

# BEHAVIORAL DEVELOPMENT

Developmental  
SIG

The Newsletter of the DEVELOPMENT & BEHAVIOR ANALYSIS Special Interest Group of ABA

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## DEVELOPMENT & BEHAVIOR ANALYSIS SIG PRESENTATIONS FOR CHICAGO 1997

The 23rd Annual Convention of the Association for Behavior Analysis, an International Organization, will be held Thursday, May 22, through Monday, May 26, 1997 at the Sheraton Chicago Hotel. For more information call the ABA main office at (616) 387-8342. The following is the program of presentations submitted by the Development & Behavior Analysis Special Interest Group. The program contains contributions of participants from several countries, including invited symposia, paper sessions, and special events. We look forward to seeing you in Chicago and hope you can attend our SIG program presentations as well as our SIG dinner, SIG business meeting, and our SIG social hour following the business meeting (see announcements in this newsletter).

BEHAVIORAL DEVELOPMENT is published twice each year. This newsletter is mailed to Development & Behavior Analysis SIG members and informs about SIG and member activities. It also publishes developmental papers, news, notes from SIG members, position openings, and announcements. Please submit your contributions to Dr. Martha Peláez-Nogueras, Editor, Department of Educational Psychology & Special Education, Florida International University, Miami, FL 33199.

Friday, May 23

## #20

Symposium  
1:00 PM - 2:20 PM  
Huron Room  
DEV

### Determinants of Self-Control at Different Life-Span Points

Chair: Daniel Bernstein (University of Nebraska, Lincoln)  
Discussant: Daniel Bernstein (University of Nebraska, Lincoln)

- Antecedent Reinforcement Schedule Exposure can Determine Responding Denoting "Self Control." SHARON ALEXANDER, Jacob L. Gewirtz, David Lubin, Michael R. Markham, and Wendy Silverman (Florida International University)
- An Integrative Approach to Studying Self-Control in Children. SILVIA CASTLE and Daniel Bernstein (University of Nebraska, Lincoln)
- Self-Control and Impulsiveness in Adult Human Females: Effects of Food Cues. LORI B. FORZANO (State University of New York-Brockport)

## #21

Symposium  
1:00 PM - 2:50 PM  
Parlor C  
DEV

### Developing a Theory of "Mind": How Children Change from Being Behavior Analysts to Mentalists

Chair: Nicole Ruther (West Virginia University)  
Discussant: Ann Watson O'Reilly (West Virginia University)

- "Mindreading" in Preschoolers. AMY WILSON and Charisse Nixon (West Virginia University)
- Social Cognition and Aggressive Behavior in Preschoolers. LAURA CAPAGE (West Virginia University)
- Individual Differences in Young Children's Social Experiences: Links to a Theory of "Mind" CHARISSE NIXON (West Virginia University)
- Increased Exposure to Narrative as a Mechanism of

Change in Theory of "Mind" Development. NICOLE RUTHER (West Virginia University)

#39

Symposium  
3:00 PM - 4:20 PM  
Huron Room  
DEV

### On Prediction, Control, Understanding and Scientific Explanations

Chair: Martha Peláez-Nogueras (Florida International University)

Discussant: Michael R. Markham (Florida International University)

- Single-Organism Research: Necessity or Mere Preference? HAYNE W. REESE (West Virginia University)
- A Behavioral Model for the Study of Scientific Theory, Language Games and Behavioral Competencies. EMILIO RIBES-INESTA (Universidad de Guadalajara)
- Some Thoughts on Scientific Explanations. JAY MOORE (University of Wisconsin, Milwaukee)

#50

Poster Session  
5:00 PM - 6:30 PM  
Chicago & Sheraton Ballrooms  
DEV

### Human Development

56. A Comprehensive Program Evaluation of Project SafeCare: Health, Safety, and Bonding with Families Ajudicated for and At-Risk for Child Abuse and Neglect. RONIT M. GERSHATER (University of Kansas), John R. Lutzker (University of Judaism), Kathryn M. Bigelow (University of Kansas), and Ronald M. Doctor (California State University, Northridge)

#66

Dinner  
6:30 PM - 8:30 PM  
DEV

### Development SIG

Reza's Restaurant, 432 West Ontario Street  
Contact: Jacob L. Gewirtz or Martha Peláez-Nogueras

Saturday, May 24

#87

Symposium  
9:00 AM - 10:50 AM  
Huron Room  
DEV

### Increasing Communication and Engagement by Older Adults

Chair: R. Mark Mathews (University of Kansas)  
Discussant: Paula Davis (Southern Illinois University)

