upon the generalization of the strategies to other classroom and groups of students.

- **The Application of Self-Monitoring Techniques in Regular and Special Education Settings.** DOUGLAS LLOYD (Silver Creek Central School District) and Barbara Mallette (SUNY College of Fredonia)

    Classroom teachers today are faced with students from diverse cultural and linguistic backgrounds as well as students with different academic, behavioral, and social needs. When the students have attention deficits and/or learning disabilities, the academic and behavioral challenges become more demanding (Bos & Vaugh, 1998). These students often require accommodations in instructional and behavioral interventions. For the most part, teachers and support personnel implement these accommodations and behavior management programs. Even if the management plans are developed and executed collaboratively, the classroom teacher usually maintains control of the plan. However, the ultimate goal for students with learning difficulties should be to self-manage their own academic and behavior performance (Rhode, Jenson, & Reavis, 1992). Self-management approaches can include components that require the students to self-monitor their behavior (Schloss & Smith, 1994). Both general and special education teachers report that they use strategies that not only produce the desired effects on their students but also ones that are relatively easy to implement and that can be generalized to other settings without difficulty (Smith, Young, West, Morgan, & Rhode, 1988).

    This presentation will present several self-monitoring systems that have been successfully used in regular and special education classrooms. The procedures involved in the planning and implementation of these strategies will be shared as well as the data generated by the students involved. Consumer satisfaction results regarding students' perceptions of the strategies will be displayed. Generalization to other classrooms as well as other age groups will be presented. In addition, a procedure for evaluating other self-monitoring techniques for ease of implementation, age appropriateness, and situational feasibility will be included.

    References
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Rhode, G., Jenson, W. R., & Reavis, H. K. (1992). The tough kid book. Longmont, CO: Sopris West.

Schloss, P. J. & Smith, M. A. (1994). Applied behavior analysis in the classroom. Boston, MA: Allyn and Bacon.

Smith, D. J., Young, K. R., West, R. P., Morgan, D. P., & Rhode, G. (1988). Reducing the disruptive behavior of junior

- **Collaborative Research Projects that Extend Behavioral Interventions into Secondary General Education Classrooms.** BARBARA MALLETTE, Larry Maheady and Gregory F. Harper (SUNY College at Fredonia), and Jean Michielli-Pendl (Dunkirk City School District)

  Classroom teachers must become more effective and efficient decision-makers in the use and evaluation of those educational strategies to which their students are most responsive or make the greatest academic and interpersonal gains (Greenwood & Maheady, 1997). One approach that can help teachers learn to do this is called an "alternating teaching design" (Barlow & Hayes, 1979) in which pupils are exposed to varying instructional methods within relatively short time periods. Student outcomes, be they academic and/or interpersonal, can be represented graphically by the specific instructional method employed to see if there are differences. On the basis of student performance, teachers can select and continue to employ those methods that produce the greatest gains in pupil outcomes.

  This presentation will present the results of an alternate teaching design involving three instructional strategies employed in a sixth grade regular education Science class. The research was a collaborative effort between a classroom teacher and three researchers. The teacher systematically alternated three teaching approaches. Whole Group Question-Answer, Numbered Heads Together, and response cards Formative and summative measures will indicate that failure rates were significantly reduced under the Numbered Heads Together and Response Cards conditions. In addition, student response rates were significantly higher under these two conditions than under the Whole Group Question-Answer strategy. Consumer satisfaction ratings strongly favored the Numbered Heads Together and Response Cards approaches.

  References:
  Barlow, D. & Hersen, M. (1984). Single case experimental designs. (2nd ed.). New York: Pergamon.

  Greenwood, C. R. & Maheady, L. (1997). Measuring change in student performance: Forgotten standard in teacher preparation. Teacher Education and Special Education, 20, 265-276.

#54 Symposium

11/29/2001
3:00 PM - 3:50 PM
Photographs Hall
DEV

Language Acquisition: Natural Selection and Language Disabilities
Chair: Peter Harzem (Auburn University)
Discussant: Peter Harzem (Auburn University)

The papers in this symposium consider the place of natural selection in language acquisition, and the phenomena of delayed language acquisition. The data on delayed acquisition opens up possibilities of further behavior analytic research into the development of verbal behavior.

- **The Onset of Language Development: Natural Selection, Adaptation, and Primary Reinforcers**. MARTHA PELAEZ (Florida International University)

  Whether language is the product of natural selection is a subject of lively debate among philosophers, psycholinguists, and child developmentalists armed with arguments and counter arguments from evolutionary biology. This debate will be highlighted in the introduction of the paper. Some evidence that is needed to support the claim that language development reflects the influence of natural selection (Pinker and Bloom) will be discussed. Results of three experiments will be reported to demonstrate the reinforcing functions of maternal vocal intonations (as in motherese speech) and, maternal imitation. The functions of these maternal vocal stimuli will be discussed within the context of reinforcement, infant attention, modeling, induction, and communication.

- **Normal and Delayed Language Development: When Disabilities Provide Suggestions for Experimental Analyses.** PAOLO MODERATO (University of Parma)

  Data on both delayed and 'normal' language development are considered and compared. It is suggested that these data, especially the data on language disabilities associated with delayed acquisition, provide significant openings for experimental analyses of these and related phenomena.

- **The Problem of Learning and the Transference in the Solving Problems Under Different Modes of Languages.** A. DANIEL GOMEZ FUENTES (Universidad Veracruzana) and Emilio Ribes Inesta (Universidad de Guadalajara)

#55 Symposium

11/29/2001
4:00 PM - 4:50 PM
Carnelutti Hall
OBM

Conceptual Bases of Organizational Behavior Management/Performance Management: Leading, Managing, and Working through Organizations
Chair: Scott Beal (Auburn University)
Discussant: Darnell Lattal (Aubrey Daniels International)

Organizational behavior management has had for many years a useful conceptual base and effective technology for changing the behavior of individual workers. Technologies for making organizational leaders and managers effective in implementing and supporting the application of the individual-worker behavioral methods have been less well explicated. Similarly, the technologies for causing behavior change methods to be successfully used throughout an organization have been largely conjectural. These inadequacies in the conceptual base for OBM will be addressed in three related papers that examine different aspects of the needs that exist in most organizations. This symposium will focus on training leaders to lead and managers to manage in such a way to spread change technology throughout an organization. It will include pinpointing of the necessary leader and manager behaviors and on strategies for replicating change efforts.

- **Effective Managing: The Fundamental Skills.** BILL L. HOPKINS (Auburn University)

  The effectiveness of organizations depends on the quality and quantity of particular behaviors of the people who are fundamentally involved in the core processes that yield the goods and services supplied by the organization to its customers. The behaviors of the people who do the fundamental work of organizations depend on the behaviors of people who manage the behavior of those people. It is argued that the managing behaviors are general across job positions. Further, we know the functional characteristics of many of these behaviors and should be able to pinpoint them. If we can pinpoint them, we should be able to train them to people with the result that they can support better organizational functioning. The general characteristics of the behaviors will be described and speculative task analyses will be conducted to yield a description of the necessary repertoire of an effective manager. A method for teaching this repertoire to managers will be suggested.

- **Impact Leadership and Consulting: Conceptual Foundations for a Behavioral Leadership.** JOSEPH S. LAIPPLE (Aubrey Daniels International)

  This paper will describe a leadership and consulting method that focuses leaders and implementers of organizational change on impact and effect. This method has solid roots in organizational behavior management, behavior analysis, operational science methods, and pragmatism. The conceptual bases of this model will be described and the implications for both consultants and organizations will be discussed. Impact-based leadership is a scientific way to manage people and lead organizations. Case examples will be used to describe the methods and illustrate the conceptual issues that underlie impact leadership and consulting. This paper will also describe how organizational behavior management can be used to raise the level of what clients can expect from consulting organizations as well as what consulting organizations can expect from themselves.

