Cognitive Control Therapy with Children and Adolescents

Therapy with the Leveling-Sharpening Cognitive Control

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The leveling-sharpening cognitive control concerns the manner in which an individual constructs images of information, holds them over time, and relates them to perceptions of current information. The program described in this chapter is designed to restructure and rehabilitate this cognitive mechanism so that it functions efficiently when external information is handled as it is, as well as when it is transformed with symbols and fantasies within the process of symbolic functioning.

The broad technique of this program calls for the therapist to present the child with a field of information, which the child examines. The information is then screened from the child's view. The therapist introduces a change in the information and removes the screen. The child surveys the information again and, on the basis of the image formed previously, determines whether and how the information changed. If the information changed, the child restores it to its original state.

To benefit from this program, a child should have achieved, in the course of development or with the assistance of programs described previously, stage appropriate efficiency in constructing body schema, regulating body tempos, scanning actively and systematically, and articulating fields of information in terms of relevance.

When compared with the previous program, the therapeutic experiences provided here represent another shift along the developmental hierarchy of cognitive control functioning (see Chapter 2). With therapy in field articulation, the information managed is contained in an existing field, parts of which are defined in terms of relevance for the task at hand. With therapy in leveling-sharpening, there are two fields of information, so to speak, the image of the first display and perceptions of the present display, each one defined in terms of relevance and each connected to the other. The image of the past bears on perceptions of the present, and the present perceptions are related to the image of the past.

The process of leveling-sharpening consists of three part-processes. One concerns whether the organization of the image constructed is global or differentiated; another concerns whether the image is stable or modified and embellished by the requirements of fantasies, and another concerns the efficiency with which the image is fitted with and related to present perceptions. The techniques employed in leveling-sharpening therapy are intended to foster growth and/or to rehabilitate each of these component functions.

PROGRAM 4: REMEMBER ME

Purpose and Goal: To develop the capacity to construct increasingly

elaborate images of information, to maintain stable images over time, and to relate images with present perceptions; to promote efficient leveling-sharpening functioning when external information is managed as it is and when it is transformed with symbols in the process of symbolic functioning.

Materials: Materials include (a) the same plywood, plastic, or cardboard cutouts, buttons and paper clips used in the program *Find the Shapes;* (b) a gray cardboard screen 2x3 feet, mounted on a stand; (c) a cloth 2x3 feet; (d) 2x3 inch cards on which are drawn silhouettes of persons, animals, and ambiguous designs; (e) keys of various shapes, squares of sandpaper of various grains, squares of cloth of various textures and colors, buttons of various sizes and colors.

Introduction and General Procedure

As noted above, the therapist locates a pattern of information on the table. The child examines the array with the intention of remembering it. The therapist places a screen between the child and the display, or covers the display with a cloth, and changes the display. The screen is removed, the child examines the display again, points out any changes, and restores the display to its original form.

If the child is unable to detect the change, or responds with uncertainty, the therapist points out the change and restores the display to its original

configuration. Then the child is presented the same display or another display at the *same level of complexity.* If the child responds correctly, restoring the display to its original form, additional trials are administered, also at the same level of complexity. When the child is able to remember and correctly restore three displays at the same level of complexity, a slightly more complex display is presented, following guidelines discussed below. While the basic method involves introducing changes in information, at appropriate times the therapist could choose to administer a trial in which no change is introduced.

The therapist should not become too concerned if a child requires 10 or 15 trials at one level of complexity before the child can remember the display. In requiring a child repeatedly to construct images of information at one level of complexity, the goal is to foster growth through assimilation of stimuli until the leveling-sharpening mechanism differentiates and accommodates to the complexity of information contained in the display. When a match is achieved between leveling-sharpening and, say, eight pieces of information, the child can move on to remembering 10 or 12 pieces of information.

If this program is followed with a child who has not received therapy in field articulation, it is frequently useful to provide the child with a preliminary phase using a modification of a technique from the program *Find the Shapes* in which the therapist asks for a series of cutouts from a display of

cutouts. The therapist displays 30 or 40 cutouts arrayed in rows and columns. The child is asked to remove a series of cutouts in the order named by the therapist (e.g., a large yellow square, two small blue circles, one small red diamond). This task is a bridge to leveling-sharpening therapy since the child must remember the sequence of shapes requested as she surveys the display.

The program consists of seven steps as outlined in Table 8.1. With the first two, the child constructs images of patterns of geometric cutouts, and then of more ambiguous items, which gradually become more complex. To help the child construct stable images of these patterns, the information to be remembered is examined in several ways as indicated (e.g., physically reconstructing the display with another set of cutouts, touching the cutouts). Step 3 requires the child to consider the display from different points of view, each of which organizes the information in different ways. Step 4 provides experiences constructing images and relating them to present perceptions while emotions and fantasies are aroused. With the capacity to use points of view to organize information to be remembered, and to balance emotions and fantasies, the child is ready for Step 5, which requires that the information held in memory be construed as something other than what it is, embedding leveling-sharpening within the process of symbolic functioning. With Step 6, the child integrates gains made by engaging the leveling-sharpening process within elaborate, directed fantasies. At this point, the leveling-sharpening mechanism is available as a tool to serve learning and adapting, and, when

indicated, the process of non-directed verbal/play therapy during which the child organizes and resolves key pathological metaphors. The outer- oriented child is administered the seven steps as outlined. The inner- oriented child begins with Step 7 with appropriate modifications and moves toward Step 1.

