

Direct and Indirect Reinforcement Processes in Parent Training

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This paper reviews the recent parent training research in which parents are taught to use principles of operant learning as well as general principles of positive verbal discourse. While this combination of interventions has been shown to have greater impact than the operant guidelines used alone, a rationale for the discourse strategy is not clear. In this review, it is argued that the two interventions can be understood within an expanded view of reinforcement theory. It would seem that the interventions used in concert lead to improvement in children's and parents' observational skills, as well as in their willingness to cooperate.

Keywords: parent training research; operant learning; positive verbal discourse; reinforcement theory; observational skills.

When parents seek professional help for their children's behavior, a majority of the referral problems amount to aggression and noncompliance (Denham, Workman, Cole, Weissbrod, Kendziora, & Zahn-Waxler, 2000; Heller, Baker, Henker, & Henshaw, 1996). These two child behaviors are clearly related as a class of disruptive actions, and it is often true that noncompliance sets the stage for aggression because troubled parents are apt to provoke their children into following acts of disobedience (Patterson, 1982). Thus, a child's chronic noncompliance with parent instructions and rules seems to be a keystone part of this disruptive class, suggesting that ways of teaching children to obey their parents might also weaken the entire class of problem behaviors.

Because of the above findings and assumptions, it is not surprising to see that today's parent training programs for disruptive children target both components of this response class (Barkley, 1997; Bor, Sanders, & Markie-Dodds, 2002; Webster-Stratton, 1996). All of these programs follow principles of operant learning but also make use of adjunctive strategies aimed at verbal discourse exercises, designed to promote stronger positive connections between parents and their children (see Conduct Problems Prevention Research Group, 1999; Eyberg, 1988; Feinfield & Baker, 2004; Forehand & McMahon, 1981; Schoenwald, Sheidow, Letourneau, & Liao, 2003; Webster-Stratton, Reid, & Hammond, 2004). These "exercises" involve friendly talk, listening, feeling talk, problem-solving discussion, art projects, and appropriate expression of feelings. In some of the above listed studies, both the operant learning and the adjunctive strategies were shown to impact referral problems of the children. Regardless of whether or not the two strategies were assessed and analyzed as independent sources of change, the authors considered both interventions to be important components of the treatment process.

Based on the conceptual arguments and research reviews by Cavell (2001), Strand (2000a and 2000b), and Cavell and Strand (2002), there is reason to view these disparate intervention strategies as more similar than they seem to be. These authors' expansion of reinforcement theory includes stimulus control constructs that could place both interventions within a broader conception of reinforcement theory. In this paper I hope to further develop these ideas and, in the process, to layout some suggested guidelines for clinicians who work with the parents of disruptive children.

The Holistic Nature of Parent-Child Interactions

When parents are taught to train their children to obey instructions, the clinical teaching and subsequent training are often based on direct reinforcement strategies. That is, child compliance is positively reinforced and noncompliance is either ignored (extinction) or timed out (absence of opportunity to obtain positive

reinforcers). This intervention step is accompanied by similar contingency management of other responses in the class of disruptive behaviors, such as demands, nagging, hitting, and property destruction. While the treatment strategy makes sense if we view each response as independent, such a perspective overlooks the research evidence documenting functional connections across these topographically different responses. This evidence, first summarized in the edited book, *Response Structure and Organization* (Bernstein, 1981) pointed to a ubiquitous patterning of responses within the repertoires of children and parents, and within these dyads' transactions. Most poignant in the editor's summation are these words: "When all categories of behavior are recorded, it becomes clear that any increase or decrease in one response will by definition result in a complementary decrease or increase somewhere else in the repertoire. Research done in this format has led some theorists to view reinforcement as a process of redistributing time among response alternatives rather than a process of strengthening individual response tendencies. This change in thinking is an example of an important theoretical possibility that has emerged partially as a result of viewing the reinforcement question as a broad structural problem." (Bernstein, 1981, page x).

Now, more than 20 years later, Cavell and Strand (2002) bring us up to date in their book chapter summation of this "structural problem." If the response repertoires of troubled children and parents are actually organized into lawful patterns, should we not develop intervention strategies that target the patterns as well as their response components? One would think that today's parent training programs include relationship-enhancing exercises in addition to contingency management teaching because the program directors view "the reinforcement question as a broad structural problem." But, since none of the studies I reviewed included a discussion of this rationale, it seems more reasonable to conclude that the directors were following an empirical pathway by including those interventions proven to "work."