#56 Paper Session

11/29/2001
4:00 PM - 4:50 PM
Cloister of the Cypress Hall
EDC

Education and Autism
Chair: Claudia E. McDade (Learning Services)

- **Going Global: Contextual Challenges to E-ABA Training in Autism Education.** BETH SULZER-AZAROFF (University of Massachusetts), Charles Hamad (Shriver Center), Richard K. Fleming (The Browns Group of Naples), Robert Bass (University of Massachusetts Medical School), and Michelle Weissman (California State University, Sacramento)

  Distance education promises potential learners global access to instruction. Teachers and parents of students with autism no longer need be hampered by geographical constraints as they seek access to programs designed to reach them applied behavior analytic (ABA) skills. As strongly supported by a number of research findings, parents and teachers stand to make a major difference in the lives of children with developmental challenges when equipped with these behavioral opers need to attend to broader variables associated with the distance learning context. Included might be constraints in programming high-quality practice and

feedback interactions, the technical complexities of the instructional system, competing student reinforcement schedules, social variables and others. This address will illustrate those points by describing the design, implementation and interim results of a US federally sponsored "Learning Anytime Anywhere Partnership" (LAAP) program in autism

- **Using a BEST Sequential Method to Determine Functional Relationships: A Methodological** CA LOUNSBERY (Utah State University), Tom Sharpe (University of Nevada, Las Vegas), Hosung So (University of Nevada, Las Vegas)

  Sequential methods of observing and analyzing behavior hold broad appeal for establishing functional relationships among behavioral events in education and therapeutic settings. The primary measure within sequential methods lies in behavioral segments as the analytic unit in efforts to provide transactional information among the discrete characteristics of behaviors and events and thereby enhancing the functional relationships among those behaviors and events (Bakeman & Gottman, 1997). Behavioral segments are defined as multiple behaviors and events occurring in close time proximity to one another, with analysis of temporal connection increasing understanding of potentially functional relationships (Morris, 1992). One challenge to a thoroughgoing sequential analysis of complex interactive settings, however, has been a technology for collecting such information in a time and cost efficient, and accurate, manner in the direct observation of widely accepted sequential behavior analysis procedures. In this context, one computer-based discrete- and sequential-behavior analysis procedure (BEST, Sharpe & Koperwas, 2000) is next illustrated, demonstrating the relative ease of information collection and relative immediacy of analysis results. Select data are next presented from physical education teacher education settings (Lounsbery & Sharpe, 1999; Lounsbery, in progress) to demonstrate the enhanced understanding that sequential methods may provide for uncovering the functional relationships among participant behaviors and ecological events. Implications for education research, and for teacher and student behavioral assessment, are last provided in encouraging increased use of computer facilitated behavior observation and analysis in complex and highly interactive settings such as that which applied.

#57 Paper Session

11/29/2001
4:00 PM - 4:50 PM
Little Theatre Hall
AUT

Intensive Behavioral Intervention
Chair: Eric V. Larsson (FEAT of Minnesota)

- **A Conceptual Framework for the Intensive Early Intervention Curriculum: The Complex Conditional Discrimination.** JULIE A. WALDOCH (University of Kansas) and Eric V. Larsson (FEAT of Minnesota)

  A great number of discrete skills are normally developed when delivering intensive early intervention programs. Such skills can be developed in a coherent conceptual framework, enabling productive treatment planning and program evaluation. In the case of language skills, organizing along a four-dimensional matrix of skills allows for programming the overall generative process of language development. The matrix of skills is addressed across generalization modalities, syntax forms,

conditional discriminations, and functional communicative relationships. Initial levels of programming focus on establishing generative labeling skills in all stimulus and response modes. Then sentences are developed as conditional discriminations. Finally, these sentences which function as expressive and receptive labels are applied to the learning of auditory comprehension skills within the same matrix organization. Compatible social skills are initiated only at the level of generative language which has been mastered. Data obtained from children in intensive early intervention will be presented to demonstrate the development of generative language and reduction of stereotyped responding through this framework.

- **Intensive Behavioral Intervention (EIBI)/Applied Behavior Analysis (ABA): Preliminary Factors Related to Progress.** VANESSA JENSEN (The Cleveland Clinic Foundation), Leslie Sinclair, Kari Marx, and Kathryn Barr (The Cleveland Clinic Center for Autism)

  Research supports the overall efficacy of EIBI/ABA treatment for young children with autism. Factors that affect program outside of the child. This study was part of an ongoing efficacy study documenting factors related to treatment progress in EIBI/ABA intervention.

  In the study period, 59 children were evaluated in a tertiary care autism clinic, 37(63%) were referred for EIBI/ABA, and 10 males had been in intervention for 3 months. Each child's treatment team rated progress toward goals and rating of compliance variables.

  Initial review indicates that progress and compliance variables (parent involvement, therapy consistency, program organization, and team consistency) were related, with mean compliance scores of 4.67, 6.00, and 11.83 for the minimal (MIN), moderate (MOD), and significant (SIG) progress groups, respectively. MIN group subjects had fewer hours/week the mean ages of the MOD and MIN group. All of the children in the MIN and MOD groups received alternative treatments while only 1 child in the SIG group received alternative treatments.

  Early data support previous research, suggesting that children who are younger and who receive more regular and consistent intervention make greater progress. Further analyses will identify other factors related to outcome and potential barriers to effective treatment.

#58 Symposium

11/29/2001
4:00 PM - 4:50 PM
Palladian Refectory Hall
EAB

Laboratory Approaches to the Study of Complex Verbal Relations
Chair: Mark Galizio (UNC at Wilmington)

The experimental analysis of human behavior has undergone a period of rapid growth over the past two decades, with topics once reserved for cognitive psychology increasingly giving way to a behavioral analysis. In this symposium we will explore some current laboratory research on complex verbal relations. Pilgrim and Galizio examine some variables related to the stability of equivalence classes in children of different ages, showing that age-related differences in performances can be influenced by specific training experiences. Dougher examines the transformation of operant and respondent functions via relational training,

showing that stimulus functions can be acquired indirectly on the basis of stimulus relations. Hackenberg and Bejarano examine the relations between verbal and nonverbal behavior in a choice context, showing that verbal behavior can sometimes override contingencies arranged for nonverbal behavior, even when it results in reinforcement loss. Together, the research presented here demonstrates the utility of studying complex human behavior under laboratory conditions.

- **Equivalence Class Flexibility in Children.** CAROL PILGRIM and Mark Galizio (UNC at Wilmington)

  Traditional psychological approaches have viewed concept or category organization as the outcome of two conflicting tendencies - one is to modify categories to reflect new experiences and the other is to resist change, due to the effort required and the loss of continuity with previous systems. The present program of study investigated the flexibility of experimentally determined equivalence classes in the face of potential class challenges with normally developing children across a range of ages, to determine the extent to which clas flexibility co-varies with age. All participants learned two 3-choice conditional discriminations and demonstrated the emergence of three, 3-member equivalence classes. Contingencies for one of the baseline conditional discriminations were then modified, and tests for equivalence were presented again. Original training and testing conditions were reinstated in the final experimental phases. Results showed substantial and unsystematic disruption in equivalence performances following the class challenge in young children, while performances consistent with the modified contingencies became more likely with age. However, training protocols that involved class-specific reinforcers resulted in performances from 4-6 year-olds more like those shown by older children and adults. Thus, specific experiences can be identified that influence the coherence between equivalence-test performances and the 4-term contingencies in effect.

- **Stimulus Relations and the Transformation of Operant and Respondent Function.** MICHAEL J. DOUGHER (University of New Mexico)

  The purpose of the present experiments was to determine whether the transformation of functions that has been demonstrated with stimulus classes can also be demonstrated via non-class based stimulus relations. College students were exposed to relational pre-training intended to establish a relational function (smallest, medium, largest) for three different ambiguous visual stimuli. This entailed match-to-sample training using the relational stimuli as samples and comparison arrays consisting of three visual stimuli that differed only in size. Selections of the smallest, medium, and largest comparison were differentially reinforced depending upon whether the arbitrarily designated "smallest," "medium" or "largest" sample was presented. Once the relational functions had been established, the "medium" sample was used to train an operant bar press response and as a CS in a respondent conditioning arrangement. The operant task simply required the subjects to press the space bar on a computer keyboard at a consistent rate. The respondent procedure entailed pairing the "medium" sample with either mild shock or CO_2 exposure. Skin conductance served as the UR and CR. Following this, the other two samples were presented first in the operant task and then in the respondent arrangement. Eight subjects responded more slowly to the "smallest" sample and more rapidly to the sample in the operant task. In addition, relative to their skin conductance responses to the "medium" sample, six of the eight subjects showed a diminished CR to the "smallest" sample and an increased CR to the "largest" sample. The second experiment employed some additional control procedures to rule out the possibility

of inadvertent control by stimulus classes but produced similar results. These data argue strongly that stimulus functions can be acquired indirectly on the basis of stimulus relations.

