

# A Strength-Based Approach to Parent Education for Children With Autism

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## Abstract

Despite the ubiquitous nature of parent education in autism treatment, relatively few studies directly address *how* parent education should be conducted. Given that the literature on parental well-being suggests that treatments that facilitate positive parental adaptation to their child's disability may be beneficial, this study examined the impact of a strength-based approach to parent education. An alternating treatments design was used to compare the effects of therapist statements that highlighted the child's deficits versus those that emphasized strengths. These two approaches were evaluated on the following measures: parent affect, parent statements regarding child behavior, and the quality of parent–child interactions. Results indicate that parents displayed improved affect, made more positive statements about their child, and also exhibited more physical affection toward their child during the strength-based approach. Findings have implications for autism programming, parental coping, and parent–child relationships.

## Keywords

autism, parent education, parent stress

A vast literature documents the effectiveness of parent education programs for children with autism, and every program identified by the National Research Council (NRC) as a comprehensive intervention program for children with autism involves some parent component (NRC, 2001). Specifically, parent education programs are associated with gains in communication and social behavior, decreases in disruptive behavior, and increased generalization (e.g., Schriebman & Koegel, 2005). Including parents in their child's habilitation process is not only cost-effective but by increasing the therapeutic support that a child has throughout the day, it can increase the child's rate of progress (e.g., Kaiser, Hancock, & Nietfeld, 2000; L. K. Koegel, Steibel, & Koegel, 1998; Laski, Charlop, & Schriebman, 1988).

Despite evidence for the effectiveness and efficiency of parent education and its potential to improve parent outcomes, comparatively few studies examine the therapist's approach to parent education (Mahoney et al., 1999; Webster-Stratton & Herbert, 1993). The majority of existent research relates to broad teaching strategies and behavioral techniques, rather than specific therapist approach to the parent and child (Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004). A few studies do suggest that the types of statements therapists make to parents may be important for treatment (Brookman-Frazee, 2004; Harwood & Eyberg, 2004; Patterson & Chamberlain, 1994), although this research is somewhat limited, and most research on parent education process does not relate to working with the distinct group of parents of children with autism.

Research indicates that experiences of parents of children with autism may be different in some ways from experiences of parents of children with other problems; therefore this population is likely to have unique parent education needs (Plienis, Robbins, & Dunlap, 1988). For instance, the literature has consistently demonstrated higher levels of stress in parents of children with autism compared to parents of typically developing children (e.g., Baker, Blacher, Crnic, & Edelbrock, 2002; T. B. Smith, Oliver, & Innocenti, 2001). In addition, a variety of studies indicate higher levels of stress and depression in parents of children with autism, above and beyond that of parents of children with other developmental disabilities or otherwise poor prognosis (e.g., Bitsika & Sharpley, 2004; Donenberg & Baker, 1993; Gray & Holden, 1992). Moreover, parental well-being, that is, the absence of stress, symptoms of depression, and negative affect, appears to be strongly related to child behavior (e.g., Davis & Carter, 2008; R. L. Koegel et al., 1992; LeCavalier, Leone, & Wiltz, 2006). Importantly, some parent-education programs for autism

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have been documented to lead to improvements in parental well-being, as parents are taught strategies to manage their children's challenging behaviors (e.g., Bristol, Gallagher, & Holt, 1993; R. L. Koegel, Bimbela, & Schreibman, 1996) and other programs include cognitive-behavioral strategies specifically designed to address parental well-being (e.g., Blackledge & Hayes, 2006; Nixon & Singer, 1993; Tonge et al., 2006).

### **Role of Service Providers— A Strength-Based Approach**

However, research suggests that beyond teaching parents specific strategies to manage their child's behavior or their own cognitions, there may be an additional role for service providers in the coping and adaptation process for parents of children with autism (Turnbull & Turnbull, 1997). In particular, the general literature on caregiver well-being suggests that the *perceived positive characteristics of the cared-for-individual* are crucial in determining positive outcomes for caregivers (Lawton, Moss, Kleban, Glicksman, & Rovine, 1991). This has been demonstrated in caregivers of patients with HIV/AIDS (Folkman & Moskowitz, 2000) and also supported by data from parents of adults with intellectual disabilities (Pruchno, Patrick, & Burant, 1996; G. C. Smith, 1996). For parents of children with autism, identifying positive characteristics of the child and the relationship may be particularly beneficial because the stressors associated with the disability are likely to be chronic, and cannot be easily mastered (Gray, 2006; Hastings et al., 2005; Miller, Gordon, Daniele, & Diller, 1992). Thus, there may be an opportunity for service providers to help parents conceptualize their child's behavior in a positive fashion.

Recently within the field there has been a movement for service providers to use a strength-based approach in the assessment of individuals with autism (Cosden, Koegel, Koegel, Greenwell, & Klein, 2006). In contrast to deficit-based models of assessment and treatment that solely emphasize the child's areas of need, engaging in a strength-based approach necessitates viewing the positive aspects of a child's behavior, highlighting areas of competence and identifying areas that facilitate development. Therefore, in this way, the use of a strength-based approach by service providers may have the potential to influence parental well-being. In fact, preliminary studies suggest that parental optimism is an important variable, as parents who were coached to conceptualize their child's behavior in optimistic ways were more likely to complete parent education programs (Durand, 2001; Kessler, 2004). In essence, if service providers employ a strength-based approach and encourage parents to join in their perspective, it may have benefits for a variety of parent variables.