- Improving Communicative Interactions in Nursing Homes. MICHELLE S. BOURGEOIS (Florida State University), Louis Brugio and Rebecca Allen-Burge (University of Alabama, Birmingham)
- Behavioral Assessment of Staff and Resident Engagement in a Geriatric Special Care Unit for Individuals with Dementia. KIMERLY KATZKE, Deborah Altus, and R. Mark Mathews (University of Kansas)
- Increasing Engagement in Activities in an Alzheimer's Special Care Unit. R. MARK MATHEWS (University of Kansas), Harvey Altman (Grand Valley State University), and Joy Spahn (The Harbor)
- Community Outreach Efforts to Save a Low-Income Senior Meal Site. TOM GALLEGOS (Washburn University),
- Pamela Xaverius, and R. Mark Mathews (University of Kansas)
- The Impact of Elder Cottage Housing on Older Adults and Their Caregivers. PAMELA XAVERIUS, Deborah Altus, and R. Mark Mathews (University of Kansas)

#96

Invited Symposium  
11:00 AM - 12:50 PM  
Huron Room  
DEV

### The Very Idea of Science and Scientific Behavior

Chair: Michael J. Dougher (University of New Mexico)  
Discussant: Edward K. Morris (University of Kansas)

- Yield Not to Temptation, or, The Abuse of Science. M. JACKSON MARR (Georgia Institute of Technology)
- On the Study of Scientific Behavior: An Analysis of Scientific Truth, Representation, and Interpretation. MARTHA PELÁEZ-NOGUERAS (Florida International University)
- Variation, Selection, and Extinction Among Selected Research Themes and Reporting Practices. THOMAS C. MAWHINNEY (University of Detroit-Mercy)

#114

Invited Address  
1:00 PM - 1:50 PM  
Huron Room  
DEV

### A Search for the Causes of Social Attachment

Chair: Murray Sidman (New England Institute for Autism)  
Discussant: Slobodan B. Petrovich (University of Maryland)

- HOWARD S. HOFFMAN (Bryn Mawr College)

**SATURDAY, MAY 24 (continued)**

#128

Symposium  
2:00 PM - 3:20 PM  
Huron Room  
DEV

**Issues Arising From Measurement Practices or the Lack of Them in Behavior Analysis**

Chair: Jesus Rosales-Ruiz (University of North Texas)

Discussant: Donald M. Baer (University of Kansas)

- The Dimensions of Behavioral Measures. WILLIAM S. VERPLANCK (University of Tennessee)
  - Dimension in Action: Comparisons and Contributions from the Physical Sciences. M. JACKSON MARR (Georgia Institute of Technology)
  - Measurement and Behavior-Analytic Constructs. JOEL GREENSPOON (University of North Texas)
- Sunday, May 25, 1997

**Sunday, May 25**

#158

**Business Meeting**

8:00 AM - 8:50 AM

Columbus Room A&amp;B

Program Committee Meeting

Program Committee Chairs: Edelgard Wulfert (SUNY at Albany) and Alan Poling (Western Michigan University)

Area Coordinators:

- CBM: Robert W. Montgomery (Georgia State University)
- CCS: Anthony Biglan (Oregon Research Institute) and Mark A. Mattaini (Columbia University)
- DDA: Kent R. Johnson (Morningside Learning Systems, Seattle)
- DEV: Jacob L. Gewirtz (Florida International Univ)
- EAB: William L. Palya (Jacksonville State University)
- EDC: Laura D. Fredrick (Georgia State University)
- ELS: Richard F. Rakos (Cleveland State University)
- OBM: Richard K. Fleming (Auburn University)
- TOX: Steven Dworkin (Bowman Gray School of Medicine)
- TBA: Richard W. Malott (Western Michigan University)
- TPC: Sam M. Leigland (Gonzaga University)
- VRB: Thomas S. Critchfield (Auburn University)

#166

Symposium  
9:00 AM - 10:20 AM  
Huron Room  
DEV

**Behavior Analysis of Imitation**

Chair: Sharon Alexander (Florida International University)

Discussant: Effie Kymissis (Alpine Learning Group)

- A Behavior-Analytic Model of Vicarious Reinforcement: Generalized Imitation Under Discriminative Control. MARICEL CIGALES, Jacob L. Gewirtz, Myra Duarte, and Sharon Alexander (Florida International University)
- The Role of Maternal Vocal Imitation on Infant Learning. MARTHA PELÁEZ-NOGUERAS, Jacob L. Gewirtz, Jeniffer Paik, Elizabeth Otto & Mariela Otero (Florida International University)
- Acquisition by Imitation and Sensitivity to Change. DANIEL J. BERNSTEIN (University of Nebraska, Lincoln)

#180

Panel Discussion

11:00 AM - 11:50 AM

Huron Room

DEV

**Field Initiated Research - A Community Project in Inclusive and Diverse Environments**

Chair: Marisal Reyes Gavilan (Florida International University)