- **Verbal-Nonverbal Relations in a Choice Context.** TIMOTHY D. HACKENBERG and Rafael Bejarano (University of Florida)

  The aim of this experiment was to examine the correspondence between verbal and nonverbal choices as the contingencies arranged for such choices were systematically altered across conditions. Four adult humans chose repeatedly between two schedules of points worth money, a progressive-time (PT) schedule and a fixed-time (FT) schedule that, in addition to delivering points, reset the progressive-time schedule to its minimum value. Subjects' guesses of the most profitable choice sequence also produced points. The accuracy of the reinforced guesses was manipulated by reinforcing a particular guess while varying PT step size (Phase 1), and by reinforcing increasingly inaccurate guesses while holding constant PT step size (Phase 2). The reinforced guess was made consistently across all conditions in Phase 1. Choice patterns initially corresponded with these guesses, but eventually departed from the guesses in 3 of the 4 subjects in ways consistent with the manipulations of PT step size. For the other subject, choice patterns corresponded with guesses across all conditions, despite substantial losses in potential earnings. When guesses were manipulated in Phase 2, choice patterns corresponded with guesses across all conditions in 2 of the 4 subjects. For the other 2 subjects, choice patterns corresponded with guesses initially, but in later conditions little correspondence was seen: choice patterns and guesses were both related to the contingencies but not to each other. The results show that the degree of correspondence between verbal and nonverbal choices generally varied with the contingencies arranged for those choices. In some cases, however, correspondence was maintained even under conditions when it was clearly suboptimal, suggesting that contingencies arranged for verbal behavior cam sometimes override contingencies arranged for nonverbal

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#59 Symposium

11/29/2001
4:00 PM - 4:50 PM
Photographs Hall
DEV

Morality: Theoretical Issues
Chair: Gary Novak (California State University, Stanislaus)
Discussant: Jacob L. Gewirtz (Florida International University)

This symposium will deal with behavioral approaches to the analysis of moral and religious concepts, behavior, and control systems, with considerable emphasis on the role of rule governance.

- **On the Parallelisms between Scientific Behavior and Moral Behavior as Rule-Governed Systems.** MARTHA PELÁEZ (Florida International University)

  Parallels between scientific practices and morality are identified. As rule-governed systems, both scientific and moral practices involve reasoning and acting. They refer to the quality of acting in accord with standards of "good" conduct (or "good" scientific practices), while possessing a system of verbal behavior (language repertoire) about "right" and "wrong" conduct (or "successful" and "unsuccessful"

scientific practices). The present theoretical approach stresses that scientific behavior (including reasoning) just as moral behavior has certain exclusive characteristics that make it different from other social behaviors: (1) It is behavior that is intentional or deliberate (not automatic). (2) It is behavior that is perceived, named, or thought of as right or good (as classes) by the agent (the scientist) and has no obvious or apparent direct benefit for the behaving agent (but for society or humanity). (3) It is behavior that is governed by verbal rules. Thus, from the present approach like "morality," "science" results from a system of rule-governed behavior. The case will be made that, by identifying and studying the different forms and dimensions of rules (a taxonomic study), their different functions, their controlling relations, and the various processes involved in the derivation or transfer of new rules, we would be able to address effectively some of the paradoxical questions related to scientific practices -- where there are no obvious, direct, extrinsic contingencies for the scientists. It will be conclude that as a multifaceted, socio-cultural process, science is established in much the same was as moral practices. I will call into question longstanding views and traditional scientific practices of the production of knowledge and conclude that the practice of science itself should be one of our main objects of study in behavior analysis. Moreover, I will be critical of and challenge the idea of the "scientific method" as the only or privileged way of producing knowledge and understanding behavioral phenomena.

- **Aversive Control: The Dark Underbelly of Religion and Morality.** RICHARD W. MALOTT, Jason T. Otto, and Moira McGlynn (Western Michigan University)

Immoral behavior and illegal behavior don't differ fundamentally. Both usually interfere with the well being of life in the universe.

Society must add both moral and legal contingencies to counteract the natural contingencies of reinforcement and punishment that support immoral and illegal behavior.

Both moral and legal contingencies are usually indirect-acting analog contingencies. So they control behavior only when they are expressed as moral and legal rules.

Generally, society adds moral analog contingencies to control behavior that's harder to observe and legal analog contingencies to control behavior that is easier to observe.

Moral analog contingencies usually have outcomes that don't materially affect the individual who is behaving. For moral analog contingencies based on religion, the outcomes are supernatural or spiritual, not material. For moral analog contingencies based on secular humanism, the outcomes for the behaving person are social—the well being of others.

Legal analog contingencies usually have material outcomes.

Rules describing analogs to punishment and penalty contingencies suppress behaviors that shouldn't occur. Rules describing analogs to avoidance support behaviors that should occur.

In most cases it seems necessary that the moral and legal analog contingencies be based on aversive control.

#60 Paper Session

11/29/2001
4:00 PM - 4:50 PM
White Hall
CSE

Natural Disasters, Risk and Vulnerability
Chair: Esther Contreras

- **Natural Disasters: A Behavioral Proposal for an Earlier Recovery.** ELSA RITTER and Belkis Coriano

  The behavior and reactions of human beings regarding traumatic events use to be diverse and unexpected (positive or negative). When these reactions are positive it is possible to overcome difficult situations in a short time and effortlessly. On the other hand, when they are negative or ineffective they can lead to states of extreme fatigue, inability, biological, social and psychological alterations and in some cases can cause death. In a attempt to help to the reconstruction and recovery of the people affected by the catastrophe occurred in Venezuela in December 1999 and to guarantee the selection and strength of behaviors which permitted a rapid recovery, we evaluated and compared reactions and coping styles before and after the traumatic events in order to make decisions in relation to psychosocial support and further contingency planning. Most of the subjects reported changes in their coping behaviors in relation to new situations. Most of these situations correlated with an increase in stress levels.

- **Risk and Vulnerability: Overcoming Obstacles in the Recovery of Vargas State.** ELSA RITTER and America Colon

  This study evaluates risk perception and prevention strategies that inhabitants of Vargas state possessed nearly a year before the catastrophe occurred in Venezuela, in December 1999. The evaluation applied to 44 residents of this state reflected the existence of a high perception risk and a minimum of prevention strategies used, and in some cases lack of information at all. However, subjects only realised about the immediate risks associated to recent daily situations as a result of catastrophe (insecurity, health problems). They were unable to think about the possible consequences such as flood and further landslide. The results of this evaluation showed that members' community had no information, organization and capacity to face risk situations. It is important to note that although 80% of people assesses, who live near rivers, streams, near highways or in areas affected by

#61 Paper Session

11/29/2001
4:00 PM - 4:50 PM
Bibliography Hall
DDA/TPC

Reinforcement and Punishment
Chair: Steve Dworkin (University of North Carolina at Wilmington)

- **Distinguishing between Social-Positive Reinforcement and Automatic Reinforcement in Descriptive Analyses of Problem Behavior.** KAREN HODGE (University of Birmingham, England)