Table 8.1. Steps in Therapy with Leveling-Sharpening: Remember Me

Step 1.	Child remembers displays of geometric cutouts and compares images with perceptions of current displays
Part A	Therapist increases complexity of displays presented to child
	1. From few cutouts to many cutouts
	2. From one color to many colors
	3. From one shape to four shapes
	4. From one size to three sizes
Part B	Therapist varies mode child uses to examine displays to be remembered
	1. Display reconstructed with another set of cutouts, examined by touch, copied on a sheet of paper, and labeled verbally
	2. Display examined only visually
Part C	Therapist varies changes introduced into displays
	1. From introducing replacements to exchanges
	2. From introducing one change to several
	3. From introducing changes close together to far apart
Part D	Therapist increases delay between first and second displays
	1. From little to more delay
	2. From few to many interpolated tasks during delay Part E Child and therapist evaluate leveling-sharpening behavior

Step 2. Child remembers displays of ambiguous objects and compares images with perceptions of current display

Parts A-E Same as Step 1

Step 3. Child remembers disordered arrays of geometric cutouts and ambiguous objects, imposing organization on the field by assuming multiple points of view

Part A Therapist locates objects to form random field

Part B Therapist locates objects to facilitate their organization in terms of points of view

Part C Therapist trains child to assume points of view, if indicated

Step 4. Child anticipates the pattern cutouts will form

Parts A, D, and E Same as Step 1

Step 5. Child remembers displays of cutouts surrounded by stimuli that arouse fantasies/emotions

Parts A-D Same as Step 1

Step 6. Child remembers displays of material construed as something other than what it is

Child construes and presents material; Therapist remembers it and guesses what the pattern conveys

Parts A-D Same as Step 1

Part E Child and therapist evaluate whether symbols constructed are conventional or personal and fit the attributes of the stimuli

Step 7. Child remembers fields of information while enacting a fantasy directed by therapist; then child directs fantasy

Parts A-E Same as Step 6

Step 8. Child remembers fields of information within non-directed/free play therapy;

Introducing the Program to the Child

The Outer-Oriented Child. Present a pattern of cutouts representing a level of complexity which the child should handle easily. Using an analogy of a camera taking pictures is a good way to introduce the task and its purpose. For example, say, “John, we're going to play a game called *Remember Me.* Look at these cutouts. Try to take a picture in your mind of how they are set up so you can remember exactly where each piece belongs." Allow the child to examine the display for about 30 seconds (more if necessary). If the child spontaneously touches or manipulates the objects, permit this without comment.

Then say, "Ready?" Now I'll set up the screen so you can't see the design. I'm going to change it in some way." The therapist sets up the screen, introduces a change, and lowers the screen. "Now look the design over again. Do you notice any change?"

If the child responds correctly (e.g., "This red square was a blue square"), hand the child a blue square and ask the child to restore it to the original display. At this point make a few comments that provide some structure for the therapy process the child will engage (e.g., "You're right. Your mind took a clear picture of the design so when you looked at it again,

and checked out the design with the picture in your mind, you noticed the blue square changed. The games we are going to play will help your mind take clearer and clearer pictures, and bigger and bigger pictures, so you can remember more and more"). The therapist could also structure treatment by using an observation from the diagnostic evaluation, or an observation the child shared from school. For example, "Remember when you read the paragraph for me last week you couldn't remember what the paragraph said and you had to keep looking back to answer the questions? With this game your mind will get better and better at remembering things and better and better at using what you remember to figure out what you are looking at."

If the child does not respond correctly to the first display the therapist says, "Your mind took a fuzzy picture of the design so you thought the yellow square changed, but the change happened here. This red square should be a blue one." The therapist restores the blue square to the display and makes comments similar to those noted above, pointing out that the games will help the child to take clearer pictures of things, remember them better, and notice if they change or stay the same. With the next trial, the complexity of the display is reduced.

The Inner-Oriented Child. During the first session or two, observe the child's spontaneous activity. As soon as possible take ingredients from the activity that lend themselves to a leveling-sharpening task. For example, the

child moves about the room in a dreamy way, occasionally relating to the therapist, but primarily touching or picking up items and sometimes engaging them in some private play fantasy. The therapist takes four (or six) of these items, places them in a matrix, and says “John, look at these toys you used. Try to remember exactly where they are. I'm going to cover them and change one of them. You try to figure out what changed—the game is called *Remember Me.*" The therapist follows the basic approach, setting up a screen, replacing one of the toys with another, removing the screen and asking the child what has changed.

Another example illustrates behaviors by the child which lend themselves more easily to a leveling-sharpening task. Ignoring the therapist almost completely, one child seemed to be looking for something during the first session, looking underneath form board games, pushing toys to one side as if searching for one particular item. When asked what she was looking for and if there was something the therapist could get for her, she said nothing. The therapist said, “Let's play a *look for* game. Look at these (the therapist arrayed pieces from the form board game) and try to remember where they belong. Now I'll cover them up and take one of them away (the therapist removes an item and then removes the screen). Which one is gone?”

This method is repeated whenever clinical judgment indicates, slowly joining the child in various tasks which involve remembering information and

comparing the image with present perceptions. As the alliance builds, and the child interacts more, move to Step 6 and direct a relatively elaborate fantasy which contains leveling-sharpening tasks.

Specific Instructions

Step 1. Four broad guidelines are followed in conducting this step. Part A concerns the complexity of the field to be remembered, Part B the modes the child uses to facilitate constructing an image of the display, Part C the types of changes introduced by the therapist in the display, and Part D the delay imposed on the response which emphasizes holding the image stable over time. Although these guidelines can be followed in combination, they are discussed separately for the sake of clarity.

Increasing the Complexity of the Information to Be Remembered (Part A). With the child severely impaired in leveling-sharpening functioning, the complexity of the displays to be remembered is increased in a stepwise fashion following a particular sequence: (a) patterns of colors are remembered, with shape and size held constant, (b) patterns of shapes are remembered with color and size all constant, (c) patterns of sizes are remembered with color and shape all constant, (d) patterns of color and shapes are remembered with size held constant, (e) patterns of colors and sizes are remembered with shape held constant, (f) patterns of shapes and

sizes are remembered with colors held constant, and (g) patterns of colors, shapes, and sizes are remembered.

