Cognitive Control Therapy with Children and Adolescents

Related Research and Critique

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As discussed in the first chapter, CCT is designed and conducted in terms of a developmental-interactional model which places cognition *within* personality. Briefly, a person experiences and "controls" a continuous flow of changing stimulation, occurring in both internal and external environments, with a set of cognitive mechanisms, which shift flexibly in the autonomy they maintain between reality and fantasy, mediating and coordinating these two sources of information.

Of the concepts from this model that are especially relevant to the methods and rationale of CCT, three are pivotal: (a) the notion that cognitive functioning consists of a set of processes that characterize the manner in which all individuals deal with information from early childhood through adolescence and that these "cognitive controls" form the substructure of other cognitive activities involved in academics and intelligence; (b) the relation between cognitive controls and learning; and (c) changes that occur in cognitive orientation and autonomy in response to changes in stimulation. Considerable research with these and other concepts is detailed elsewhere (Santostefano, 1978; Santostefano & Rieder, 1984). The highlights presented here derive from these sources unless otherwise noted.

SUMMARY OF RESEARCH WITH THE CONCEPT OF COGNITIVE CONTROLS

Construct Validity of Cognitive Controls and Their Relationship with Intelligence and Sex

Seven independent factor analytic studies by the author and studies by others (e.g., Wertlieb, 1979) demonstrate that when various groups of children and adolescents (normals, outpatient and inpatient psychiatric populations, learning disabled, brain damaged, orphaned) are administered a wide range of tasks they manage them with a particular set of cognitive functions that fit the definitions of cognitive controls presented earlier: body ego-tempo regulation, focal attention, field articulation, leveling-sharpening, equivalence range. These results, along with those of studies which relate measures of cognitive controls to measures from other cognitive tests (e.g., Benton Visual Retention Test, Continuous Performance Test) provide considerable support for the validity of the construct of cognitive controls. Studies also demonstrate that cognitive control functioning underlies a child's academic skills and the manner in which a child deals with, for example, Piagetian tasks of conservation, while other studies show that cognitive control functioning is relatively independent of intelligence and sex. Boys and girls of high or low intelligence, for example, could make habitual use of narrow scanning or sharpening as cognitive strategies.

Developmental Changes and Reliability in Cognitive Control Functioning

When longitudinal assessments of cognitive controls were obtained, from children ages 4 to 11 years, and in cross-sectional studies of children through adolescence, maturational changes were observed as outlined in Chapter 2. For example, scanning (focal attention) is characteristically narrow and passive with young children and gradually becomes more broad and active with age. While the organization of cognitive controls change throughout development, individual differences in cognitive control functioning are stable over several years. For example, if a 5-year-old child is the most narrow scanner in a group of 5-year-olds, although that child's scanning becomes progressively more broad with age, when assessed at the age of 10 years, the same child is again the most narrow scanner in a group of 10-year-olds.

Cognitive Controls and Learning Disabilities

Studies demonstrate that dysfunctional cognitive controls underlie learning disabilities and poor classroom performance as judged independently by teachers. For example, children who characteristically ''level'' rather than sharpen information are rated as showing poor knowledge of classroom routine, forgetting assignments, and needing frequent reminders. As another example, children low in field articulation are rated as distractible and requiring extra effort on the part of the teacher to focus their attention on relevant projects.

Two studies explored whether cognitive control functioning predicts learning disabilities. In both studies the entire kindergarten population attending a public school was evaluated (about 180 children in each group). On the basis of dysfunctions in cognitive controls (determined by a discriminant function analysis), predictions were made as to the probability that a child would show difficulty in learning by the third and fourth grade. Several years later interviews were conducted with teachers who had no knowledge of a child's kindergarten test performance. A high relationship was observed between predictions based on cognitive control assessments obtained in kindergarten and academic failure and learning disabilities observed in the third and fourth grades.

Cognitive Control Functioning and the Environment

A study by Garrity (1972) illustrates how the structuring of cognitive controls is influenced by, and accommodates to, the environment's pace and complexity of stimulation. Assessing black and white children from various socioeconomic status (SES) levels, Garrity correlated cognitive control measures developed by the author with assessments of social deprivation. Following Deutsch's Social Deprivation Index Scale, children and parents were interviewed to obtain information about (a) physical make-up and organization of the home, (b) number of children under 18 in the home, (c) extent of dinner conversation, (d) cultural experiences the child anticipated

for the coming weekend, and (e) parent's educational aspirations for the child. Children who constructed global, fluid images of information and compared these inefficiently with present perceptions (the leveling-sharpening control) were associated significantly with disorganized homes and a low degree of social stimulation.

Changes in Cognitive Control Orientation with Changes in Stimulation

Several studies explored the concept that cognitive controls shift the degree of autonomy maintained from external and internal stimuli in order to maintain affects and the complexity of information at a level that serves successful adaptation. Among the hypotheses explored were (a) if the situation permits the individual to engage information actively, the cognitive orientation maintained emphasizes perceiving and working on external stimuli; (b) if the situation restricts the individual's participation, the orientation maintained emphasizes perceiving and working on fantasies which construe the situation; (c) if the environment is unusual given the individual's history, cognitive orientation seeks and/or avoids information so that emotions prescribed by fantasies construing the event do not interfere with successful adaptation; and (d) a cognitive orientation is judged successful on two interrelated counts: whether requirements of stimuli and fantasy are coordinated to foster mastery and learning, and whether the type and intensity of affect prescribed serve rather than restrict adaptation.

Two studies evaluated individuals when dealing with two molar situations, one usual and the other unusual, the latter presumably arousing fantasies and affects. Guthrie (1967; see also Santostefano, 1978) measured the leveling-sharpening control of novice parachutists in their homes and again at an airport before executing a parachute jump. The latter situation was construed by all subjects as jeopardizing survival. Also, the situation clearly required that subjects actively engage and use available external information. When compared with parachutists not scheduled to jump, experimentals showed a significant progressive shift (from home measures) toward increased sharpening when at the airport. The finding was interpreted as a change in cognitive orientation which balanced fantasies of annihilation (accompanied by fear/anxiety) so as to limit the extent to which they interfered with perceiving external stimuli, an orientation necessary for executing a successful jump.