Yet the literature reveals an overall disconnect between parents' and professionals' perceptions of the child, as

professionals tend to overestimate the negative effects of a child on a family, as well as underestimate a parent's ability to cope (Knussen & Sloper, 1992; Urey & Vlar, 1990). Moreover, parents of children with autism report that they desire therapists to be more optimistic about their child's behavior and prognosis (Nissenbaum, Tollefson, & Reese, 2002). Furthermore, lack of understanding and acknowledgement of parent positive perceptions by service providers can harm the parent-professional relationship (Hastings & Beck, 2004). Given that individualized parent education involves the therapist implicitly offering conceptualizations of child behavior through selecting target behaviors, identifying goals, and evaluating child progress, parent-education sessions are an ideal context to explore the use of a strength-based approach.

The purpose of the current study was to examine the effects of differential statements to parents regarding their children with autism during parent-education sessions. Parents were taught Pivotal Response Treatment (PRT) procedures, and two approaches to child behavior were compared: (a) strength-based, in which the clinician made strength-based statements regarding the child; and (b) deficit-based, in which the clinician made statements identifying areas of child need. The effects of both conditions were evaluated in terms of (a) parent affect directed to the therapist, (b) parent statements regarding child behavior, and (c) parent affect and physical affection directed toward the child.

## **Method**

### **Participants**

Three children and their primary caregivers participated in this study. Criteria for participation were as follows: the child was diagnosed with autism according to the criteria specified by the *Diagnostic and Statistical Manual—4th edition, text revision (DSM-IV-TR; American Psychiatric Association, 2000)* by at least two independent professionals with expertise in diagnosing autism, the child was under the age of 4, and the child's primary caregiver was interested in receiving parent education services through a university autism clinic. The first three families who contacted the center for parent education services met the criteria for inclusion. There was no selection criteria based on the gender of the children or caregivers.

*Child 1.* Child 1 was a 25-month-old Caucasian male at the beginning of the study. Prior to the study, he was non-verbal, displayed no functional communication, rarely initiated interactions with others, and engaged in high levels of disruptive, avoidant, and self-stimulatory behavior. Table 1 displays his scores on the *Vineland Adaptive Behavior Scales (VABS; Sparrow, Balla, & Cicchetti, 1984)*. Prior to the study, Child 1 was receiving 20 hr per week of 1:1 discrete trial programming targeting speech, social skills, and

**Table 1.** Vineland Adaptive Behavior Scales Scores

Domain	Child 1		Child 2		Child 3	
	SS	AE	SS	AE	SS	AE
Communication	63	10	62	14	66	21
Daily living	71	15	66	19	60	20
Socialization	66	10	61	12	61	16
Motor skills	87	20	90	31	79	34
Adaptive level	66	14	64	19	68	23

Note: SS = Standard Score; AE = Age Equivalence in months.

play, which did not include a parent education component. During the study, intervention sessions focused on developing functional words attempts.

Parent 1 (mother of Child 1) was a 34-year-old Caucasian female who was employed part-time as a teacher. Parent 1 had not received any parent education from past service providers, nor had she previously received services through the university autism clinic. Child 1 received the diagnosis of autism approximately 6 months prior to participation in this study.

**Child 2.** Child 2 was a 35-month-old Caucasian male at the beginning of the study. Prior to the study, he spontaneously used approximately 10 words to communicate his needs, rarely engaged in social interactions with others, and displayed a variety of disruptive and self-stimulatory behaviors. Table 1 displays VABS scores for Child 2. Prior to the study, Child 2 was receiving 20 hr per week of 1:1 discrete-trial programming, targeting speech, social skills, and play, which did not include a parent education component. During the study, target behaviors included increasing Child 2's functional vocabulary.

Parent 2 (mother of Child 2) was a 30-year-old Caucasian female and was employed part-time as a preschool teacher. Parent 2 had not received any parent education services prior to participation in this study nor had she received services through the university autism center. Child 2 received the diagnosis of autism approximately 3 months prior to participation in this study.

**Child 3.** Child 3 was 45-month-old Asian American male at the beginning of this study. Prior to participation, he spontaneously used approximately 75 single words to communicate his needs. He demonstrated delays in social interaction and displayed restricted and repetitive behaviors. Table 1 displays VABS scores for Child 3. Prior to the study, Child 3 was attending a special education preschool 4 days per week, and was receiving 1 hr per week of speech therapy and occupational therapy, which did not include a parent education component. During the study, target behaviors included increasing Child 3's use of multiple word utterances.

Parent 3 (mother of Child 3) was a 30-year-old Asian American female who worked as a homemaker. Several

months prior to participation in this study, Parent 3 had received standard PRT parent education services for 6 months through the university autism center. Child 3 received the diagnosis of autism approximately 18 months prior to participation in this study.

### Parent Education and Pivotal Response Training (PRT)

Given the children's significant language delays, the primary focus of parent education sessions was improving the children's expressive verbal communication. The general approach for teaching speech that was employed in this study is described by R. L. Koegel, O'Dell, and Koegel (1987) and incorporates the following motivational principles into the treatment: (a) child choice of stimulus materials used to evoke verbal communication, (b) interspersal of maintenance and acquisition tasks, (c) reinforcement of goal-directed verbal attempts, and (d) the use of natural and contingent reinforcers following any word or attempt. The specific procedures are detailed in the manual *How to Teach Pivotal Behaviors to Children with Autism: A Training Manual* (R. L. Koegel et al., 1989). Parents were given this treatment manual prior to intervention to familiarize them with the procedures. Parent education sessions for Child 1 and 2 took place in the clinic setting at the university autism center and in-home for Child 3.