With each series of trials, the number of cutouts is increased gradually from a few to a larger number appropriate for the child's developmental stage. It may be necessary to begin with only two cutouts and in some cases with a single cutout. When fewer than four cutouts are used, arrange them in a row. When four or more are used, display them in matrices of rows and columns.

Examples of the first guideline, increasing patterns of colors with shape and size held constant, are presented in Figure 8.1, which shows displays of four and nine cutouts of two colors and in Figure 8.2, which shows displays of three colors. A child may require 10 or 15 trials with a display of four cutouts, for example, before performing successfully and therefore ready to proceed to a display of six cutouts and then nine.

After handling eight or nine cutouts with color varied and size and shape held constant, the child moves on to a series of trials with shapes varied and color and size held constant and with the number of cutouts again gradually increased. Figures 8.3 and 8.4 provide examples of displays of four and then nine cutouts, first of two shapes and then of three shapes. When the child is successful, remembering patterns of eight or nine cutouts with shape

varied, a series of trials is administered with size varied as illustrated in Figures 8.5 and 8.6, then a series of trials with colors and shape varied and size held constant (see Figures 8.7 and 8.8), then a series with size and color varied and shape held constant (see Figure 8.9), then a series with shape and size varied and color held constant (see Figure 8.10), and finally a series with all three dimensions varied (see Figure 8.11).

By presenting displays repeatedly, which gradually and systematically vary and combine each of the attributes of color, shape, and size, the leveling-sharpening function gradually differentiates, accommodating to and developing the capacity to construct increasingly more complex images of neutral information. The greater the number of cutouts displayed with a particular attribute varied, the more elaborate and differentiated the image the child constructs. When the therapist patiently moves through a carefully planned sequence of displays, children who originally could not remember the pattern of 2 cutouts eventually remember a pattern of 10, with all three attributes varied.

Last, with children who are severely disturbed and limited in leveling-sharpening functioning, it is usually best to begin with displays of black and white cutouts and later add chromatic colors, since colors frequently create stress.

Figure 8.1 Colors Varied, Shape and Size Held Constant—Two Colors. Note: Figures 8 .1 through 8.12 are from A Bio-developmental Approach to Clinical Child Psychology by Sebastiano Santostefano , New York: Wiley Publishing Co. Copyright c 1978 by Wiley Publishing Co. Reprinted by permission.