In descriptive assessments of problem behavior, it is often difficult to distinguish between behaviors maintained by automatic reinforcement and social-positive reinforcement. Given that schedules of reinforcement are likely to be very lean in natural environments, both have similar antecedents and consequents (low levels of social interaction). In this study, descriptive analyses were carried out for three children with problem behaviors in order to assess the likely function of their behavior. Each participant was observed for four hours in the natural classroom environment. Pre-specified child behaviors, teacher behaviors, and general classroom contexts were coded in real time and analysed using computer software. Inter-observer reliability was acceptable for all codes (Kappa $0.6). Conditional probabilities were calculated for the occurrence of environmental events given the presence of problem behavior and for the occurrence of problem behavior given the presence of environmental events. This method, used by Lerman and Iwata (1993) avoids potential confounds due to differing baseline frequencies of behaviours and events. The risk of misclassifying the function of problem behaviors based on a descriptive analysis is discussed in terms of the development of problem behaviors and early

- **Discriminative Stimuli for Punishment?** JENNIFER O'DONNELL, Dean C. Williams, and Kathryn J. Saunders (University of Kansas)

  The extent to which response suppression is maintained and generalized often is a focus of laboratory studies of punishment. Frequently, maintained and generalized suppression also is a goal in interventions using punishment. Punishment contingencies involve two potential sources of control: antecedent stimuli and punishing stimuli. A common assumption is that antecedent stimulus control is established in the same manner with punishment as it is with reinforcement. A recent review of the animal and human punishment literature reveals that these assumptions may be false, and that the stimulus control involved in punishment may be more complex than originally thought. Determining the source of control has important theoretical and practical implications. Theoretically, this issue bears on an avoidance conceptualization of punishment and whether discriminative stimulus control over punished behavior makes conceptual sense. Practically, antecedent control of aberrant behavior may be (1) more effective in the long term, (2) safer for the individual, (3) more feasible, and (4) more socially acceptable than delivering punishers. Results of the literature review will be presented briefly, followed by a detailed discussion of the theoretical and practical implications.

#62 Symposium

11/29/2001
4:00 PM - 4:50 PM
Barbantini Hall
CBM

The Many Faces of Clinical Behavior Analysis: Conceptual Issues
Chair: Luc Vandenberghe (Catholic University of Goias)

This symposium offers fresh views on a quickly developing area of Behaviour Analysis. Clinical Behaviour Analysis is a tentative to apply the concepts of Radical Behaviourism and the principles of Behaviour Analysis on the conventional psychotherapy session, in which the mayor means of changing the problem-behaviour of the client consists in the verbal interaction between client and therapist. Different aspects of this way of doing therapy are

examined: the role of positive reinforcement; the implications of treating a client with another cultural and values-orientation than the therapist; and the impact of in-session contingencies on the behaviour of the therapist.

- **The Concept of Natural Reinforcers, and its Implications for Psychotherapy.** LARS-GUNNAR LUNDH (Stockholm University)

  Each kind of psychotherapy has its specific contingencies of reinforcement that are likely to influence the client's behaviour (at least in this particular psychotherapeutic setting, and hopefully also beyond that setting). Effective psychotherapy is partly a matter of designing environments that can produce the kind of behaviour change that is desired by the client. The present paper starts from Kohlenberg and Tsai`s (1991) distinction between `natural` and `arbitrary` reinforcers, and argues that an important part of effective psychotherapy is to identify natural reinforcers for clinically relevant behaviours. The concept of natural reinforcers is analyzed and discussed with reference to Kohlenberg`s Functional Analytic Psychotherapy, Linehan`s Dialectical Behaviour Therapy, and Hayes` Acceptance and Commitment Therapy. It is argued that each kind of behaviour (as defined functionally, and not topographically) has its natural reinforcers, and that the further development of behaviour analysis in this area may benefit from the development of a phenomenology of behaviour that identifies various kinds of clinically relevant behaviours and their natural reinforcers.

- **Culture-Sensitive Clinical Behaviour Analysis.** LUC VANDENBERGHE (Catholic University of Goias)

  The functional analytical psychotherapist who treats clients belonging different cultures, faces a dilemma inherent to the principles of clinical behaviour analysis. He or she lacks some repertoires which are specific for the client's culture and will thus lack sensitivity for natural contingencies that are important for the client. In the literature on clinical behaviour analysis, a therapist is supposed to be more effective when having access to the same repertoires that he or she aims to influence in his or her clients (which is not obvious when client and therapist do not have a common culture), and knowledge of culture-specific interaction-patterns is supposed to be necessary to be able to discriminatively reinforce clinical improvements during session. This paper will elaborate some fundamental ideas, both from Relational Frame Theory and Functional Analytical Psychotherapy, which provide potentially decisive answers to the above mentioned dilemma. Fundamental research concerning the distinction between rule-governed and contingency-shaped behaviour and the interaction between both is called upon to argue that clinical behaviour analysis has particular culture-sensitive potentials. This paper concludes with a number of general recommendations for clinical behaviour analysis with culturally different clients, and concrete suggestions for research.

- **Some Effects of the Therapeutic Session on the Therapist's Repertoires.** ROBERTO ALVES BANACO (Pontifical University of Sao Paulo)

  The literature concerning the study of the contingencies that act upon behaviours emitted in the therapy session has specially focused the effects of that situation upon the client's repertoires. Little attention has been given to the therapist's repertoires, unless through recommendations, rules, ethical postures, etc., that is to say, as a series of responses that should be acquired before the session starts. The present work looks for forms of working with the behavioural repertoires of therapists that are transformed during the sessions as a result of shaping, starting

from the interaction between the therapist's and the client's behaviours. It also approaches effects of supervision sessions. The method of data collection adopted, consists of the supervisor's direct following of the session while it happens. Through the shaping of the therapist's self-observation behaviour during the supervision session, it was sought to improve the therapist's self-control during the therapeutic session. Results demonstrate not only that the relevant therapist behaviour can be established in this way; the therapist teaches the same responses to his or her client, obtaining marked changes in the pattern of the session. This work finally discusses some proposals found in the literature, especially in Functional Analytical Psychotherapy, that insinuates that therapists who lack specific repertoires would be unable to make certain interventions during the session, and which alternatives would be possible for them.

#63 Paper Session

11/29/2001
4:00 PM - 4:50 PM
Council Hall
DDA

Treatment for Eye Rubbing and Avoidance of Medical Treatments
Chair: Anthony DeCasper (University of North Carolina)

- **Escape-Motivated Problem Behavior in the Medical and Dental Setting: A Multicomponent Intervention.** JANE CARLSON (Virginia Commonwealth University) and Edward Carr (SUNY at Stony Brook)

    Behavioral difficulties during medical/dental examinations are a significant barrier to the provision of adequate healthcare services to people with developmental disabilities. Two-process theory and the role of personal control in the development of fear offer logical theoretical bases for the development and maintenance of problem behavior in the medical/dental setting. The present study evaluated a multicomponent intervention for escape-motivated problem behavior during general medical and dental examinations. The first phase of the study involved the use of direct observation and interview with relevant staff to validate that escape was the motivating factor in the maintenance of problem behavior during medical/dental examinations. The second and third phases involved two multiple baseline studies, each across three participants. The second phase was conducted in a general medical examination setting and the third, in a dental setting. The purpose of these phases was to evaluate a multicomponent intervention protocol designed to ameliorate the conditioned negative responses (problem behavior) that participants displayed when presented with specific aversive stimuli in medical/dental settings. Results showed that the multicomponent intervention was effective in increasing both the latency to problem behavior and the number of examination steps completed without problem behavior during both medical and dental examinations. Issues pertaining to respondent processes, cost effectiveness, and medical risk reduction are discussed.

- **Treatment of Chronic Eye-Rubbing Using Behavioral Contracting.** SCOTT HALL and Sunny Kalsy (University of Birmingham, England)

    In addition to contingency management procedures, verbal stimuli can also be used to directly alter the probability of problem behaviors. In this single case study, the

treatment of chronic eye-rubbing shown by a verbal autistic man was investigated using behavioral contracting. The man was observed in his classroom at college with all behaviors being recorded onto a palm-top computer. (Inter-observer reliability was good). In brief analogue conditions, eye rubbing occurred at persistently high levels during close social interaction conditions and occurred at low levels during alone conditions. Weekly contracts were devised in which the client agreed to spend longer periods of time without eye-rubbing in exchange for periods working alone. Contracting produced significant reductions in eye rubbing without producing a significant increase in self-restraint behaviors (i.e., clasping of the hands). The results are discussed in terms of the influence of rules, instructions and self-control versus contingency management procedures on problem behaviors.