The second study (Santostefano, 1978; Shapiro, 1972) assessed the leveling-sharpening mechanism and several personality/affective variables in an unusual situation that limited active participation. Boys 8-11 years old were assessed in their homes, again in a hospital hours before undergoing surgery for hernia repair, and again at home 30 days after discharge. The comparison groups were children evaluated at a dentist's office during their first visit for dental repair, or only at home, at three comparable points in time. Among the personality dimensions measured were: castration anxiety,

fantasied aggression, fantasies representing body barriers and penetration, and behavioral signs of emotional upset. The surgical group shifted most toward leveling information when in the hospital environment. Moreover, children who shifted most toward leveling produced *fewer* images while in the hospital that represented body barriers (i.e., the inner world became more accessible), and they produced *more* fantasies which depicted castration anxiety and aggression in concrete literal terms. They were also rated by their mothers as adjusting best after surgery.

Viewed according to the model outlined in Chapter 2, these results suggested that the hospital group construed hernia surgery in terms of mutilation fantasies, and the hospital setting limited the extent to which these children could engage external information. Accordingly, when in the hospital the cognitive orientation assumed by the leveling-sharpening mechanism avoided the requirements of external stimuli, turned inward, and addressed fantasized castration and aggression, a shift associated with more adaptive, post-operative adjustment.

Other studies used molecular environments defined as test stimuli. The fantasies activated by these stimuli were inferred from differences observed between populations which shared some key variable relative to the stimuli.

In the parachute study described above, one test of a neutral “house”

scene was always administered immediately after either a test depicting a parachutist in free fall (the chute was not yet deployed) or a parachutist in slow descent (the chute was fully deployed). A significant test sequence effect was observed. Individuals administered the House Test after the Free Fall Test, sharpened more with the House Test than did individuals administered the House Test after the Slow Descent Test. Given results discussed earlier, the following interpretation is possible. The two parachute scenes represented different “environments," activating different fantasies and associated affects. The requirements of a free fall scene for novice parachutists at an airport represented a level of stress and danger which prescribed a shift to an outer orientation and accurate perceptions of external stimuli (i.e., the same shift observed in response to the molar environment of the airport).

Santostefano and Rieder (1984) assigned psychiatrically hospitalized children to high or low aggression groups on the basis of their performance with an action test of aggression. The two groups were compared with two tests of the leveling-sharpening control: a house scene representing nonaggressive test stimuli and a scene of two cowboys in a fist fight, a stimulus which usually arouses fantasies of violence. High aggression children were significantly more efficient in maintaining images of aggressive stimuli in memory and comparing them with present perceptions (sharpened), while low aggression children leveled aggression stimuli and sharpened

nonaggressive stimuli. This difference was interpreted in terms of the hypothesis that the requirements of aggressive fantasies of high aggression children (which included low anxiety about aggression) were concordant with those of aggressive stimuli, prescribing an orientation that called for the ready assimilation of aggressive test stimuli. Conversely, the requirements of aggressive fantasies of low aggression children (which included high anxiety and conflict with aggression) were discordant with those of aggressive test stimuli, prescribing an orientation that avoided (leveled) their attributes.

With another study, hospitalized emotionally disturbed children, also designated as high or low in aggression, were administered multiple tests of focal attention (large sheets on which were printed, in random arrays, drawings of one type of stimulus: geometric shapes; neutral objects [e.g., chair]; oral objects [e.g., bottle of milk]; aggressive objects [e.g., pistol]).

With each form the child scanned and marked, as quickly as possible, for 30 seconds, particular stimuli (e.g., circles and crosses; chairs and shoes). The location and sequence of markings were recorded. The scanning of high aggressive children was most narrow when surveying aggressive stimuli. If related to the previous study, this finding suggests that although aggressive children sharpen aggressive test stimuli (hold images stable in memory and compare these efficiently with perceptions of present aggressive stimuli), at the same time when scanning, they tend to center on a few aggressive stimuli

(myopic perception).

STUDIES OF CCT

The author and colleagues have examined the functioning and test findings of children and adults treated with the CCT method and, whenever possible, obtained follow-up data. We have been especially interested in persons who were first treated only with a non-directed, verbal/play format without appreciable results, and then treated along the lines of CCT. A discussion of these individual cases is reserved for a future communication. Several formal studies of CCT have been conducted involving control groups and are summarized below. Details are available in a previous publication (Santostefano, 1978) or as otherwise noted. Sketches of CCT with an autistic child and a blind child are also provided to illustrate the method with severely impaired children.

CCT with Retarded Children: I

This study evaluated whether a short-term course of CCT in focal attention and field articulation would advance the efficiency with which retarded children scanned and articulated relevant/irrelevant information and also result in a greater degree of cognitive plasticity (i.e., a greater capacity to assimilate guidance and stimulation provided by others). The

treatment group consisted of 31 children attending a day care program (17 boys, 14 girls; age range, 3.5-7.8 yrs.; mean age, 5.6 yrs., mean I.Q., 54). A comparison group consisted of 32 children selected from other day care centers participating in the same state-wide program (17 boys, 15 girls; mean I.Q., 51; mean age, 5.2 yrs.). Mothers conducted the treatment program at home with their respective child for a period of 16 weeks, five sessions per week, each 30-60 minutes. Mothers were provided a special manual of instructions, materials, and weekly supervision.