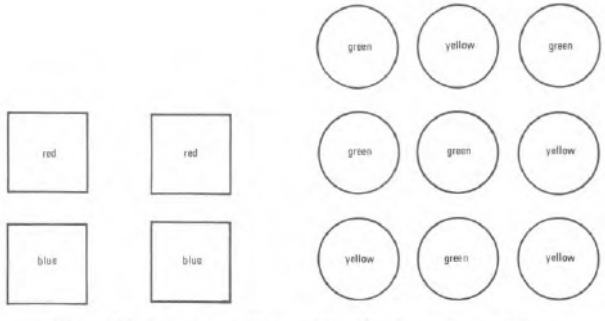


Figure 8.2 Colors Varied, Shape and Size Held Constant—Three Colors

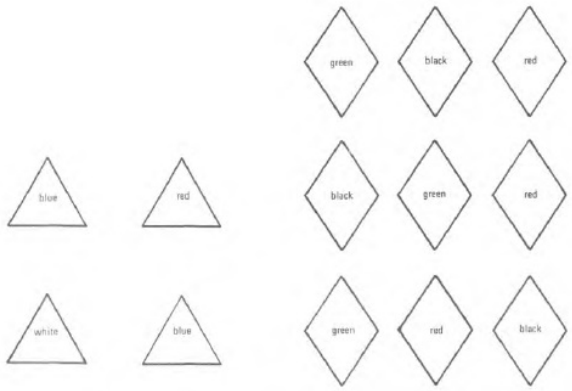


Figure 8.3 Shapes Varied, Color and Size Held Constant—A

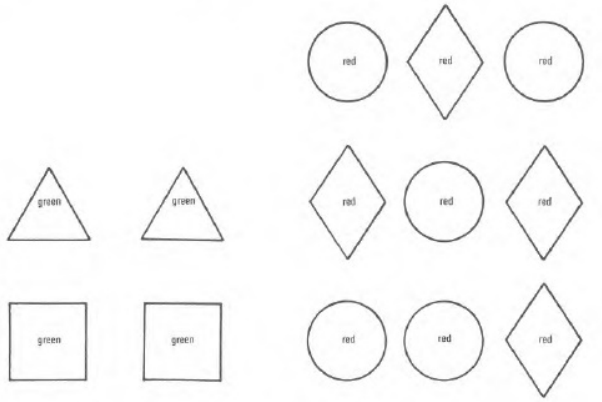


Figure 8.4 Shapes Varied, Color and Size Held Constant—B

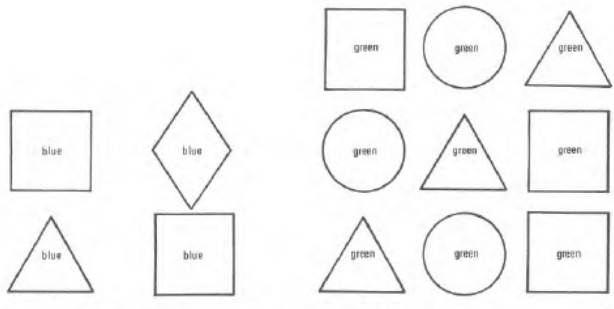


Figure 8.5 Size Varied, Shape and Color Held Constant—A

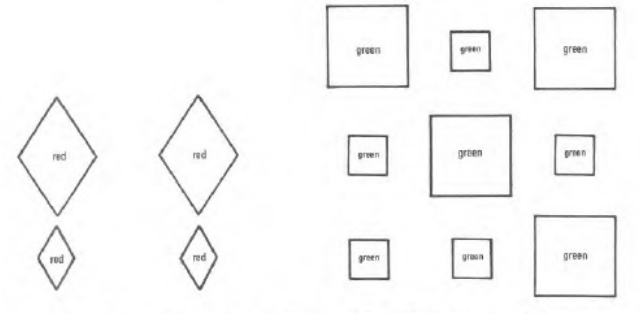


Figure 8.6 Size Varied, Shape and Color Held Constant—B

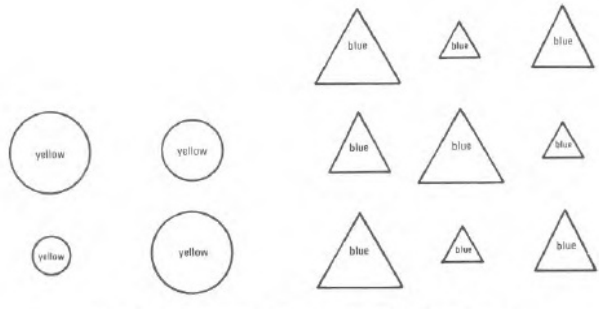


Figure 8.7 Colors and Shapes Varied, Size Held Constant—A

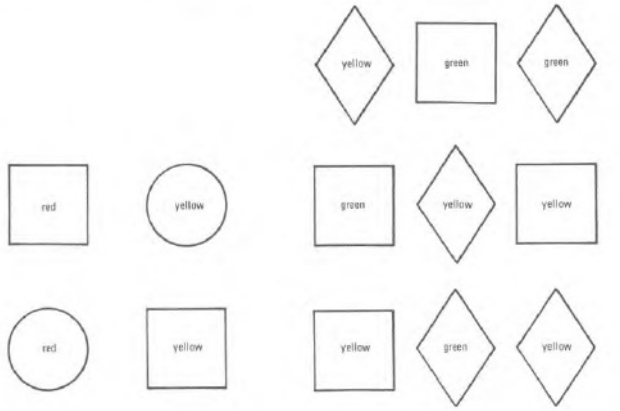


Figure 8.8 Colors and Shapes Varied, Size Held Constant—B

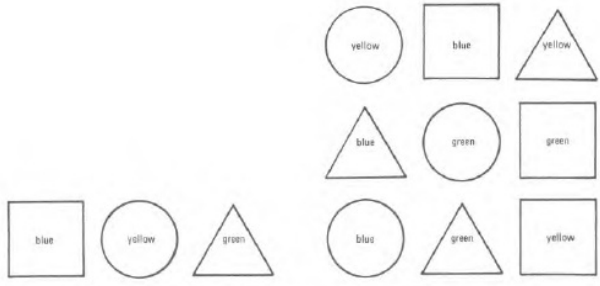


FIGURE 8.9. Size and Color Varied, Shape Held Constant

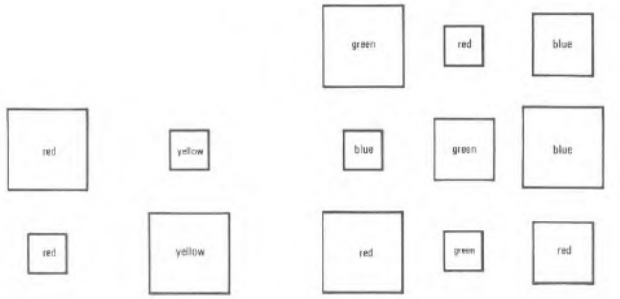


Figure 8.10 Shape and Size Varied, Color Held Constant

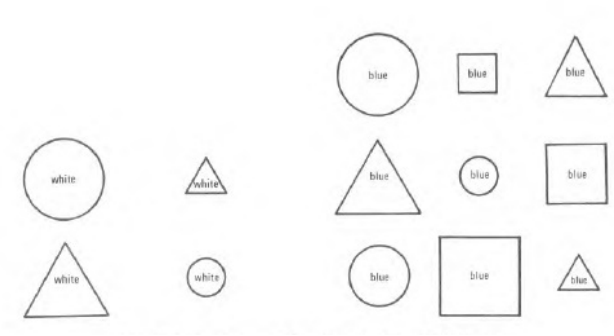
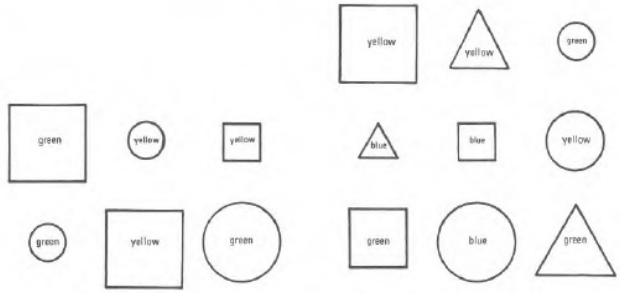


FIGURE 8.11. Shape, Size and Color Varied



Techniques to Aid the Child in Constructing Articulate Images (Part B). When a child has extreme difficulty remembering a display if it is examined only visually, several techniques are used, in the sequence noted or in combination, to help the child construct articulate images: (a) give the child another set of cutouts and ask the child to construct the display systematically from left to right and from top to bottom, (b) ask the child to pass her fingers around the perimeter of each cutout, again in a systematic sequence, while examining the display visually, (c) ask the child to copy the display on a sheet of paper; if colors are being used, the geometric shapes should be colored in with crayon, (d) ask the child to describe and label each of the cutouts in the display systematically (e.g., "a red square at the top corner, then a yellow circle," etc.). Initially the child describes the display aloud, and then covertly.