- MARIA ANTONIETA BILBAO (Florida International University)
- CARMEN MENDEZ (Florida International University)

#207

Symposium

1:00 PM - 2:20 PM

Huron Room

DEV

**The Culture of Behavior Analysis: Research - Design Practices of Behavior Analysts**

Chair: Henry S. Pennypacker (University of Florida)

Discussant: Henry S. Pennypacker (University of Florida)

- On Some Uses of Group Designs in Behavior-Analytic Research. JACOB L. GEWIRTZ (Florida International University)
- Trends in the Use and Interpretation of Single-Subject Designs. SCOTT L. FRASER (Florida International University)
- Problems Inherent in the Use of Inferential Statistics for Analyzing Differences in Behavior. BILL L. HOPKINS (Auburn University)

#220

Panel Discussion

3:00 PM - 3:50 PM

Huron Room

DEV

**Teaching an Undergraduate Course in Development from a Behavior-Analytic Perspective**

**Sunday, May 25 (continued)**

Chair: Gary Novak (California State University, Stanislaus)  
**GARY NOVAK** (California State University, Stanislaus)  
**CHARALAMBOS CLEANTHOUS** (Eastern Washington University)  
**EMILY BRANSCUM** (Florida International University)

#226

**Poster Session**

5:00 PM - 6:30 PM

Chicago &amp; Sheraton Ballrooms

DDA, DEV

**Developmental Disabilities; Autism; Human Development**

6. Increases in the Communicative Behaviors of Students with Cerebral Palsy, as a Result of Feedback to and the Selection of Goals by Paraprofessionals. **MICHELLE L. MACVEAN** and Laura Hall (Deakin University, Australia)
7. Self-Injurious Behavior in Normally Developing Children. **HENRY S. ROANE**, Timothy R. Vollmer, Joel E. Ringdahl, Ernest Whitmarsh, and Bethany Marcus (Louisiana State University)
8. Aggressor-Target Relationships Among Pre-School Children. **DANIEL F. GUNNARSON** and Robert F. Peterson (University of Nevada-Reno)
9. Infant Discrimination Learning: Identification of Factors within a Synchronous Reinforcement Schedule that Control Attending Behavior. **D. WAYNE MITCHELL**, Kevin M. Scharz, and Stacey A. Sand (Southwest Missouri State University)
10. A Comparison of Delayed Matching-to-Sample Performance in Children Ages 4 to 14 Years Old. **JOHN J. CHELONIS**, Donna Blake (Arkansas Children's Hospital), and Merle Paule (National Center for Toxicological Research)
11. Transferring Control from Experimenter to Individuals with Developmental Disabilities: The Prompting of Written Self-Prompts. **JAY BUZHARDT**, Irene Grote, and Donald M. Baer (University of Kansas)
12. Reducing Assaultive Behaviors of an Individual with Traumatic Head Injury. **VINCENT K. ADKINS** and R. Mark Matthews (University of Kansas)
13. Waxing and Waning of Behavioral Gerontology: A Case of Premature Speculation? **WANDA L. SMITH** (Chedoke McMaster Hospitals), Victoria Madsen (Hamilton Psychiatric Hospital), and G. R. Hopper (University of Toronto)
14. The Utility of Behavioral Assessment in Treating Behavior Problems in the Elderly. **WANDA L. SMITH** (Chedoke McMaster Hospitals)
15. Mathematical Behavior: About Conditions for Transference. **JULIO VARELA** and Antonia Padilla (Universidad de Guadalajara)
16. Training Preschoolers to Initiate Social Interactions with Children Diagnosed with Autism. **R. WAYNE**

**FUQUA** (Western Michigan University), Wanda Keehbauch-Murphy (Kalamazoo Valley Intermediate School District), Lynn Ann Weller (YMCA Preschool), Jennifer Zielesch, and Charles Woods (Western Michigan University)  
 177. Parental Perceptions of Non-Behavioral Therapies Received by Children with Autism in Intensive Behavioral Treatment. **MICHELLE ANTOLOVICH-HAUG** and Tristram Smith (Washington State University)

**Monday, May 26**

#250

Symposium

9:00 AM - 10:50 AM

Huron Room

DEV

**Recent Research on Behavioral Development**

Chair: Ann B. Pratt (Capital University)

Discussant: Ann B. Pratt (Capital University)