Pre- and post-treatment evaluations consisted of five tests, which could be administered by pantomime, required only nonverbal responses, and used only white, black, and grey material: (a) Maze Trail test, (b) Picture

Discrimination and Matching test, (c) Buttons test (segregating a pile of buttons into designated containers), (d) Object Sort test (grouping wooden cutouts according to commonalities, and (e) Arm Movement Imitation test (imitating movements performed by the examiner). To assess cognitive plasticity (whether the child shifted from one level of cognitive efficiency to a higher one after being provided coaching), the examiner physically guided the child through a successful response whenever the child's first response fell below a predetermined level. When the item was re-administered, if coaching resulted in improved performance, a "gain score" of 1 was assigned, if no improvement was observed the score was 0.

At pretest the groups did not differ in I.Q., age, or in their performance with each of the tests. At post-testing, the treatment group showed performance that was statistically better with all tests except the Arm Movement Imitation test. In terms of cognitive plasticity, at pretest the groups showed no difference in their need for, or capacity to assimilate, coaching provided by the examiner. Each group required coaching for an average number of nine test items, and each improved their test performance with about 45% of the items for which coaching was received. In post-testing, the CCT group showed significantly less need for coaching and a greater capacity to assimilate demonstration. The CCT group required coaching for an average of five test items versus nine test items by the comparison group, and improved in test performance 63% of the time as a result of coaching versus 45% by the comparison group.

Although treatment was conducted by nonprofessionals, the results suggested CCT in focal attention and field articulation, with retardates, generalized to more efficient perceptual-cognitive functioning and promoted a greater capacity to assimilate stimulation provided by others.

CCT with Retarded Children: II

This study compared the effects of CCT in body ego-tempo regulation with CCT in focal attention-field articulation. We explained to parents of

retarded children attending the same day care program, that CCT in focal attention, when conducted at home, appeared to promote cognitive growth, that we had every reason to believe CCT in body ego also promoted cognitive growth, and that learning whether these programs promoted cognitive growth in different areas would help professionals better prescribe CCT for a child. We also explained that if a mother elected the program, mother-child pairs would be randomly assigned to a treatment group. Of the 33 mothers who enlisted, 11 were assigned to one of three treatment groups. However at some point along the way, 11 mothers elected to drop out finding the requirement of conducting daily sessions too demanding. The groups for which complete data were available are as follows: (a) CCT in focal attention (16 weeks): four boys and four girls, age range 3.6-8.2 years; mean age 5.6 years; mean I.Q. 51; (b) CCT in body ego (16 weeks): five boys, three girls; age range 4.3-6.7 years; mean age 5.6 years; mean I.Q. 52; (c) CCT in body ego (8 weeks) followed by CCT in focal attention (8 weeks): five boys, one girl; age range 4.3-8.0 years; mean 5.6 years; mean I.Q. 47.

The parents were given special manuals of instruction, materials, and weekly supervision. The children were administered a series of tests before and after therapy including several used in the previous study and others. The tests, in the sequence listed, were conceptualized as requiring cognitive activity representing body experiences (proximal) to activity representing conceptual experiences (distal): (a) Maze-Trail test; (same as above), (b)

Object Discrimination and Matching test (the child matched each of 24, three-dimensional cutouts with 8 standards displayed), (c) Buttons test (same as above), (d) Picture Discrimination and Matching test (same as above), (e) Circles and Cross test (the child scanned various geometric shapes printed on a sheet of paper and marked only circles and crosses), (f) Object Sort test (same as above). Again the items were re-administered with coaching whenever indicated and a gain score computed.

The results were evaluated with the Mann-Whitney U-test. At pretest the three groups did not differ in age, I.Q., and test performance. To evaluate the effects of therapy, difference scores were computed for each child, with each test, between pre- and post-therapy measures. An examination of these difference scores suggested that CCT in body ego versus focal attention-field articulation had different effects. Body ego therapy improved performance most with the Maze test. Therapy in body ego followed by focal attention (Group 3) resulted in the most improvement in discriminating and matching three-dimensional objects (with body ego therapy showing a greater influence than focal attention). Focal attention therapy alone had an increasingly greater effect in improving a child's discriminating and matching pictures of familiar objects, scanning and marking geometric shapes mixed among others, and grouping objects according to common attributes. In terms of cognitive plasticity, the three groups did not differ at the start of treatment. After treatment, the group receiving body ego CCT followed by focal attention

CCT (Group 3) showed the greatest gain in the capacity to assimilate stimulation provided by coaching.

Although the observations were obtained from retarded children and the therapy provided by nonprofessionals, the results suggest that CCT programs have different effects on cognitive processes and skills, encouraging further study of this issue.

Group CCT with Kindergarteners in Public School

Gunnoe (1975; see also Santostefano, 1978) and the author collaborated in a study comparing CCT and academic skill tutoring. "Freshman" kindergarteners were administered a battery of tests (cognitive and academic skills). On the basis of these results and teacher observations during the first weeks of school, children were selected who showed significant cognitive dysfunctions and who appeared to be at risk negotiating classroom demands. The parents of these children were contacted and asked to volunteer having their child randomly assigned to either a group CCT program or an academic tutoring program that would be conducted in the school, one hour, four times per week, by the same two teachers. We explained that we believed both group programs, supplementing the child's regular kindergarten program, should be beneficial and that we were interested in learning more about the relative effectiveness of each. Three groups were formed: (a) CCT: 9 boys, 2

girls, mean I.Q. 119; (b) Tutoring: 8 boys, 2 girls, mean I.Q. 116; (c) no treatment: 9 boys, 13 girls, mean I.Q. 123. The treatment programs were conducted for a period of 15 weeks. Before and after treatment, each child was administered a battery of cognitive control tests and the California Test of Mental Maturity (CTMM). Each child was also reevaluated with the same procedures one year later.

At pretest, the two treatment groups did not differ from each other in test performance, but each group showed significant lags in cognitive functioning and academic skills when compared with the no-treatment groups, as might be expected since the children were selected for treatment because of their dysfunctions.