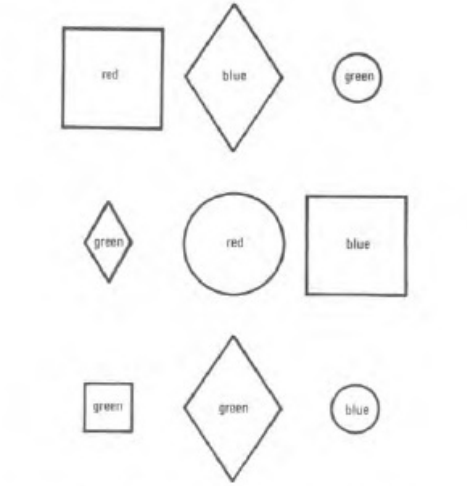
Once the child is competent constructing a stable, differentiated image by visually scanning the display, and without the need for sensorimotor and verbal rehearsals described above, another technique is used to foster the construction of differentiated images. Administer a series of tasks, at some appropriate level of complexity, and systematically decrease the amount of time the child scans the display before the screen is set up. The therapist points out the purpose of the technique to the child (e.g., "It will help you learn how to take quick pictures with your mind that are clear and don't change"). Usually the time allowed to scan a display is decreased in 5-second

increments from 60 seconds to as little as 5 seconds.

Varying the amount of time the child scans an array could be introduced at each level of therapy. For example, after the child develops competence in holding patterns of colors in memory, the therapist administers a series of trials decreasing the amount of time allowed to examine each display. Then, following a series of tasks with varied patterns of shapes to be held in memory, a series of trials is introduced during which the time allowed to examine display is gradually decreased. The same procedure would be followed at the close of each series of tasks as described in Part A.

Guidelines for Introducing Changes in Information Displayed (Part C). Two types of changes are introduced into the display. One, referred to as *replacements,* involves substituting a cutout in the display with another cutout not used in the display. Referring to Figure 8.12, an example would be replacing the red square in the upper-left-hand corner with a red diamond. The other, referred to as *exchanges,* involves taking two or more cutouts within the display and switching their locations. Referring to Figure 8.12, an example would be exchanging the location of the green circle in the upper right-hand corner with the blue circle in the lower right-hand corner.

Figure 8.12 Display Containing Complex Pattern



Most children experience replacements as less difficult than exchanges. With the former, only one section of the field to be remembered has been altered with a stimulus that was not a part of the original field. With the latter, two or more sections of the field are altered with information that was part of the original field. Since detecting a new element in a field is usually easier than detecting the rearrangement of existing elements, replacements are introduced in the first phase of treatment. Gradually, as the child demonstrates the ability to construct stable images of the displays presented, exchanges are introduced.

Replacements and exchanges can be simple and more complex, and a simple change can be detected if a global image has been constructed, while a differentiated image is necessary to detect a complex change. By skillfully increasing the complexity of the changes introduced, the therapist fosters the capacity to construct memory images of information that are increasingly more differentiated and stable.

The complexity of changes can be varied systematically by increasing the number of changes introduced and also by introducing changes first in color, then shape, and then size. A change in location of a color is usually easiest to detect, requiring a relatively global image of the pattern of colors in the field. Moreover, detecting a color that was not a part of the original display is a simpler task than detecting a change in a color that was and still is

part of the original display.

To facilitate illustrating this guideline, and others discussed below, the display in Figure 8.12 is used which contains a fairly complex pattern that would be administered at advanced levels of therapy. Replacing the center red circle with a yellow circle (a color not part of the field) is a simpler change than replacing it with a green circle (a color which is part of the field). In terms of number of changes, detecting one color, replaced by another which is not part of the field, requires a more global image than would detecting three color changes.

When the child is competent detecting color changes, shape changes are introduced following the same principle. First, introduce a shape that is not part of the display (e.g., replace the small, green diamond, middle left, with a small, green triangle) and, later, a shape that is part of the display (e.g., the same green diamond would be replaced by a small, green square). Similarly, with regard to size changes, replacing a large or small cutout with a medium one is a simpler task (since medium cutouts are not part of the field) than is replacing one size with a large or small cutout (e.g., replacing the small, green diamond on the left with a large, green diamond).

When the child has had sufficient experience constructing images that efficiently detect color, shape, and size changes, exchanges are introduced

following similar guidelines. Colors are exchanged first (e.g., the large, blue diamond at the top with the large, green diamond at the bottom), then shapes (e.g., the large, blue diamond with the large, blue square), and then sizes (e.g., the small, green diamond with the large, green diamond).

Changes can also be varied in complexity by manipulating the locations into which they are introduced. The image of a field is usually articulated first at the corners and perimeter and then in the center. Therefore, replacements and exchanges introduced into the periphery of the field are usually detected more easily than ones embedded within the field, and changes located close together are detected more easily than those located far apart. Consider these multiple replacements. The red square is replaced by a yellow square and the blue diamond at the top by a green diamond. In locating the changes side by side that "section" of the field is spotlighted, making more vivid the replacements introduced. With later trials, the blue circle (lower right) is replaced by a small, blue square, and the small, green diamond (center left) by a small, blue diamond. Detecting these changes requires a more articulated image because they are more distant from each other. Along the same line, initially exchanges are located side by side (e.g., the green circle is exchanged with the blue diamond [top row]) and later far apart (e.g., the blue diamond at the top is exchanged with blue circle at the bottom).

Delay Between Examining and Reexamining a Field-Promoting the

Stability of Images (Part D). Delay is phased in after the child has had sufficient experience with Parts A, B, and C, showing adequate leveling-sharpening functioning with patterns of colors, shapes, and sizes which are examined only visually and for relatively short periods of time. When introducing the technique, explain to the child that the *Remember Me* game will be played in a different way, that the child is to wait for some period of time before the screen is removed, that the therapist and child will begin to pay special attention to holding images stable over time, and that they will decide together when and how much to increase the delay.