Cavell and Strand (2002) add a good bit of substance to a holistic perspective regarding the nature of children's disruptive behavior disorders. In fact, they give readers models of indirect reinforcement, ranging from "momentum" to "the matching law." All of these models presume that parent-child interactions generate specific outcomes (i.e., increased or decreased probabilities of responses) *and* general outcomes (i.e., improvement or worsening in the overall quality of the interaction pattern). Getting back to our focus on teaching child compliance, Cavell (2001) made a persuasive argument against the targeting of this child response, partly because of evidence pointing to compliance as a marker of change in the overall pattern of parent-child interaction. Thus, if a child's willingness to obey a parent's instructions is impacted by the molar pattern of the dyad's interactions, we would obviously want to know more about the nature of such patterns.

Kochanska (2002) summarized her research on this issue by highlighting the term "mutually responsive orientation" in a description of compliance-generating patterns of child-mother interactions. Kochanska's studies (Kochanska, 1993, 1994; Kochanska & Aksan, 1995; Kochanska, 1997; Kochanska, Coy, & Murray, 2001) extended the theoretical and empirical work of Maccoby (1992), Martin (1981) and Parpal and Maccoby (1985), showing that mothers who could orchestrate appropriate reactions to the full range of their infants' and toddlers' behaviors were rewarded by the children's prosocial actions, including "eager" or "committed" compliance with their mothers' instructions. Kochanska (1997) argued that the mothers who could orchestrate such fine tuned reactions might possess a capacity for perspective taking: "mothers who can adopt the psychological point of view of others may be better able to respond sensitively to the child's needs and to engage in mutually enjoyable activities with their children." (page 95).

It also stands to reason that parents who are not responsive to their children's various behaviors, will promote unresponsive actions by the children; including the children's noncompliance with parent instructions. Kochanska found that these unresponsive children were more likely than their counterparts to violate parent stated rules and they were more likely to oppose parental instructions. In their turn, these

unresponsive parents were more likely than their responsive counterparts to use coercion tactics in their efforts to engender child obedience (see Kochanska, 2002; 1997).

Harrist, Pettit, Dodge, and Bates (1994) pursued a similar line of thinking about those patterns of parent-child interactions defined by degree of “synchrony” or “reciprocity” in the overall behavioral transactions between mothers and their kindergarten-age children. In this study of volunteer dyads, the authors assessed positive synchrony (mutually positive transactions), non-matching exchanges (non-synchrony), and negative synchrony (mutually aversive transactions). Results showed that positive synchrony constituted most of the dyadic transactions, followed by non-synchrony and, rarely, negative synchrony. In line with the Kochanska (2002) findings, the children’s positive synchrony experiences correlated directly with measures of the children’s prosocial adjustment at school (e.g., teacher-rated competence) and correlated inversely with disengaged play, and both teacher and peer rated aggression. Also, as expected, the children’s home based non-synchrony and negative synchrony experiences co-varied directly with measures of maladjustment at school.

Although synchrony and reciprocity are useful descriptors of the constructive (and destructive) patterns emerging in parent-child interactions, these descriptors leave traditional reinforcement theory wanting as an explanatory model concerning the patterns promoting children’s cooperation or opposition. If reinforcement theory is to yield a viable account of this phenomenon there must be reason to believe that synchronous patterns describe higher probabilities of reinforcement for the children’s prosocial responses compared to their disruptive behavior.

As Cavell and Strand (2002) point out in their conceptual paper, the matching law (Herrnstein, 1974) provides a molar view of reinforcement processes that could explain how synchronous patterns of parent-child interactions promote the children’s cooperation. According to Herrnstein (1974), the matching law defines reinforcement in relative terms, meaning that one must assess the distribution of reinforcers across an individual’s full repertoire of responses in order to know the impact of reinforcement on any particular response. In the case of child cooperation, these responses could become more prominent in the child’s repertoire if a parent distributes the largest proportion of social attention following this prosocial class of child behavior. Wahler, Herring, and Edwards (2001) and by Synder and Patterson (1995) found correlational evidence for the matching law in accounting for rates of children’s prosocial responses and disruptive responses.

