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THE BEHAVIOR ANALYST TODAY

A Context for Science with a Commitment to Behavior Change

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The Behavior Analyst Today

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From the Editors

Joseph Cautilli and Beth Rosenwasser

Hello. This is our third issue of BAT. We apologize for the difficulties some of you have had downloading BAT #2. We will have those software difficulties remedied shortly, so please revisit the Cambridge website at the end of September (www.behavior.org, then click on "News").

Exciting times continue. As John Jacobson points out in his article, BA is the only treatment for autism endorsed by the U.S. Surgeon General. This removes "belief" from arguments concerning the efficacy of ABA and makes it a matter of medical fact. The growing consensus of the utility of ABA in treating autism and the impact that it has on society has led to a redefinition of what is an appropriate education for these children (see Yell & Drasgow, 2000). In our continued effort to emphasize bridges between research and practice, we invited Dr. Jacobson to present this information in a user-friendly style, for school administrators /managers making decisions regarding "converting to an ABA program." Also in this issue, Schreck, Metz, Mulick, & Smith present a pilot study looking at the influences of intensity and setting of early intervention programming for children with Autism. Hopefully, this research trend will continue with other populations where there is already demonstrated efficacy such as behavior parent training for the treatment of oppositional defiant disorder (Brestan & Eyberg, 1998) and Direct Instruction within "regular" education (click on "Direct Instruction" on www.behavior.org).

Over Memorial Day weekend, ABA's Clinical Behavior Analysis SIG (CBA-SIG) and Pennsylvania ABA (PennABA) met at our annual convention in D.C. It was good to see how the membership had grown. Many of the faces were new, which demonstrates expanding interest in this hot area. In this issue the new president of the CBA-SIG, Tony Procaccino, offers his views on the role of verbal behavior in clinical behavior analysis. He also cautions behavior analysts of the problems that could occur if we fail to look to our neighbor disciplines to learn from their progress. However, there are landmines as we increasingly step into the study of molar contingencies in human behavior and verbal behavior, particularly private verbal behavior. Dr. Rob Hawkin's article lists several steps that we can take to prevent sloppy theoretical analyses, particularly when we speak of "cognition." In an excellent example of clinical behavior analysis, Lundervold and Poppen present the role of biobehavioral conditioning in the phenomenon of Essential Tremor. For those readers who are not quite sure what behavior analysis looks like when applied to broader clinical issues, this is a nice example.

PennABA's meetings resulted in new officers and plans for expansion. Richard Foxx is now president, Rick Kubina is treasurer, Rich Weissman is our meticulous secretary, and Beth Rosenwasser and Kimberly Schreck are the members at large. See Beth's brief review of new goals, including a conference in spring, 2001 and how to become more involved. It is hoped that this new crew will be effective in greeting the mounting political issues in PA. For example, several weeks ago the Inspector General's Office sent a representative to PA to find out why we spend more EPSDT (federal) money than any other state. As a former director (Beth) and current director (Joe) of EPSDT-funded children's programming we think the answer is simple, low program integrity. For starters, many so-called "behavior specialists" do not practice behavioral consultation but mental health consultation. While this difference may not seem like much, the effect size difference is enormous. In mental health consultation, the mean effect size for behavior and attitude change for consultee is .55 and only a .39

effect size for client (Medway & Updyke, 1985). Behavioral consultation, on the other hand, has a mean effect size of .60 for behavior and attitude change for consultees and .91 for clients (Sibley, 1986 cited in Bergan & Kratochwill, 1990). In addition to this staff training problem, treatment integrity for bachelor level (Therapeutic Staff Support; TSS) is not measured by agencies. The difficulty is how to measure whether this army of staff out in the community are really delivering the treatment that is being recommended (hopefully by someone using behavioral consultation). These issues scream for behavior analysts; the field of Organizational Behavior Management offers effective approaches to increasing program integrity. The 1998 issue of the *Journal of Organizational Behavior Management* contains several articles on how this may be achieved. One of the basic steps is ensuring proper staff training, with half-hour by half hour breakdown of expected activity. The other is allowing TSS a role in treatment creation. Finally, more involved systems of monitoring and feedback need to be set into place to enhance PA (and other) programs. Just as mobile therapists in PA should be licensed counselors, social workers, or marriage and family therapists, so behavior specialists should be Board Certified Behavior Analysts.

Speaking of treatment integrity, check out Long & Bahl's look at current issues in functional assessment. They propose several guidelines for enhancing the quality of what has become a catch-all phrase: "functional assessment." Yet another key to maintaining program integrity is to teach behavior analysts to work with family resistance. Cautilli & Santilli-Connor's article applies a functional analysis to what we commonly term "resistance" and offers clinicians and supervisors many practical suggestions for understanding and working with these relationships patterns.

Last, we have two sections designed to provoke dialogue among our readers. One is our "letter to the editors" section, begun by prior BAT author, Nathan Stemmer, Ph.D. He invites readers to behaviorally analyze the term "specify" as in "contingency specifying stimuli." We would love to hear from you in what could prove to be a more thoughtful forum than the faster-paced listserv, and yet a lower response requirement than a journal article. Second, our new layout editor and printer, C. A. Thomas, Ph.D., takes us on the road with a humorous piece on his "portable life." With this, we launch a new section designed to address the larger daily context of consultation, from setting fees, to dealing with insurance companies, gaining malpractice insurance, and getting certified as a behavior analyst. We will accept unsolicited manuscripts for this section.

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Letters to the Editor

Jerusalem, July 18, 2000

Dear Editors,

We are all well acquainted with the notion of Contingency Specifying Stimuli (CSSs). However, as far as I know, there is no clear behavioral analysis of the notion 'to specify' that occurs in the notion CSS. This analysis should enable us to find out, for any CSS -- e.g., for 'Bring the ball' -- , the contingency C that is specified by the CSS, for subject s. Notice that the simple solution of removing the quotation marks -- e.g., to say that the contingency specified by 'Bring the ball' is Bring the ball -- is not a behavioral analysis, since it requires us to know the language in which the CCS is expressed. A real behavioral analysis must be sufficiently general to allow us to determine the contingency C that is specified by a CSS (for a subject s), even if CSS is expressed in a language we do not understand.

I am interested in receiving feedback from members of the verbal community.

Sincerely,

Nathan Stemmer

We invite and welcome an open dialogue and hope that our readers will respond to this forum. Please feel free to send any comments to jcautilli@astro.ocis.temple.edu and iBRosie@aol.com .

Converting to a Behavior Analysis Format for Autism Services: Decision-Making for Educational Administrators, Principals, and Consultants

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This article is intended to orient school administrators and managers to the existing evidence for usefulness of ABA-based instruction for children with autism spectrum disorders, and to identify salient aspects of the educational system and setting that should be addressed by consultants when newly implementing ABA-based instruction. No one dimension of ABA implementation in schools is fully addressed—rather, selected recommendations are included and readers are directed to the primary sources cited throughout.

The Need to Provide Behavioral Education Services to Children

Presently one of the areas of greatest controversy in special education is the development of intensive educational services for children with autism. Parents often arrive at preschools and schools and with their preschooler or primary schooler in tow, and high expectations for performance by the educational system. These expectations have been fueled by a variety of factors, not least of which is the emergence of a body of research studies demonstrating that children with autism spectrum disorders (ASD) can realize very extensive benefits from intensive, behavioral educational intervention, in many instances benefits that include apparent and enduring recovery from the effects of ASD.

Although parental expectations for intensive intervention, and related benefits, may appear unrealistic at first blush to teams, principals, and educators who are not experienced in behavioral educational approaches, in fact there are several sources that have documented that these expectations are not out of line. A number of evaluation studies of intensive early intervention services have shown that substantial and continuing gains can be realized, including very substantial benefits for about half of the children referred at an early age, and varying benefits for others. These include studies by Anderson, Avery, DiPietro, Edwards, and Christian (1987), Graff, Green, & Libby (1998), Lovaas (1987), Perry, Cohen, and DeCarlo (1995).

Findings have suggested that more intensive rather than moderately intensive educational participation, and inception of services at an earlier age are associated with greater benefit (Birnbrauer & Leach, 1993; Fenske, Zalenski, Krantz, & McClannahan, 1985). But, either one of these considerations rules out value of interventions that begin upon primary school entry, and involve heightened instructional intensity, through an extended school day, extended school year, or parental participation as therapists in home and community.

The research foundations upon which behavior analytic strategies in autism education are based are extremely broad and well-developed, and, indeed, the research underpinning these strategies in educating children with autism is more extensive than the research foundation for any other educational model for children with ASD (Matson, Benavidez, Compton, Paclwaskyj, & Baglio, 1996). This conclusion, and the conclusions that behavioral approaches (a.k.a. applied behavior analysis—ABA--or behavior analysis) are of recognized utility and encompass instructional procedures with recognized utility, are supported by government reports from California and New York, an administrative review in Maine, and in a recent report on mental health by the Surgeon General of the United States (Collaborative Work Group on Autistic Spectrum Disorders, 1997;

Department of Health, 1999; Department of Health and Human Services, 1999; MADSEC Autism Taskforce, 1999).

Although researchers and evaluators might be occasionally accused (usually entirely unjustified) of having a vested interest in reaching conclusions that reflect well on the services they provide, no such factors taint, however faintly, the conclusions of the comprehensive governmental reports cited above. The Surgeon General, New York, and Maine reports directly cite the benefits of ABA strategies in serving children with ASD, while the California report stresses the importance of a wide range of educational program characteristics that in turn are conspicuously present in ABA-based educational programs.

Because contemporary education has not been a strongly research-based profession (Grossen, 1997), many educators and educational administrators may find research studies to be an insufficient basis to consider ABA as an organizing approach for educational intervention selection. In this context, it is important to stress that ABA also has the best and most comprehensively documented outcomes in terms of their impact on children with ASD in educational settings, substantially exceeding the breadth of those for other, popular, approaches such as TEACCH (Division TEACCH, 1996) or floor-time (Greenspan, 1992).

Educators also should be aware that while progressive or constructionist educational philosophies have flowered as touchstones of educational development, parents remain largely unimpressed with these philosophies, and focus on the bottom line of educational and developmental outcomes for their children. Correspondingly, as the role of parents as members of educational teams becomes further cemented under IDEA, the Individuals with Disabilities Education Act as amended, outcome orientation in individual educational planning will become increasingly important.

Parental expectations are one very important reason for schools to consider instituting educational services for children with ASD that are organized around behavioral instruction. As discrepancies between available or offered services and parental expectations and knowledge of applicable instructional technologies have increased, so too have school expenses, in time and money, for due process (Jacobson, in press). Moreover, both during the school years and into vocational transition and adulthood, early, or at least earlier, intensification of behavioral education makes sense financially, if for no other reason than avoidance of greatly expanded future expenditures for special and related services (Jacobson & Mulick, 2000; Jacobson, Mulick, & Green, 1998).

Although the reasons why are not well understood, there is every indication that increasing numbers of children with ASD are entering schools every year (Department of Education, 1999). School administrators and directors of special education who do not seek to balance philosophical considerations with pragmatic considerations of earlier educational benefit and later diminished need for support for children in later school years, who focus on meeting today's financial targets to the exclusion of future cost, may find themselves facing rapidly escalating special education expenses within the span of a few years. Cost modeling, as noted above, suggests that the opportunity for spending less later may depend on spending more, on special education for children with ASD, today.

Finally, there is the consideration that, if schools can substantially improve the ability of children with ASD to benefit from later, regular education, they will also greatly increase the contribution they make to later quality of life, independence, autonomy, and personal productivity of these children in adulthood. However, this commitment also requires a commitment to providing special instruction in the early primary years that is comprehensive and intensive, and which may not, without prior intensive intervention in the preschool years, lend itself to child benefit initially from participation in fully inclusive classrooms (e.g., see Hallenbeck & Kauffman, 1995 on related issues). This is not to say that inclusive practices are inherently incompatible with ABA-based instruction, but rather that the benefits of inclusion will differ with timing and preparation (Johnson, Meyer, & Taylor, 1996).

Costs to Establish an ABA-Based Educational Program

Realistically, there are a number of costs that are associated with converting to an ABA-based educational format for educating children with autism. Some of these costs are similar in nature to those of adopting new curricula or instructional methods, while others reflect enriched capacity to provide more intensive and comprehensive educational intervention in the school.

One of the critical issues is that, over the past two decades, it appears that behavior analysis content in both undergraduate and graduate teacher preparation programs has diminished. Many educators have received a little relevant training in ABA with respect to classroom management, much less so regarding behavioral approaches to individual goal setting, curriculum development, using specific instructional strategies, intervention tracking and monitoring, and integration of these activities (Mingan, 1999). They often also lack specific prior education in the nature of autism, and its varying and pervasive impact on the learning and development of children with ASD (Mingan, 1999). Unfortunately, more general preparation in organization of special individual services for children with developmental disabilities (e.g., Knowlton, 1998), may be of marginal or limited relevance to ABA-based work for children with ASD.

Several resources can be helpful in assisting educational administrators and supervisors, or principals, to understand the necessary and typical features of ABA-based educational services. These include a book on preschool programs that is also pertinent to design of primary school services (Harris & Handleman, 1994) and a special issue of the journal *Behavior and Society* that identifies well-studied and evaluated ABA-based school programs for a range of populations (Crandall, Jacobson, & Sloane, 1997). Several books are available that address crucial issues in operating a school program (e.g., Maurice, Green, & Luce, 1996).

In addition, there are resources that can assist senior educational personnel in identifying qualified consultants or professionals in behavior analysis who can support classroom or program conversion effectively (Shook & Favell, 1996). Guidelines for identifying the extent to which consultants or school personnel may be qualified (and able) to effectively supervise ABA services have also been developed (Autism Special Interest Group, 1998). Standards for certification as a behavior analyst at the masters level or associate behavior analyst at the bachelors level also indicate key competencies needed in order to provide high quality ABA-based services (Behavior Analyst Certification Board, 1999).

In general terms, converting to an ABA-based educational approach requires:

1) identifying and assuring adequate preparation of teacher supervisors, teachers, and teacher assistants,

2) hiring sufficient additional teachers and assistants to increase child access to intensive, individual instruction for substantial portions of the school day,

3) reorganizing classroom and instructional routines—and decreasing group size--to facilitate this heightened intensity,

4) developing or acquiring new, appropriate curricula that are individually adapted to children's initial skill levels and performance,

5) extending school hours and the school year, altering or increasing teacher access to in-service training,

6) increasing use of off-site or university-based training,

7) using data on child performance as a basis for instructional decision-making, and acquisition of consultative services.

