

Derived from Mark L. Sundberg, Ph.D., BCBA, 2006 ABA PowerPoint Presentation Verbal Behavior and Autism Intervention

What Constitutes a Verbal Behavior Approach to Autism Treatment?

The basic teaching procedures consist of the standard methodology found in applied behavior analysis (e.g., Cooper, Heron, & Heward, 1987)

- Prompting
- Fading
- Pairing
- Modeling
- Shaping
- Chaining
- Differential reinforcement procedures (e.g., DRO, DRI, DRL)
- Intermittent reinforcement procedures (e.g., FR, VR, FI, VI)
- Extinction procedures (e.g., planned ignoring)
- Punishment procedures (e.g., reprimands)
- Generalization
- Discrimination training
- Errorless learning
- Transfer of stimulus control
- Task analysis
- Fluency procedures
- Contingency contracting
- Token economies

Additional procedural elements include, for example....

- Individualized assessment and intervention program
- Frequent opportunities to respond
- Use of discrete trial teaching procedures
- Incidental & natural environment teaching procedures
- Data collection
- Interspersel techniques
- Behavioral momentum techniques
- Peer and social interaction
- Functional analyses
- On-going analyses of performance by formally trained behavior analysts

These procedures are (to varying degrees) common to most behavioral intervention programs for children with autism (e.g., Greer & Keohane, 2006; Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Koegel & Koegel, 1996; Leaf & McEachin, 1999; Lovaas, 2003; Maurice, Green, & Luce, 1996; Sundberg & Partington, 1998), and **thus all benefit from the same empirical foundation found in applied behavior analysis**

However, these programs vary substantially in terms their treatment of language

The major difference between the verbal behavior programs and the majority of discrete trial (DTT) and ABA programs available in the literature is the conceptual analysis of language that underlies the assessment and curriculum used in each program

At the core of Skinner's analysis of language is the distinction between the mand, tact, and intraverbal (traditionally all classified as "expressive language")

A Sample of the Published Empirical Research on the EO, and the Mand and Tact

- Hung (1980)
- Simic & Bucher (1980)
- Lamarre & Holland (1985)
- Pierce, Epling, & Boer (1986)
- Hall & Sundberg (1987)
- Carroll & Hesse, (1987)
- Stafford, Sundberg, & Braam (1988)
- Yamamoto & Mochizuki (1988)
- McPherson & Osborne (1988)
- De Freitas & Ribeiro (1989)
- Sigafoos, Doss, & Reichle (1989)
- Sundberg, San Juan, Dawdy, & Arguelles (1990)
- Sigafoos, Reichle, Doss, Hall, & Pettitt (1990)
- Baer & Detrich (1990)
- Braam & Sundberg (1991)
- Sprague & Horner (1992)
- Williams & Greer (1993)
- Twyman (1996)
- Drasgow, Halle, & Ostrosky (1998)
- Drash, High, & Tudor (1999)
- Brown, Wacker, Derby, Peck, Richman, & Sasso (2000)
- Knutson & Harding (2000)
- Barnes-Holmes & Barnes-Holmes (2000)
- Goh, Iwata, & DeLeon (2000)
- Sundberg, Loeb, Hale, & Eigenheer (2002)
- Arntzen & Almas (2002)
- Ewing, Magee, & Ellis (2002)
- Winborn, Wacker, Richman, Asmus, & Geier (2002)
- Chambers & Rehfeldt (2003)
- Ross & Greer (2003)
- Nuzzolo-Gomez & Greer (2004)
- Taylor, Hoch, Potter, Rodriguez, Spinnato, & Kalaigian (2005)
- Petursdottir, Carr, & Michael (2005)