To evaluate the effects of treatment, the test scores were combined into a composite score and examined by means of a multivariate analysis of covariance with pre-therapy scores serving as baselines. The pretest difference between the two treatment groups and the comparison group were no longer observed, indicating that both treatment groups "caught up" to the controls in terms of cognitive functioning and academic skills. However, CCT and tutoring did not have differential effects on the composite test score. Further, an analysis of scores obtained one year later produced the same results. Both groups sustained the gains achieved, showing no difference when compared to the control group. And again the two treatment groups did

not differ from each other.

However, when the rate of change observed with individual test scores was examined by means of quadratic trend analysis, noteworthy differences were observed between the CCT and tutoring groups. Quadratic analyses examined the rate of change from times one to two and compared this rate with change observed from times two to three, providing an opportunity to explore whether the rate of change was influenced differently by each treatment approach.

While the treatment groups showed no difference at the start with a measure of fine motor delay, the CCT group improved sharply at time two and slightly more at time three. The tutoring group showed moderate improvement at time two and again at time three. The difference between rates of change was statistically significant. CCT was also associated with greater rates of change with two other cognitive measures: scanning information actively (focal attention) and withholding attention from irrelevant information (field articulation). In addition, the rate of change shown by the CCT group with the CTMM Verbal Concepts Test reached statistical significance. Though lagging significantly behind the tutoring group at pretreatment, with a test that measures drawing inferences from statements and understanding the meaning of words, the CCT group showed a greater rate of growth immediately after treatment, closing the gap between

them. This gain sustained 1 year later.

In summary, although CCT and tutoring had about the same general effect on cognitive functioning and academic skills, CCT was associated more with a greater rate of change and growth. This study, and the previous one contrasting two CCT programs, emphasize the need to compare CCT with alternative treatment methods. Among the issues requiring attention in such studies are the skill and commitment of the therapists. In the study reported, although the same teachers conducted the CCT and tutoring programs, they had prior training in "tutoring'' but no training in conducting group CCT, except for weekly supervision.

CCT with Children Hospitalized in a Psychiatric Facility

Donahue, Rokous, and Santostefano (1984 a) explored the effectiveness of CCT with children hospitalized in a psychiatric facility because of severe personality disorders and cognitive dysfunctions. The children were among about 200 admissions into a 40-bed facility, over a four year period, and who had been administered psychological tests on admission and at discharge after a course of CCT (experimental group) or on admission and at discharge, but who had not received a course of CCT (control group). Except for CCT, the hospital program of each child in each group was essentially the same: they attended a psychoeducation program on hospital grounds (9:00 a.m. to 2:30

p.m., 5 days a week), participated in afterschool recreational activities, and received the same milieu program.

CCT consisted of 2 to 4 one-hour weekly sessions conducted by psychology interns, postdoctoral fellows, and psychiatric residents with weekly supervision provided by staff psychologists. Although the therapists varied, and their skill with CCT was relatively underdeveloped, a comparison of the groups provided an opportunity to evaluate the method. Children were recommended for CCT whenever testing on admission showed severe cognitive control dysfunctions, and those most impaired were assigned whenever a therapist was available.

The CCT group consisted of 12 boys and 6 girls (age range: 6.2-15.0 years) and the control group, 9 boys and 7 girls (age range: 8.0-15.0 years). The two groups did not differ statistically in mean age at pretesting (CCT mean was 12.0 years; control mean was 12.6 years), in total days of hospitalization (CCT mean was 428 days; control mean was 416 days), and in average family income (CCT mean was $26,000; control mean was $19,500). Four additional months separated pre- and post-testing of the two groups (CCT mean was 14.5 months; control mean was 10.0 months). The CCT group received an average of 102 treatment sessions over an average period of 10 months.

At pretest the children were administered cognitive control tests (Santostefano, 1978) assessing scanning, field articulation, leveling-sharpening, and conceptualizing. In addition, the admitting psychiatrist routinely rated the severity of a child's presenting symptoms from severe to moderate following guidelines provided by the Group for Advancement of Psychiatry. At posttest the same procedures were re-administered and again a staff psychiatrist routinely rated severity of symptoms, without knowledge of a child's test performance or necessarily that the child participated in a course of CCT.

To evaluate the effects of CCT, 19 cognitive test scores were compared with the Mann-Whitney U test. At pretest the control group showed more advanced cognitive functioning on all scores, 8 reaching statistical significance, an expected result since children were assigned to CCT because they showed major lags in cognitive functioning. However, at posttest all of the differences were less in magnitude, and only one reached statistical significance, indicating the CCT group “caught up” with the control group.

In addition, at posttest, the CCT group showed *more efficient* equivalence range functioning, which reached statistical significance in spite of the fact that at pretest the control group showed more efficiency. The measure in question derives from the Object Sort test, which assesses conceptual thinking. In a free sort format, the child places 46 familiar objects

into groups and explains how the objects located in each group belong together. The Mean Breadth score produced by this test takes into account three aspects of the performance: (a) the average number of objects the child locates within each realistic group, (b) the average level of abstraction the child imposes on all groups when explaining how the items belong together, and (c) the total number of realistic groups the child constructs. When these values are set in a ratio, they reflect the category width or breadth the child tends to impose on information when free to conceptualize in his/her preferred way. Although lagging initially in category width, at post-testing the CCT group showed an average category width that was significantly broader and more abstract than that of the control group.

Symptom ratings by a psychiatrist provided another source of data about the possible effects of CCT. The CCT group was rated as showing less severe symptoms at discharge, a difference which approached statistical significance ($p = .10$).

These findings suggest that a course of CCT with severely disturbed, hospitalized children was associated with overall cognitive growth, growth in conceptual thinking in particular, and with a decrease in severity of symptoms. The interpretation seems tenable since both groups represented severe psychological illnesses, received the same hospital care, with the exception of CCT, and since cognitive lags revealed at pretesting by the CCT

group were diminished at post-testing and no longer statistically different. The one possible contaminating factor concerns the difference in the duration of time separating pre- and post-testing. It could be argued that the gains made by the CCT group were a function of the four additional months of hospitalization they received. But, this possibility should be considered in terms of the more severe impairments the CCT group showed at the start. It seems unlikely that the few additional months separating the evaluations alone resulted in the cognitive growth which took place, especially in conceptual thinking, or in the reduction of symptom severity.