Obviously, there are increased costs associated with most of these conversion activities. Conversion over the short term requires an exceptional infusion of development resources, but more gradual implementation of the core elements of an ABA-based approach may allow these costs

to be effectively managed and spread over time. Schools that do not plan for gradual conversion, but instead are forced to institute rapid conversion under due process, may experience higher conversion costs. Rapid conversion may not permit schools to obtain needed consultative services through competitive bids or consideration of a variety of offers by consultants.

Rapid conversion may also prohibit institution of continuing professional education and supervised experience for teachers in the district, which could produce qualified supervisors and prove to be less costly than use of consultative services, and establish new and enduring expertise within the district's professional work force. Another option that schools may wish to consider is obtaining further professional training in behavior analysis and autism for school psychologists. Although school psychologists sometimes have more collegiate training in ABA than do special educators, their training and supervised experience regarding instructional approaches and ASD is typically insufficiently specific in ABA to permit them to meet the previously mentioned guidelines for supervisors. However, they often do have training in consultation, which can help them to be effective in working with a variety of ABA-based programs, possibly in several schools, given further training in behavioral instruction and ASD.

School administrators clearly must be concerned about managing the costs of conversion, but they should also be cognizant that the quality of preparation of supervisors, teachers, and teacher assistants is critical to the effectiveness of ABA-based programs. Although teachers and supervisors can instruct teacher assistants effectively, with relatively limited additional didactic training for these assistants, the teachers and supervisors need formal training. This training entails both collegiate level training in ABA, at least several courses, and experience supervised or mentored by a professional qualified in ABA, for one or two years, to achieve the competencies necessary to design and direct ABA-based educational services with some degree of independence.

New hires with such training and experience can assist more rapid implementation, but unionization, district budgetary considerations, or other organizational factors may constrain the ability of administrators to hire additional educators with these competencies. Qualified consultants can provide appropriate supervision or mentoring for educational personnel who are developing competencies in ABA, but can seldom provide the degree of instructional content needed to establish the competencies and needed comprehension of ABA principles and instructional approaches. Workshops or time-limited training alone do not spread instruction over time in ways that allow for readings to enrich instruction or practice of methods necessary to establish competencies.

It can be estimated that the cost of providing intensive ABA-based educational services may approach twice that of the most intensive educational services that school districts provide. In some cases, increased costs may not be as great if many children with ASD are already receiving services with highly enriched instructional ratios or extended school hours or an extended school year. Costs for consultation, however, may greatly affect overall costs for these services.

In some localities there are very few qualified consultants, and in some localities the only available consultants are minimally, or even less, qualified to supervise or support conversions, or provide continuing assistance. Experience has suggested that, as a result, there is no obvious correlation between the fees charged by consultants and their qualifications, and schools should be scrupulous in reviewing consultants' credentials. In such reviews, administrators should be aware that the extent of prior relevant training in ABA, and the duration and nature of prior appropriate supervised experience are more important than the particular university or collegiate setting where the potential consultant was trained.

Two other points regarding conversion costs are also salient. First, some legal consultants to school districts have advised that schools can avoid adverse due process outcomes that increase costs by partially implementing ABA-based services, or services which have some superficial characteristics of such services (e.g., Peper Martin Law Firm, 1999). Unfortunately, there is no

evidence that such partial or similar but insubstantial modifications of educational practices provide benefit for children with ASD, these modifications may require that staff obtain additional training, and there may be other costs that are also increased with partial implementation. As parental self-advocates continue to become more sophisticated, they may also be more readily able to discern and communicate the superficial nature of such modifications within due process proceedings.

Second, many school districts will be able to recover costs for increased related services (e.g., speech pathology) in intensive services, and possibly some consultative costs, by billing Medicaid. Recoupment of costs through billing is strongly encouraged under the IDEA, but experience suggests that many schools fail to recover these costs because of erroneous assumptions by administrators that costs for billing will outstrip the funds recovered. In some states, depending on reimbursement methodologies, costs for development operation of billing systems may be partially recoverable as well. State and federal special purpose grants may also be available to defray costs of extensive teacher retraining or of establishing billing systems and should be explored as resources by districts.

Instilling Necessary Elements of ABA Technology in the School

What does it mean to instill the necessary elements of ABA technology in school services for children with ASD? Extensive guidance on this issue is provided by the guidelines developed by the Autism Special Interest Group of the Association for Behavior Analysis (1998). Many educators, as do some parents initially, may identify ABA-based services narrowly in terms of the services provided by the Young Autism Program at UCLA and as involving discrete trial training, but numerous other settings provide valuable resources and relevant ABA instructional approaches are much more diverse.

Table 1: General Competency Areas for ABA-Based Services Supervisors

1. Ethical considerations
2. Definition and characteristics of applied behavior analysis
3. Basic principles of behavior
4. Behavioral assessment
5. Descriptive analysis
6. Demonstrating functional relations
7. Measurement of behavior
8. Data display and interpretation
9. Selection of target behaviors and goals
10. Behavior change procedures
11. Generalization and maintenance of behavior change
12. Managing emergencies
13. Transfer of technology

Autism Special Interest Group (1998)

The guidelines identify a set of general competency areas and instructional approaches that are requisite for effective instruction. The general competency areas are shown in Table 1. The instructional strategies encompassed by ABA-based services are shown in Table 2 (and are quoted or paraphrased from the guidelines). The content of these guidelines is extended and clarified, in part, by definitions of competency areas for certification as a behavior analyst (BACB, 1999) and by Shook and Favell (1996).

Assuring the development of needed teacher knowledge and competencies, as well as familiarity and facility in use of a variety of

instructional and supportive interventions requires not only formal teacher preparation through collegiate level or post-employment courses and supervised experience by a properly qualified behavioral practitioner, but also development of a responsive and comprehensive curriculum to guide instructional design and sequencing on the individual level. Model curricula are available, for example, Taylor and McDonough (1996).

The availability of suitable curricula is important, because they provide a basic structure for learning, and as the skills of children with ASD increase, the broadened scope and depth of intervention, especially with respect to social skills, may divert teacher effort to design of intervention rather than provision of intervention in the absence of a curriculum that addresses these issues (Mulick, 2000). It is reasonable for school administrators and managers to expect that consultants will be able to identify suitable existing curricula and that it will not be necessary to reimburse consultants for curricular development. However, at the same time, it is reasonable to expect that consultants will provide a suitable curriculum to the school, and that they will be involved in initial and periodic meetings and provide supervision and assistance regarding the use of that curriculum with individual children.

The educational preparation necessary for effective implementation of a curriculum includes, for consultants, several collegiate courses on ABA at the graduate level, a year of general supervised experience in providing ABA-based services to children with ASD, and a year of supervised experience in supervising such ABA-based services. Qualifications for teacher supervisors within the schools should approximate those of consultants, and qualifications for teachers should approach those of the supervisors—again, it is likely that periodic or intensive (e.g., one- or two-week workshops) will provide insufficient skills for educators to implement an ABA-based curriculum for children with autism faithfully.

Table 2: Instructional Strategies Encompassed by ABA-Based Educational Services

1. Designing and implementing individualized programs to build skills in: "learning to learn" (e.g., observing, listening, following instructions, imitating); communication (vocal and nonvocal); social interaction; self-care; academics; school readiness; self-preservation; motor; play and leisure; community living; work.
2. Using both discrete-trial and incidental or "naturalistic" teaching methods to promote skill acquisition and generalization.
3. Incorporating prompting; error correction; discrimination training; reinforcement strategies; strategies for enhancing generalization. into skill-building programs.
4. Modifying instruction based on frequent, systematic evaluation of direct observational data.
5. Designing and implementing interventions to reduce stereotypic, disruptive, and destructive behavior based on systematic analysis of the variables that cause and maintain the behavior.
6. Incorporating differential reinforcement of appropriate alternative responses into behavior reduction programs, based on the best available research evidence.
7. Modifying behavior reduction programs based on frequent, systematic evaluation of direct observational data.

Autism Special Interest Group (1998)

Curriculum content will also provide a sequencing structure that will define the basic attributes of preschool or school individual educational plans (IEPs), which should be written to reflect behavioral assessment data that are gathered for the preparation for IEP meetings and development (Romanczyk, 1996). Behavioral assessment data gathered on child performance will also be used to make continual, daily or weekly, modifications to the instructional methods within the IEP, in order to assure that, as each child acquires skills, at

differing rates, the IEP subgoals or objectives and level of performance sought remain relevant and responsive to each child. All educational personnel involved in serving a particular group of children with ASD should meet regularly, usually weekly, in order to review progress and make the needed instructional modifications within the overall plan of instruction set through the IEP.

Continual review of progress necessitates that data on child performance be taken as instruction is delivered, on a trial by trial, or content by content basis, to permit rapid gains, or the necessity for modifications to set smaller steps in learning, to be readily detected. Frequent data collection, on a detailed rather than summary basis, is a defining characteristic of ABA-based instruction. Continuing data collection is not a cornerstone of other instructional models and consequently, some teachers may become discouraged initially in attempting to collect child data and provide instruction at the same time. However, data collection is a skill, and with practice, perseverance, and appropriate feedback from a mentor or supervisor, this skill can be readily acquired and carried out with a high degree of accuracy, becoming easier to perform, over a period of weeks.

In addition to changes in instructional focus, specificity, and implementation associated with adoption of a developmentally sequenced, ABA-based curriculum, there will be related changes in classroom organization and routines. For children who have not yet demonstrated extensive gains in communication or social skills, individual one-to-one instruction will be the dominant method of instruction; for those who have demonstrated such gains, instruction in pairs of very small groups will be instituted, and provide a structure for further social skills instruction. Some aspects in these changeovers from everyday group instruction to more individualized classroom structure, such as rotation of children among teachers and assistants, and progressive involvement in interactions with children without disabilities, are noted in Anderson, Taras, and Cannon (1996), Dawson and Osterling (1997), Greenwood, Carta, Kamps, and Arreaga-Mayer (1990), Guralnick (1997), and Harris and Handleman (1990). However, the key point here is that effective implementation of an ABA-based curriculum includes alteration and restructuring of the learning environment.

Increasing Acceptability of ABA in a School or Early Intervention Setting

Administrators or principals who direct implementation of ABA-based services, whether due to either a policy or due process determination, may encounter philosophical resistance to implementing ABA instruction among supervisors and staff, or may themselves have questions about side effects or other issues associated with ABA. For example, personnel may have concerns about the impact of ABA instruction on intrinsic and extrinsic motivation of children. Like many issues that surround institution of ABA services, such concerns are likely to reflect popular and technically incomplete depictions of ABA (Kohn, 1993), or overdrawn or specious depictions and caricatures, sometimes narrowly set forth, of ABA (e.g., AUTCOM, 1999).

Both research reviews and research studies regarding ABA have addressed distortions, partial and sometimes self-serving criticisms of ABA, and depiction of side effects of ABA that are in fact addressed on a day to day basis in implementing services and supervising services. It may be averred that ABA instruction undermines intrinsic motivation, but the conditions under which this may occur are known and regularly avoided in providing services (e.g., Cameron & Pierce, 1994), indicating the importance of appropriate training and knowledgeable supervision. It may be averred that ABA instruction ignores developmental factors, or progressions, but this is a coarse and erroneous criticism, since effective ABA instruction is based explicitly on the individual developmental status and progress of each child.

It may be averred that ABA research focuses on negative aspects of a child's functioning (e.g., problem behavior) or classroom management rather than instruction and child development. But in fact the great majority of all research and publication on ABA and children focuses on their skill development, improved academic

performance, and practical independence. It may be averred that eclectic selection of instructional methods is important to assure that the range of children's needs are addressed in the classroom, and that ABA-based instruction is narrowly formulated. Although this perspective is contradicted by the facts of the breadth, depth, and diversification of ABA-based instruction and curriculum in the education of children with ASD, it is also important to note that usage of a range of techniques may involve using techniques that pose conflicting demands upon children, or which have no substantive benefit for the children—some eclectically selected techniques may adversely affect child development (Jacobson, Mulick, & Apollo, 1998).

Some educators may claim that ABA-based instruction is incompatible with inclusive practices, and, while compromises in intensity or specificity of instruction may be required by full inclusion (Daniel & King, 1997; McDonnell, Thorson, & McQuivey, 1998), again, the instructional strategies derived from ABA are not inherently incompatible with inclusive, or with community-referenced and –based, instruction. Moreover, special educators who have reservations about non-inclusive practices and regular educators who have reservations about inclusive practices may benefit from presentation of information about the nature and impact on child development of autism and ASD. These impacts indicate, in general terms, that autism is not simply a matter of developmental delays to be addressed in a generic manner through enrichment and social and academic participation, but that, as in the instances of blindness or deafness, the needs of these children are indeed special, amenable to skilled, special instruction, and generally unresponsive to mundane instruction.

Many mistaken beliefs about ABA prevalent among teachers are related to misinformation or mischaracterization of ABA, but also more fundamentally, to a lack of exposure to the particulars of ABA and its skilled implementation in schools. Primary and readily undertaken strategies to address personnel concerns about ABA involve providing exposure, through workshops or site visits, to peers who are successfully and comprehensively implementing ABA-based instruction, or requesting that consultants directly address staff concerns. Many educators may not realize that some of the instructional procedures that they use in classrooms are based on ABA research (e.g., see Crandall, Jacobson, & Sloane, 1997).

Aspirations to Integrate ABA Instruction Throughout Schools

Some consultants to schools that are developing ABA-based services for children with ASD may aspire to infuse ABA instruction throughout a school. When administrators and principals invite infusion, consultants should be prepared to identify and orient personnel to procedures like fluency training and direct instruction, instructional packages like DISTAR, and impacts of ABA procedural instruction on academic performance in urban schools, as well as identifying procedures that regular or special educators in the school are using that have a basis in ABA.