- Hartman & Klatt (2005)
- Wallace, Iwata, & Hanley (2006)
- Sweeney, Carbone, O'Brien, Zecchin, & Janecky (2006)
- Taylor, Hoch, Potter, Rodriguez, Spinnato, & Kalaigian (2005)
- EO must be present to evoke mands (initiations to peers)
- Petursdottir, Carr, & Michael (2005)
- Mand training resulted in tacts, but tact training did not result in mands
- There doesn't appear to be a body of research that contradicts the separation of the mand and tact at the time of initial acquisition, or manding without EOs
- Empirical research reviews:
 - Greer, R. D., & Koehane D. (2005). The evolution of verbal behavior in children. *Behavioral Development*, 1, 31-48.
 - Oah, S., & Dickinson, A.M. (1989). A review of empirical studies on verbal behavior. *The Analysis of Verbal Behavior*, 7, 53-68.
 - Sautter, R., & LeBlanc, L. (2006). The empirical applications of Skinner's analysis of verbal behavior with humans. *The Analysis of Verbal Behavior*.

EO and Mand research across a variety of populations with similar effects

- Children with autism (e.g., Ross & Greer, 2003)
- Language delayed children (e.g., Twyman, 1996)
- Typical children (e.g., Petursdottir, Carr, & Michael, 2005)
- Deaf/autistic teenagers e.g., (Hall & Sundberg, 1987)
- Children with developmental disabilities (e.g., Sigafos, Doss, & Reichle, 1989)
- Adults with developmental disabilities (e.g., Chambers & Rehfeldt, 2003)
- Adults with traumatic brain injury (e.g., Sundberg, San Juan, Dawdy, & Arguelles, 1990)
- Pigeons (e.g., Sundberg, 1985)
- Rats (e.g., Pierce, Epling, & Boer, 1986)
- Chimpanzees (e.g., Savage-Rumbaugh, 1984)
- Parrots (e.g., Pepperberg, 1988)
- EO and Mand research and reviews across a variety of behavioral journals
 - JEAB (e.g., Lamarre & Holland, 1985)
 - JABA (e.g., Wallace, Iwata, & Hanley, 2006)
 - TAVB (e.g., Petursdottir, Carr, & Michael, 2005)
 - TBA (e.g., Michael, 1993)
 - Behavioral Development (e.g., Greer & Koehane, 2005)
 - Research in Developmental Disabilities (e.g., Taylor, Hoch, et al., 2005)
 - Journal of Autism and Developmental Disabilities (e.g., Hung, 1980)
 - Behavior Modification (e.g., Rogers-Warren & Warren, 1980)
 - Journal of Early and Intensive Behavior Intervention (e.g., Pistoljevic & Greer, 2006)

Empirical Research on the Distinction Between the Tact and Intraverbal

- Braam & Poling (1983)
- Chase, Johnson, & Sulzer-Azaroff (1985)
- Luciano (1986)
- Daly (1987)
- Lodhi & Greer (1989)
- Tenenbaum & Wolking (1989)
- Watkins, Pack-Teixeira, & Howard (1989)
- Sundberg, San Juan, Dawdy, & Arguelles (1990)
- Partington & Bailey (1993)
- Sundberg, Endicott, & Eigenheer (2000)
- Finkel & Williams (2001)
- Miguel, Petursdottir, & Carr (2005)

Two examples of research

- Braam & Poling (1983) found that children with autism who could emit specific responses under tact control could not emit the same response forms under intraverbal control. Transfer of stimulus control between nonverbal SDs and verbal stimuli were successful
- Miguel, Petursdottir, & Carr (2005) replicated the basic procedures from Braam and Poling (1983) and concluded “ while participants were able to tact...and point to the pictures...they were not necessarily able to reliably produce thematically related intraverbal responses...(until) intraverbal training was used”
- **No body of research has emerged to show the tact and intraverbal are the same**

Conclusion

- “The ‘VB approach’ is simply normative applied behavior analysis with a few refinements. That is, it incorporates all of the standard methodology of applied behavior analysis, but it explicitly adopts Skinner's interpretive framework for analyzing verbal contingencies. In other words, it is a small variation on a methodology that has an enormous empirical foundation. The worst-case scenario is that the added framework doesn't help. But even in that case the child is still getting a full-fledged program of applied behavior analysis procedures. It is simply hard to believe that a set of procedures guided only by a distinction between receptive and expressive language can be as sharp as one that respects all of the various types of contingencies analyzed by Skinner” (Palmer, 2005)