### Experimental Design

An alternating treatments (Barlow & Hersen, 1984) design was used in order to investigate the effects of the two parent education conditions, Deficit and Strength, on measures of parent and parent-child interaction variables. This design was selected because the effect of the treatment was anticipated to be very rapid, and rapid alternation between Deficit and Strength statements was very similar to the way in which a parent education session would naturally be conducted. In addition, the alternating treatments design reduced the possibility of any long-term negative effects of a given treatment approach.

Pre-measures were collected weekly over the course of 3 weeks prior to implementation of the alternating treatments. In the pretreatment probes, parents were instructed to interact with their child for 10 min. The Deficit and Strength conditions were then implemented in 10-min intervals during weekly parent education sessions for Parent 1, Parent 2, and Parent 3, across the course of 1, 2, and 3 weeks, respectively. Sequencing of the two treatments were determined a priori, ensuring that sessions always concluded with a strength-based alternation to avoid extending any potentially negative effects of the deficit-based approach, with Parent 3 beginning in the Strength condition to control for order effects. In addition, the week following

**Table 2.** Parent Affect Ratings

Negative: Unhappy (0–1)	Neutral Happiness (2–3)	Positive: Happy (4–5)
Parent appears to be sad, angry, frustrated, or hopeless. Behaviors that might characterize this include frowning, crying, or sighing.	Parent does not appear to be decidedly unhappy or particularly happy.	Parent seems to be enjoying self. Behaviors that might characterize this include smiling or laughing.

the final alternation for each parent, a 2-hr strength-based parent-education session was conducted, with probes collected at the end of the session to assess the effects of the Strength condition alone when not in direct contrast with the Deficit condition. To assess for generalization of effects, probes were taken following this final extended strength-based session. In the generalization probes, the therapist left the room for a 10-min period to exchange toys and record data. Parents were instructed to continue interacting with their child. Because of concern for potentially extending adverse effects of the Deficit condition, generalization probes were not collected following Deficit conditions. In addition, because of the rapid nature of the alternations, generalization was only conducted following the final extended session in the Strength condition.

### Independent Variable

**Deficit condition.** In this condition, the therapist made statements regarding the child's potential target areas to the parent, such as areas or skills in which the child demonstrated a weakness. These statements were made in the context of developing or altering interventions procedures to address this concern. For example, if the focus was child attention, the therapist might say, "It seems like it is hard to get his attention. He does not seem to focus on one thing for very long. He moves from toy to toy." This was typically followed by a statement or inquiry regarding parent behavior (e.g., "One way to get his attention is . . .").

**Strength condition.** In this condition, the therapist made statements that highlighted the child's strengths or potential. These statements were made in the context of developing or altering intervention procedures to capitalize on these areas of strength. As above, if the focus was child attention, the therapist might say, "It seems like he has a lot of interests. That's a good sign. Right now he seems interested in a couple different toys." Similarly, this was typically followed by a statement or inquiry regarding parent behavior (e.g., "One way to get his attention is . . .").

**General positive teaching approach.** In addition to making statements regarding the child's behavior, the therapist also made statements regarding the parent's use of PRT procedures. Specifically, the therapist modeled techniques and provided opportunities for the parent to work with her child while offering feedback related to her use of the procedures.

The nature of these statements naturally varied during alternations based on the child's performance and the parent's correct use of procedures. To ensure that the therapist used the same general approach with respect to teaching PRT procedures across the two conditions, probes were also rated on the following criteria: (a) the therapist provided instructions and feedback to the caregiver throughout the probe related to the caregiver's use of PRT procedures and (b) the feedback was positive, consisting of a balance of constructive suggestions and praise, regardless of condition. The "general positive teaching approach" was present across all Strength and Deficit conditions.

**Fidelity of implementation of independent variable.** All probes met criteria for fidelity of implementation. Two raters blind to the purposes of the study independently rated 33% of the probes to assess the fidelity of implementation of the independent variable on a probe-by-probe basis. Specifically, both observers rated the probes for general approach and also either Deficit or Strength, from the above definitions. An agreement for the independent variable was defined as both observers rating the probe as the same conditions (Deficit or Strength) and general approach. The reliability for the independent variable was 100%.

### Dependent Variables

All measures were scored from videotapes using Noldus Observation Software.

**Parent affect following therapist statements.** To demonstrate the immediate impact of therapist statements, parent affect following each Deficit or Strength therapist statement was recorded. The Happiness scale (shown in Table 2), a 6-point Likert-type scale numbered 0 to 5 was adapted from Dunlap and Koegel (1980). This scale has been shown in prior publications to be reliable in measuring levels of affect (Dunlap, 1984; Dunlap & Koegel, 1980; R. L. Koegel & Egel, 1979). Observers were instructed to rate the parent's response to therapist statements using the aforementioned scale. Specifically, this response was a global rating of the parent's affect during and up to three seconds following each therapist statement. Parental response to each statement was averaged across statements per probe.