#64 Poster Session

11/29/2001
05:00 PM - 06:30 PM
Truss Pavilion
EAB

#1 Choice under Uncertainty: The Certainty effect observed in Japanese and Indonesian Students. TAKAYUKI SAKAGAMI (Keio University), Taku Ishii (Keio University), Thomas Hastjarjo (Gadjah Mada University)

Twenty-six Japanese and 24 Indonesian students were requested to respond to a computer display on a Web page containing two differently colored choice alternatives. The students were required to choose one of the alternatives in order to earn points exchangeable for money at the end of the experiment. Points could either be earned (Gain trials) or lost (Loss trials). In Phase one (P1), a riskless alternative produced 20 points (gain or loss) with probability 0.90, while a risky alternative produced 36 points (gain or loss) with probability 0.50. In Phase two (P2), the points were doubled and the probabilities halved (i.e. 40 points with probability 0.45 versus 72 points with probability 0.25). Subjects experienced two times each phase, totaling 400 Gain and 400 Loss trials. In P1 compared to P2, 21 Japanese and 17 Indonesian students had more riskless choices in Gain trials, whereas 17 Japanese and 16 Indonesian students had more risky choices in Loss trials. The group data also showed the certainty effect. Moreover the Indonesian students had more riskless choices than the Japanese students, which can in part be explained by the different sensitivities to the exchange rate of money in the two countries.

#2 Cocaine Tolerance using an Automaintenance Procedure. MICHELLE MILLER (University of Florida), Marc Branch (University of Florida)

Six White Carneaux pigeons were exposed to an automaintenance procedure wherein access to grain was delivered independent of responses to an illuminated key. This procedure successfully established keypecking and, once response rates stabilized, a range of doses of cocaine (0.3-10.0 mg/kg) was administered. The dose that increased rates of responding relative to control rates was subsequently administered prior to each session. An attenuation to the rate-increasing effect was observed. This procedure allowed for assessment of the development of tolerance to the effects of cocaine and may provide a useful strategy to analyze the conditions under which tolerance develops.

#3 Corporal Expression and Creativity. Its Social and Empirical Validation. VERÓNICA MARÍN and Hannah Rattia (Universidad Central de Venezuela)

This investigation had as objective: the Social Validation of the definition aspects of the Creative Conduct in the Corporal Expression Activity and, the evaluation of the effect of an intervention package on this conduct. In the first stage participated seven personalities of the artistic means, who acted as sworn in the establishment of the criteria that employs the society to evaluate a Corporal Expression activity, as creative. The analysis of the results permitted to illustrate the criteria existence related to the qualification of the corporal expression as creative. In the second stage, participated six preschoolers' children between three and six years old. The employed design was a A-B with follow-up, with initial and final measures of the dependent variable. The dependent variable was the Creative Conduct, measured through Fluency and Originality. The independent variable consisted of an intervention package composed by various behaviorism techniques. The subjects were trained in the Fluency factor; there were taken measures of the Originality factor to study the generalization between factors. The results evidenced that the execution of the subjects was affected positively by the application of the intervention package, since increased their punctuation in the Fluency factor. It was found that the Originality factor was increasing with the Fluency factor, confirming the Generalization

#4 Deterministic Variability in Fixed-Interval Schedules. MARK S. HOYERT (Indiana University Northwest)

One of the classic problems in behavior analysis involves the examination of moment to moment variability in Fixed-Interval schedules of reinforcement. Some researchers have suggested that this variability is the product of a system of interacting variables. Other researchers have suggested that the variability is the result of stochastic inputs. Similar questions have been addressed recently by researchers in nonlinear dynamics. A number of techniques have been developed that are useful in distinguishing between stochastic and deterministic system. None of the procedures is sufficient to provide proof of the underlying character of the system, but a series of analyses used simultaneously may provide convincing multiple converging evidence. In this paper, I explored the utility of three methods: a) estimation of the correlation dimension, b) calculation of the fractal dimension, and c) attractor reconstruction for examining three types of data. a) Empirical data collected from four pigeons responding to a Fixed-Interval 20 s schedule of reinforcement. b) Theoretical data generated from a system of deterministic equations that model Fixed-Interval performance. c) Theoretical data generated to produce random performance. The techniques were able to identify correctly identify theoretically generated stochastic and deterministic output. They suggest that pigeon performance is

#5 Discounting of Hypothetical Shared Rewards: Does Discounting Rate Reflect the Degree of DAISUKE SAEKI (JSPS Research Fellow), Masato Ito (Osaka City University)

Discounting of shared rewards were examined by questionnaires in which Japanese college students (N=530) were asked to make a series of hypothetical choices between 130,000 yen with sharing and unshared money of variable amount (varied from 130 yen to 130,000 yen). Two groups of different sharing conditions were used (Family and Stranger). In addition, subjects were required to choose to keep 100,000 yen for themselves or share it with other people in social dilemma questionnaire. As a result, the discounting of shared rewards was well described by a hyperbolic function, and the median discounting rate (s) obtained from the Family condition (s=1.29) was significantly lower than that obtained from the Stranger condition (s=1.75). Furthermore, the median discounting rate obtained from the subjects who chose to

keep the money in the social dilemma questionnaire (s=1.71) was significantly higher than that obtained from the subjects who chose to share it (s=1.34). These results suggest that the discounting rate obtained from a hyperbolic function reflects the degree of selfishness.

#6 Dynamics Of Adaptation Of Preferences In Multiple Schedules. Oscar Zamora-Arevalo, Arturo Bouzas-Riaño, and Ruben Gonzalez-Olvera (Universidad Nacional Autonama De Mexico)

We studied eight pigeons in two similar experiments described below which to have the purpose of to analyze the behavioral adjustment to transition in multiple schedules of reinforcement successive choice.

The general procedure of this study was similar in the used by Mazur (1992, 1995 & 1996) with concurrent schedules. In Experiment 1, eight pigeons were exposed to five different conditions of training. During three days the keypecking responses was reinforced according to a variable ratio schedule (VR) for both components. Training sessions were followed by two sessions of transition, where the responses were reinforced according to two different variable ratio schedules (VRx VRy) for every component. Every condition repeats four times. In Experiment 2, eight different pigeons also were exposed to the identical five different conditions of training and transition except that an alternate component (VI 30") was included and the number session of transition was four. The components of the multiple schedules alternated each 60-sec. and the experimental sessions finished by time (30 min.) or 80 reinforces for Experiment 2.

The means of relative response rate are exposed and discussed along transition sessions and were analyzed as the main behavioral adjustment index for each experimental condition.

#7 Effects of Positive and Negative Reinforcement upon Avoidance Behavior in Human. SAKURA YOSHIHARA (Keio University) and Kaname Mochizuki (National Institute of Multimedia Education)

The difference of the effect of positive and negative reinforcement on concurrent avoidance behavior was explored in 7 male and 1 female undergraduates. Participants pushed a button to get monetary points on a schedule of mixed VI EXT in the positive reinforcement. In the negative reinforcement, they could postpone periodic reduction of monetary points on the same schedule. Concurrently, they could escape or avoid a loud noise by striking the wooden plate with a hammer on Sidman avoidance schedule. The frequency and the magnitude of avoidance and escape response were measured. In the negative reinforcement, 3 of 8 participants showed a larger number of avoidance and escape responses than in the positive reinforcement. 2 participants showed stronger responses in the negative reinforcement than in the positive one. There was no difference between VI and EXT on measure of frequency and magnitude of avoidance responses. The increase of avoidance and escape responses under the negative reinforcement schedule indicates the emotional side effect of negative reinforcement.