Consultants should also identify resources for personnel that can assist them in using ABA, including use of ERIC to obtain resources and information, as well as how to obtain information from federally funded institutes about the behavioral tools they are developing and refining for use by regular educators. As in consultation in establishing ABA-based services for children with ASD, more general infusion should be a graduated process, entailing the baseline activities of the school, identification of existing resources and expertise, exposure to general information, targeting of specific priorities, design of targeted changes or enhancements, and systematic evaluation of implementation, fidelity, outcomes, and counter-habilitative factors (e.g., Meinhold, & Mulick, 1990).

Typically, however, consultative implementation will focus on services for children with ASD. Implementation of effective ABA-based services constitutes a dramatic reformulation of instructional methods and classroom environments in most instances. The content and character of consultative interactions with school personnel should differ based upon whether graduated planful implementation is possible, or rapid mandated

implementation is required. Under conditions of rapid implementation, more intensive consultative contacts may be required: the consultant may have to provide more extensive guidance and supervision regarding IEP development and implementation of instructional and classroom modifications, more frequent on-site meetings and more didactic and demonstrative training of personnel, and more extended direct involvement with service delivery to assure fidelity.

In instances where collaborative graduated implementation involving parents and the school has been undertaken, consultants can establish a sequence of organizational intervention assessment and implementation that will systematically address personnel concerns and skill, performance, and maintenance dimensions of ABA-based instruction. Consultants may also be able to identify additional teacher preparation resources that can be brought to bear from local institutions of higher education. In either instance, consultants are obligated to clearly articulate the nature, dimensions, content, and duration of the services they will provide, to school officials and to the teachers and staff who will be involved in implementation, at the beginning of the consultative.

Finally, consultants need to be cognizant that the development of collegial and collaborative relationships with school administrators, principals, and teachers is an important factor in implementing effective ABA-based services. Educational administrators and managers, not to mention classroom teachers, are often faced with a variety of conflicting demands to enhance education while containing costs, and dealing with uncertainties regarding the nature and consequences of implementing ABA-based instruction, as well as implications of federal or state requirements regarding required performance of schools. Federal guidance on priorities under IDEA and their implications for FAPE (free and appropriate public education) and LRE (least restrictive environment) remains general in nature (e.g., NICHY, 1999a, 1999b).

Instructional procedures used in classrooms, and which teachers adopt readily seldom have a sound basis in research and bonafide impact assessment (Kauffman, 1996). Under conditions of high uncertainty, like decision-makers in other sectors, state education bureaucrats, and local school administrators and managers may adopt policies and rules of practice that appear related to IDEA requirements, but are not in fact mandated, or they may narrowly and habitually interpret regulatory requirements in certain ways that assist them to make complex decisions more expeditiously. In such situations, focus on student benefit and outcomes of education within special education may become diminished (e.g., Hocutt, 1996), although many special education directors and special educators remain motivated to improve their skills and the instruction they provide (Mingan, 1999). Effective and responsible behavioral consultants, for whom educational benefit may constitute the bottom line, must be aware of these role demands and performance requirements for school personnel, and the extent to which they can decrease the responsiveness of schools to respond to parental demands for ABA-based instruction. A core responsibility of consultants, therefore, is to assist administrators, managers, and teachers in the school to establish common goals and objectives for instructional redesign that can guide the sequence of consultative activities.

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On Herding Sheep and Climbing Sand Dunes: We Gotta' Keep Saying It (But Listening Too)

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Cultural Change and Our Impatience for It

Probably most people who strive for major changes in society or at least in their special field, are naive about how fast and easily change can be wrought. I recall that in the 1960s Ogden Lindsey was telling special education teachers at conferences that within 20 years all of special education would be behavioral. Has that come true? Well, no. Although there are probably very few special education teachers who have essentially no knowledge of behavioral techniques, the majority appear to make very limited use of a very few techniques; and even fewer have much understanding of behaviorism as a philosophy or science. Consider also this quote from M. F. Meyer in 1933:

> Why introduce into science an unneeded term such as emotion when there are already scientific terms for everything we have to describe? ...I predict: the "will" has virtually passed out of our scientific psychology today; the "emotion" is bound to do the same. In 1950, American psychologists will smile at both of these terms as curiosities of the past.

This quote was published in a major psychology journal. He was predicting that in a mere 17 years the concept of emotion would disappear; yet it is now 2000 and the concept has certainly not disappeared from either basic or applied psychology.

I think we are all naive about how long it takes to change the thinking or action of most large populations. For example, toward the end of his career, Skinner (1987) seemed to be discouraged because psychology was not changing radically as a result of his very cogent writings about how best to conduct its science. He saw the ascendance of cognitivism and decried its negative effects on education (Skinner, 1984, 1990). He questioned whether human society--even humankind as a species--would be able to survive if we did not get on the right track quickly and develop a science that provided useful answers to the severe problems caused by human behavior, such as air and water pollution, overpopulation, and war (Skinner, 1990b).

It is indeed discouraging that the science of psychology seems so misguided. The same phenomenon that Skinner saw in education -- with cognitive perspectives dominating and preventing the development of a truly useful understanding of how behavior works, an understanding that leads naturally to effective interventions -- is evident in a field that even began as behavioral, though not behavior analytic. That field is behavior therapy.

It has become increasingly cognitive over the last 25 years (Hawkins, et al., 1992). This is reflected in the fact that the organization in the United States that most represents this field--the Association for Advancement of Behavior Therapy (AABT)--added a byline to the name of its journal, Behavior Therapy, adding "An International Journal Devoted to the Application of Behavioral and Cognitive Sciences to Clinical Problems." The critical word here is "cognitive," and the byline was intended to reflect the existing fact that the journal "publishes articles from widely discrepant conceptual and diverse methodologial viewpoints" (Craighead, 1990, p. 1). In addition, in 1994 AABT began publication of an additional journal, entitled Cognitive and Behavioral Practice, in which the term "cognitive" is even primary.

Two Major Impediments to Changing Crucial Cultural Practices

Our Minority Status

The first impediment is obvious: behavior analysts are a microscopic minority of the billions of people on earth. Realistically, we should not expect to change even the other behavioral sciences extensively within five or ten decades; and changing the practices of the numerous cultures

throughout the world should be expected to take dozens of decades. It would appear that we must accept an evolutionary approach, not expect a revolutionary, rapid-change approach.

Our Language

I believe that another major reason why behavioral science has such limited impact on the practices of human cultures is that all behavioral scientists--including behavior analysts--come to their task with a host of preconceptions about how behavior "works." Over the eons of human culture, humans have developed innumerable terms and expressions that carry assumptions about how behavior is controlled. Many of these expressions have no explanatory power at all, in that they yield no control; yet because they are uttered in the form of explanation, we are fooled into accepting them as explanatory concepts. For example, if I say to my wife "I had no intention of offending your mother," there is the implication that somewhere--apparently inside me, since my wife cannot see, touch, or hear it--there is a thing that constitutes intention. But is there such a thing? Just because we have the word "intention" in our language and use it in expressions that take the form of explanation, does that mean that intentions cause behavior? No (Baum & Heath, 1992), it would be just as valid for me to tell my wife "The devil made me do it." Both expressions are simply verbal conventions of the lay community that have not grown out of science, and they contribute nothing to our ability to influence behavior (even though the verb "intending" has some validity). The same can be said about a "belief," a "perception," a "cognitive structure," a "schema," and other mentalisms that are common in psychology and even in behavior therapy. As explanations, they are fictions that do not come out of a basic science, *and* they lead us away from a science/technology that can yield continuous progress in our influence over behavior.

Since our language is full of assumptions about how behavior works, and since a science consists of developing better and better ways to talk about behavior (Hawkins, 1997), the assumptions that are already contained in our language stand in the way of our science. I like to compare this situation to walking up a high sand dune: each step you take forward is followed by your sinking back almost the same distance. But it is even worse than climbing a sand dune, because our lay language contains very inconsistent, even contradictory assumptions about how behavior works. Following the sand dune metaphor, I suppose that means that we are trying to climb up a dune but can't tell which way is up!

Although psychology is more than a century old, some aspects of the discipline are not greatly advanced from Wundt's attempts to study the contents and processes of the "mind." The reason is that even scientists are too easily fooled by the verbal conventions of their lay culture, conventions to which we are all exposed for hours every day. We let these conventions determine our science/technology of behavior far too much.

Developing Solutions

We really cannot afford to wait for science to develop better and better ways of talking about and influencing behavior, and then for those developments to seep into the culture so that our serious problems can be solved or prevented. Through nuclear war, environmental pollution, or disease, humankind may well be extinct long before those developments can come about. So what can we do now to move things in the right directions? I think there are many possible avenues of action.

Activism in Several Kinds of Organizations

One major effort should be activism in terms of reducing population growth, probably the most basic and profound problem for humankind. It seems to me that most of the major problems and threats affecting human society come largely from our overpopulation of earth. Even problems that are not substantially caused by overpopulation are more pressing because the size of the human population makes rapid solution more crucial.

In addition, there are other activist efforts in which a person can participate, ones directed at the more specific problems, such as aggression, pollution, education, racial and ethnic respect, and so on.

Correcting Misconceptions of Behavior Analysis

Within behavior analysis there are also things we can do. For one thing, the BALANCE Special Interest Group in ABA constantly watches various media, including textbooks, to see how our natural science of behavior is being depicted. The members contact publishers and other media outlets to attempt to improve the depictions of behavior analysis. This can at least make a natural science approach more accepted in the behavioral sciences and in the culture generally, with the result that more and more of the culture might adopt useful ways of talking about how behavior works. BALANCE could use more volunteers and participation serves to hone and maintain behavior analytic attention to language issues.

Persuasive Interaction with Others Outside Behavior Analysis

All of us can be careful to avoid demeaning others' explanations of behavior and solutions to behavior problems, yet, at the same time, offering explanations and solutions that we know to be more useful. We can talk about how learning histories, environmental contexts, motivative events, specific cues, and certain consequences are influencing the behavior of a client or of any person in the culture. The more precise our explanations and solutions, the more likely it is that they will be adopted by others. It is crucial that we not be offensive or arrogant in such exchanges, despite our impatience, because that turns away many who have the potential to become more behavior analytic in their thinking and talk.

We can also write articles, letters to editors, and such. We can not only present our work to fellow behavior analysts but also to other disciplines within and beyond behavioral science. Further, we can write discussion articles, letters to the editor, and such, in order to keep reaching other audiences. Joe Wyatt's little newsletter, Behavior Analysis Digest, is one such attempt to reach a wider audience. Notice that it does not matter if what one writes is a repetition of something that other behavior analysts have been saying for decades; remember that the culture's language constantly erodes our efforts, so repetition and persistence are necessary. We must not get discouraged about how long it takes. We will not accomplish a total evolution of behavioral sciences for many more decades, and we won't accomplish it at all if we just pout about what we see as the ignorance of others.

Keeping Our Thinking Open

At the same time, we need to keep listening to and reading what others are saying from different perspectives. Intelligent, thinking people often observe important behavioral phenomena--whether it is in their own or others' behavior--and talk or write about them. We must constantly be trying to find what is important in those descriptions and translating them into our own language, to "understand" what they are saying. As we do this we will occasionally--perhaps often--discover interesting and important information that can expand behavior analysis. The symposium on thinking and feeling in The Behavior Analyst (Anderson, Hawkins, Freeman, & Scotti, 2000) came partly out of just such listening and reading.

Notice that the "adaptive networks," simulated with computers to study complex human behavior, were developed by cognitivists and seem to have significant promise in our understanding of behavior (Donahoe & Palmer, 1994) by making it less tempting to shift to hypothetical cognitive constructs as explanations. Notice also that Freud wasn't all wrong; for example, we learned a lot from him about defensive behavior ("ego defense mechanisms").

Conclusion

In order to change the world, we must continue making our accomplishments known to the relevant disciplines and to the general public, where contingencies arise that can have great and lasting influence on all aspects of our science and, sometimes, society. In addition, we must listen to others respectfully and see what we can learn from their efforts. Finally, there are a variety of more direct-acting activities in which we can influence policy, practice, and our culture's language about behavior.

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Essential Tremor: The Role of Biobehavioral Conditioning

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Abstract

Essential Tremor [ET], the most common neurological movement disorder, has been described as a purely medical condition, with little consideration of how principles of behavior may come to exert joint control over tremor, related negative emotional arousal, and verbal behavior. A biobehavioral conditioning model is described that has been useful in accounting for these behaviors and in developing biobehavioral interventions.

Essential tremor (ET) is the most prevalent neurological movement disorder with approximately 14% of the population being affected by the disorder (Koller, Busenbark, Miner et al., 1994). ET is dominantly inherited with variable penetrance (Rautakorpi, Martilla, & Rinne, 1984). In such cases it is referred to as familial essential tremor. The term idiopathic essential tremor is used to classify the significant number of individuals who develop ET absent a family history of the disorder. Men and women are equally affected. Peak incidence occurs in the seventh (20.3%) decade of life (Koller et al., 1994). Hispanic and African American individuals are at greater risk of developing the disorder than other ethnic groups (Louis, Marder, Cote, et al., 1995).

ET can be distinguished from Parkinson's disease based on several characteristics. For example, among individuals with Parkinson's disease "cogwheel" rigidity or "ratcheting", observed when an upper limb is extended and flexed, bradykinesia (slowness of movement) and imbalance when ambulating are used as "soft neurological signs" to discriminate ET from Parkinson's disease (Elble & Koller, 1990). Finally, ET is pathologically distinct from Parkinson's disease, which is caused by a loss of dopaminergic cells in the substantia nigra. While various causal biological mechanisms have been imputed, the pathophysiology of ET appears to be linked to the thalamus (Tasker, 1998).

ET most often affects the hands and head; however, tremor of the lower limbs may also occur over time (Koller et al, 1994). Tremor involves continuous or intermittent oscillation resulting in horizontal, vertical and/or rotational movement (Lundervold, 1997). Tremor may also be defined according to three types of situations (Elble & Koller, 1990). Resting tremor occurs when the limbs are fully supported, as is the case when one is sitting in an armchair. Kinetic tremor occurs during the act of movement, such as reaching for an object. Postural tremor occurs when a posture is sustained against gravity, such as holding one's arms outstretched.