**Parent statements to therapist regarding child behavior.** To further assess the impact of the therapist approach, all parent statements to the therapist regarding child behavior were scored for all treatment probes, regardless of the proximity

of the parent statement to any therapist statement. Parent statements were scored as an “agreement” when the parent agreed with the therapist statement, but did not provide any additional information (e.g., “Yes, he does”). A novel positive statement was defined as any statement the parent made about her child that introduced new information and reflected a positive behavior (e.g., “He used good language yesterday”), which was spontaneous or in response to a therapist statement. A novel negative statement was defined as any statement the parent made about her child that introduced new information and reflected a negative behavior (e.g., “He has trouble with that at home”) which was spontaneous or in response to a therapist statement. Total numbers of agreements and novel positive and negative statements were calculated for all treatment probes.

**Parent affect with child.** To assess the broader impact of the therapist statements on parent variables during treatment sessions, parent affect was scored during parent–child interactions and generalization probes using the Happiness scale (see Table 2), with ratings addressing global parent affect during probes. Session videotapes were spliced to exclude any therapist statements or parent–therapist interaction to focus purely on parent–child interactions for observational scoring.

**Physical affection.** Physical affection was recorded to further assess the effects of therapist statements on parent–child interaction. Using event recording, observers scored the occurrence of physical affection. Physical affection was defined as the parent gently touching, caressing, tickling, kissing, or hugging the child. The average number of occurrences of physical affection throughout each condition as well as directly following a therapist statement (up to 3 s) was calculated.

**Child responsivity.** One potential concern of using a strength-based approach is that by focusing on the child’s strengths, the child may not progress as quickly. To determine the effects of the two approaches on child behavior, child responsivity was recorded. Using event recording, the percentage of total appropriate child responses was calculated for each probe by dividing the number of appropriate child responses by the number of total opportunities provided by the parent, multiplied by 100. An opportunity was defined as instances in which the parent had the child’s attention and provided any clear prompt, question, or expectant look for the purposes of eliciting a child response (e.g., “What do you want?” “Ball?” or “What’s this?”). A child response was a correct verbal attempt, appropriate to the child’s language level.

### Reliability of Dependent Measures

Two observers, both naïve to the purposes of the study (to control for observer bias), independently rated 33% of the probes from all experimental conditions and participants, from videotapes presented in random order (to account for observer drift). For all measures, reliability was calculated

according to the following formula: number of agreements divided by number of agreements plus disagreements, multiplied by 100. For all Likert-type scale observations, an agreement was defined as both observers’ scores being within the same classification range. For parent statements, an agreement was defined as both observers giving the same exact rating for each statement on a statement-by-statement basis. For child responsivity, an agreement was defined as both raters recording the same parent and child behavior at the same time (within three seconds). In addition, for relevant dependent variables, Kappa was also calculated. Average interrater reliability was as follows: parent affect to therapist, 85% (range = 80%–94%, Kappa = 0.78); parent statements, 88% (range = 82–100, Kappa = 0.87); parent affect with child, 95% (range = 83%–100%, Kappa = 0.89); physical affection, 90% (range = 75%–100%); and child responsivity, 84% (range = 77–100).