- Sequential Contingencies in Social Interaction. **FLORENTE LOPEZ** (Universidad Nacional Autonoma de Mexico) and Daniel Gomez Fuentes (Universidad Veracruzana)
- The Use of Public Posting and Performance Lotteries to Improve the Quality of Staff-Resident Interactions in Geriatric Nursing Homes. **WENDY E. ROTH**, Maiber Matos, Ileana M. Rodriguez, and Michael R. Markham (Florida International University)
- Applications of Behavior-Analytic Principles in Developmental Interventions. **DAVID LUBIN**, Margaret O'Hara, and Sharon Alexander (Florida International University)
- Developmental Pathways in the Emergence of Problem Behavior: Theory and Research. **SMITA SHUKLA** (Florida International University)

#251

Symposium

9:00 AM - 10:20 AM

Ohio Room

DEV

**A Behavioral-Developmental Analysis of the Psychophysics of Order of Acquisition as Measured by Responses to Dilemmas**

Chair: John M. Linacre (University of Chicago)

Discussant: John M. Linacre (University of Chicago)

- Behavioral Categorizing Responses to Dilemmas and Their Analysis with Scaling Techniques. **MICHAEL L. COMMONS** (Harvard Medical School)
- A Rasch Analysis of Developmental Data on Relations Between More and Less Powerful Persons. **ERIC A. GOODHEART** (Harvard Medical School)
- Assessment of Development through Stage Transitions

**Monday May 26 (continued)**

in Moral and Evaluative Reasoning. THEO L. DAWSON and MARK WILSON (University of California, Berkeley)

**#268**

Symposium  
11:00 AM - 12:20 PM  
Ohio Room

**A Behavioral-Developmental Analysis of the Psychophysics of Skill Acquisition as Measured on Hierarchically Ordered Tasks**

Chair: Patrice Marie Miller (Harvard Medical School)  
Discussant: John Michael Linacre (University of Chicago)  
• The General Stage Model Analytically Measures Hierarchical Task Complexity, and the Rasch and Saltus Model Statistically Measures Corresponding Stage of Performance. MICHAEL L. COMMONS (Harvard Medical School)

- A Behavioral Developmental Analysis of the Psychophysics of Stage Using the General Stage Model and a Saltus Analysis of the Laundry Room Problem Task Series. E.A. GOODHEART (Harvard Medical School)
- A Saltus Analysis of Behavioral Developmental Data from the Balance Beam Task Series. K. DRANEY (University of California, Berkeley)

**#269**

Symposium  
11:00 AM - 12:20 PM  
Huron Room

**Verbal and Motor Roles in Generalized Problem Solving**

Chair: Amanda Jay (University of Kansas)  
Discussant: Irene Grote (University of Kansas)  
• Nonverbal Self-Instruction: Task-Analyzing, Teaching, and Evoking Motor Mediators of Problem Solutions. AMANDA JAY, Irene Grote, and Donald M. Baer (University of Kansas)  
• Investigating the Role of Language in Self-Instruction by Persons with Severe Disabilities. CAROLYN HUGHES, Melinda L. Harmer, and Kathleen Hugo (Vanderbilt University)  
• Self Instruction as an Anecdote to Poor Practice Decisions. EILEEN GAMBRILL (University of California, Berkeley)

**#282**

Symposium  
1:00 PM - 2:50 PM  
Ohio Room

**Environmental Influences on Fearful Behavior in Young Children**

Chair: Patrice M. Miller (Salem State College)  
Discussant: Slobodan B. Petrovich (University of Maryland)

- Fears and Environmental Stressors in Preschool Children. PATRICE M. MILLER (Salem State College)
- The Effects of Contingent Maternal Attention on Infants' Responses Denoting "Fear of Dark." AIDA A. SANCHEZ, Jacob L. Gewirtz, Martha Peláez-Nogueras, Jorge Fonseca, Mark Sengelman, and Mariela Davila (Florida International University)
- Infants' "Fear of Strangers" May be a Learned Phenomenon. K. LUM LOCK, Jacob L. Gewirtz, Martha Peláez-Nogueras, and Michael R. Markham (Florida International University)
- Accounting for Trauma and Fear in the Acquisition of Attachment and Anxiety Disorders from a Behavioral-Development Perspective. MICHAEL L. COMMONS (Harvard Medical School)

**#286**

Paper Session  
1:00 PM - 1:50 PM  
Huron Room

**Development and Behavior Analysis**

Chair: Wendy E. Roth (Florida International University)  
• A Behavior-Analytic Alternative to the Cognitive-Developmental Approach to Dementia. DEBRA W. FREDERICKS (University of Nevada)  
• Isolation of Life-Span Factors Associated with Orderly Changes in Pattern Diversity in Individual Performance as a Result of a Discrete Exposure to Contingencies. ROCIO HERNANDEZ POZO and Ignacio Mendez (UNAM, Mexico)

**1997 SIG Dinner**

Since 1991, we have sponsored a dinner in a quality, sometimes exotic, restaurant on opening day of the annual ABA meeting. Ideally, our dinner is held in a restaurant near the hotel and in a separate room that maximizes both serious discussion and happy-time behavior.