CCT with Outpatient Children

Donahue, Rokous & Santostefano (1984 b) also explored the effect of CCT with children treated in a community outpatient facility because of learning disabilities and adjustment problems. The group consisted of 26 children (16 boys, 10 girls) for whom cognitive control test scores were available before and after a course of CCT. Their ages ranged from 5 to 17 years, with a mean age of 11.6 years. As a group they received an average of 78 sessions (conducted one or two times per week) over an average period of 14 months. Because a comparison group was not available, and the age range of the groups spanned kindergarten to high school, we decided to use the average age of the group (11 years) as the index of comparison. We reasoned that a comparison of the group's mean score on each test with the mean score

associated with normal 11-year- olds would provide an opportunity to probe the effectiveness of CCT. The tests administered before and after treatment assessed scanning, articulating relevant and irrelevant information, comparing images of past information with present perceptions, and categorizing and conceptualizing information. Before treatment, the group means of each of nine scores fell significantly below the means associated with 11-year-old typical learners (Santostefano, 1978). After treatment, eight of the nine scores were no longer significantly different from norms, suggesting that as a group these children and adolescents achieved noteworthy cognitive gains.

CCT with an Autistic Child

Mike's history showed severe atypical and retarded development and at one point he was evaluated for possible blindness because of his vacant stare. He participated in a day care program from the age of 5 to 6, when independent evaluations by a clinical psychologist and psychiatrist showed that he had not yet formed speech patterns (he wailed in a high-pitched voice) and gave no evidence he was aware of objects, persons, sounds, or events around him. His main activity consisted of running along the walls of a room, moving his hands ritualistically. It was decided to continue Mike's day care program and to provide him with two sessions per day of individual CCT in focal attention. The main question asked was whether CCT in focal

attention would break through his autism and cognitive withdrawal.

Following the guidelines noted in Chapter 4 (see section on Special Considerations for Seriously Disturbed Children) and Chapter 6, the therapist began treatment by placing a single, white square in the center of a table and devoted her efforts to helping Mike stand in front of the table, reach out, grasp the cutout, and release it in a box. At the end of the second month, Mike was able to perform this response purposefully and without coaching. (Incidentally, at the same time it was noticed that he was creating more disturbance in classroom, behavior suggesting that he was beginning to perceive the environment.)

At this point the therapist presented a white square and a black square, directing Mike to remove the square that she touched, leaving the other one on the table. Over the next 5 months the displays gradually increased in complexity, eventually consisting of 25 cutouts, all white, three shapes, and randomly arrayed, and Mike removed, for example, all the squares, or circles, as designated by the therapist.

During these 7 months, Mike used various strategies to resist the demands of therapy and escape from the information of the "outside world" which persistently intruded upon his autistic withdrawal. For example, during the fourth month of treatment, he cried whenever he was seated at the

table. Sometimes he placed his head on the therapist's shoulder and sobbed, or looked at her with a “pathetic” expression, seeming to make an appeal that therapy be abandoned. That he was attempting to stop therapy was clearly supported by the observation that as soon as he was told he could get up, the tears were gone and he quickly began running about the room jabbering. During these episodes of resistance the therapist hugged Mike, stroked the cutouts, but gently persisted. Later Mike teased the therapist, suggesting a higher form of resistance. For example, laughing mischievously, he removed incorrect cutouts after having shown he could identify the correct ones, or he removed a correct cutout but would not release it, shaking his wrist as if the form was glued to his hand. At the same time, Mike began to reciprocate purposely the therapist's smiling and laughing.

Observations made by day care staff suggested that Mike's growth in focal attention-field articulation, and in negotiating, generalized from the tasks to the environment. Staff noticed he seemed to be “looking at" children, teachers, and events in the classroom. Once when the therapist entered the classroom, a child spontaneously hugged her, while Mike obviously watched. After looking back and forth from the child to the therapist, he suddenly covered his eyes with his hands, apparently attempting to block out the incident because it was too painful for him. When he looked up again and found the child still hugging the therapist, his face puckered, tears fell, and he walked over, offering his cheek to the therapist for a kiss. During the sixth

month of treatment, Mike got up from his cot during nap time, walked over to a shelf, surveyed the row of shoes several times, and picked out his pair.

Using Mike's observations during the previous year as a baseline, Mike's behavior during this seven month period clearly suggested that the CCT program promoted growth in focal attention and dissolved his autistic withdrawal to some degree. Treatment was terminated because circumstances beyond the control of the center required that Mike be relocated in a distant facility.

CCT with a Blind Child

One therapist (Kimball, 1969) used aspects of the field articulation program to treat a blind child. The child was asked to examine by touch each display of cutouts presented, and then to remove the cutouts designated by the therapist. The displays were systematically varied in terms of number of cutouts, sizes, and shapes, and the child was asked to remove the cutouts with increasing speed. After 6 months (twice a week), the therapist felt that treatment had generalized and transferred to other situations. For example, the child now showed that he could discriminate sizes and shapes of various everyday material, and he understood number concepts. His language had improved noticeably, although the degree of blind mannerisms did not change.

SELECTED WORK BY OTHERS AND A CRITIQUE OF CCT

The revolution created in psychotherapy by advances in cognitive psychology (Mahoney, 1977) has resulted in numerous publications, some polarizing cognitive and psychodynamic therapies (e.g., Szasz, 1967), others constructively comparing them (e.g., Feather & Rhoades, 1972), and an increasing number searching for useful integrations (e.g., Marmor & Woods, 1980; Wachtel, 1977). Since space does not permit discussion of this vast literature, we conclude by examining CCT in terms of selected issues emphasized by reviewers (e.g., Arnkoff & Glass, 1982; Glass & Arnkoff, 1982; Kendall & Hollon, 1979; Mahoney, 1980; Mahoney & Arnkoff, 1978), providing the reader with guidelines to compare techniques and rationale proposed here with those of others.