A stopwatch is placed on the table, and child and therapist construct a sheet of paper on which the delay trials are logged, along with the accuracy of the child's response and other relevant behaviors. Usually the child begins with a delay of 10 seconds, the period of time the child has been waiting to this point while the therapist introduced a change. Initially present a display that is less complex than the one with which the child has been working. If the child was dealing with a nine cutout display of two colors, two shapes, and two sizes, the first display could consist of six cutouts with the same attributes and then gradually increase in number. After the child examines the display, the screen is set up and the stopwatch is started. After the delay period, the screen is removed, the child reexamines the display, and the performance is logged. In the next trials, the task complexity remains consistent while the delay period is increased until the child successfully

detects changes introduced after a delay of at least two or three minutes. Then, the complexity of the field to be administered is increased and the sequence repeated.

When the delay period is two minutes or more, introduce interpolated activities. Almost any activity will do, but at the start the activity should be neutral (e.g., counting; reading a neutral, brief paragraph; looking at a neutral picture). With older children and adolescents it is useful to include extended delays, presenting a display at the start of the session; and then at the close of the session the child determines whether or not a change was introduced. An even greater period of delay can be employed by presenting a display at the close of a session and asking the child to reexamine the display at the start of the next session.

During the delay period children frequently begin to show significant behaviors (e.g., restlessness, fatigue) and comment spontaneously. These behaviors provide information about a child's personal issues and unique difficulties constructing images of information. The therapist selects aspects of these behaviors for discussion. In the early stages of therapy, these discussions are limited to promoting the child's ability to observe what happens to the child during the delay period, and to the image constructed of the display.

Step 2. Once the child gains some competence with the leveling-sharpening process when dealing with patterns of geometric cutouts, present displays of more ambiguous objects, following the guidelines of Step 1. Various material is used that is easily obtained and not costly (e.g., paper clips of different colors, shapes, sizes, and thicknesses; keys of different shapes, sizes, colors, and design; and ambiguous line drawings on 3 x 5 inch cards).

Step 3. This step emphasizes how assuming multiple points of view, when examining a field of disordered information, serves to organize the field and to construct and retain a stable, differentiated image of that field.

The displays presented consist of the same materials used in Steps 1 and 2 but are varied in their organization in two interrelated ways. The items are set further apart than the 2 to 3 inches that separated them in the displays presented in Steps 1 and 2; and the items are placed in a random field and not in rows and columns. Further, the items are located to facilitate the child's clustering the field, and therefore an image of it, from a point of view.

To introduce this step, begin with displays of geometric cutouts of several colors, shapes, and sizes, but with a smaller number than was used in Steps 1 and 2. The cutouts are located about 4 to 6 inches from each other and form what at first glance appears to be a field of random or “scattered” items.

Explain to the child that the *Remember Me* game will be played in a

different way, that the cutouts to be remembered will look like the example on the table (e.g., “They're all over the place."). Frequently children spontaneously exclaim that it is impossible to remember the sample display. Whether or not the child expresses dismay, the therapist goes on to explain that it *is* more difficult to remember “a bunch of things that are all over the place," and that the job becomes easier if the cutouts are examined and remembered in terms of a point of view (e.g., “If we look at them in a certain way that makes a pattern or design, we can remember them.").

The therapist demonstrates, coaching the child to examine the display in terms of color and to generate a pattern from that point of view (e.g., pointing to the pattern articulated, "You see red goes across and then up. Blue goes down and then up. Yellow bunches in the corner."). The therapist then asks the child to examine the same display in terms of shape and coaches the child to generate a pattern in the field from that point of view. For example, "You see the circles make a point; they go from this one, up here, to this one, and then down to this one over here; and the squares make a line from this one to that one," and so on.

Once the child receives sufficient coaching, present displays that gradually increase in complexity and randomness, following the usual format: after the child examines the display, cover the items, introduce a change, remove the cover, and ask the child to restore the display to its original form.

But, with this step, while restoring the display, the child is encouraged to describe how the points of view he/she used organized the field.

Initially the therapist is active suggesting and directing points of view (e.g., "Now with this one, make a design in your mind, bunch these together by looking at the small, green cutouts, and the large, red cutouts, and all the round ones."). In later stages the therapist does not offer possible points of view but encourages the child to experiment with generating his/her own that best organizes the display to be remembered.

The more varied the material used, the more the child is stimulated to use multiple points of view. For example, if cutouts of cloth are arrayed in random patterns, the child is asked to organize the field to be remembered by organizing the items from the points of view of texture, thickness, shape, color, and size. When wooden cutouts are combined with cloth, buttons, and keys, the points of view assumed can now include types of material. At this stage in the therapy the points of view used are limited to physical attributes of the materials in the display. With some children it may be necessary to introduce this step initially using only one point of view over several trials before requiring two or more points of view.

Training the Child to Assume Points of View. Some children have much difficulty or are unable to assume points of view even in terms of relatively

concrete attributes. In these cases the therapist takes time to conduct a series of trials during which the child is trained to assume points of view following two guidelines. First, the child assumes a point of view *physically.* To illustrate, locate the display on the table, ask the child to look it over and to indicate "where the red squares are." The child responds, "Over there at the top." Then, ask the child to move to the opposite side of the display and again to indicate where the red squares are. The child responds, "They're right here, at the bottom." At this point the therapist engages in a discussion, pointing out that "where the red squares are depends on where you are." This approach is repeated as often as is required with the child examining the same display from two or more *physical* locations.

When the child readily articulates different patterns in a display when assuming different physical points of view, the therapist begins to train the child in assuming points of view cognitively (e.g., "Do you understand, John, you see the design in different ways depending upon where you stand and where you are looking from? Now stay in your seat, look at all of these, and figure out a design the cutouts make [the child responds], Now *make your mind walk over* to the other side of the table; while you're imagining yourself over there, figure out a design the yellow circles make.").