Individuals afflicted by ET are often significantly disabled in communication, work, emotional adjustment, home management, and leisure activities (Bain, Findley, Atchinson, Behari, et al., 1993; Busenbark, Nash, Nash, Hubble, & Koller, 1991; Koller, Biary, & Cone, 1986; Koller et al., 1994). Approximately 50% of the individuals with ET have disability in performance of activities of daily living (ADL) involving use of the hands (Auff, Doppelbauer, & Fertl, 1991; Bain et al., 1993). Approximately 20% of individuals with ET report having such significant disability that they must leave their jobs or reduce their job responsibilities due to motor or anxiety-related disability (Metzer, 1992; Rautakorpi et al., 1984). Numerous clinical observations clearly point to the development of fear and avoidance behavior, such as social phobia secondary to tremor-related

physical disability (Lundervold, 1997; Metzer, 1992; Wake et al., 1974).

The primary forms of intervention for ET are neurosurgery and medication. Neurosurgery may take two forms: severation of nerves of the brain thought to be responsible for the tremor or implantation of electrodes used in brain stimulation (Andrew, 1981;Tasker, 1998). Brain surgery is highly intrusive, expensive, and experimental limiting its application. Pharmacological treatment using Primidone, an antiseizure medication, or beta-blockers, such as Inderal, is not entirely satisfactory. Positive response rates to pharmacological intervention are approximately (40%) (Koller et al., 1994). This meager record of success for pharmacological intervention may in fact be an overestimate due to the use of unreliable measures and poor experimental method (Bain, 1993). Even when medication alters motor behavior, negative emotional arousal often remain (Koller et al., 1986; Metzer 1992).

It is well known that ET is exacerbated by stress, fatigue, or conditions where vigilance is required (e.g., eating). Social situations, such as being in public or being observed while performing ADLs worsen tremor, disability and emotional distress (Bain et al., 1993; Koller, 1984). These observations suggest that contextual factors and conditioning play an important, and, as yet unrecognized, role in the development of overt motoric and covert emotional responses related to tremor. The purpose of this paper is to describe a biobehavioral conditioning model of tremor and related emotional behavior.

Behavior analysis of complex human behavior

Human behavior may be observed to occur in four major response domains, motoric, verbal, visceral, and observational (Poppen, 1989; 1998). Relatively simple behavior may involve just one category, while complex behavior involves responding across two or more domains. When dealing with problematic behavior, it is useful to analyze the domains involved in order to devise effective alternatives. Each category of behavior can be defined in terms of both its functional attributes and its structural (or physiological) basis. In addition, behavior in each category may occur overtly, that is, available to observation by another person, or covertly, observable only to the behaving individual. General descriptions of these four domains are given below, with an application of this system to ET.

Motoric behavior functions to move one's body through space and to manipulate objects. Structurally, motoric behavior involves the skeletal muscular system. Overt examples include walking or buttoning a shirt. Covert examples include muscle tension in the neck or privately rehearsing a sequence of movements before engaging in a skilled action, such as a one-and-a-half gainer. ET is comprised in large part of overt motoric behavior. Covert components may include muscle tension in a limb or feelings of incipient tremor prior to overt occurrence.

Verbal behavior functions to maneuver in or manipulate one's social environment. Physiologically it includes the vocal musculature, though other motoric behavior may be employed in the service of verbal behavior, such as writing with a pen or signing with ASL. Overt verbal behavior includes speaking and writing, while covert aspects include 'talking' silently to oneself. ET often includes negative verbal statements, either public or private, about one's performance or other people's perceptions.

Visceral behavior functions to adjust the internal environment to meet the demands of daily life. Physiologically it includes the autonomically innervated organ systems. Overt examples include sweating or respiration, while covert examples include cardiac acceleration or salivation. ET may include visceral arousal characteristic of stress, such as shallow respiration or facial flushing.

Finally, observational behavior functions to seek and select relevant features in all of the above-listed environments. Physiologically it involves the sensory systems. Overt observation involves stimuli accessible to others, such as looking at a picture or smelling a rose. Covert observation involves attending to private sensations, such as a toothache, or engaging in imagery. ET often includes close attention to one's motoric performance or other's reactions.

Biobehavioral conditioning model

The primary focus of our research has been on the development of a biobehavioral conditioning model of ET based on current medical research and employing contemporary principles of behavior analysis and respondent conditioning (Forsythe & Eifert, 1998; Forsythe & Chorpita, 1996; Poppen, 1998).

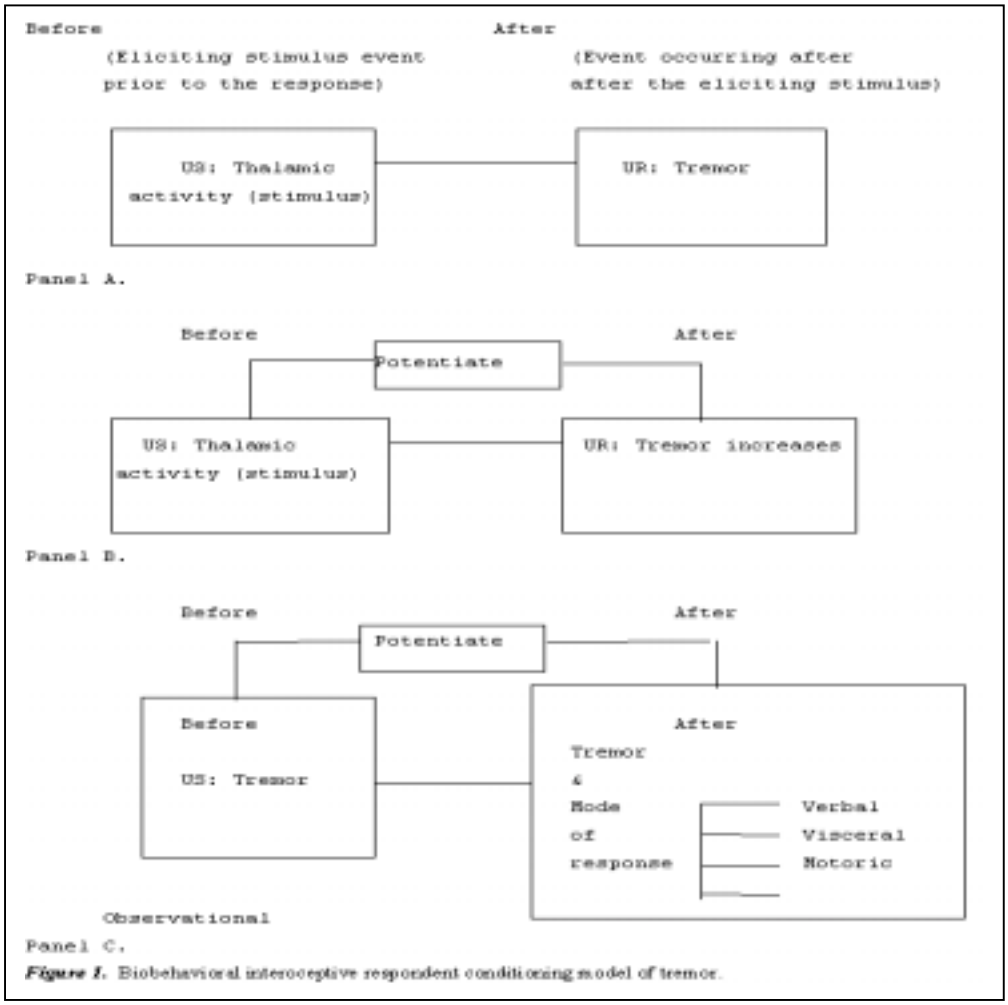

Figure 1. Biobehavioral interoceptive respondent conditioning model of tremor.

As can be seen in Figure 1, Panel A, ET is hypothesized to initially result from a disturbance in biologic functioning at the central nervous system, particularly the thalamus (Elble & Koller, 1990). This biologic perturbation functions as an *interoceptive* unconditioned stimulus (US), which elicits an unconditioned motor response (UR), tremor. ET is the product of disrupted recruitment patterns of motor units, such that the discharge of other motor units becomes synchronized resulting in greater bursts of neuromuscular activity. Preliminary research by Elble (1989) reports that as tremor amplitude increases, the number of desynchronized neural pathways decreases. The occurrence of the tremor functions to further elicit and potentiate the original US, creating an interoceptive feedback loop (Razran, 1961; Figure 1, Panel B). Tremor like many other responses, also has stimulus properties. In this case, it is the tremor that functions as a US, which elicits observational and visceral responses, leading to further potentiation of the tremor. (Figure 1, Panel C). Tremor can also evoke other responses including emotional arousal, verbal responses, (motoric) avoidance behavior, and increased self-observation and awareness.

Tremor occurs in a social context. Previously neutral contextual antecedents, for example, social conversation or eating in the presence of others, begin to function as conditioned stimuli (CS) after being repeatedly associated with the occurrence of a biologic US and resulting tremor. (See Figure 2 below). The CS, a specific social contextual event, when presented by itself now elicits tremor. Each of these events, biologic dysfunction (US) by itself and/or conditioned contextual events (CS) elicits central and autonomic nervous system arousal, leading to tremor.

Central to contemporary models of respondent conditioning is the expanded concept of the conditioned response (CR; Forsythe & Eifert, 1998). Respondently conditioned behaviors are not limited to autonomic (visceral) functioning, but include motoric and verbal response systems (Staats & Eifert, 1990). Moreover, these same CRs may also function as discriminative stimuli for behavior under the control of operant consequences (Allen, 1998; Blackman, 1977).

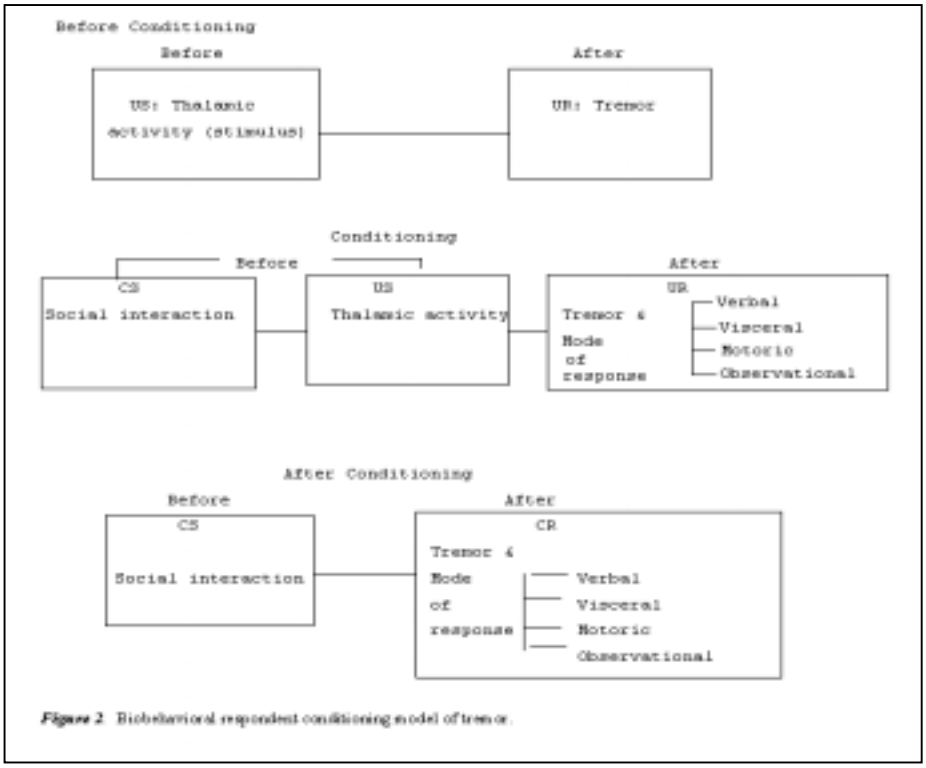

Figure 2 Biobehavioral respondent conditioning model of tremor.

Covert verbal responses, i.e., exclamations of negative emotions, e.g., "Damn, I just spilled all over my pants!" initially established through respondent conditioning, function as discriminative stimuli which influence the occurrence of other behavior, for example, performance of motor responses and self-observation. Engaging in these behaviors is followed by environmental consequences (positive or negative reinforcement) thus establishing operant control of the previously respondently conditioned verbal behavior. For example, the overt verbal response, "There's nothing that I can do about my tremor" is a discriminative stimulus for others to provide sympathy and help (positive reinforcement), which increases the likelihood that such verbal behavior and tremor occur in the future in that setting. In addition, this same verbal stimulus signals impending aversive stimulation (i.e., tremor, disability) and sets the occasion for avoidance behavior, for example, avoiding performance of ADLs and associated aversive conditions such as spilling, or failure. Avoidance behavior is thus negatively reinforced and increases in probability. As can be seen in Figure 3, a response within any of these systems then feeds back to central and autonomic nervous system mechanisms producing a self-activating feedback loop (Lundervold, 1997; Lundervold & Poppen, 1995).

Utility of theory

To be truly functional, theoretical models must lead to the development of assessment and intervention procedures that are testable and productive in terms of generating empirical data, and new research questions. Ultimately, the findings need to be disseminated leading to general application of the interventions.