Defining Cognition

Because different cognitive behaviors have been the focus in cognitive approaches to therapy (see Chapter 1), reviewers vigorously remind us to define cognition with conceptual consistency:

What aspects of cognition are involved—the development of attention, the encoding and construction of percepts, the retrieval and construction of memories, categorization, inference, problem-solving, language, or what? . . . the investigator must employ particular techniques designed to tap each of

these aspects of the human cognitive system. Otherwise, “cognition" like the “motive" and "instinct" constructs that dismayed earlier generations of psychologists, becomes just another catchall label, frequently bandied about by those who keep up with new trends, but actually void of any specific meaning. (Kihlstrom & Nasby, 1981, p. 291)

In this spirit we recapitulate that CCT defines cognition, within personality functioning and development, as discrete, hierarchically ordered, mobile processes (cognitive controls) that range from physical to mental and from nonverbal to verbal behaviors which produce (copy) information. In addition, these processes are involved in symbolic functioning, mediating between external stimulation and fantasy/metaphor through the autonomy maintained from each source of stimulation. At one time cognition is autonomous from fantasy and oriented more toward prescriptions from reality, at another oriented more toward those of metaphor, and at another oriented toward some combination from each. The development of these cognitive processes, and of flexible cognitive autonomy, are defined as occurring during the first three years of life. The definition of cognition held by CCT, then, clearly emphasizes cognition as *process* which takes place in a context consisting of both reality and fantasy requirements.

This definition differs appreciably from those proposed by the better-known cognitive therapies. Rational emotive therapy (RET) (Ellis, 1970), self-

instruction therapy (SI) (Meichenbaum, 1977), and Beck's cognitive therapy (BCT) (Beck, 1976) define cognition almost exclusively as verbal behaviors (e.g., beliefs, the statements a person makes to herself) and accordingly emphasize cognitive *content* rather than process (e.g., Arnkoff & Glass, 1982, p. 3). Moreover, while acknowledging the importance of fantasy life, these approaches do not systematically conceptualize the means by which cognition mediates between reality and fantasy or the developmental origins of beliefs and self-statements.

Defining Maladaptive Cognition: The Behavior to Be Restructured

It follows that CCT defines maladaptive cognition in two ways: as measureable, developmental lags or dysfunctions in cognitive control processes, and as a pervasive, rigid cognitive orientation or excessive, rapid shifts in orientation. Research findings (see above and Santostefano, 1978; 1984) illustrate that the presence of these two types of maladaptive cognition is associated with unsuccessful learning and psychopathology, and their absence with successful learning and adaptations to changing stressful stimulation.

A longitudinal study by others (Wolf & Gardner, 1979) conducted without any discernable interest in psychotherapy produced results that strongly support those of the author—the concept of rigid cognitive

orientations and the rationale of CCT. Wolf and Gardner observed children, beginning at the age of 12 months, in free play and dealing with structured tasks, and concluded that between 12 and 24 months, children develop one of two “styles” of activity which they term "patterning” and "dramatizing." Patterners show a tendency to engage material in terms of external attributes and resist symbolizing (e.g., refusing to treat a toy block as if it were a cup). In contrast, dramatists take considerable liberties with external attributes of material and prefer symbolizing (e.g., using a toy block as a cup or even as a moving vehicle). These two styles of symbolic play are identical to the outer and inner cognitive orientations described by the author.

Wolf and Gardner also concluded that from 24 to 36 months a child gradually integrates aspects of the other style, resulting in a balance between patterning and dramatizing. Again, this conclusion converges with the rationale of CCT, that by the age of three years a normal child achieves flexible cognitive autonomy, at one moment transforming information in terms of highly personal symbols/metaphors, and at another engaging information as it is.

These investigators include observations in their report that related to cognitive pathology. They note that while most individuals acquire skill in both styles, " . . . traces of these contrasting modes can still be observed . . . for instance (in elementary school children) we find a significant minority who

can still be characterized as strong patterners or strong dramatists. . . . It is possible that there exist individuals who remain throughout their lives capable of only one approach to material . . ." (pp. 134 and 137). These observations converge with the author's proposal that rigid outer or inner cognitive orientations contribute to cognitive/personality disorders, but the author takes the position that, rather than characterizing a minority, pathological cognitive orientations may be more pervasive and implicated in various psychological difficulties than heretofore realized.

Wolf and Gardner do not discuss factors that might relate to a child's failure to develop an integration of both styles (i.e., flexible cognitive autonomy) between 12 and 36 months. From reconstructed histories in clinical practice, the author has developed several speculations about experiential factors that could interfere with the emergence of flexible cognitive autonomy. For example, if a child's testing of aggression and physically experimenting with material is sharply limited, from 12 to 36 months, by caretakers (e.g., parents conflicted about their own aggression) or by environmental accidents (e.g., the need for a body cast), the child solidifies a rigid inner cognitive orientation, ignoring the attributes of external stimuli and preferring symbolizing which gradually develops into an elaborate fantasy life. If caretakers do not pretend, especially with humor, or if caretakers are excessive in requiring the child to respond to external stimuli in terms of order, cleanliness, and detail, the child internalizes these

standards and develops a preference for an external orientation.

Another study of pretend behavior in the first years of life (Fein & Apsel, 1979) adds further support to the conclusion that by the age of 3 years normal children develop competence with a two-fold process—engaging material as it is and in highly symbolic ways. While Fein and Apsel refer to this development as an apparent paradox, the rationale of CCT views this two-fold capacity as the emergence of flexible cognitive autonomy, a tool that serves adaptation and learning throughout the life span.

In defining maladaptive cognition as specific dysfunctions in cognitive control processes and orientation, judged according to normative expectations, CCT differs from RET, SI, and BCT, which define maladaptive cognition as irrational beliefs or negative self-talk. Moreover, these approaches predetermine which beliefs are irrational and which self-statements are negative, sometimes proposing a "correct list" of irrational beliefs without a theoretical or empirical basis (e.g., Arnkoff & Glass, 1982).