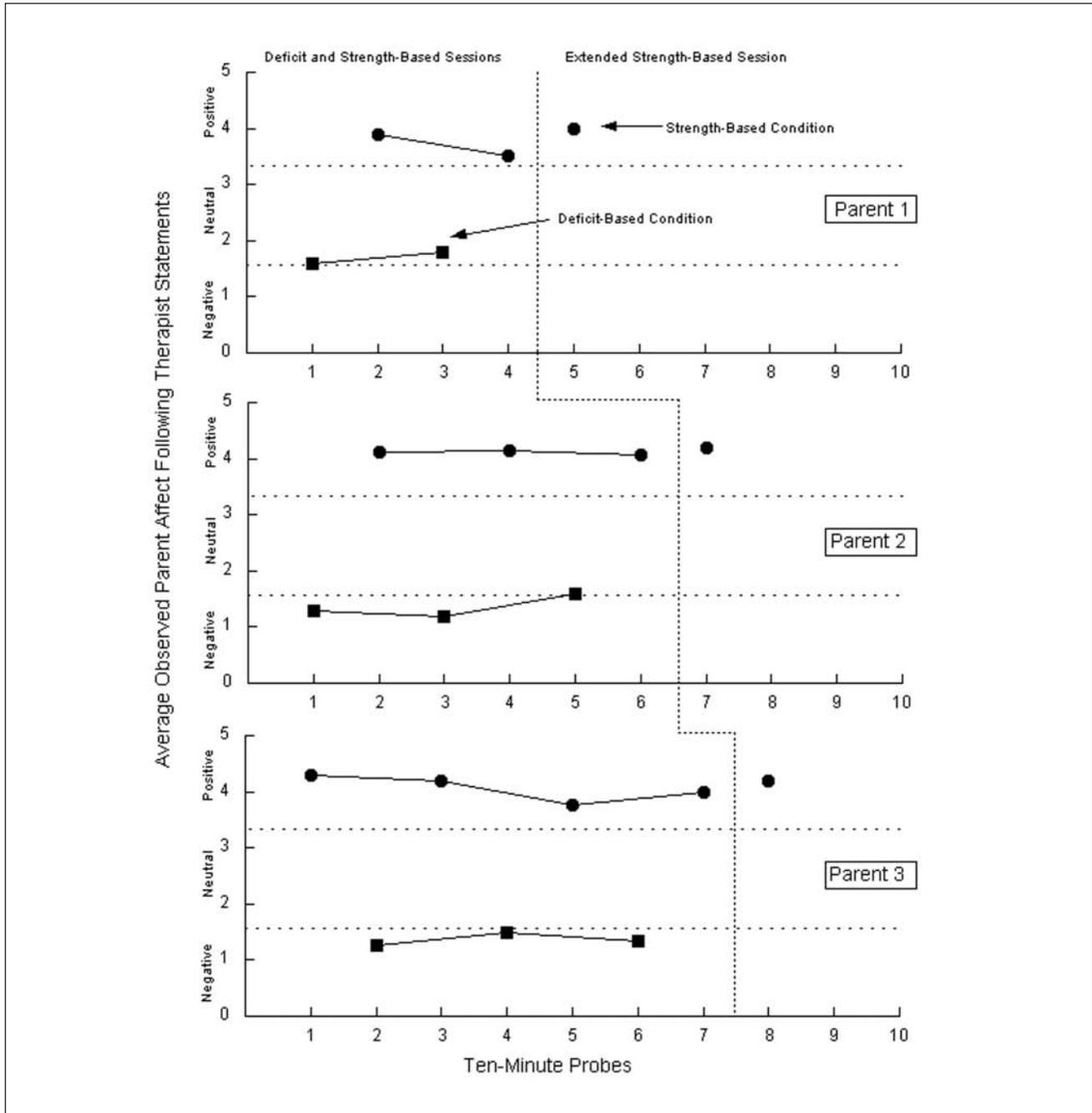
## Results

### Parent Affect Following Therapist Statements

Figure 1 shows the effects of Strength and Deficit therapist statements regarding child behavior on observed parent affect averaged across therapist statements. For all participants, parent affect following therapist statements was rated as more positive in sessions where therapists made Strength statements compared to Deficit statements ( $d = 3.02$ ; Cohen, 1988). Parent ratings of affect were quite sensitive to therapist statements, and shifts in ratings of affect occurred immediately following a change in condition. Furthermore, for all participants, affect ratings remained positive as therapy progressed using only the Strength approach.

### Parent Statements Regarding Child Behavior

Figure 2 shows the effects of the Strength and Deficit conditions on the type of statements that parents made to the therapist regarding their child’s behavior. All parents made numerous negative statements in the Deficit condition, but rarely made a negative statement in the Strength condition ( $d = 2.16$ ). Similarly, parents made frequent positive statements in the Strength condition, but never made positive statements in the Deficit condition ( $d = 5.39$ ). All parents appeared to make the greatest number of positive statements in the first Strength alternation, with positive statements decreasing to more stable levels in subsequent alternations. In addition, even after a full 2-hr Strength session, parents continued to make positive statements about their child and very few negative statements. As can be noted, the majority of parent statements contained novel information regarding the child, and were not merely an agreement with a therapist statement.



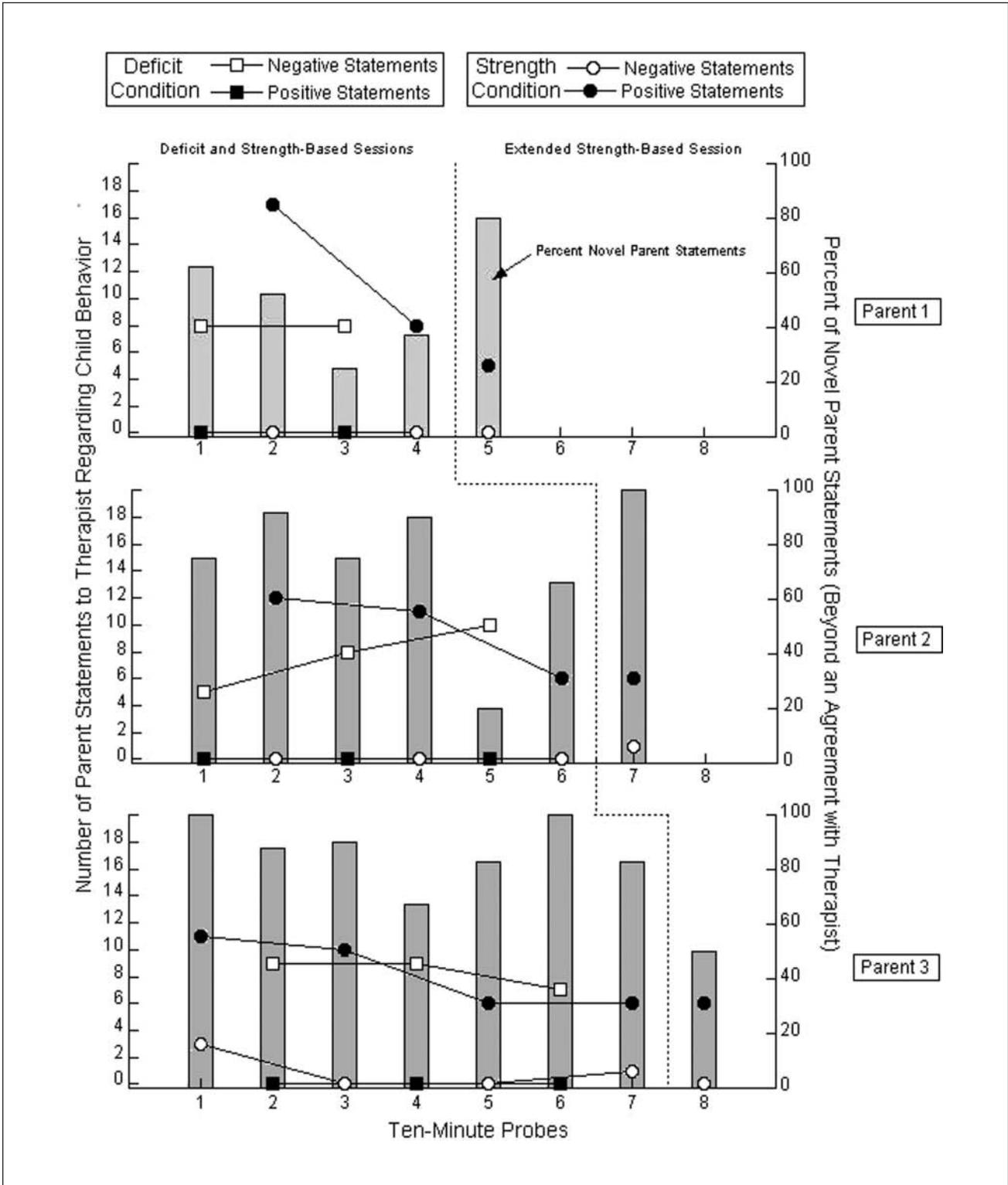
**Figure 1.** Average observed parent affect following therapist statements