In this phase of model building we have focused on the development and evaluation of biobehavioral assessment and interventions that are theory-driven. Multibehavior-multimethod assessment procedures, including clinical and self-ratings of tremor severity and emotional arousal, and electromyographic activity (EMG) are used. EMG serves as an objective, quantitative measure of tremor severity. Behavioral Relaxation Training (BRT) is used to decrease negative emotional arousal and lessen tremor severity (Poppen, 1998; Lundervold, Belwood, Craney, & Poppen, 2000). During analogue training situations individuals practice relaxed behaviors while performing ADLs. Participants are then instructed to perform

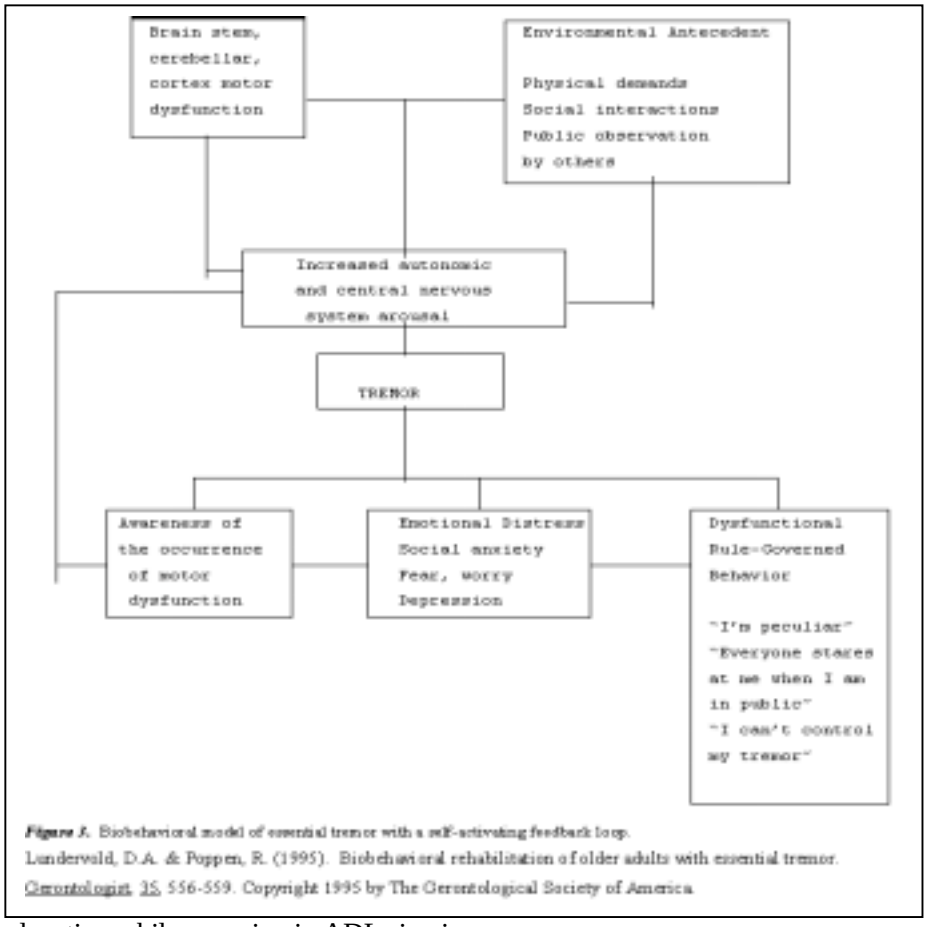

Figure 1. Biobehavioral model of essential tremor with a self-activating feedback loop.
Lundervold, D.A. & Poppen, R. (1995). Biobehavioral rehabilitation of older adults with essential tremor. Gerontologist, 35, 556-559. Copyright 1995 by The Gerontological Society of America.

relaxation while engaging in ADLs in vivo. Dynamic EMG biofeedback is used to further decrease tremor and refine motor behavior during ADL performance. Audio feedback, provided contingent on decreased EMG during dynamic performance of the ADL, functions as a reinforcer for altered covert motoric behavior (Lundervold & Poppen, 2000). BRT has also been used with imaginal exposure to conditioned aversive stimuli, instruction in coping self-statements, and praise to decrease avoidance behavior and negative emotional arousal (Lundervold, 1997). Coping self-statements are taught as replacement verbal responses that function as discriminative stimuli for engaging in relaxed behaviors and effective ADL performance. Finally, single-case (N = 1) research designs have been employed in the techniques-building stages of the research (Lundervold & Belwood, 2000).

The biobehavioral conditioning model described has enabled us to better understand the complex and interactive processes related to ET, to develop multibehavior-multimethod assessment procedures, and functional interventions addressing ET. Further research is needed to evaluate the model and the generalizability of the biobehavioral interventions used.

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Making it fit: A Provocative Look at Models of Early Intensive Behavioral Intervention for Children with Autism

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Abstract

Recommendations for ABA for children with Autism have exponentially increased, creating a shortage of qualified ABA consultants. The increase in demand, lack of financial support for in-home programs and difficulty of maintaining in-home staff create a need for alternative delivery models for Early Intensive Behavioral Intervention (EIBI). We present a preliminary analysis of learning rates and psychometric outcomes for children in 3 different delivery models – Home based EIBI, only; and Home and School EIBI; Home Based EIBI with alternative school methods.

An impressive body of research exists that supports the effectiveness of early intensive behavioral intervention (EIBI) programs based on principles of applied behavior analysis (ABA) implemented with preschool age children diagnosed with autism and PDD-NOS (see New York State Department of Health Early Intervention Program, 1999a, 1999b, 1999c). Traditionally, these programs have included 40+ hours per week of programming conducted by trained therapists in home settings over a period of 2-3 years. Given the daunting financial and logistical demands inherent in organizing and implementing programs of this type, it is often necessary to implement different service delivery models. Some of these models have included school-based programs (often housed in special needs schools), combined home/school programs, and partial home programs – among others. Relatively little research has been done comparing the outcomes and relative effectiveness of these program variants.

Effective EIBI programs can significantly increase the quality of life of children and families, and can significantly reduce costs to society (Jacobson, Mulick, & Green, 1998). Increased knowledge of the comparative efficacy of EIBI program variants can be of benefit to school districts and parents of autistic children attempting to balance limited resources with effective intervention.

This study is viewed as a pilot project. Data are presented for children in 3 different service delivery models: Home based EIBI, only; Home based and School EIBI; and Home based EIBI and alternative school program. The intent of the study is to obtain initial data to be used in formulating follow-up studies of the efficacy of alternative EIBI service delivery models.

Method

Participants

This study was conducted with children of preschool age (N = 5) initially diagnosed with autism or PDD-NOS currently in EIBI programs followed by the psychology department of Columbus Children's Hospital. Participants were between 3 and 6 years of age, who received a comprehensive psychological evaluation at least twice by the Psychology Department, have received at least 10 hours per week of EIBI intervention over the past 18 months (or more),

and have tutors other than parents. Exclusionary criteria included diagnoses of Asperger's, Rett's, Fragile X without Mental Retardation, Mental Retardation without Autism, and Tuberous Sclerosis. See Table 1 for a brief description of each participant.

Table 1 Brief Descriptions of Participants

MODEL: School EIBI & Home EIBI

1. 4 year old female (AUT)
   - Met full criteria for Autism
   - Risperdal (fall 1999) for aggression
   - Number of EIBI hours per week = 10
2. 4 year old female (PDD-NOS)
   - Met criteria for PDD-NOS
   - Number of EIBI hours per week = 20

MODEL: Home EIBI, only

3. 5 year old male (AUT)
   - Met full diagnostic criteria for Autism
   - Echolalic & Screaming for communication
   - Number of EIBI hours per week <10
4. 5 year old male (PDD-NOS)
   - Met criteria for PDD-NOS
   - Screaming for communication
   - Number of EIBI hours per week = 15

MODEL: Home EIBI & No school EIBI

5. 5 year old male (AUT)
   - Met criteria for Autism
   - Speech regression at 18 months (some echolalia)
   - Follows alternative nutritional diets
   - Severe tantrums
   - Number of EIBI hours per week = 20

Materials

Because of age and skill differences, children received a variety of standardized cognitive and language measures. These measures included:

Cognitive measures:

1. Bayley Scales of Infant Development – Second Edition (Bayley; Bayley, 1993)

The Bayley was designed to assist professionals in early identification of developmental delays. Standardized scores for cognitive, motor, and behavioral development are available. Correlations with measures of cognitive ability (e. g. IQ tests) are adequate for estimates of developmental delay (correlation with WPPSI-R Full Scale IQ = .73). Test-retest reliability for the mental scale was also adequate (.87).

2. Mullen Scales of Early Learning Manual (Mullen; Mullen, 1995)

The Mullen was designed to provide estimates of cognitive development for young children. A general cognitive ability estimate is derived from scales of gross motor, fine motor, visual reception, receptive language, and expressive language abilities. Correlations with the overall index of mental development for the Bayley are adequate (.70).

Receptive language measure:

1. Peabody Picture Vocabulary Test – Third Edition (PPVT; Dunn & Dunn, 1997).

Although not a measure of overall language ability, the PPVT-III does give a standard score that estimates a child's receptive language ability. Scores are based on the child's ability to correctly identify one of four pictures requested by an examiner. Validity comparisons to estimates of verbal ability are reported for the WISC-III (.91). Reliability estimates are reported for split-half reliability (.86 -.97), alternate forms (.88 - .96), and for test-retest (.91 - .94).

Expressive language measure:

1. Expressive One-Word Picture Vocabulary Test: Manual (EOW; Academic Therapy Publications, 2000)

Although not a measure of a child's overall communication ability, the EOW does provide a standardized score estimating a child's expressive language ability. The score is an estimate of a child's ability to accurately name pictures of objects and categories of objects. Validity measures with the WPPSI-R Vocabulary (.48) and the WPPSI-R Full Scale

IQ (.69) were reported. Split-half reliability was also reported (.97).

Autistic Symptoms measures:

1. Childhood Autism Rating Scale (CARS; Schopler, Reichler, & Renner, 1988)

Gives a standardized score of a child's behaviors that resemble autism, such as communication, stereotypy, play, emotional responses, etc.. Scores are obtained through interactions between the child and a professional during a structured interaction.

2. Gilliam Autism Rating Scale (GARS; Gilliam, 1995)

Gives a standardized score (normed with children with autism; n=1,092) of the probability that autism is a correct diagnosis. Score is based on parental report of typical child behavior. The author reports uses of scale as autism diagnosis, target goal selection and measurement, and as a research measurement. Validity and reliability measures are adequate.

In addition to psychometric testing, children's rate of learning was measured through target acquisition and mastery. This was determined by data collected by the EIBI team during individual instruction sessions. For a target to be considered mastered, the child was required to respond correctly 80 – 90% of all trials and to demonstrate generalization (correct response in more than one environment, more than one person, similar stimuli, etc.)

Procedures

Each of the children received EIBI consultation from a supervised psychology intern, post-doctoral fellow, or licensed psychologist employed by Columbus Children's Hospital. The treatments involved individualized learning curriculum using a variety of ABA methods including discrete trials, incidental teaching of language, and errorless learning prompts. Although each of the children's programs was individualized, each included components of imitation, receptive language, expressive language, compliance, and social/play skills. The primary difference among the EIBI programs was the model of service delivery. The three primary models used were:

1. *Home EIBI & School EIBI*:

This model of EIBI services involved a coordinated effort between home and public school EIBI programs. All public school teachers, support staff, and the home EIBI team were trained in ABA principles and techniques during a two-day workshop conducted by a qualified ABA consultant[1]. In addition to instruction in EIBI teaching techniques, learning objectives (targets) were selected during the workshop -- on the basis of input from all team members. All Individual Education Program (IEP) objectives were included in the curriculum and taught using EIBI techniques.

The child's typical instruction schedule involved individual EIBI instruction in the morning at school, group instruction in the afternoon, and individual EIBI instruction in the evening at home. During the group instruction, the child was accompanied by a team member who used EIBI prompts and cues to assist the child in generalizing skills taught during the individualized instruction. Additionally, the classroom teacher attended team meetings and used the EIBI teaching techniques in the group classroom. Team meetings to review the program with the ABA consultant were scheduled monthly.

2. *Home EIBI, only:*

In this model, the child received a "traditional" EIBI program, which is conducted in the home. The home based tutoring team typically consisted of community volunteers, paid college age staff, and relatives of the child. Team members were taught EIBI teaching techniques during a two-day training workshop. Additionally, staff learned the individualized targets that were developed based on results of standardized psychological testing. In this model, children received all educational instruction within the home. Generalization to group learning environments was not attempted until the child developed consistent levels of communication skill. However, all home staff was instructed in incidental teaching and

[1] For information on EIBI consultant qualifications, see Shook, G. L. & Favell, J. E. (1996). Identifying qualified professionals in behavior analysis. In C. Maurice, G. Green, & S. Luce (Eds.), Behavioral Intervention for Young Children with Autism: A Manual for Parents and Professionals (pp. 221-229). Austin, TX: Pro-Ed.

generalization methods. The child's progress was reviewed daily and weekly by the team and monthly during team meetings with the ABA consultant.

3. Home EIBI & no school EIBI:

The one child in this model of EIBI received the same type of Home EIBI service previously described. In addition, he attended a ½ day school program -- which did not use the cues, prompts, or techniques used in EIBI intervention. This group instruction preschool program used techniques such as, Popsicle stick signs and written words to cue the child to activities. Additionally, the school was not aware of the targets that the child had mastered in his home program and, thus, completed tasks for the child that he had already mastered.

Table 2 Pre and Post-test psychometric data

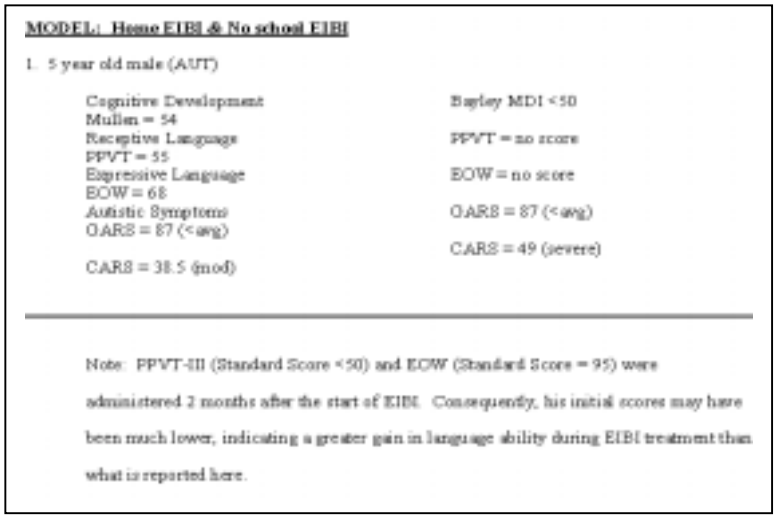
Participant & Test areas	Scores Before EIBI	Scores During EIBI
MODEL: School EIBI & Home EIBI		
1. 4 year old female (AUT)		
Cognitive Development	Bayley MDI <50	Mullen SS = 62
Receptive Language	PPVT-III = 53	PPVT-III = 75
Expressive Language	EOW = 77	EOW = 75
Autistic Symptoms	GARS = 100 (avg)	GARS = 78 (low)
	CARS = 37 (mod)	CARS = 31 (mild)
2. 4 year old female (PDD-NOS)		
Cognitive Development	Mullen = 57	Mullen = 85
Receptive Language	Not given	Not given
Expressive Language	Not given	EOW = 81
Autistic Symptoms	GARS = 78 (low)	GARS = 75 (low)
	CARS = 24 (mild)	CARS = 17.5 (not aut)
MODEL: Home EIBI, only		
1. 5 year old male (AUT)		
Cognitive Development	Mullen = 49	Mullen = 52
Receptive Language	PPVT <50 (no response)	PPVT = 64
Expressive Language	EOW <50 (no words)	EOW = 76
Autistic Symptoms	GARS = 102 (avg)	GARS = 90 (avg)
	CARS = 31 (mild)	CARS = not avail
MODEL: Home EIBI, only		
2. 5 year old male (PDD-NOS)		
Cognitive Development	Bayley MDI < 50	Mullen = 101

Since data for all children's programs were retained in the hospital charts, parents were contacted by phone for verbal permission for chart review and inclusion of data in this study. After receiving verbal permission from the children's parents, information was obtained via chart review. Information included baseline and post-intervention scores on standardized cognitive measures, and monthly mastery of goals from the initiation of EIBI intervention to the present. Descriptive information about each child's intervention program was also obtained.