In summary, there is ample evidence pointing to patterns of parent-child behavioral transactions as sources of influence on children’s willingness to obey their parents and willingness to acquire prosocial response classes. Likewise, patterns of disjointed and aversive parent-child transactions appear to be the formative base of children’s disruptive response classes in which noncompliance, demands, complaints, and hitting constitute covarying clusters. Finally, the available evidence suggests that these synchronous and non-synchronous transactions orchestrated by parents might be accounted for by a molar conception of reinforcement processes’ such as the matching law.

Enhancing Parent Abilities to Orchestrate Synchronous Interactions Through Verbal Discourse

Teaching parents to distribute social attention appropriately across their children’s various prosocial, neutral, and disruptive responses is a more daunting task than that presented in traditional parent training programs. Wahler and Bellamy (1997) found it possible to teach two mothers to generate synchronous interactions with their disruptive boys, along with the use of time-out for the children’s disruptive responses.

Results following an ABAB reversal design, showed synchrony to be superior to contingent praise in maintaining the boys' compliance with their mothers' instructions. However, these were highly motivated mothers who quickly caught on to our coaching procedures designed to point out appropriate and inappropriate ways of consequenceing prosocial, neutral, and disruptive child responses with simple acknowledgments (e.g., "I see."), commentary ("That looked like fun"), questions (e.g., "How will you do that?"), occasional praise, ignoring, and time-out. Following this study, our work with a larger sample of disadvantaged mothers and their disruptive children was less promising in this respect. In essence, many of these depressed and frustrated mothers were frequently inconsistent in their trainer-guided efforts to react appropriately to the full range of their children's responses. As other parent training researchers have done, we then looked for some relationship enhancing exercises that might help these dyads to focus on cooperation.

We are now following the research on parent-child conversations about the past as potential setting events for cooperative ventures with these dyads (Laible & Thompson, 2000; Slade, Belsky, Aber, & Phelps, 1999; and Welch-Ross, 1995, 1997). When parents converse with their children, these discussions about opinions, ideas, actions, and feelings typically reference recent and long passed experiences shared by the dyads. When the verbal discourse is well orchestrated by the parent it is because this adult's primary goal is relatively straightforward: To prompt the youngster to elaborate his or her recall of an experience in detail. The process becomes synchronous since children usually enjoy telling their stories to a listener who asks for more, meaning that the parent is acquiring experience in how to orchestrate mutually responsive (synchronous) interactions (see Kochanska, 2002). In addition, the children gain experience in reporting clear, orderly, and succinct accounts of the happenings, and the parents gain equal clarity on how they think and feel about their children during these episodes.

When troubled parents are taught to use prompts for elaboration as their disruptive children recount past experiences, two beneficial outcomes seem to accrue. First, these moments of synchronous social exchange seems to lead the parents to temporarily view their children in positive ways (i.e., Slade, et al., 1999). Second, the children's more coherent stories are known to covary with their more complex understanding of causality (i.e., "Theory of Mind" scores reported in the paper by Welch-Ross, 1997). Theory of mind refers to a child's willingness to question his or her current view of how and why things happen. As the child recognizes discrepancies between his or her personal beliefs about a happening (e.g., "My mother is mean to me") and a mother's belief about this same happening (e.g., "You disobeyed me, so I scolded you."), the conflicting representations can become topics for child-parent discussion (also see Dunn, Brown, Soomkowski, Tesla, & Youngblade, 1991; Fivush, 1991; Nelson, 1986, 1993), possibly leading to a broadening of the child's understanding of this and similar happenings. In short, children who develop a more complex understanding of causality ought to become more objective observers of what happens during interactions with their parents. Likewise, troubled parents who expect the worst from their disruptive children might become more objective observers as they experience the synchrony in this form of verbal discourse.

Given the success experiences following parents' prompting of their children's elaboration of "stories" about the past, these dyads ought to be ready for a similar revamping of their more common social interactions. In effect, the parents ought to be motivated to think of these everyday interactions using the matching law formulation of contingency management. Guided by a parent trainer who helps parents to imagine a variety of appropriate ways to react to the children's prosocial, neutral, and disruptive response classes, these adults might find creative ways of ensuring that most of their positive reinforcers are contingent upon prosocial responses (i.e., following the Wahler & Bellamy, 1997 format).