This year's dinner is no exception. It will be held in a separated room at Reza's (Persian) Restaurant, 432 West Ontario Street, Chicago (312-664-4500), on Friday, May 23, 1997, from 6:00 to 9:00 p.m. (the mode probably will be between 6:30 and 8:30). The meal, served family style, will include a mix of vegetarian items and char-broiled meats. The restaurant is expecting between 30 and 40 diners. Cost of the meal will be \$18.00 plus tax and tip, which is estimated to total between \$22. and \$23. Drinks are to be bought and paid for separately. Each table will be responsible for its own bill. [If you depart Reza's by 9:00 p.m., you should easily be able to get back to the hotel for the Expo, which is from 9:00 to 11:00 p.m.]

The Sheraton Chicago Hotel is on E. North Water St. Walk north (paralleling Lake Michigan at your right; if you cross the Chicago River you've been going south!) on either Fairbanks Ct. or St. Clair St., about four blocks to Ontario St. Turn west (left) on Ontario St. and walk about 10 blocks to Reza's (which is one-half block beyond Orleans St.). The distance is approximately one mile (20 min. by foot, 5 min. by taxi).

We look forward to seeing (and hearing) you all at Reza's and at the Development SIG's excellent program this year.

Jack Gewirtz

## A Conceptual Framework for Understanding Patterns of Response Sequences

Smita Shukla, Ph.D.

Florida International University

Many individuals with severe challenging behaviors often display patterns of behaviors that sequentially escalate from less to more severe topographies (e.g., from whining to screaming). Described as an escalating sequence in vernacular, this pattern may be defined as a class of topographically different responses that occur in a sequential pattern in which successive responses are of increasing severity, intensity, or problematic topography (Albin, O'Brien, & Horner, 1992; Colvin, 1990; Patterson, 1982; Shukla, 1994). More likely than not, the various topographies are members of a common response class, maintained by one or more behavioral functions, e.g., escape from task or get adult attention.

The theoretical implications of understanding and intervening with such patterns of behavior are twofold: First, a need to operationally describe an escalating pattern of responses based on the organizational structure of the response sequence (Evans, Kurkijan, & Kishi, 1988). Second, a need to empirically document the occurrence of an escalating sequence, that demonstrates the occurrence of less severe topographies (e.g., whining) early in the sequence compared to more severe topographies (e.g., aggression), later in the sequence. This is prerequisite for designing effective interventions for individuals who engage in clinically severe forms of behavioral escalation. This paper provides a basis for understanding the organizational structure of the response pattern and suggests directions for designing functionally equivalent behavioral interventions.

### Theoretical Foundations for Understanding Response Sequences

The theoretical foundations for understanding response sequences builds from recent research in two areas: Communicative functions of problem behavior and functional response classes. The theory that problem behaviors may have communicative functions is based on the logic that human behavior is not random. All behaviors, appropriate or inappropriate, serve some function which maintains these behaviors. If individuals knew socially acceptable ways to communicate, there would be little reason to engage in problem behaviors. However, in the absence of functionally equivalent modes of communication, individuals may engage in severe problem behaviors to produce the functional reinforcers. If individuals were taught other functionally equivalent ways to communicate the same function, it is likely that problem behaviors will decrease in rate (Carr & Durand, 1985). Topographically different responses could be interrelated by common function(s) and success of

behavioral intervention procedures depends on our understanding of the organization of multiple responses within a response class (Evans et al., 1988; Schroeder & MacLean, 1987; Voeltz & Evans, 1982).

A response class is a group of topographically different responses (e.g., pushing, screaming, throwing objects) that are emitted to produce a common functional effect (e.g., escape from task, attention, access to tangible objects, or internal reinforcement) (Johnston & Pennypacker, 1980; Parrish, Cataldo, Kolko, Neef, & Egel, 1986). Of the different behaviors that form a response class, some may occur more frequently than others (e.g., whining may occur more frequently than hitting). Research has demonstrated that if one member of the response class is manipulated, it changes the probability of rate of occurrence of other members in the same response class (Grace, Kahng, & Fisher, 1994; Parrish et al., 1986; Shukla & Albin, 1996; Sprague & Horner, 1992). In other words, if one or more behaviors in a response class are blocked, punished, or placed on extinction, other behaviors will increase in rate. On the other hand, if a new response (e.g., signing "break") is added to the response class, this response will more likely occur at higher rates, making the problem behaviors irrelevant (Shukla & Albin, 1996; Sprague & Horner, 1992). The response class theory suggests that if problem behaviors have communicative functions, we need to identify classes of behavioral responses so that a single intervention could be implemented for all members of a class rather than implementing one intervention for each problem behavior (Dunlap, Kern-Dunlap, Clarke, & Robbins, 1991).