#8 Effects of Prior Experience on Free Choice Preference. KOICHI ONO (Komazawa University)

Preferences in pigeons for free choice over forced choice after three different baseline histories were compared in multiple concurrent-chain schedules of reinforcement. Three groups of pigeons were first exposed to baseline condition and shifted to free

(two keys) and forced choice (single keys) condition. There were three baseline conditions. In the first baseline condition, pigeons were engaged in choice between two single-key alternatives after choice between two two-key alternatives. In the second baseline condition, pigeons were engaged in choice between two two-key alternatives after choice between two shingle-key alternatives. In the third baseline condition, pigeons were engaged in alternating condition of single-key alternatives and two-key alternatives in each session. Results showed that when the condition was shifted to free and forced choice condition, pigeons preferred for the alternatives of the latter half of the baseline condition. For example, if pigeons experienced two-key condition in the latter half of the baseline, then pigeons preferred for free choice (two-key alternatives) over forced choice (single-key alternatives).

#9 Effects of Self-Monitoring through Videotape Feedback on Social Behaviors for Socially Isolated Children at School. MYONG-HEE YANG and Jeongil Kim (Taegu University)

The investigation examined the effects of self-monitoring through videotape feedback on social behaviors for socially isolated children at school. Three elementary school children, who were reported as being socially isolated at school by their teachers and their peers, participated in the study. The children's behaviors during playtime were recorded on videotape and the children were asked to self-monitor their own behaviors on a video. Their social behaviors were collected in three settings: classroom, hallway, and playground. A time-lagged AB design across subjects was used. The study had three conditions: one was a condition where children were asked to self-monitor their own social behaviors during free playtime on a video. Second, the children self-monitored their own social behaviors on a video during structured playtime under the supervision of the teacher. The data was collected by two observers. The observers measured the percentage of occurrence of the children's social behaviors in a 20-minute observation session, once per day, using a partial interval time sampling recording system. To assess reliability of the data, interobserver agreement was calculated, and they were 89% for occurrence/ nonoccurrence of the social behaviors. The results of this study showed that the intervention increased the children's positive social interaction with their peers and decreased negative interaction. Second, three children maintained the increased positive social interaction and the decreased negative interaction in a non-intervention condition, the maintenance condition, when the intervention was withdrawn for a month. This work was supported by the Brain Korea 21 Project in 2001.

#10 Energy Budget vs. Temporal Discount as Determinants of Preference in Risky Choice. VLADIMIR ORDUÑA and Arturo Bouzas (Universidad Nacional Autonoma de Mexico)

Several studies have found that rats and pigeons prefer a variable schedule of reinforcement over a fixed one with the same mean value, with the energy budget playing no role in such preference, contrary to the predictions of the energy budget rule. The experiment reported contrasts this prediction with that of a temporal discount model of choice. The successive encounters procedure was used, which allows to decrement the energy budget in two different ways. Lengthening either, the search or the handling phase decreases the energy budget and therefore, according to the energy budget rule should increase the preference for the variable delay. For a temporal discount model the first manipulation should provoke a tendency to indifference, while the second should provoke more extreme preferences. These predictions were tested using pigeons as subjects and the results support models based on temporal discount.

#11 Hypertextual Training and Metaphorical Skills: Experimental an Applied Analysis in Education. SILVIA PERINI and Dolores Rollo (Università di Parma)

Moving from a brief theoretical analysis of developmental literature about metaphorical comprehension and production, the study emphasized the main effect of experimental task specific features on metaphorical skills. 64 subjects, aged 8 years, were submitted to two different experimental conditions: the experimental group was trained with hypertextual task and the control group with visual tasks. The main hypothesis was that the first one would be more efficient in improving the metaphorical skills than the second one. The AN.O.Va on the performances pre and post training, tested by Kogna's MTT, shows that really the experimental group obtained a significant improvement of its metaphorical

#12 Predicting Relational Responding in 2-choice Matching to Sample. GRAYSON OSBORNE and John Heath (Utah State University)

College students both judged the relational strengths of 80 pairs of operationally defined pictures, and matched to sample 120 stimulus arrays composed of the same pictures with common samples, grouped into six trial types: A(AB), A(AC), A(AD), A(BC), A(BD), and A(CD). Mean (judged) relational strengths of each stimulus pair predicted comparison selection in the matching-to-sample trial types with 90 percent accuracy. Judging relational strengths first increased the predictability of comparison selection.

#13 Punishment, Stimulus Control, and Generalization Among Humans and Nonhumans. Jennifer M. O'Donnell, DEAN C., Kathryn Saunders (University of Kansas)

Reviews of the experimental punishment literature that discuss stimulus control of punishment commonly conclude that it parallels stimulus control of reinforced behaviors. In a recent study O'Donnell et al (2000, JEAB) described difficulties generating antecedent stimulus control of punishment in human subjects. In the presence of the stimulus signaling punishment, response suppression was readily obtained, but only after delivery of the first punisher. Stimulus control was obtained only under special procedures including delayed delivery of the aversive stimuli, and instructions about the delay procedures. Subsequent generalization gradients were similar to those reported with non-human subjects. The difficulty in producing antecedent stimulus control and the necessity of using special procedures are at variance with reports in the animal literature. Thus, this appeared to be another instance of differences in human and animal subjects. We re-examined the literature on stimulus control of punishment to search for procedural factors that may account for the discrepant results. Procedural characteristics are presented in a table along with whether or not they are associated with successful demonstrations of discriminated punishment. Using the criterion for antecedent control applied to our human data revealed that only a limited number of studies demonstrated unequivocal antecedent stimulus control of punishment using free-operant procedures. A common finding was that suppression followed presentation of a punisher rather than the onset of the antecedent stimulus – as with our human subjects. Thus, it appears that the results of the human studies are consistent with many animal studies. Difficulty in producing stimulus control of punishment raises several conceptual issues about the process of punishment.

#14 Reformative Self-Control and Discounting of Reward Value by Delay or Effort. HIROKO SUGIWAKA (Nara University of Education) and Hiroto Okouchi (Osaka Kyoiku University)

Relations between reformative self-control and discounting of reward value by delay or effort were examined. Thirty-two Japanese undergraduates were selected on the basis of their scores on a standardized pencil and paper test of self-control, the Redressive-Reformative Self-Control Scale (Sugiwaka, 1995). The subjects indicated their preference (a) between a hypothetical 100,000 yen reward available with various delays and a certain reward of variable amount available immediately, or (b) between a hypothetical 100,000 yen reward available with various efforts and a certain reward of variable amount available without effort. The discounting of delayed reward value was described well by a hyperbolic function proposed by Mazur (1987). The slopes of the delayed discounting curves were steeper for subjects scored low on the Reformative Self-Control, which is a measure of reformative self-control and a subscale of the Redressive-Reformative Self-Control Scale, than others. The discounting by effort also was described well by the hyperbolic function. The slopes of the effortful discounting curves did not correlate with those of the delayed discounting curves or with scores on the measure of reformative self-control.

#15 The Dynamics of Transitions in Fixed-Ratio Schedules. DIANA POSADAS-SANCHEZ, Mark P. Reilly, AND Peter Killeen (Arizona State University)

Bizo and Killeen (1997) developed a model for behavior under ratio schedules of reinforcement that predicts a bitonic response rate function over ratio value. A large number of sessions are required to generate this function. The reliability of the function determined by stability of behavior over changing ratio values has not yet been established. The current study was conducted to analyze and compare the stability of behavior following various ratio value transitions. Four pigeons were repeatedly exposed to four fixed-ratio schedules (5, 20, 50, 100) until behavior was deemed stable, as defined by Killeen's stability criteria (Killeen, 1978). Preliminary data analyses showed that response rates under small and large fixed-ratio values were unstable compared with intermediate fixed-ratio values. A general model will be advanced to describe the dynamics of transitions.