Keeping in mind that most of the previously cited research represents correlational studies of children's personal adjustment and narrative structure, it is still tempting to speculate on functional properties of children's abilities to tell coherent and rich stories of their life experiences. We already know that parents who demonstrate such narrative abilities are also more responsive during observed interactions with their young children (see the meta-analysis of research by van IJzendoorn, 1995). Thus, it would make sense to hypothesize that children's personal narratives might also function as observational templates during interactions with their caregivers. Presumably, a child's ability to tell coherent and rich stories about family life is a marker of that youngster's objectivity as an observer of moment-to-moment social exchanges with his or her parents. Given that this ability is paired with parental responsiveness during the discourse leading to the children's storytelling ability, one would think that the combination could enhance cooperation within the dyad.

Dialogue as a Parenting Tool to Enhance Children's Willingness to Cooperate

Many of the verbal discourse exercises commonly used in current parent training programs might be construed as enjoyable dialogue between parent and child. As such, the dyad would hopefully be engaged in mutually responsive discourse known to enhance dyadic cooperation (e.g., Laible & Thompson, 2001; Kochanska, 2002). This form of dialogue can be taught to parents (see Wahler & Smith, 1999; Welch-Ross, 1997) and the children should then become more proficient storytellers who subsequently view their day-to-day experiences in more objective ways.

In effect, I am proposing a clinical strategy in which troubled parents develop expertise as contingency managers and as listeners who have mastered the art of dialogue. In doing so, these fathers and mothers can teach their disruptive children to pay attention to the molecular level of social transaction and to study the molar pictures of their social experiences. Such teaching ought to increase the children's willingness to cooperate because of enhanced parent responsiveness to the children's elaborations in their verbal accounts of personal experiences. Then, since the children's personal narratives will become more clearly and richly structured, they are likely to view the causes of their problematic social interactions more objectively.

The new look at contingency management aspects of this strategy are covered well in the papers by Cavell (2001) and by Cavell and Strand (2002). The ten principles outlined in this latter paper will challenge clinicians to teach parents to orchestrate responsive patterns of reacting during verbal and non-verbal social episodes with their children, including joint conversations about the past. As these appropriate transaction patterns are developed, the children ought to become willing participants who are both cooperative and interested in studying their own stories of personal experiences. The following steps constitute my suggestions for a clinical plan of action:

- 1) Begin parent training with the traditional differential reinforcement and time-out strategies aimed at increasing child prosocial responses and decreasing disruptive behavior.
- 2) Once the parents demonstrate control of their children's disruptive behavior along with a demonstration of their skill in reinforcing the prosocial responses, introduce the parents to principles of dialogue. Start these adults and their children on conversations about shared experience, both recent and long passed. Teach the parents to encourage the children to elaborate their accounts by asking questions about when, where, what, how, and why. Remind the parents that they are in control of their children's behavior (due to success in step 1) and, therefore, they need not worry about the consequences of granting their children full autonomy during dialogue. The reminder is important because parents often feel that they should correct their children's misperceptions of how and why things happened.

- 3) When parents get the gist of dialogue (i.e., a supportive listener's quest to help the narrator to tell a coherent and rich story), they will also begin to see how they have orchestrated synchronous verbal discourse through their own responsiveness to the children's stories. Point out these patterns of harmonious discourse to the parents and remind them that they have mastered the art of dialogue.
- 4) Once the parents have been taught how to be responsive listeners to their children's stories, it is now feasible to go back to step 1 for purposes of expanding the differential reinforcement concept into the broader conception of synchrony (see Wahler & Bellamy, 1997). We start this re-education process by emphasizing the importance of time-out to maintain parental control of the children's disruptive behavior. We then point out that praise is only one of many ways in which parents can support their children's prosocial and neutral responses. In fact, we also tell parents that a rich schedule of appropriate praise can get "old" and can lose its quality of genuine approval when used too often. We remind parents that their orchestration of dialogue involved a number of ways in which they acknowledged and prompted their children's account of past events. In the same vein, they can acknowledge, comment on, and otherwise attend appropriately following instances of their children's neutral and prosocial responses. Through guidance from the matching law the larger proportion of this parental attention will be geared to the children's prosocial behavior.

Also, we heed the advice of Cavell and Strand (2002) and Kochanska (2002) about children's compliance as a barometer of quality in the parent-child relationship. We want parents to keep track of compliance likelihoods and to make judgments about the degree of willingness in this response to parent instructions. Parents in our program understand that they could force their children to comply or they might even arrange reinforcement contingencies to shape this response. But, these adults also know that these "products" would be misleading indices of cooperation. The latter product is a pattern found within the repertoires of each parent and each child, and within the transactions generated through a complex harmony orchestrated by each of these people.

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