### Understanding the Organizational Structure of Response Sequences

Multiple problem behaviors that form a single functional response class seem to be organized in various patterns that appear to be structurally different from each other. Terms used in the literature to describe such behavior patterns include operant chains, response sequences, escalating sequences, and behavior hierarchies with each pattern being structurally different from the other (Evans et al., 1988; Voeltz & Evans, 1982). An *operant chain* is defined as "The response of one reflex [that] constitute[s] or produce[s] the eliciting or discriminative stimulus of another" (Skinner, 1938, p.32). This definition emphasizes the stimulus-control relation where one behavior immediately follows another (Baer, 1982; Millenson & Leslie, 1979). In other words, the previous response acts as a discriminative stimulus for the next response, producing a chain of behaviors. A behavioral chain is likely to have a high degree of consistency in the steps of the sequence such that early behaviors can reliably predict the occurrence of later behaviors (Evans et al., 1988).

A *response sequence* is structurally different from an operant chain and more difficult to explain (Evans et al.,

1988; Voeltz & Evans, 1982). In a response sequence, early behaviors do not necessarily act as discriminative stimuli for the next behavior but *increase the probability of occurrence of the next behavior sometime in the proximal future* (Evans et al., 1988; Voeltz & Evans, 1982). The previous response in a sequence makes the later response more likely and hence predictable to a certain extent, e.g., screaming to escape from task demands increases the probability that hurling materials will occur if screaming fails to produce escape. However, hitting is equally likely to occur especially if this response is associated with a history of reinforcement. The two subsequent responses do not appear to be inherently organized in some form of a structural pattern as is evident in a response chain (Evans et al., 1988). This distinction is important because interventions designed to address operant chains are likely to require different considerations than those required for addressing response sequences.

Within a response sequence, if we assume that both less severe (e.g., whine) and more severe (e.g., aggression) behaviors are members of the same response class, it is logical to assume that more severe behaviors will occur only if less severe behaviors are functionally ineffective. Given this reasoning, it is likely that more severe behaviors will follow less severe behaviors. This pattern has been described as an *escalating sequence* which is characterized as a functional class of topographically different responses that occur in a sequential pattern in which successive responses are of increasing intensity, seriousness, or problematic topography (Colvin, 1990; Shukla & Albin, 1996).

The response class theory points to the need for understanding how behaviors become members of a response class. It appears that as new responses are learned, a *behavior hierarchy* is established (Baer, 1982). It is also important to understand what variables determine which member of a response class will be performed under any specific condition (Baer, 1982). Certain environmental events will occasion the occurrence of less severe behaviors and others will occasion the occurrence of more severe behaviors. An understanding of the hierarchical nature of the organization of different responses (less and more severe) within a class may provide an explanation for behavioral allocation.

Selection of a specific response in a behavioral hierarchy is not random. In fact, it is likely to be determined by several factors, e.g., an established reinforcement history (Baer, 1982; Evans et al., 1988; Mace, McCurdy, & Quigley, 1990), the physical effort it takes to perform a behavior (Baer, 1982), or the overall efficiency of the response (Horner & Day, 1991; Horner, Sprague, O'Brien, & Heathfield, 1990). Recent research has indicated that a new functionally equivalent response is more likely to be learned and maintained if it is more efficient than the old response (Horner et al., 1990). Efficiency of a response is likely to be affected by the physical effort it takes to perform a given behavior, the

latency for functional effect, and the schedule of reinforcement. If more severe behaviors were consistently more efficient for individuals, it is likely that they will engage in those behaviors at a higher rate and less severe behaviors would cease to occur over a period of time.

Effective research on response sequences must be preceded by development and integration of effective measurement procedures (Barrett, Johnston, & Pennypacker, 1986). We have for many years focused on the measurement of the rate and frequency of problem behaviors. To fully describe and understand complex response patterns, we need a measurement technology that will allow us to (a) directly observe the multiple problem behaviors that occur in a sequence, and (b) analyze the sequential relation between multiple problem behaviors and their controlling variables (Bakeman & Gottman, 1986; Moran, Dumas, & Symons, 1992; Repp, Felce, & Karsh, 1991; Repp, Harman, Felce, Van Acker, & Karsh, 1989). The methodology for the measurement of sequential relationships between variables provides tremendous potential for a fine-grained analysis necessary for understanding, predicting, and controlling severe problem behaviors. However, the complexity of the measurement and analysis procedures make it a heuristic for research purposes and prevents it from being a tool of practical utility. Making this a user-friendly methodology may well be the target for future research efforts.