Results

Analysis of the learning rates did not indicate differences in target acquisition for the children receiving EIBI using the different service delivery models. All children displayed steady, significant rates of target acquisition. However, differences in target mastery rate were noted based on the child's initial diagnosis. Children with Autism experienced more plateaus in learning rate than children with PDD-NOS. Additionally, after 1 year of EIBI, children with PDD-NOS mastered almost twice as many targets as children with Autism (Autism range of targets mastered: 200-324; PDD-NOS range of targets mastered: 523-668). (See Figures 1-3 for cumulative graphs of acquisition rates).

The differences in learning rate were related to a significant increase in post-EIBI cognitive ability measures for children with PDD-NOS (average increase = 44 points) as compared to children with Autism (average increase = 6 points). However, children with both diagnoses tended to experience significant increases in expressive (average increase in EOW scores for



MODEL: Home EIBI & No school EIBI

1. 5 year old male (AUT)

Cognitive Development Mullen = 54	Bayley MDI < 50
Receptive Language PPVT = 55	PPVT = no score
Expressive Language EOW = 68	EOW = no score
Autistic Symptoms OARS = 87 (< avg)	OARS = 87 (< avg)
CARS = 38.5 (mod)	CARS = 49 (severe)

Note: PPVT-III (Standard Score < 50) and EOW (Standard Score = 95) were administered 2 months after the start of EIBI. Consequently, his initial scores may have been much lower, indicating a greater gain in language ability during EIBI treatment than what is reported here.

the Autism group = 18 points; increase in EOW score for 1 child in the PDD-NOS group = 54 points)[2] and receptive (average increase in PPVT-III score for the Autism group = 13 points; increase for 1 child in the PDD-NOS group = 31 points) language ability scores. See Table 2 for pre and post- test Psychometric data.

The average number of hours of EIBI treatment was relatively similar among children with different diagnoses and was not related to psychometric score gains or rates of learning. However, the child in the Home EIBI and No School EIBI model had almost 2 times as many hours as the other children, but no significant increase in learning rate.

Discussion

This preliminary analysis comparing three different service delivery models for EIBI is promising. For these 5 cases, children's learning rates and psychometric outcomes were not dependent on the number of hours of EIBI service or location of service, but on children's initial diagnosis of Autism versus PDD-NOS. The children with PDD-NOS exhibited significantly higher rates of target acquisition and significantly higher cognitive ability after treatment. Interestingly, both groups demonstrated significantly higher scores on measures of language after EIBI treatment.

It is important to emphasize that all ABA services – school and home – were conducted under the auspices of trained consultants, who trained and supervised school personnel and in-home therapists and who provided program consultation on an ongoing basis. It is also important to note that the reported results are based on a small sample of 3 children with autism and 2 children with PDD-NOS. Consequently, caution should be taken when considering these results in making treatment decisions. However, these results provide important avenues for future research -- differentiating learning rates of children with Autism vs. PDD-NOS and evaluating the effectiveness of different service delivery models available for providing EIBI to young children with Autism.

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[2] Pre and Post-test scores on the EOW and the PPVT-III were only available for one child in the PDD-NOS group.

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Current Issues Regarding School-Based Functional Assessment

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Introduction

A pediatrician recently asked our opinion regarding an eighth-grade patient who was having academic and conduct problems at school. The parents of this patient were upset because the child had been suspended from school for disrupting class and being verbally abusive toward both the teacher and other students. During their visit with the physician, the parents presented the doctor with a "functional behavioral assessment summary" form and a "behavioral intervention plan" completed by the school staff in regard to their child's behavior. The "functional behavioral assessment summary" form was one page in length and allowed for limited information regarding the student's behavior, the antecedents and consequences related to the problem behavior, and the suspected function of the behavior. Examples of some of the problem "behaviors" identified on the form included "overly aggressive," "disrespectful," "mean-spirited," and "volatile." The lack of operational definitions for these "behaviors" were of concern to us. As we read on, we had difficulties interpreting some of the other information. For example, the antecedents to the problem behavior were identified as "whenever his self-esteem was threatened" and "whenever he wants to avoid uncomfortable situations." Vague information regarding where and when the behavior occurred was evidenced by the statement, "His behavior occurs consistently throughout each day and every week." Furthermore, the hypothesis regarding the function of the behavior was stated as, "He behaves inappropriately as a cover for his perceived inadequacies."

Unfortunately, the one page "behavior intervention plan" was equally inadequate in description and content. The goal was to have the student, "become more academically successful and socially appropriate." No specific behaviors were targeted to help achieve the goals. No plans for task analyses, behavioral skills training, or curriculum modifications were outlined. Finally, no plans were made to monitor and revise the plan.

It is easy to guess the future outcomes resulting from this "functional behavioral assessment summary" and "behavioral intervention plan." The assessment information and behavior intervention goals referred to constructs that in no way enhanced the school's ability to identify and subsequently manipulate the environment to help this student with challenging behaviors. As behavior analysts, target behaviors defined as "mean-spirited behaviors" and antecedent information describing that the problem behavior occurred "after the student's self-esteem is threatened" were distressing. Not only were they distressing because we have no way of addressing antecedents and consequences or measuring behavior change, but also because these forms had been completed by a school staff member who had received in-service training on how to conduct functional assessments and develop behavioral intervention plans two years ago. As a result, the vague definitions and deficient data provided by the school staff exposed not only their inadequacies in understanding the procedures and purposes of functional assessment, but also how ineffective the in-service training had been. Therefore, the purpose of this article is to provide an overview of functional assessment and highlight issues related to training school personnel to conduct competent and thorough functional assessments of problem behavior exhibited in school settings.

Functional Assessment: Methodological Variations

With the passing of the Individuals with Disabilities Education Act Amendments of 1997 (IDEA), schools now are mandated to conduct

functional behavioral assessments and develop behavioral support plans for students exhibiting problem behaviors who have been suspended from school for at least 10 days. IDEA was established in an attempt to promote safe, well-disciplined schools and to strengthen academic expectations and accountability for children with behavioral and intellectual disabilities. Functional behavioral assessment, or functional assessment, is a technology that uses a variety of methods to identify associations between a problem behavior and the environment (Dunlap et al., 1993). Functional assessment is a process by which functional relations between environmental events and the occurrence or nonoccurrence of problem behaviors are identified.

Functional assessment is not a novel technology; rather there is substantial research in applied behavior analysis supporting its use in assessing maintaining variables and developing effective treatment interventions for challenging behaviors (e.g., Iwata, Dorsey, Slifer, Bauman, & Richman, 1982; Repp & Horner, 1999). The type of information gathered in a functional assessment can be understood as either descriptive or experimental data (Lane, Umbreit, & Beebe-Frankenberger, 1999). As a result, a functional assessment can consist of indirect observations, direct observations, and/or functional analysis (Miltenberger, 1997). The critical feature of a what is called either "functional analysis" or more specifically, "experimental analysis" is the experimental manipulation of environmental variables in order to empirically demonstrate the functional relation between antecendents and consequences and the occurrence of challenging behaviors. Although functional analyses have been conducted in classrooms (e.g., Dunlap et al., 1993), the efficiency of conducting a functional analysis for every child exhibiting problem behaviors at school is questionable, due to the need for both time and expertise (e.g., Durand, 1990).

In our experiences, the data generally gathered in a school-based functional assessment are descriptive in nature (as opposed to experimental) and consist of indirect and direct measures. Common indirect methods in which informants provide descriptive functional assessment data in response to assessment questions include interviews, behavior rating scales, and behavior checklists. Informants for indirect functional assessment measures generally include teachers, the identified student, parents, and peers (O'Neill et al., 1997). These measures are convenient to use, but are not as reliable or valid as direct observation measures (Miltenberger, 1997). There are a number of interview formats and questionnaires available for conducting functional assessments, ranging from initial screening measures (e.g., the Initial Line of Inquiry; Llewellyn & Knoster, 1997) to more comprehensive semi-structured interviews (e.g., Functional Analysis Interview Form; O'Neill et al, 1997). We generally recommend that schools begin with a screening measure to hone in on operational definitions, establishing operations, antecedents, and consequences prior to conducting interviews.

In addition to interviews and behavior rating scales, assessment should include some form of classroom-based direct observations that produce definitive data regarding the antecedents and consequences of the target behavior. Direct observations require more time and effort than interview and questionnaire methods, however the data patterns resulting from direct observation often facilitate the development of effective treatment strategies (Miltenberger, 1997). As a result, we advocate that school personnel practice using both descriptive methods of observation (e.g., A-B-C data sheets) and checklist methods of observation (e.g., Functional Analysis Observation Form; O'Neill et al., 1997), prior to conducting observations in the classroom. Observation data may be collected by teachers, school psychologists, and/or behavior consultants (e.g., Lalli, Browder, Mace, & Brown, 1993; Steege & Northup, 1998).

Benefits and limitations exist, whether the direct observations are conducted by teachers or by behavior specialists. In general, obtaining observational data from multiple observers is beneficial in that reliability and accuracy typically is increased. Given some circumstances, it may be best if the classroom

teacher is responsible for collecting behavior observation data. Teachers are present in the classroom throughout the day, thus allowing for ongoing data collection during a variety of times and activities. Also, by having teachers collect data, the need for additional resources (e.g., people, finances) to conduct data collection is eliminated. Finally, the behavior of the target child is not impacted by having a new individual observing in the classroom. On the other hand, there are benefits of using a third party observer. Some possible third party observers include behavior specialists, either from within or outside the school, other school personnel, or classroom aides. Certainly, it is likely to be more convenient for the teacher if another individual is responsible for behavior observations. Additionally, a third party observer may be able to obtain greater detail, given that they do not have the demand of managing other aspects of the classroom.

Regardless of whether the data collected are indirect (e.g., interview) or direct (e.g., observation), the goal of functional assessment is to identify controlling variables for the problem behavior in order to guide and enhance treatment strategies. When those variables are identified, treatments that (a) manipulate relevant antecedents and consequences, and (b) teach functionally equivalent desirable behaviors, can be developed to replace problem behaviors with more appropriate behaviors (Dunlap et al., 1993; Steege & Northup, 1998). Therefore, functional assessments conducted in the schools provide the basis for the development of interventions that address the function of the problem behavior.

Call for Standards

In a recent paper, we called for the establishment of functional assessment standards to aid educators in conducting thorough and competent functional assessments (Long, Sorrell, & Bahl, 2000). One example of a standard we suggested is that data collection should continue until hypotheses regarding the variables maintaining challenging behaviors are reasonably substantiated. Educators must be trained to understand that a functional assessment is not completed simply by having the teacher fill out a "form" or "worksheet." Rather, functional assessment is a process whereby more or less data may be needed to develop effective behavior plans. In addition, we suggested that a minimal standard we might expect when conducting a functional assessment is that data collection consists of at least two methods (e.g., an interview and direct observation), conducted by at least two informants (e.g., homeroom teacher and special education teacher) and across at least two settings (e.g., reading class and lunch time).

Our sentiments were stated in a recent article by Sugai et al. (2000). The authors suggested that school-based functional assessments should proceed until at least three of the following conditions were obtained. First, the functional assessment should provide a hypothesis stating operational definitions of the challenging behaviors, along with descriptions of the antecedents and consequences maintaining the challenging behaviors. Second, the authors suggested that direct observation be conducted until support for the hypothesis is obtained. Finally, the authors suggested that the findings from the functional assessment result in a behavior support plan that addresses setting events, antecedents, and consequences, along with strategies for teaching alternative behaviors. Specific information regarding plan implementation and monitoring, including details about who is responsible for various aspects of the plan, when it is to be implemented, and where it is to be followed (Sugai et al., 2000).

With the expected increase in demand for school-based functional assessment due to the passing of IDEA, behavior analysts find themselves at a point in time whereby they may be able to teach and guide educators in effective behavioral practices. Hopefully, these practices will not only reduce students' problem behaviors, but also increase their appropriate behaviors and quality of life. Although we had difficulty providing direct assistance to the pediatrician, given the vague behavioral information regarding his patient, we recognized the need for further discussion regarding

functional assessment and behavior interventions in the school. We hope that this article highlights some of the important issues and considerations needing to be addressed in order to ensure that competent and comprehensive school-based functional assessments occur in the future.

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Assisting the Client/Consultee to Do What is Needed: A Functional Analysis of Resistance and other Forms of Avoidance

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Skinner (1945) discussed the importance of analyzing psychological terms. One commonly used term needing deconstruction is "resistance." While the study of "resistance" is not novel to a behavioral approach (e.g. DeVoge & Beck, 1978), it has certainly been given less attention than it deserves in the behavior analytic literature. First, it is important to recognize that when behaviorists speak of "resistance" it is not a characteristic of the client. Instead it is conceptualized as a description used by either the consultant or therapist of a *relationship* in which the client/consultee does not do what is expected or desired by the therapist or the consultant. For example, Dr. John said "Mary, please use this new form to collect data on Sam's aggressive behaviors." Mary has not followed through three days later when Dr. John returns to see how treatment is going; Mary has not come under instructional control of Dr. John's mand. Behavioral consultants and therapists often encounter this problem of performance. As a performance problem, resistance is a complex issue that warrants a comprehensive functional analysis. A comprehensive functional analysis of behavior not being displayed was conducted by Daly, Witt, Martens, & Dool (1997). In this paper, we apply their model to consulting and therapeutic relationships. It can be applied to the supervisory process as well.