The squares represent parental affect during the deficit-based condition. The circles represent parental affect during the strength-based condition. Ratings are based on a 6-point Likert-type scale (0 = negative observed affect, 5 = positive observed affect). High scores are desirable.

### Parent Affect With Child

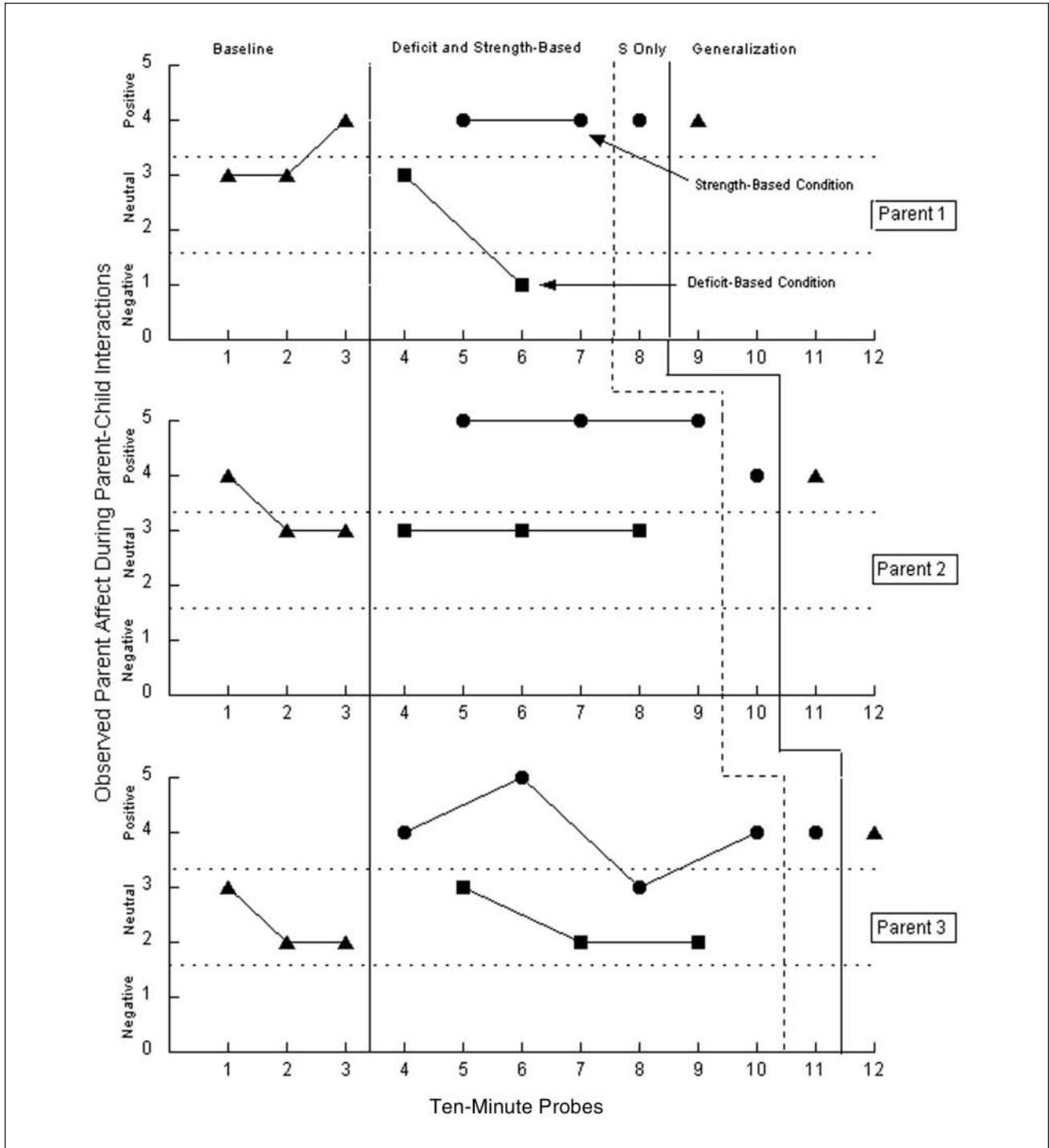
Figure 3 displays parent affect during parent-child interactions across the Strength and Deficit probes, as well as pretreatment and generalization. As the graphs indicate, regardless of pre-treatment levels, all parents displayed more positive levels of affect in the Strength condition

compared to the Deficit condition ( $d = 3.44$ ) during parent-child interactions, with some parents displaying even lower levels of affect in the Deficit condition compared to pre-treatment. All participants demonstrated positive affect during parent-child interactions as treatment progressed in the Strength condition and during final generalization probes.