To summarize, there is a continued need for research that demonstrates effective intervention strategies for complex patterns of problem behaviors in individuals with developmental disabilities. Our ability to support individuals in regular environments will depend on our ability to (a) identify and document escalating response sequences, (b) understand the hierarchical organization of escalating response sequences, and (c) identify and eliminate the controlling variables.

#### References

- Albin, R. W., O'Brien, M., & Horner, R. H. (1995). Analysis of an escalating sequence of problem behaviors: A case study. *Research in Developmental Disabilities, 16* (2), 133-147.
- Baer, D. M. (1982). The imposition of structure on behavior and the demolition of behavioral structures. In D. J. Bernstein (Ed.), *Response structure and organization* (pp. 217-254). Lincoln: University of Nebraska.
- Bakeman, R., & Gottman, J. M. (1986). *Observing interaction: An introduction to sequential analysis*. Cambridge: Cambridge University Press.
- Barrett, B. H., Johnston, J. M., & Pennypacker, H. S. (1986). Behavior: Its units, dimensions, and measurement. In R. O. Nelson & S. C. Hayes (Eds.), *Conceptual foundations of behavioral assessment*. NY: The Guilford Press.
- Carr, E. G. & Durand, V. M. (1985). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis, 18*(2), 111-126.

Colvin, G. (1990). Procedures for preventing serious acting out behavior in the classroom. Association for Direct Instruction News, 2(4), 27-30.

Dunlap, G., Kern-Dunlap, L., Clarke, S., & Robbins, F. R. (1991). Functional assessment, curricular revision, and severe problem behavior problems. Journal of Applied Behavior Analysis, 24(2), 387-397.

Evans, I. M., Meyer, L. H., Kurkjian, J. A., & Kishi, G. S. (1988). An evaluation of behavioral interrelationships in child behavior therapy. In J. C. Witt, S. N. Elliot, & F. M. Gresham (Eds.), Handbook of behavior therapy in education (pp. 189-215). NY: Plenum.

Grace, N. C., Kahng, S. W., & Fisher, W. W. (1994). Balancing social acceptability with treatment effectiveness of an intrusive procedure: A case report. Journal of Applied Behavior Analysis, 27, 171-172.

Horner, R. H., & Day H. M. (1991). The effects of response efficiency on functionally equivalent competing behaviors. Journal of Applied Behavior Analysis, 24(4), 719-732.

Horner, R. H., Sprague, J. R., O'Brien, M., & Heathfield, L. T. (1990). The role of response efficiency in the reduction of problem behaviors through functional equivalence training: A case study. The Journal of The Association for Persons with Severe Handicaps, 15(2), 91-97.

Johnston, J. M., & Pennypacker, H. S. (1980). Strategies and tactics of human behavioral research. New York: Lawrence Erlbaum.

Mace, F. C., McCurdy, B., & Quigley, E. A. (1990). A collateral effect of reward predicted by matching theory. Journal of Applied Behavior Analysis, 23, 197-205.

Moran, G., Dumas, J. E., & Symons, D. K. (1992). Approaches to sequential analysis and the description of contingency in behavioral interaction. Behavioral Assessment, 14, 65-92.

Parrish, J. M., Cataldo, M. F., Kolko, D. J., Neef, N. A., & Egel, A. L. (1986). Experimental analysis of response covariations among compliant and inappropriate behaviors. Journal of Applied Behavior Analysis, 19, 241-254.

Patterson, G. (1982). Coercive family process: A social learning approach to family intervention. Eugene, OR: Castalia Publishing Company.

Repp, A. C., Felce, D., & Karsh, K. G. (1991). The use of a portable microcomputer in the functional analysis of maladaptive behavior. In B. Remington (Ed.), The challenge of mental handicap: A behavior analytic approach (pp. 119-137). New York: John Wiley & Sons.

Repp, A. C., Harman, M. L., Felce, D., Van Acker, R., & Karsh, K. G. (1989). Conducting behavioral assessments on computer collected data. Behavioral Assessment, 11, 249-268.

Schroeder, S. R., & MacLean, W. (1987). If it isn't one thing it's another: Experimental analysis of co-variation in behavior management data of severe behavior disturbances. In S. Landesman & P. Vietze (Eds.), Living

environments and mental retardation (pp. 315-337). Washington, D.C.: American Association on Mental Retardation.

Skinner, B. F. (1938). The behavior of organisms. New York: Appleton-Century Crofts.

Shukla, S. (1994). Escalating sequences of problem behaviors: Analysis and intervention. Unpublished doctoral dissertation, University of Oregon, Eugene.