Fitting the Treatment Method to the Definition of Maladaptive Cognition

Guided by its definition of maladaptive cognition, CCT begins with a directed format to restructure dysfunctional cognitive control processes. A person is presented a series of graded tasks which require the malfunctioning process and around which patient and therapist negotiate. The tasks also

initially call for nonverbal cognitive functioning in order to rehabilitate deeper cognitive structures that underlie verbalizing. At the same time, the tasks are administered in a sequence designed to rehabilitate the pathological cognitive orientation, either requiring or prohibiting the participation of symbolic functioning and then gradually requiring the reverse. The last step, involving directed fantasy, cultivates flexible cognitive autonomy from reality and fantasy stimulation, a skill achieved by the normal 3-year-old. In its non-directed format, CCT emphasizes restructuring pathological metaphors that contribute to maladaptations, linking conscious thoughts, affects, and daydreams to action, connecting fantasy to reality, and making unconscious structures available to consciousness.

In contrast, following their definition of maladaptive cognition, RET, SI, and BCT employ methods designed to replace irrational beliefs with rational ones and to modify the content of what a person says to himself. These techniques implicitly assume that the individual can perceive reality stimuli accurately, as well as represent them, and that the person knows when he is engaged in one or the other mode.

The Issue of Change—Can Regressive Behavior Be Adaptive?

Arnkoff and Glass (1982), in particular, stress that workers conceptualize change and failure to change, and raise the related question (as

did Lazarus, 1980) whether only accurate perceptions of reality, or assumptions about life, are adaptive (i.e., the issue of regression in adaptation). With its emphasis on process, CCT's view of change in cognitive structures relies upon the writings of Rappaport (Gill, 1967), Holt (1976), and Piaget (1977). Detailed elsewhere (Santostefano, 1978, and Santostefano, 1985, Chapter 3), a person's actions (physical, perceptual, and conceptual) on stimuli feedback to the structure that gave rise to the action. A discrepancy between the action and the existing structure induces a state of disequilibrium, and the existing structure reorganizes to fit the stimulation, restoring equilibrium. This process of action, feedback, disequilibrium, assimilation, equilibrium, action, feedback, and so on, is a continuous one and results in progressive structuring and a hierarchy of more differentiated behavioral structures.

Accordingly, a cognitive control mechanism changes when its process actively engages and assimilates the stimulation of graded tasks, each task presenting stimulation slightly more complex than the last. Cognitive orientations change when the individual internalizes ideals/models which invite symbolizing to influence perception and when the intensity and type of affect prescribed by fantasies/metaphor construing the stimuli are fitted to the person's emotional/personality development and adaptive intention.

Why cognitive controls fail to change is discussed in Chapter 3. Briefly,

pathological cognitive processes structured in the first three years of life to fit the pace and complexity of stimulation at that time, become rigidified and persist, serving primarily to avoid stress associated with the requirements of increasingly more complex external and/or internal information.

Further, CCT holds the view that both regressive cognitive changes (i.e., behaviors characteristic of earlier developmental stages), as well as progressive ones, serve successful adaptation. Studies cited earlier provide empirical support that both progression and regression in cognitive control processes serve successful adaptations to environmental changes (e.g., airport, hospital, test stimuli) and associated fantasies.

In contrast, other approaches to cognitive therapy cited earlier view cognitive change in terms of replacing beliefs and self-statements with others judged by the therapist to be less maladaptive. As Arnkoff and Glass point out, the method of replacing beliefs and thoughts fails to take into account the purpose and function served by a belief and presumes that an unrealistic belief is automatically "bad" when in a particular context and personality even a delusion may be adaptive.

The Use of Active Intervention to Produce Change

Employing directed tasks in therapy is the hallmark of all behavioral-cognitive therapies, but is still alien to psychodynamic therapy with its

heritage in Freud's non-directed approach to treatment. In spite of Freud's own use of direction (e.g., giving the patient the task of focusing on the situation that gives rise to a symptom), early proposals by Ferenzi, who directed patients to engage in particular fantasies (see Santostefano, 1978), were sharply criticized by psychoanalysts. However, most recently, psychoanalytic therapists have articulated a clear rationale for the use of active intervention (e.g., Wachtel's [1977] integration of psychoanalytic and behavior therapy; Weiner's [1975] use of structured tasks, such as Wechsler items, during which the patient free associates).

CCT takes the position that some children, adolescents, and adults do not have the cognitive tools required to scan experiences freely, relate observations to early memories, and conceptualize, and that these tools are best forged by asking the patient to deal with carefully graded, directed tasks. In addition to active intervention, CCT shares the use of desensitization, self-observation, and modeling with other cognitive-behavioral approaches.

Transference and Resistance

For years, the writings of cognitive-behavioral therapists have been conspicuously devoid of concepts and techniques for managing resistance. However, a recent volume (Wachtel, 1982) makes clear that therapists from many persuasions now recognize the importance of this topic. CCT ascribes to

the psychoanalytic position that to promote change a patient must relive maladaptive behaviors and affects in the office (not experience them hypothetically) and then successfully resolve the phenomena of transference/ resistance. To accomplish this CCT proposes a set of techniques, based upon a model of negotiation, which differ from techniques traditionally used in psychodynamic therapy with individuals who are less cognitively impaired. While the child negotiates tasks and therapist, the therapist helps the child develop the capacity of self-observation and awareness of *how* he thinks and behaves, an aspect of CCT that converges with the increasing interest in metacognition.

Formal Assessments—Fitting Treatment to a Person's Unique Pathology

CCT is highly prescriptive in fitting a program to a child's unique cognitive pathology. Particular treatment tasks and sequences in method are prescribed for particular dysfunctional cognitive controls and cognitive orientations. Moreover, CCT prescribes whether the child's developmental stage requires the therapist to intervene primarily with action, or fantasy, or language metaphors, and cautions against premature use of verbal interventions.