#16 Training Discrimination, Reflexivity, Mixed Identity Matching, Generalized Identity Matching, and Arbitrary Matching in Infants: Towards the "Emergence" of Stimulus. Martha Pelaez and JANET LUBIAN (Florida International University), and William McIlvane and William Dube (Shriver Center)

Using innovative computer technology and methods these are the first of a series of experiments ultimately seeking to: (1) demonstrate the behavioral prerequisites for stimulus equivalence, exclusion, and contingency classes in the infant population; (2) examine the possibility that stimulus equivalence-class formation may be demonstrable in infants with minimum expressive language skills. The major objective of this program of research is to search for the formation of stimulus equivalence and its precursors in infants who are just developing or have not yet developed language. No one as yet has tried to meet the logistical and methodological challenges of conducting such research with a fairly large infant cohort. We have initiated such studies, using three groups of 10 infants each aged 15-16 mos, 12-13 mos., and 9-10 mos, respectively. The procedures of the first experiment will be reported and include: (1) using a variable rather than fixed sample location during discrimination training; (2) using 10 stimuli; (3) overstraining prerequisite baseline Matching-to-Sample (MTS) relations; (4) use of auditory-visual computer provided reinforcement contingencies, and (5) systematic, computer-presented, stimuli presentations, that permit the implementation of stimulus control shaping techniques. Training and testing required the use of a touchscreen monitor and a laptop computer with a special software program, designed to meet the specific needs

of infants. The procedure consisted of a systematic process, starting from the training of touching the screen response, then discrimination, reflexivity (identity matching), mixed identity matching, generalized identity matching, and arbitrary matching. Visual display of the data will be presented.

#65 Poster Session

11/29/2001
05:00 PM - 06:30 PM
Truss Pavilion
EDC

#1 Delaying and Promoting Early Development: Teaching Parents Early Intervention Techniques. ANA CRISTINA BARROS DA CUNHA, Ana Paula Cruz, Daniel Arantes, Daniela Martins, Helena Carvalho, and Renata Martins (Universidade Federal do Rio de Janeiro)

In the field of the promoting and the prevention of child development, the early intervention has been proving effectiveness in the improvement of the development so much of the normal child as of the exceptional children. This study has a principal purpose to present a model of training parents to use techniques to stimulate your babies and, consequently, to prevent future behavior problems. In a university daycare center, the study occurred with a group of babies (7 to 10 months old) and their parents (mother or father). In the first time, the parents were contacted to do an interview for investigate about the child's development (mental and physics health) and the psycho-social aspects of babies' families. After this step, babies were evaluated b Uzgiris-Hunt Ordinal Scales of Cognitive Development. In the second time, after first interview and investigated environment stimulation by Home inventory, the parent and the baby in their homes in three situations: bath situation, play situation and feed situation. In the third time, the parent receives information about early development and information about clues to stimulate your baby in different areas of human behavior: cognitive, motor, linguistic, sensorial, social and emotional. In the last time, it was observed parents and their babies in their homes in that three situations to know if parents was using information about clues to stimulated your baby. Data collection showed that the model of training of parents to stimulated your babies have a efficacy to promote development because parents showed better performance in their interactions with your baby than before training model. Because of this results, the model of parents training how early interventionists is a best tool to prevent and promote early development for normal and exceptional children.

#2 Effect of Multimedia Learning Materials: Improving Care Work for the Elderly, NAOHIRO KANEKO, Sachiyo Nakayama, Ryosuke Takino, and Hisayuki Kurasawa (Shiraume Gakuen College), and Keiko Otsuki (Keio Junior College of Nursing)

The use of interactive multimedia materials in education is accelerating. The aim of the study is how to design multimedia materials for the training on the care worker. It is important to develop a clear understanding of how these media work in the learning of behavioral technique. The multimedia learning materials contains photo, graphics, animation, digital video movie, sound and text. The structure of the learning set has been designed multi-line stories with several multimedia text. Subjects are required to learn practical technique by learning set without instruction. The study was performed by recording learner behavior working on the learning set. Effects of the interactive multimedia learning materials were evaluated by practical test of care work. Learners

made stable transitions within the same stories were demonstrated substantial improvements in the practical test. Learners made frequent transitions between stories were demonstrated unsubstantial improvements in the practical test. Results showed the effectiveness of the structure to made stable transition within the same stories.

#3 Enhancing Generalization of Functional Linguistic Skills in a Retarded Child: A Home-Based Matrix Training. MASSIMO INGRASSIA and Loredana Benedetto (Siena University)

The matrix training strategy [Striefel, S. B., Wetherby, B., & Karln, G. R. (1976). Establishing generalized verb-noun instruction-following skills in retarded children. Journal of Experimental Child Psychology, 22, 247-260.] is a useful approach to promote the generalization of the language intervention outcomes. The feature of this method is that it enhances the generalization of untrained combinations of referential stimuli: a subject who learns functional responses in expressive or receptive trainings can exhibit the same response to novel combinations of stimuli, even if he or she has received the training only on some instances of them. Striefel et al. (1976) demonstrated that the recombinative generalization is better when the combination of stimulus classes follows this rule: a member of the first class (row, e.g., noun N) with two stimuli of the second class (column, e.g., adjective A), N1+A1, N1+A2, N2+A2, ..., Nn+An.This study is an application of Striefel's matrix training to teach combinations of verbal responses to a Down subject (11 years old). A single subject design was used. Parents were instructed to train matrix combination to their child at home. Verbal stimuli had a functional value for the subject. The results was analysed by C test and are discussed from an ecological validity point of view.

#4 Fixed Interval Responding by Students on a Web Discussion. Gary D. Novak (CSU, Stanislaus)

Web-based discussions are increasingly popular in college classes. When the discussion is tied to a weekly class meeting, it provides the conditions for a fixed interval contingency. In addition, the format of the web-based discussion provides an easy archival method for collecting the data.

The poster will show a graph of student posting of questions and answers from two sections of a graduate class in developmental psychology. Both clearly show the effects of the fixed interval schedule. In the second class, changes in the responding were accomplished by instituting changes in posting deadlines.

#5 Procrastination: Description of Behaviors of Students and Passersby from a Brazilian City. SÔNIA R. FIORIM ENUMO (Federal University of Espírito Santo, Brazil) and Rachel R. Kerbauy (São Paulo University, Brazil)

The procrastination of tasks or decision occurs frequently among Brazilian people, but few studies concerning this matter have been made. In order to characterize procrastination concept and behavior in the city of Vitória/ES/Brazil, questionnaires, containing questions about procrastination concept and behavior and its consequences, were applied in 50 passersby and 22 psychology students. As an objective measure, the passersby received a stamped addressed envelope, containing a test with three possible answers, which should be sent back within 15 days. The results show that most people procrastinate. It is a time-based concept - do it later, delay the beginning of some tasks such as home routines, school homework, go to the doctor of dentist. While some people feel guilty and irritated when they procrastinate, others tell that they feel nothing or, depending on the task, they feel a sense of relief. Laziness or unpleasant tasks are

mentioned as an attempt to explain their behavior. 54% of the envelopes were sent back. The differences found in the samples demonstrate that obtaining specific data is important to the proposal for educational or clinic intervention procedures.

#6 The Conception of the Professor About Their Practice Teach. Edgardo Ruiz Carrillo and Ana Luisa Gonzalez-Celis Rangel (National University of Mexico)

The purpose of this work is to know the concept of the teachers of their educational practice. It is important to know the attitudes and knowledge that are behind these practices, where the teacher appears committed or foreign with their educational occupation. The concepts were extracted from the theoretical framework: the tolerance, participation, communication, academic environment, social relationships, motivation, power relationships, identification, creativity, knowledge and the learning as describers of the conception that the teacher makes about their academic practice. The methodology designed the problem, the environment of trust, the groups of discussion and the context. The compilation of the data analysis strategies and the interpretation strategies were selected. The way in which the data were collected was through groups of discussion of axis thematics, from where the theoretical concepts were applied and the use of a video camera, with the participant's permission. In the analysis of the data it was intended to understand what the University Biology Professor (Physique and Chemistry) (n=41) of University were referring about their practice, based on the data, building topics, concepts and propositions, ending with the codification of the same, within a process of triangulation. The professors were codified as of their speech in "intermediate" and "radical". The forty percent of the teachers (intermediate) tended to conceive to the pupil as individual in their practice, from the commitment, comprehension, participation, recognition, respect, tolerance and the relationships that establishes with him, in the process of the learning, if this arrangement is updated, actually would be expressed in the conscious professionals with created interest about the profession, achieving the efficiency and the self-determination in their practice.