Shukla, S. & Albin, R. W. (1996). Effects of extinction alone and extinction plus functional communication training on covariation of problem behaviors. Journal of Applied Behavior Analysis, 29(4), 565-568.

Sprague, J. R. & Horner, R. H. (1992). Covariation within functional response classes: Implications for treatment of severe problem behavior. Journal of Applied Behavior Analysis, 25(3), 735-745.

Voeltz, L. M., & Evans, I. M. (1982). The assessment of behavioral interrelationships in child behavior therapy. Behavioral Assessment, 4, 131-165.

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#### XXVII CONGRESS OF EUROPEAN ASSOCIATION FOR BEHAVIOURAL & COGNITIVE THERAPY

VENICE, ITALY, September 24-27, 1997

Provisional list of speakers include: A. Bandura, P. Harzem, R.P. Liberman, D. Meichembaum, P.E. Garfinkel, S. Hayes, F. Lowe, E Ribes-Inesta, Martha Peláez, Paolo Moderato, and many others.

**Topic areas to be covered include:** assessment: theory and methods, behavioral and cognitive approaches for: medical problems, educational settings, autism, AIDS, problems of the elderly and in infancy, child abuse, adolescence, emotion, depression, developmental disabilities, eating disorders, epistemological and conceptual issues, experimental models, psychological and pharmacological treatments, personality, learning theories, marital and sexual problems, mental retardation, OBM, sleep disorders, stress and stress reduction, and behavioral themes in general. Submission deadline is May 20, 1997. For more information on scientific and organizational updating maintained and transmitted via Internet at: [http://www.psico.unipd.it/dept\\_info/eabct.html](http://www.psico.unipd.it/dept_info/eabct.html) or write to: Congress Studio International, Piazza dei Volontari, 4-20145 Milano, ITALY



### **BEHAVIOR ANALYSIS TRAINING AT FLORIDA INTERNATIONAL UNIVERSITY**

Formal training in basic and applied behavior analysis is one of the goals of Department of Psychology and the Department of Educational Psychology & Special Education at Florida International University.

The Department of Psychology currently offers the M.S. degree in behavior analysis and the Ph.D. degree in Developmental Psychology with a track in behavior analysis. Research opportunities in this program include 2 infant laboratories, a laboratory for experimental analysis of human and animal behavior, a daycare center, a child phobia center, a learning center, a state hospital and various community facilities. Recent research includes studies on stimulus equivalence and transfer of function, exploring infant learning using conditional discrimination and matching procedures, treatment of school phobias, exploring the conditioned basis of fear of the dark and fear of strangers in small children, "jealousy" between siblings, the effects of touch in mother-infant interactions, and imitation vs. direct contingency learning.

The Department of Educational Psychology & Special Education (EPSE) offers opportunities for doctoral and masters' degrees in Special Education with a track in Applied Behavior Analysis through several fields/programs including Exceptional Student Education, Community College Teaching, Curriculum and Instruction, and Adult Education and Human Resource Development. Recent research includes studies of social and motor skills among children with severe disabilities, comparisons of error correction procedures used to teach academics, interaction patterns between babies and their depressed-adolescent mothers, and generalization strategies used in parent training programs.

The behavioral faculty of the Psychology Department include Scott Fraser, Jacob Gewirtz, Michael Markham and Wendy Silverman, as well as adjunct faculty Beth Sulzer-Azaroff, Steve Starin, and Haydee Toro. For more information on graduate programs contact Jacob Gewirtz, Department of Psychology, Florida International University, Miami, FL 33199, phone (305) 348-3375. The behavioral faculty of the Department of Educational Psychology and Special Education are Patricia Barbeta, Michael Brady, Martha Pelaez and Smita Shukla. For information on graduate programs in Educational Psychology & Special Education contact Michael Brady (305) 348-2552 or Martha Peláez-Nogueras (305) 348-2090.

### **IRELAND, DUBLIN 1997**

The 3rd European Meeting for the Experimental Analysis of Behavior- IMAM III- will be held in Dublin, Ireland July 10-13, 1997 at Trinity College. This is a successor to two successful meetings held in Belgium in the 1980s. There is growing interest in EAB and ABA in Europe. A theme of the meeting will be the essential interdependence of EAB and ABA. Many nationalities will be represented with distinguished keynote speakers such as Charles Catania, Philip Heline, and David Wacker. This meeting will occur immediately after the 5th European Congress of Psychology, also being held in Dublin from July 6-11, 1997.

For Further information, contact:

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### **Don't Miss the Developmental SIG Dinner!!**

**Friday May 23 at 6:00 pm**

Reza's Restaurant, 432 W Ontario St.

### **Don't Miss the Florida International University Reunion!!**

**Saturday, May 24 from 7:00 pm - 9:00 pm**

Michigan Room B

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