Of the alternative approaches to cognitive therapy, the proposal by Kendall to treat impulsive, aggressive children (e.g., Kendall, 1981,1984;

Kendall & Hollon, 1979; Kendall & Wilcox, 1984) is most related to the issue of fitting treatment methods to the child's preferred mode of behaving. Kendall employs a series of tasks, similar to those of CCT, beginning with non-stressful, psychoeducation material (e.g., the child selects a geometric cutout that should come next in a sequence of cutouts), then shifts to representations of interpersonal situations (e.g., examining pictures of children, the child identifies emotions and offers explanations for these feelings), and finally involves the child and therapist alternating role-playing in hypothetical situations. However, in contrast to CCT, Kendall's approach emphasizes the self-instruction technique throughout as the main therapeutic intervention. For example, with a psychoeducational task, the child is trained to think aloud (e.g., "Let's see, what am I supposed to do? How can I figure out which design comes next?"). The question for future study is whether a severely impulsive, cognitively disabled child, of the type considered in this volume, is equipped to make use of self-talk, at the start, as a way of controlling his aggressive behavior and gathering information relevant to solving the task. CCT advocates that at the start the *nonverbal* impulsive, aggressive responses of the child are *integrated within the response required by the task,* then transformed into symbolic, fantasy behaviors, and only later verbally described, examined, and rehearsed in discussions with the therapist. (Similarities and differences between the techniques of CCT and those of other approaches are discussed in Santostefano, 1978, 1984.)

The Use of Directed Fantasy and Play

CCT appears to make more explicit and systematic use of directed symbolizing in its structured format, and of fantasy and pretend play in its unstructured format, than do other cognitive therapies employed with children (see Kendall & Hollon, 1979).

The technique of directed fantasy resembles the technique of guided affective imagery (GAI) (Leuner, Horn, & Klessmann, 1983) but also differs from it in several important ways. With GAI, intended for children "beyond play" but not ready for adult psychoanalysis, the child relaxes physically and remains immobile. The therapist describes a motif from a list typically used (e.g., you are climbing a mountain; you are entering a house to explore its contents). Guided by questions from the therapist, presented in measured steps from neutral to emotional, the child elaborates the fantasy, including characters, happenings, defensive maneuvers, and solutions. The clinical examples presented by these workers make clear that GAI requires the child to be able to sit still, symbolize, fantasize, and scan and articulate mental pictures. Moreover, the focus is exclusively on the content of the fantasy the child produces.

In contrast, with the directed fantasy technique of CCT, the child initially *enacts* the prescribed fantasy, and performs a particular cognitive process by engaging a task embedded within the fantasy. The therapist's interventions

emphasize cultivating a fit between a symbol or fantasy and the material to which they refer and the capacity to shift flexibly between symbolizing information and dealing with information as it is. In the author's opinion, GAI, as presented, would suit inner-oriented children who are not cognitively impaired or handicapped by impulsivity.

In its non-directed phase, CCT proposes that pretend play follow a progression of behavioral transformations, from action to fantasy to language metaphors to restructured pathological metaphors. CCT also proposes that the therapist's interventions follow the same progression. (The concept of alternative coding systems that represent past experiences and prescribe present behavior is related to other proposals; see Santostefano, 1984; in press a, especially those of Horowitz, 1978, and Paivio, 1971). These technical proposals elaborate and modify the psychoanalytic conception that play offers a child temporary escape from reality and the opportunity to release tension and express unacceptable impulses. Therapeutic play as a progression of metaphoric modes is viewed as providing a child with an opportunity to *join* fantasy and reality (not to escape from reality), restructure the prescriptions of pathological metaphor, transform these prescriptions into more conventional terms, and establish roots among action, fantasy, and language behaviors, providing thoughts, words, and insights with power to steer behavior. The view of play presented here departs more from that of Piaget who, though proposing that play represents

a transformation of reality, also proposes that play represents cognitive immaturity and enables the child to escape from the pressing demands of the adult world (Golomb, 1979). For CCT, pretend play with its use of symbolic functioning represents the height of cognitive maturity.

The Relation Between Cognition and Affect

The most common position on the relation between cognition and affect among prevailing cognitive therapies has been that cognition precedes and causes affects whether appropriate or inappropriate and therefore holds that cognition and affect are two independent but related systems. Detailed in Chapter 2 and elsewhere (Santostefano, in press a), CCT conceptualizes cognition and affect as inseparable. The child performs different cognitive actions on different types of information that vary in the degree to which they prescribe emotions. Affects are an integrated part of the way in which information is construed, a view held by contextualist- interactionist theories of cognition.

The method of CCT outlined in this volume represents one way in which psychodynamically-oriented psychotherapy and cognitive behavior therapy can be integrated to treat children. This integration is in keeping with promptings by other psychodynamic therapists (e.g., Freud, 1965;

Wachtel, 1977; Weiner, 1975) that technique be adopted to a person's

level of ego development, responds to the prevailing use of verbal intervention by other cognitive therapies, and agrees with Meichenbaum (1977) that saying the right thing may not be enough.

As discussed throughout, the broad goal of CCT is to provide the child with cognitive controls that produce information efficiently, and then, with the benefit of this capacity, to develop the child's power and freedom either to deal with information as it is or to symbolize and transform it with personal metaphors—power and freedom achieved by the normal 3-year-old. If we consider Aristotle's view that mastery in metaphor is a sign of originality and genius (Billow, 1977) then in one sense, the goal of CCT is to enable the child to recover and rehabilitate the originality and genius of which he/she is capable. With the power of efficient cognitive controls and symbolic functioning, all children could be artists, continuously constructing and reforming representations of past victories and defeats with developmental battles and coordinating the prescriptions of these metaphors with opportunities and limitations of everyday environments, resulting in pleasure in learning and coping, and freedom from pathological pain.

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