Before launching into the model of these relationships, it is important to understand that much of what is termed "resistance" in the psychotherapeutic relationship can be avoided with proper setting of the consulting context. A proper setting requires giving the consultee or client accurate information about the process at the start of the consulting or therapeutic relationship. The therapeutic relationship is complex (Kohlenberg and Tsai, 1998). It allows for shaping of client behavior (Kohlenberg & Tsai, 1994) and the giving (Kohlenberg & Tsai, 1994) or disruption (Hayes, Strosahl, & Wilson, 1999) of instructions or rules to clients to change their behavior. When giving rules, we are presenting clients with information. Etymologically, the word "information" comes from the Latin word "informare." This word means, "to put into form;" things that help us put what we know into form, (i.e., structure and simplify what was previously complex), can be reinforcing (Foxall, 1988). If consultant utterances fail to do this, or do it in a way that requires high levels of work output, then they can be aversive instead of reinforcing, and thus people will seek less information in the future.

Six informational setting factors that a consultant can implement to increase compliance are: (1) prepare the consultee or client for what consultation/therapy is about (i.e., provide direct instruction of what is about to occur); (2) explain responsibilities of all parties involved (i.e., contract consent); (3) explain how this process can help (i.e., talk about the reinforcers); (4) explain the risk factors involved (i.e., talk about any punishers that may occur); and (5) avoid early overuse of demands, imperatives, and questions which tend to evoke "resistance." When the initial contact is approached in this manner using language that is meaningful to the listener, much of what is often termed "resistance" can be avoided.

With the above said, it is important to recognize that with some populations such as those diagnosed with oppositional defiant disorder, conduct disorder, borderline personality disorder, or substance abuse,

"resistance" to performance may be very high and can have very pronounced effects on therapeutic outcomes (Patterson & Chamberlain, 1993; Stoolmiller, Ducan, Bank, & Patterson, 1993). However, some methods exist which can help the therapist or consultant to change their behavior to increase the probability of client or consultee compliance (Patterson & Forgatch, 1985).

The model presented here is based on interventions designed to overcome students' failure to perform academic tasks developed by Daly, Witt, Martens, & Dool (1997). They hypothesize that five factors play a role in increased performance problems. These factors are: (1) lack of motivation (i.e., not enough reinforcement to perform the skill or punishment for performing the skill, or too many obstacles exist); (2) not enough time to practice the skill sufficiently before use; (3) more help to successfully implement the skill under the environmental conditions asked are needed; (4) the skill is a requirement has not been something that they have had to do before and; (5) the skill is just too complex for them to be able to do. The rest of this paper is devoted to applying their model to therapeutic, consulting, and supervisory relationships.

Lack of Motivation

Clients may engage in a diverse array of behavior to avoid presenting information (Munjack & Oziel, 1978). Skinner (1971) suggested that all of the Freudian defense mechanisms, which are often viewed as ways to sidetrack the discussion, could be viewed as ways to avoid punishment. Skinner (1957) suggests ways that the therapist can work around specific defense mechanisms. For example, for repressed or forgotten details Skinner (1957) suggests:

"Among the effects of excessive or inconsistent punishment are many neurotic symptoms, including 'repression' of some areas of verbal behavior. It is often necessary for the psychotherapist to establish himself as a nonpunishing audience. The behavior of the patient who is allowed to go unpunished is almost exclusively verbal. If the required change in audience control takes place, the patient may emit previously punished behavior, including behavior which he may appear to have forgotten." (p.179)

According to Skinner (1957) this often leads to the effect that some call a "release." This can be helpful in the therapy process for it allows the client to become more open to his/her own verbal behavior. For example, Tony has never talked about having jumped on his mother's stomach when she was pregnant. She later miscarried and the family blamed Tony. He never discussed this until his intake interview when he entered couples therapy. The therapist listened with "soft eyes" and Tony burst into tears. Tony later reported that he felt liberated from his guilt.

Skinner (1957) also refers to the themes released in the therapeutic dialogue often reflect the themes that are salient in the client's life. Skinner (1957) holds that "Behavior strengthened without respect to form is likely to be determined by other variables in the history of the individual and hence regarded as 'revealing.'" For example, in working with a client, a clinical behavior analyst may become aware that the client has presented repeating themes of violence and aggression during the discussion. The therapist may ask if the client is feeling angry at the therapist. Another example, ma be that a consultant in discussion with a consultee may become aware of the repeating themes of the consultee being overwhelmed by work and requests made of them. The consultant could take this as an indication that the consultee may not want to do the new data collection system.

These types of revealing themes in the therapeutic relationship can be monitored and used to aide in the lessening of resistance to the program. Therapists can relate these themes that the client has offered as overviews of the client's life and thus provide the client with rules or as Kohlenberg and Tsai say "cognitive overlays" (Kohlenberg & Tsai, 1991). This can also be applied to the consulting relationship, when a consultant states, "It seems to me like a lot is going on and maybe this is why you are finding little time to collect data. It is important at these times to remind ourselves that many positive consequences will come once Johnny is not disrupting the class."

In addition, to the above, when giving the client rules we open the client to collateral contingencies of the relationship (Cerutti, 1989). Many psychotherapists report a willingness from clients to try performing a new behavior because of the therapists support and guidance. With many parents and teachers, the child that we are consulting to them about represents an aversive stimuli that they would rather have removed. The teacher or parent wants the consultant or therapist to take care of the problem and let them know when everything is "fixed". They often avoid discussing the specifics about the child and the case through the use of verbal behavior.

This type of resistance is particularly obvious (Chamberlain, Patterson, Reid, Kavenaugh, and Forgatch, 1984) and has lead to the development of a strong conceptual model (Chamberlain & Patterson, 1993). The intervention for this type of resistance is similar to the old psychoanalytic intervention. Patterson and Chamberlain call this the "struggle-and-working-through" resistance intervention.

When working with families that are blocked motivationally it is important to go a step beyond "struggle-and working-through." The family needs continuous reinforcement to get beyond the feeling that they have been through this before and seem to be feeling "burnt out" as a parent or guardian. To do this, the consultant needs to be very good at specification of the problem (Bergan & Kratochwill, 1990) and carefully match the tasks to the parent's level, so as to increase the natural reinforcement hat comes with success and lessen the natural punishment that comes with failure. Even before this, the consultant needs to establish credibility. The consultant needs to show that parent/guardian that s/he knows what s/he is doing. The consultant has to prove himself/herself to the family so the family can put their "trust" in what s/he says as a professional. Once the consultant achieves this the family's motivation for following through with various protocols prescribed by the consultant will increase.

Establishing this credibility as a consultant can be achieved by simply making predictions that will come true. Once you let the family know what will happen after doing certain procedures, they will be able to trust what the consultant is saying. Another way to establish credibility is to use graphs of data. Display of data may help a parent or teacher see changes that they were previously unaware of before. For example, the first author in supervising a behavioral consultant of a child with autism, had the consultant redo his graphs with calculating the number of trials to mastery as opposed to percent correct. This new view of the data, showed that the child was making good progress on his imitation skills that before even the consultant did not see.

Another factor that increases motivation is setting goal and objectives for the family and reinforcing the behavior that leads to achievement of the goal. The family has a role to play and each member needs to be informed of what is required of him/her. Through this process and when goals are met reinforcement must occur to strengthen participation and to motivate the individual to continue working.

On the individual scale, the "closeness" of the therapeutic relationship may be highly aversive (DeVoge & Beck, 1978). For example, it takes many ongoing behaviors for a child to achieve a degree of "closeness" with his/her family. If this child is placed into residential setting or foster care by these family members, this whole repertoire of behavior may be punished. Often these children are less likely to engage in the behaviors that lead to "closeness". For example the child may find sharing aversive as a result of the association with the parent.

Hayes, Strosahl, & Wilson (1999) point out that a person can be temporarily motivated to obtain something by a description of what will occur in the long run. This is brought into the present by verbally explaining the consequence of such actions. If the individual already has experienced what is being described then the probability of him/her

doing it will increase. If this is not in a person's repertoire then correlate it with something that is and formulate a connection.

Another factor that is important for the consultant or therapist to consider is that coercive families build up patterns of out-punishing the child. This pattern is particularly common in families of conduct disordered children (Snyder & Patterson, 1995). These family members will attempt to out coerce or avoid the child. The child is a conditioned aversive stimuli and they would at times rather avoid the child than interact or monitor the child. The consultant then comes in and has a number of protocols that the family is to do with the child. The family sees this as punishing and avoids the consultant so as not to be punished by the child since for them the child is aversive. It is important for the consultant to see where the family is coming from and not to get frustrated and to be less negative about the family.

Adding to the lack of motivation is the language that the consultant uses with the family. If the consultant speaks at a level above that of the family and it is not understood what is expected the consultant will become an aversive and be avoided. To minimize these aversive features it is important to speak at a level in which the family can understand what is being said and what their responsibilities are. The consultant needs to listen to the family. It may be that the protocols are too complex and take too much time. The consultant then needs to sum things up and come up with a protocol that can be completed by the family in a shorter period of time. The consultant needs to hear the aversive features of the stimuli in regards to the performance and respond to the abilities and limitations of the family without compromising treatment.

Not Enough Time to Practice the Skill Sufficiently Before Use

The procedure that the consultant wants the parent/guardian to do with the child may be worded in such a way that is clear and understandable but there is no training history of success for the parent. The skill may be a new skill in which they have not had to perform it previously.

First an assessment of what the parent can do should be completed. This can be done by observing the parent with the child and by engaging the parent in dialogue about the procedure the consultant wants to implement.

The consultant needs to give assignments geared toward the parent's level and maximize the opportunity to do the skill successfully. The parent may be hesitant to do the skill for fear of missing a step. The consultant needs to provide instruction continuously. Also, the parent can perform the protocol with the consultant observing and when the parent hesitates, the consultant can prompt them. This should be done at least three times or until it is noted that fluency has been achieved. With feedback, instruction, and prompting the parent will be able to practice the procedure in the natural environment.

More Help to Successfully Implement the Skill Under the Environmental Conditions

The issue presented here is one of generalization. Tillman (2000) points out that many factors impede upon generalization of a skill that is learned in the office. Readers should see Tillman's paper for more information on generalization. Lack of generalization may be interpreted as resistance but it may be a skills deficit or more likely it is one of a programming problem. Therefore the consultant/therapist needs to change his/her approach.

The parent may need more help in doing the procedure in the natural environment rather than just more time practicing what is expected. Often in consultation to families, the parent/guardian has a number of other things going on in the household. The client is not the only child and the parent has other responsibilities. In addition to this, the household environment may not be conducive to sitting down one-on-one with the child and

parent. The house may be small and crowded and the parent/guardian may not feel comfortable doing what is required in the environment. In these cases the consultant has to be imaginative and come up with various ways for the parent to follow through with the protocols in the household. A way to achieve this is to possibly get other family members involved. If there are older siblings or extended family in the household engage them in assisting with the protocols or in taking some of the parent's responsibilities over so the parent can have more time to work with the client. The family is an integral part of the process and should be engaged in treatment.

One way to handle this would be coaching to assist in the learning process. Feedback is needed immediately following what the parent does. Reinforcement in the form of praise will increase the likelihood of the behavior being repeated within the environment. In Parent Child Interaction Therapy (McNeil & Hembree-Kiggin, 1996) parent's are often coached through the use of a parenting skill and praised by use of a "bug-in the ear" technique. They receive immediate feedback with descriptive praise for the use of positive reinforcement and other positive parenting procedures that they use.

The Skill Required is Not Something That They Have Had to Do Before

The consultant needs to take into account what the consultee is familiar with and if the protocol required is something that has been done before. The consultant also needs to know if the family values this skill. Skinner (1974) discusses value as being behaviors that have been reinforced in the past. Therefore, the consultant may give instruction but the family will not be able to see how it will be reinforcing. The instructions are incompatible with their learning history. If it is new to the consultee then it is not logical that s/he hears it once and then can perform it. It is necessary that the consultant breaks the task down into smaller pieces and that fluency is obtained prior to moving on to the next level. Remember that you are shaping a new behavior for the consultee and just like with a client, one can not move too fast or a crucial step will be lost.

Finally, the consultant may be shaping behavior that is incompatible wit the current repertoire. For example, the parent may not talk to the child to avoid fighting and now the parent is being asked to engage in dialogue or to play with the child. Active coaching is also necessary at this point. The direct coaching approach of Parent Child Interaction Therapy (McNeil & Hambree-Kiggin, 1996) recognizes this. A way to assist in the learning process is through training tapes. This way the consultee/parent can view the tape at a speed that is appropriate for him/her.

The consultant needs to be aware of the learner and needs to know what the consultee/parent already knows. It is important to talk with the consultee/parent and be explicit. It is important to be clear and ensure that the parent understands. If not then s/he will be practicing inappropriately and will need to re-learn the skill which will take more time and effort. Let him/her know that it is not expected that s/he know everything and that is why there is a consultant. Make sure the consultee/parent feels s/he can talk to the consultant without feeling "less than". If one feels that s/he is being talked to in a condescending way, his/her cooperation will not be forthcoming and can hinder treatment for the client.

The Skill is Too Complex for the Consultee to Perform

As mentioned above it is imperative that the consultant knows what is in the consultee's repertoire. If the skill is too complex for the consultee then it is obvious that s/he will not be able to perform the skill adequately and may do more harm than good to the client. As the consultant it is his/her responsibility to ensure that the consultee can perform the skill. Since this is the case, if the skill is too complex then more curriculum matching should occur. The consultant should give the consultee reading materials and

various forms of learning opportunities. Direct instruction will be needed along with modeling. The consultant will have to show the consultee exactly what they need to do and have the consultee practice it with the consultant.

Conclusion

Throughout this paper, we have examine the setting factors, specific antecedents, and functional aspects of resistance. It is our hope that by providing the beginnings of a behavioral framework for such phenomena our colleagues will follow with research and data to support or reject the tenets of our functional analysis.

As noted throughout this paper, resistance is a complex process which may involve various motivational and skills deficits. For clinicians to successfully recognize this fact is to recognize that a client can be at no other place than where s/he is. This is the hallmark of current acceptance practices the behavior analyst has applied to clients and now needs to apply to his/her relationship with the client (Hayes, Strosahl, & Wilson, 1999) and consultees. This does not mean that we can not commit to changing this. When we do so we find that becoming a generalized reinforcer to the client is important. Becoming a generalized reinforcer is akin to practices that have long been performed by our psychodynamic colleagues. A functional analysis of resistance opens the door to psychotherapy and consultation integration with a strong therapeutic conceptualization and technology which has become known to be behavior analysis.