Basic training in assuming points of view can also be provided, when indicated, by taking a single object (e.g., a toy car) and engaging a child in

discovering that if the object is considered in terms of color, it is red; if it is considered in terms of weight, it is light; if it is considered in terms of composition, it is plastic; if it is considered in terms of what it can do, it rolls on wheels, and so on. With this type of training, the child learns that the particular item remains the same, but the point of view assumed emphasizes a particular quality.

Step 4. This step emphasizes anticipating the pattern or organization a field of information could take. The geometric cutouts are typically used, although other materials such as buttons and keys are also suitable. Explain to the child that the game will now be played in another way called, *Flying Shapes.* To illustrate, set two (or three) squares in a row at the edge of the table and point out that the child will use a ruler to push the shapes onto the floor. Before the child pushes the shapes off the table, the child is asked to draw on paper the location and pattern the shapes will assume when they land on the floor.

If the child seems confused, the therapist actively coaches the child, pointing out that one cannot be absolutely sure exactly what pattern the cutouts will form when they fall, that the location of the cutouts at the edge of the table gives clues, and that "we can picture in our minds where they will be when they are on the floor." The therapist insures the child understands that it is OK to guess and demonstrates as often as needed.

With each task, once the drawing is completed, the therapist pushes the shapes onto the floor, and child and therapist compare the outcome with the anticipated pattern. In later trials the child is invited to push the cutouts onto the floor and encouraged to experiment pushing them with subtle and more vigorous thrusts of the ruler, providing the child with experience anticipating the spread the cutouts will assume as well as the pattern. Through a series of tasks, the number of cutouts, colors, shapes, and size are gradually increased.

The issue with this step is not the accuracy with which the child anticipates the pattern a set of cutouts might assume, but with providing the child repeated experiences constructing images that anticipate the pattern information will take (anticipatory images). Last, only Parts A, D, and E of Step 1 are relevant for this step.

Step 5. With gains in remembering fields of simple and more ambiguous information, and while assuming points of view and anticipating information, the child is ready to engage in leveling-sharpening functioning while experiencing fantasies and emotions.

The first technique used is the same as that described in Step 4 of the program in field articulation. The display of cutouts to be remembered is surrounded by pictures from magazines (or sound recordings are played) that arouse fantasies and emotions (e.g., pictures depicting nurturance,

aggression, violence, affiliation among children, authority, violations of rules, loneliness-isolation, persons smiling and enjoying themselves). Stimuli are selected in terms of the child's unique personality difficulties, and which initially are minimally provocative and gradually more provocative.

When introducing this step, explain to the child that the pictures now placed around the display to be remembered, "will make you think of things and make you feel things," that "the game is the same," namely, to remember the display of cutouts, but now the displays are to be remembered "while you get different ideas, memories, and feelings." Also, explain that after the task is completed, the child is free to talk about the pictures and what they aroused.

The complexity of the displays, the mode of examining them, and the types of changes introduced follow the guidelines of Parts A through D of Step 1. Beginning with the first series of tasks, the therapist engages the child in comparing her efficiency with which various displays are remembered when surrounded by different pictures.

Another technique involves the use of delay with interpolated tasks as described in Step 1 above. During the delay between examining and restoring a display, the child looks over, talks about or tells a story about a picture. If a recording is played during the delay, the child describes what she imagines is going on.

With a third technique, a picture is taped on the bottom side of each cutout. When a display is presented, the child not only studies the pattern of the cutouts, but also turns over each one and studies the pictures attached to the bottom, associating some attribute of the cutout with its picture (e.g., “The big, red diamond is a soldier, the big, blue triangle is a policeman."). When the child is ready, the therapist sets up the screen and replaces a cutout, initially with one that is different. When examining the display, the child is asked to identify the changed cutout, turn the cutout over, and recall the picture that was also replaced.

The pictures placed under the cutouts are selected to fit some aspect of the child's therapeutic need for experiencing the leveling-sharpening process while balancing emotions/fantasies. In addition to using pictures cut from magazines, photographs the child is invited to bring in of family members, relatives, and recent events are also taped to the bottom of cutouts.

Step 6. This step relies upon experiences provided with the previous step and embeds leveling-sharpening functioning more formally into the process of symbolic functioning. Wooden and cloth cutouts, buttons, keys, and other materials used in Steps 1 and 2 are used as well as other material that lends itself to being construed in many ways.

To introduce the method, present a display of cutouts, and say, “Now we

are going to play *Remember Me* in a different way. Let's pretend these (pointing to the cutouts) are something. What could they be?" If the child does not respond or has difficulty, the therapist suggests, for example, “Let's make believe they are different people, like a teacher, a mother, a father, a sister, a policeman. Which one should we make the mother?" This procedure is followed until the child construes each of the cutouts.

If the child responds, offering, for example, that the cutouts are “animals” or “cars," or "outer-space guys," or “monsters," the therapist engages the child in the same way, asking her to designate each cutout as a particular type of the category construed (e.g., “What kind of monster is this one? Does it have a name? And, how about this one?").

Once the material is construed in some way, with each cutout having an identity, follow the usual procedure and present a series of increasingly more complex displays to be remembered, vary the mode used to examine the displays, the type of changes introduced, and the degree of delay imposed.

Over the series of tasks, encourage the child to construe the material with conventional and less conventional symbols. If a child tends to use conventional referents such as cars and familiar domestic animals, coach the child "to pretend these are something really different, something way out, something nobody would think of." If the child tends to use unconventional

referents, the therapist encourages the child "to make these into something that we see every day, something other kids would think of easily." Similarly, if the child tends to use concrete symbols (e.g., cars) the therapist encourages the child to use more abstract ones (e.g., "strong, sleepy, fast" and vice versa).