**Figure 2.** Parent statements regarding child behavior

The squares represent parent statements regarding child behavior during the Deficit (D) condition (including agreements with the therapist and novel statements). Open squares represent negative statements, and closed squares represent positive statements in the Deficit condition. The circles represent parent statements regarding child behavior during the Strength (S) condition (including agreements with the therapist and novel statements). Open circles represent negative statements and closed circles representing positive statements in the Strength condition. The gray bars represent the percentage of parent statements that were novel, beyond an agreement with the therapist.



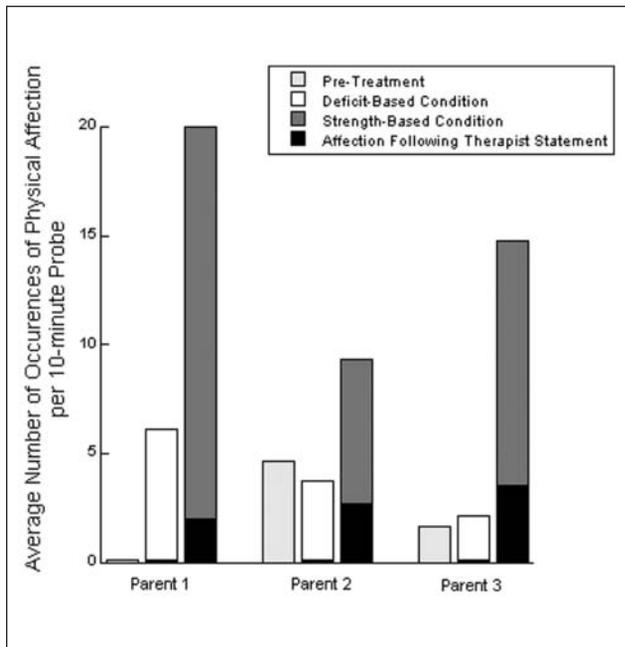
**Figure 3.** Observed parent affect with child

The squares represent parental affect with child during the deficit-based condition. The circles represent parental affect during the strength-based condition. Ratings are based on a 6-point Likert-type scale (0 = negative observed affect, 5 = positive observed affect). High scores are desirable.

### Physical Affection

Figure 4 displays the occurrence of parents engaging in physical affection averaged across probes per condition. To examine the immediate effects of the therapist's statements,

the graph also shows the average percent of therapist statements followed by physical affection. Across all participants, parents demonstrated more physical affection during the Strength condition, with low levels of physical affection both at pretreatment and in the Deficit condition. Throughout



**Figure 4.** Average occurrence of physical affection across conditions

The light-gray, white, and dark-gray bars represent the average occurrence of physical affection during pretreatment, deficit-based, and strength-based probes, respectively. The black bars represent the percentage of physical affection that occurred following a therapist statement.

both conditions, the majority of physical affection did not occur subsequent to a therapist statement, suggesting that the overall therapist approach influenced the parents' tendency to engage in physical affection.

### Child Responsivity

Because of the rapid alternation of the treatment conditions, the experimental design did not permit a clear understanding of the relationship between parent-education approach and child behavior outcomes. Child 1, who was nonverbal, exhibited low levels of responsivity across both conditions, 10% and 12% in the Deficit and Strength conditions, respectively. However, Child 2 and Child 3 demonstrated somewhat higher levels of appropriate responding in the Strength condition (94% and 89.5%, respectively) compared to the Deficit condition (78% and 76%, respectively). Overall, the data indicate improved responding in the Strength condition, although this may be moderated by the child's level of functioning.

### Discussion

Results of this study support the use of a strength-based approach to parent education for parents of children with autism. Specifically, the data demonstrate that using a strength-based approach to parent education can improve

parent affect and enhance parent-child interactions. Moreover, the results suggest that strength-based parent education may be a promising avenue for facilitating parental well-being, and could possibly be a useful tool to assist parents in coping with the variety of sources of chronic stress associated with raising a child with autism.

The initial step to understanding the impact of a strength-based approach was evaluating the immediate, observable effects of different types of therapist statements on parents. Indeed, the current study revealed that parents demonstrated more positive affect immediately following Strength therapist statements, compared to Deficit statements about their child. This statement-by-statement analysis showed what a dramatic impact discreet therapist behaviors can have on parents. In addition, results of this study reveal that the effect of therapist statements is more pervasive than an immediate reaction by parents, but also can set the tone for a session, such that parents exhibited improved affect in interactions with their children throughout the Strength condition (independent of the timing of therapist statements), compared to more negative affect in the Deficit condition, and affect remained positive as treatment progressed in the Strength condition and during generalization. Moreover, the Strength condition often led to improvements in parents affect compared to pre-treatment probes, while the Deficit approach tended to produce more negative affect for parents. This speaks to a concern in the literature that parent education programs may actually increase parent stress (Eiserman, Weber, & McCoun, 1995; Winton, Sloop, & Rodriguez, 1999), with the current study suggesting that it may not be the parent education itself that has a negative impact but the way in which parent education is delivered that is of importance. Of note, this study suggests that the effects of either condition could be rapidly reversed by the opposite approach, indicating that consistent with emerging literature on the importance of therapist behavior (Brookman-Frazer, 2004), the onus for the mood of the sessions relies heavily on the therapist approach.