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Pennsylvania Association for Behavior Analysis (Penn ABA) May 28, 2000 Business Meeting Report Held at Association for Behavior Analysis 26th Annual Convention

Beth Rosenwasser
Board Certified Behavior Analyst
***Member at Large* PennABA**

Rick Kubina presided over the meeting. The first order of business was the election of officers for this year. Here's the new line up. *President*: Richard Foxx, *Secretary*: Richard Weissman

Treasurer: Rick Kubina, *Members at Large*: Beth Rosenwasser and Kimberly Shreck, *Student Representative*: Angela Smith.

New president, Richard Foxx emphasized, "getting the organization up and running" as a primary agenda item for Penn ABA. A primary strategy is to take account of what other state groups have done and the effects of those choices. Membership recruitment methods and concerns were also discussed. Ideas included recruiting from a mailing list of certified behavior analysts and from private agencies, schools, and related professional conferences. It was agreed that Penn ABA will keep an inclusive behavior analytic presence including: applied behavior analysts working with a range of client populations (industries, organizations, developmental disabilities, medicine and health, clinical populations, etc.) as well as basic researchers working at experimental and conceptual levels toward advancing the science of behavior.

A proposal to table the choice of the next meeting time and place until the support base for Penn ABA had been given time and opportunities to expand was ratified. The next meeting time will be decided within the year. Opportunities to increase awareness throughout Pennsylvania of the existence and purpose of Penn ABA that were suggested included: a) Behavior Analysis Today – a newsletter representing the Behavior Analysis SIG at AABT, the Clinical Behavior Analysis SIG at ABA, and Pennsylvania-Certified Behavior Analysts is available online at www.behavior.org then click on "News"

b) Electronic Communication: C. A. Thomas offered to donate 10 megabytes of server space for a web site.

If you would like to find out more about joining PennABA, would like to help plan our first conference, or just have ideas for building Pennsylvania's main behavior analytic organization, please feel free contact one of us! We welcome your ideas and assistance!

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The Process of Clinical Behavior Analysis: From the General to the Specific

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Joe Cautilli (1999-2000) described the Clinical Behavior Analysis (CBA) SIG at ABA as "devoted to the study of comprehensive behavior analytic adult outpatient treatments" (pg. 2), which meshes nicely with my professional objectives as a psychologist. As a private practitioner, I operate in a context that does not afford me opportunities to influence client repertoires outside of the box. And the box is typically one forty-five minute session weekly. Abolishing operations, establishing operations, stimulus control, derived relational responding, and reinforcement are general processes that describe behavior-environment relationships and how they pattern over time. However, the stimuli that are relevant or give meaning (DeGrandpre, 2000) to any one person are particular to that individual, and when we are referring to verbally competent adult outpatients, delineating their histories of these processes can become very bewildering indeed. CBA's unique contribution is the thoroughgoing explanation of these phenomena from a functional perspective, thus enabling practitioners to situate the specific particulars into their proper place. It suggests which variables should be manipulated and with what technique.

My belief is that if I am truly working from a functional perspective, I cannot rely on a predetermined set of techniques *only*. Of course, Beck's cognitive therapy is very likely to be effective for depression, as exposure with response prevention is likely to be effective with obsessive-compulsive disorder, etc. The advantage of CBA is that it allows for the meaningful augmentation of these interventions, taking into account the so-called "nonspecific therapeutic variables" that influence treatment outcome.

In my private practice it seems that these nonspecific phenomena are quite common, and I want to get a handle on them. Sorting this all out is why I return to ABA every year. The organization, and in particular those individuals who are CBA affiliated, are my professional verbal community. However, when the convention is over, I return to a private practice setting that is a different sort of verbal community, one that is unfamiliar with a natural science approach to "traditional" psychological issues. Certainly, discourse with psychologists from other orientations is as rich and valuable as any other professional experience. However, I have ongoing private dialogues that translate these discussions into behavior analytic terminology. The language, concepts, and philosophy of CBA allow me to make sense of my experience with clients.

There are a wide variety of presentations at ABA that are relevant to CBA in the basic, applied and theoretical domains. There have also been several in the applied domain that have illuminated the process of therapist-client interactions in a unique manner, that is, in a case study format. Lucianne Hackbert has presented at least twice in the past few years, and Chauncey Parker did likewise this past May. These presentations were significant because they enabled me to perceive stimulus control and reinforcement not only as abstract concepts that help consolidate a worldview, but also as fully lived processes that are tangible in an interpersonal context. The clinician is a major source of reinforcement, stimulus control, and establishing operations when she asks about a client's desperation resulting from panic attacks in the middle of the night, his sense of "being a failure," losing control and "not being a man," or when she encourages the client to deliteralize language functions, or when she assists him with identifying the negative cognitive triads related to depression. Likewise, the client is a source of reinforcement, stimulus control and establishing operations relative to the clinician,

whether it's in adult outpatient therapy or any other type of therapeutic social interaction. These processes are not just *in* the relationship, they *are* the relationship. CBA can facilitate our understanding of how to utilize specific techniques in the context of these lived behavioral processes.

I have found the case study to be a stimulating exercise, as I am sure many of you have as well. It generates impassioned discussion regarding what clinical behavior analysts actually do. However, case studies presented in tandem with relevant data would also enhance their impact. To approach treatment functionally entails generating data that support such methods. That suggests the need for process-oriented studies to complement our outcome-based research, which would likely increase our profile to community-based clinicians.

"Process-oriented" study refers to the analysis of moment-to-moment reciprocal influence in social interaction. Such research has a long history outside of the behavior analytic community, and demands a different sort of data, such as those associated with protocol analysis and sequential analysis. Although clinical behavior analysts have renewed interest in this domain (e.g., Follette, Naugle & Callaghan, 1996), much work still needs to de done. And perhaps there are those within ABA who are uncomfortable with some of the novel ideas associated with CBA, despite consistent efforts to secure clinical applications on basic behavioral foundations, and despite persistent attempts to elucidate the connections between the two realms. Nevertheless, as Pete Harzem said in a recent ABA presentation (and I paraphrase), 'People do not like new ideas because they are new.' These ideas will either be adaptive and selected by clinicians or they will have limited utility and atrophy. But they need to be presented, and supporting such efforts is a primary function of the CBA SIG.

"Happiness is a good place to visit, but it was so sad in Fayetteville"[3]

A client with whom I've been working for eight months recently shared how she reacted to a word I used to describe her emotional struggle. The word elicited both gratification *and* unease. "I felt really special when you said that…thank you. But I also felt like you were being condescending." Interestingly, the word that was so salient is not one I typically use. Of interest to her (and consistent with her overarching treatment goals) is understanding 1) how her feelings about me increased the likelihood that she misperceived something I said, and 2) how one word made her "feel so many different ways" (had multiple functions). Additionally interesting to me is understanding 1) how my behavior can be gratifying and whether or not something I said was, in fact, condescending, and 2) how one word made her "feel so many different ways" (had multiple functions). Exploring how behavioral processes function in therapeutic relationships can be exciting work. There are so many questions I have about assessing such dynamics. How does the therapeutic relationship enhance or mitigate treatment effectiveness? Does the asymmetrical nature of therapist-client relationships facilitate establishing operations relevant to shaping appropriate repertoires? Is it preferable to initiate therapy with a structured protocol or to introduce it during later sessions?

Answers to these questions are of course different for individual clients. The CBA SIG presents many opportunities to explore these dimensions of our professional experience. As Erik Auguston (1999-2000) noted, "we as clinical psychologists are certainly living in exciting times" (pg. 4). CBA is thriving, as demonstrated by the continuing publication of related papers in basic, applied and theoretical areas (e.g., Dougher, 2000; R.J. Kohlenberg, Tsai, & B. Kohlenberg, 1996; Phelps, 2000; Wilson & S. Hayes, 2000), and the enthusiastic tenor of the most recent SIG

[3] Jerry Jeff Walker, *Five Years Gone* (Atco Records – 1969)

meeting in D.C. I am truly honored to have been elected as the CBA SIG's Chairperson, and am delighted to share SIG responsibilities with Vice Chairperson Kurt Freeman (freemaka@pacificu.edu) and Secretary D.J. Moran (dmoran@valpo.edu). I encourage you to contact Kurt, D.J. and me (stimuluscontrol@msn.com) with suggestions, concerns, complaints, or to just say hello. Any occasion to interact with members of the CBA verbal community is welcome.

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Issues for the Consulting Behavior Analyst: The Portable Life

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Introduction

Recently, while on a consulting trip with my friend Joe Cautilli to New Orleans I was encouraged to write down some observations I had made about being a distance consulting behavior analyst. The following is my attempt to do so and in doing so elucidate on the lifestyle of the distance consulting behavior analyst. One of the biggest issues people in our field usually have with the distance consulting behavior analyst is the rate they charge to consult.

I remember working in direct care years ago and from time to time a consultant would come to assist us in setting up some technical programs or to offer intensive staff training. Word would quickly spread about the rates the agency was paying this consultant to offer their pearls of wisdom. Some distance consultants charged as little as four hundred a day while others received three and four thousand a day. All this plus expenses and of course you know they flew in stayed at a nice hotel and flew out to some other exotic place to conduct another consult. Of course they never had to stay and carry out the programs or conduct the one to one work they just dictate and fly. Oh, from the direct care workers perspective making a bump or two above minimum wage these distance consultants were raking it in and doing nothing for it.

When I first decided to take Joe up on the challenge of writing this article I tried to decide first what I would write about to kick things off. I suppose that with this article I might try to explain why rates tend to be so high and simultaneously give readers a good look at the glamorous world of distance consulting as a full time job.

Full Time Distance Consulting

When I speak of full time distance consulting I am not talking about those folks that spend three for four weeks a year consulting with a school district, private provider, some industry or insurance company. I am also not speaking of those who are independent contractors who live in one place and may suffer the hour drive occasionally to work with a young child or adult.

So what is the full time distance consultant, how do you know if you are a full time distance consultant? I offer the following as a list of criterion:

1. You are chronically on the road, flying from one place to the next, being away from home for as much as a month at a time or you routinely spend eighteen hours of travel time for six to eight hours of work.

2. You have a variety of suitcases that you have designated for the length of a given trip.

3. You carry a suitcase that contains a printer, file folders, postage, envelopes, and other office supplies, separate from your clothes.

4. You get excited when you find office items (printers, staplers, computers) or personal hygiene items that are very tiny.

5. If air miles were dollars you would be wealthier then Bill Gates.

6. You know where dry cleaners are located in nine or more cities across the United States or in two or more foreign countries.

7. You have purchased toiletries and clothing on two or more occasions because although you made the connection at the airport, clearly that was not the case for your luggage.

8. You routinely turn down work located in or near popular vacation spots.

9. You have a natural immunity to Montezuma.

10. You are initially confused when asked the question; where do you live and find you generally respond that you have been told where you live is nice.

If eight or more of these apply to you then you could consider yourself a full time distance consultant.

Why So High?

Having defined the distance consultant, let's try and tackle that issue of cost and in doing so I believe that we can shed some light on that fable about the glamorous lifestyle.

The consultant who leaves for a business trip almost knows leaving that if thy are not on a flight at 6:30 AM they should not expect to do anything but travel that day. Although, flight times are always listed on tickets and airline itineraries the consultant knows that it should read [Boarding Time 6:30 AM "that's our guess"] if it were to be truthful. This is mainly because if the airline personnel are available for your flight and not delayed on another flight themselves, then there is always at least five people on your flight who will attempt to stick a Volkswagen beetle in the overhead compartment. Finally after an hour or two of trying this they will lament loudly as they check the car at the gate.

Then of course the eternal struggle of the connection, usually the airlines have overbooked the flights. It is my theory that they plan to overcome this problem by having connections at the opposite end of the airport planning of course that only about 90% of the people scheduled on the flight will possibly have the physical stamina to make the run. Distance consultants in the first two or three years of their chosen profession miss about 70% of these flights, but as they engage in airport aerobics over the years these percentages drastically decrease. So, depending on where you are traveling you can generally plan to spend all day either in an airport or on a plane, except for the occasional four or five hour trip.

Of course on these days, when you feel like things are really going well, you usually find that someone misplaced the luggage, lost the rental car reservation, or the hotel has an under-abundance of available clean rooms. So, with one day shot traveling you quickly learn to plan to begin working on the day following travel. This is mainly because even if things go rather well and you make it to the destination with your luggage you find the process has placed such a physical drain on you that you won't be useful for much besides some paperwork and an early bedtime anyway.

Essentially the distance consulting behavior analyst can expect to travel at least one day for every day of work. This often leads to the need for high consulting fees, since it is impossible to have a three day work week, although, I am willing to try if anyone has a plan to do this that they feel is viable.

The distance consultant is an ambassador of behavior analysis, not a glamorous movie star jet setting from place to place. There is ultimately nothing glamorous about living out of a suitcase, checking in and out of temporary housing, or running through airports trying to make connections. It is my belief that you have to love behavior analysis and the people you work with to have any longevity on the road. You certainly cannot find enough in the travel to keep you on the road since the novelty of traveling wears off quicker then the varnish on the tables of those overpriced airport bars and café's.

I have been working as a distance consulting behavior analyst since 1994, I find I love the job, but look forward to the time, when people will be able to find the assistance they need in a nearby city and the need for my portable life fades away like a good prompt.

Perhaps these are the real issues driving the high cost of distance consulting. The fact is there just aren't enough behavior analysts to go around. Just look around the United States, while we certainly have the east and west coast fairly covered, the middle of

this country is starving for behavior analysis. Additionally, overseas has a large demand for services and there are few behavior analysts available to meet these growing needs. Perhaps the number one issue facing the ever rising costs of distance consulting behavior analysts is just the fact that there is a high demand and low supply.

It certainly seems with all the attention that behavior analysis has received over the past few years that more people will enter this profession, but until they do and choose to live in the areas where there is no real choice, then I will be living the portable life.

Future Issues for the Consulting Behavior Analyst

It is our hope that we can make this a regular feature in The Behavior Analyst Today and in future volumes tackle issues facing the consulting behavior analyst. Please feel free to send ideas for discussion to me at cthomas@tclc.com as I look forward to future features and future issues.