In conducting the evaluation process during this step, encourage the child to specify the connection between the vehicle (the particular attribute of the material) and the referent of the symbol constructed. For example, one child designates that "pointy things are strong; curvy things are weak," another child that "pointy things are fast; curvy things slow," and another that "red things are fast cars; yellow things are slow; and blue things are very slow."

In the last phase of this step, which forms a bridge to the next, ask the child to set up a display of material to be remembered by the therapist and while pretending the cutouts are something (e.g., "Pretend in your mind these are something. Don't tell me what you're pretending. After you put them out, I'll try to guess what they are from the design you make and from the place you give to each piece.")

After the child completes the array, the therapist attempts to determine the symbols and fantasized situations the child has in mind. While working with the display, the therapist verbalizes aloud, sharing with the child various

possibilities that come to mind (e.g., "Let's see, these green squares could be space ships getting ready to land on a space station, which is this big, blue circle. But, they could also be three cars parked in front of a store."). After producing several possibilities, ask the child to set up the screen, introduce a change, and lower the screen. Then try to determine what changed. Then ask the child to share what she had in mind when constructing the display.

Following this, child and therapist engage in evaluating how and why the symbols the therapist proposed fit the attributes displayed and whether or not they are close to what the child had in mind. As might be expected, some children remain very stimulus-bound when first engaging this task. For example, one child said, "I just put out pointy things around some round things." Other children use highly personal symbols, which have little or no connection with the vehicles employed to convey them. For example, one child said, “This is rain (a wide array of shapes and colors) falling on this frog (a yellow diamond) that's sitting on this rock (a blue circle)." In this case as with all children, this step provides an opportunity to help the child cultivate the capacity to construe with both conventional and personal symbols while engaging in the leveling-sharpening process and to learn to evaluate whether and how a symbol communicates.

Step 7. Experiences with the previous step prepare the child to participate in the directed fantasies phased in at this time and which include

leveling- sharpening tasks.

To introduce this step, explain to the child, for example, “Now we're going to pretend that the cutouts are something, but also we're going to pretend that we are in a particular place and you are a certain person. Let's pretend you're a detective and people who own a big house called you to figure out who committed the crime. Make up what the crime was." The therapist uses every opportunity to help the child participate in constructing the fantasy. After the child responds (e.g., “There was a murder."), say, "Now let's pretend all these (the cutouts) are people in a room." Eight cutouts are placed on the floor in a random array (or an ordered array, if indicated). "Let's make up who they are. Who could this green square be?" The child is encouraged and assisted in labeling each square (e.g., the green square is the guy who works in the garden; this white diamond is the butler, etc.); "Now let's say you leave the room for a few minutes, and while you're gone somebody comes in and takes the place of one of these people. You come back and try to figure out who left the room." The child walks to another part of the room, and after a delay returns and determines what has changed.

In this way, the child is engaged in a series of directed fantasies, each one including some activity that requires the leveling-sharpening process. Other directed fantasies include: (a) the scene of a classroom, a teacher (played by the therapist) is asking a student (played by the child) to

remember numbers on a blackboard; (b) a marine captain (played by the child) takes roll call; the troops (cutouts) are lined up in rows and columns and each one is given a name and a rank. The captain leaves for several minutes and returns to discover one of the soldiers has been replaced by someone else (or two soldiers have exchanged places in the ranks). The captain names the missing soldiers, or names the soldiers who have exchanged places.

After the therapist directs several fantasies, the child is encouraged more and more to initiate and direct various imagined scenarios within which some of the activity involves remembering information.

Step 8. After the child engages in a series of directed fantasies, which include leveling-sharpening tasks, the treatment process, if indicated, shifts gradually to a non-directed verbal/play format as discussed in Chapter 10. The goal of this phase is to focus the child on organizing, elaborating, and working through key pathological metaphors with the benefit of efficient cognitive controls and cognitive-affective balancing.

Concluding Remarks and a Note About Resistance

With the capacity to construct and retain stable images of fields of information perceived as they are and as they are construed, and to relate these images to present perceptions, the child has available a cognitive tool

that should improve the efficiency of learning and adapting and, if indicated, serve a phase of non-directed verbal/play therapy.

As with other programs, the therapist initially trains the child to observe behaviors and emotions that occur while working on the task. However, with this program, these self-observations focus on whether and how these behaviors/emotions influence the clarity of the image constructed of the information to be remembered and/or the efficiency with which the image is related to present perceptions. Once the child who requires therapy in leveling-sharpening is aware of the relations between the complexity of tasks and resistant-intrusive behaviors that occur, he/she has a fair amount of insight into the similarity between what occurs in the office and what occurs in school and home and what can be done to change these maladaptive habits of functioning.

To illustrate, one fifth grader was reexamining a display of cutouts after an imposed delay of several minutes. Suddenly he became flustered, unsure whether the four corners of the matrix should be yellow squares. He began tapping one of the yellow squares on the table, but this behavior was quickly transformed into a more aggressive form as he banged one cutout against another. Then, abruptly, he mumbled with agitation, "This is a s____ game," stood up and walked away, stretched and yawned. He returned to his seat and rested his head on the table suggesting that they play a form board game.

Relying on previous work, the therapist asked the boy to observe what had just taken place and then wondered if something similar happens in school. The child associated to a recent incident when he had been sent to the principal's office for swearing. A reconstruction of the event revealed that he swore during a reading comprehension quiz, when each child was writing answers to questions about a story the teacher had just read to the class. The boy became aware of the parallel between trying to remember the corners of the matrix and trying to remember the story read by the teacher, and between calling the *Remember Me* game "s___," and swearing in class. At this point the therapist

focused the boy's attention on the fact that he had given himself clues that his anger and frustration were mounting when he tapped the cutout on the table and then banged one against the other. And, the therapist engaged the boy in discussing what alternative behaviors are possible once he notices these forecasts of his mounting anger.

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