Results also suggest that therapist approach may facilitate positive parent statements regarding child behavior. In particular, as the therapist highlighted the child's strengths, parents affirmed these views of child behavior and used this positive framework to recall and share additional strengths, further establishing a strength-based approach and enhancing the potential for positive perceptions of child behavior. In contrast, in the Deficit condition, parents responded to therapist statements by affirming the deficit-based approach and making further negative statements. Notably, for all parents, the first alternation into the Strength condition appeared to produce the greatest number of positive statements regarding child behavior on the part of the parents, with positive statements tapering off to a more stable frequency in subsequent alternations. One interpretation of this pattern is that parents may not frequently have an opportunity to reflect on their child's strengths, and when

presented with a welcoming forum to share positive views of their child, these parents did so eagerly. In fact, in the first Strength alternation, Parent 3 made frequent positive statements but also contradicted the therapist with negative statements on a few occasions, as if unaccustomed to focusing on her child's strengths. Moreover, parents continued to make positive statements even after treatment had progressed in the Strength condition over the course of a few weeks, suggesting that extending a strength-based approach may continue to prompt parents to consider their child's strengths.

The final major research question of this study related to the potential of the Strength condition to enhance parent-child interactions and thereby demonstrate a more direct impact on the child. Indeed, data reveal that parents engaged with their children in a more playful manner, engaging in higher levels of physical affection during the Strength condition, which also maintained throughout treatment and was observed in generalization. Of note, the Strength condition only involved the therapist, providing strength-based interpretations of child behavior, and the therapist gave no additional indication of the types of activities or the manner in which the parent should engage in with their child than had been given in the Deficit condition. The data suggest that parents' displays of physical affection bear a relationship with therapist statements, as parents only exhibited physical affection following Strength statements and demonstrated more physical affection overall during the Strength condition independent of the timing of therapist statements. Moreover, preliminary data on child responsivity suggest that children may respond more readily when parents demonstrate more positive affect and are more playful.

Concomitant effects of therapist approach on parent-child interactions are particularly important for children with autism, as the quality of these interactions have been identified as predictive to subsequent outcomes (Kasari & Sigman, 1997; Siller & Sigman, 2002). Specifically, seen from a transactional developmental perspective, autism is not a static condition existing within a person, but a neurodevelopmental process that can only be understood as taking place through the interaction of person and environment (Dawson, 2008). Moreover, improving the quality of parent-child interactions may be particularly relevant, given that in many treatment programs, it is expected that parents will be providing learning opportunities for their child, especially within generalization settings (McConachie & Diggle, 2007; R. L. Koegel, Koegel, Frea, & Smith, 1995).

### *Future Directions*

Given this was an initial study of the effects of a strength-based approach to parent education for children with autism; many pertinent research questions remain. In particular, therapists controlled only the types of statements made

regarding child behavior, as it was not possible to control for therapist affect during a naturalistic parent-education session. Thus, the therapist may have naturally displayed more positive affect during the Strength condition and appeared more neutral or concerned during the Deficit condition. Therefore, the strength-based approach may extend beyond statements by the therapist, but rather represent an overall therapist attitude.

In addition, although this study provides preliminary evidence for the impact of a strength-based approach outside the parent education session, due to design constraints, the long-term impact of a strength-based approach on parents could be not fully assessed. Given the rapid nature of the alternations and concern over extended periods of time in the Deficit condition, generalization was only conducted following the 2-hr Strength session at the end of treatment. On average, parents maintained positive affect and engaged in high levels of physical affection with their child even when the therapist was not involved in the interaction or present in the room, which suggests that a strength-based approach to parent education may influence parents in subsequent parent-child interactions that occur outside of parent education sessions. Further research is needed to understand how this process develops over time, what role the therapist can play in facilitating coping, and how continued exposure to a strength-based approach may buffer parents from the daily stresses of raising a child with autism.

Moreover, the strength-based approach may be useful for improving both parent and child skill acquisition as well. Because of the fact that parents were implementing treatment procedures throughout all alternations of treatment, and receiving feedback regarding their skills, the impact of strength-based parent education on child and parent behavior within this experimental design was also challenging to assess. Results of this study on child responsivity across each condition indicate that for children who responded to treatment, a strength-based approach may enhance child behavior. Given that PRT has been demonstrated to be a particularly powerful treatment tool for children with autism (R. L. Koegel & Koegel, 2006), it is expected that, consistent with the data, even in the Deficit condition, children would still respond to treatment. However, given the improvements in parent affect and parent-child interactions, parents may be more adept at engaging their children during the Strength condition, leading to increases in child responsivity. Similarly, one would expect that parents may learn skills more readily during the Strength condition.

Participant characteristics of this study also warrant further investigation. As Singer (1993) discusses, the research of Linehan (1988) suggests that there are groups of individuals who may be more resistant to challenging their ways of thinking. In particular, some parents of children with severe behavior problems might perceive these strength-based

statements as a lack of understanding on the part of the parent educator. In addition, research indicates that parents of older children have higher attrition rates in parent education programs and that the parent–professional relationship can be more challenging (Dishion & Patterson, 1992; Summers, Hoffman, Marquis, Turnbull, & Poston, 2005). It would be interesting to evaluate if the strength-based approach may be helpful in working with parents of older children with autism and children with severe behavior problems. Overall, this study provides preliminary evidence for the utility of a strength-based approach to parent education and further work is needed to explore the broader implications of this approach.

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