#7 What is Wrong with the English Education System in Japan? YOSHINORI HASEGAWA (Okayama University Tsushima)

Many Japanese can read English pretty well, their speaking and writing abilities are poor in comparison. One of the most important barriers to effective English teaching is the written emphasis of textbooks and university entrance examinations. That is, the school education system in Japan is designed to promote accuracies of grammatical judgment and translation skill, preparing students to pass these exams with written test measure. From the standpoint of behavior analysis, overemphasizing grammatical accuracy may have punishing effects on operant responses such as spontaneous speaking and writing. With empirical analysis, I shall argue that Japanese should not hesitate to speak "Japenglish," a Japanese variety of English . Differential reinforcement and punishment of communicative skills should be taken after enough preparation.

#66 Poster Session

11/29/2001
05:00 PM - 06:30 PM
Truss Pavilion
OTH

#1 A Functional Analysis of Child Adoption in Brazil (CSE). LIDIA WEBER (Federal University of Parana - Brazil)

Today, the Brazilian government maintains no official statistics about abandonment and adoption, but researchers estimate there are about one million children institutionalized in Brazil. Despite this fact, these children and the people wanting to adopt them must endure a lengthy and arduous process. Typically, it takes 3 years to successfully adopt a child. But if there are hundreds of people wanting to adopt children and thousands of children available for adoption, why is it so hard to get these two segments of the population together? One of the difficulties is cultural stereotyping. The degree of racial prejudice with regard to the adoption of children is still very high. Pressured by social factors, the adoptive families themselves Frequently end up reproducing such prejudices. A study involving 311 adoptive families showed that: 71% had adopted new born babies; 75% were Caucasian families and Caucasian babies; 48% were black-market adoptions in order to avoid legal restrictions 98% had adopted healthy children; 65% had adopted because of infertility; 34% had affirmed that had done an adoption by altruism. The majority of the mulatto, black and older children are still adopted internationally or remain in institutions in spite of the basic right of living within a family.

#2 Acquiring Taxonomic Relations: The Role of Slot Filler Pattern. (DEV). SILVIA PERINI, Marina Pinelli, and Dolores Rollo (Università di Parma)

The present paper analyses the slot-filler's function in the categorization process and especially its role of conceptual precursor. 3-and-5-years-old subjects were compared. Two slot-filler lists -functional/paradigmatic/replaceable/alternate and coordinate/sintagmatic/complementary/contiguous- were used, after three training's sessions. Both lists were presented in two different modalities: induction (scripted and categorical instructions) and non-induction (attentional and incidental instructions). The results show no substantial differences between the two lists in the first rehearsal, but differences in the delayed rehearsal after the training.

#3 Constant Versus Escalation Response Rates of Killing in Serial Murderers (CSE). LISA A. OSBORNE (University College London)

A common approach to exploring the killing behaviour of serial murderers is to concentrate on their modus operandi, victim selection, assumed motivation, and personalities. However, the approach taken by the research reported here is to analyse the 'response rates' of the killing behaviour emitted by serial murderers. A selection of case studies from English and Welsh serial murderers, active during the last two hundred years (1800-2000), is used to illustrate the various patterns of murders across time (i.e. response rates) produced by different serial murderers. From this selection, it is hoped to investigate the various possible patterns of murder rates that may emerge. In particular, two patterns in the rates of killing behaviour may be apparent: a constant rate of murder across time; and an escalating rate of murder across time. These distinct behavioural patterns can then be related to other known aspects of the individuals' backgrounds, assumed motivation and/or reinforcement, opportunities, etc. It may well be the case that the different patterns of murder rates will be related to quite different background factors of the murders. In this way, it is hoped to secure an understanding of serial murder more firmly in behavioural data and monitoring methods.

#4 Effects of a Behavioral Intervention Program To Improve The Quality Of Life In Older Adults (DEV). Ana Luisa Gonzalez-Celis Rangel and Juan Jose Sanchez Sosa (National University of Mexico)

Quality of life has emerged as a determinant dependent variable to evaluate clinical significance (Kendall, 1999). A goal with older adults is to improve quality of life

especially that related to psychological functioning. The purpose of the present study was to examine the effects on an intervention program designed to improve the quality of life of elderly persons. Two experimental groups and two in a waiting list (N=40) participated through a pretest-posttest design. The program contained five components: Self-care; Social abilities, Assertiveness/Problem Solving, Strengthening of Self-efficacy; and Social support. All training was behavioral in nature. Each component consisted of five simulated situations. Participants' behavior was coded in categories and data collected by two independent observers. Data collection included five additional measures: subjective well being (Lawton's PGC), quality of life (WhoQol-Brief), depression (Yesavage's GDS), cognitive function (Ostrosky's Neuropsi), and self-efficacy (Gonzalez-Celis & Sanchez-Sosa).

The instruments showed solid psychometric properties (Alpha 0.55). Results revealed both applied and statistically ($p<0.05$) pre-posttest significant differences. Differences occurred for all four groups for the behavioral categories and for subjective well being, quality of life and self-efficacy. Results also revealed significant associations ($p<0.01$) among the five measures.

#5 **Performance Improvement of a Graduate College: Behavioral Systems Management Comes to Help (OBM).** GUILLERMO YÁBER (Universidad Simón Bolívar)

A behavioral system management approach was used to design, develop and improve the performance of a graduate college in a university setting using the "total performance system". Core, support and management processes are analyzed and described. Likewise a behavior supervisory system was applied to modify the effectiveness of the "support" processes. Productivity and satisfaction improved with the behavioral intervention. A behavior system management approach may be used to improve the work and unit performance of colleges in university settings.

#6 **Teaching Behavior Analysis: Giving Experimental Behavior Analysis Relevance and Applied Behavior Analysis Conceptual Bases (TBA).** RONALD G. WEISMAN (Queens University)

This poster examines the author's approach to combining experimental and applied findings in courses on behavior analysis. The approach tries to make experimental analysis more exciting and to provide more of a conceptual base for Applied analysis. The use of a modified and tractable Keller plan for evaluating student progress is also discussed. The course routinely generates high marks on the final examination and high ratings in student evaluations.

#7 **The Social and Cultural Problems to Adapt a Neuropsychological Tests Battery (CSE).** TATIANA IZABELE JAWORSKI DE SÁ RIECHI (Paraná Federal University)

The purpose of this research is to adapt and standardize the Luria-Christensen neuropsychological tests battery to children, teenagers and adults Brazilian. this battery is composed of ten tests each one assessing one specific area of the cerebral function system, mapping the different areas and their connections through an exhaustive assessment of the perceptive, cognitive and motor skills. this work started previously adapting the tests(phase 1)when the kind of stimulus chosen visual, verbal and kinesthesical with the final presentation and revision works. some pictures or worlds, for example, are unlike to Brazilian people, and this problem can invalidate the neuropsychological assessment. a prior analysis of the practical results lead to a deeper

scientific and statistical approach of the answers we could get from the testes, having choice of analysis, revision criteria (phase 2). The third phase was a repetition an standardization work reaching a more formal state of knowledge and going beyond the prior criterion of excellence. at the end of the research the results will be reliable as neurological assessment and as qualitative mapping of the cerebral areas, adjust to the local reality, with total security of material used.

#8 The Study of Moral Behaviour in Russian Business Sphere (OBM). ALLA KUPREITCHENKO (BORISOVNA)

This paper was voted to the study of the moral behaviour in business sphere(150Ss). The scales for measuring personnel's moral attitudes were constructed. The peculiarities of behaviour of Russian entrepreneurs and managers were reflected in the scales. The determinants of moral behaviour were defined. A relationship between moral attitudes and interpersonal trust was revealed. The scales enabled us to measure the level, flexibility and stability of moral attitudes over time. The differences were also revealed in acceptability of offense moral norms in managers and entrepreneurs.

#67 Special Event

11/29/2001
7:00 PM - 9:00 PM
Tapestry Hall

Reception