

SINGLE CASE STUDY

CHANGE IN A SCHIZOPHRENIC ADOLESCENT AS A RESULT OF A SERIES OF RAGE-REDUCTION TREATMENTS

JAMES C. CARPENTER, Ph.D.¹

A 15-year-old schizophrenic girl with many autistic features was observed to have minimal gains from verbal (individual and family) psychotherapy. A course of six rage-reduction sessions was carried out. Effects of the treatment was assessed by daily ratings made by attendants in the ward setting and by a recreation therapist. Both short term and long term effects were assessed. Short term improvement was noted in the ward ratings on dimensions assessed: eye contact when requested; eye contact, spontaneous; speech quality; expression of feelings; interaction with peers; frequency of autistic behaviors; and interaction with adults. In recreation therapy (using fewer observations), short term improvements were noted in all except two of the dimensions: eye contact, spontaneous; and interaction with peers. Long term (pretreatment *vs.* post-treatment) gains were evident in the ward ratings on all areas except expression of feelings. In the recreation therapy setting, only frequency of autistic behavior showed a stable improvement. The therapist working with the patient also noticed more global changes, and suggested that rating such dimensions as depth of self-disclosure and willingness to confront important issues in verbal psychotherapy would also show interesting results. Methodological weaknesses of the study are mentioned, and guidelines for future work on this problem are suggested.

Zaslow and Breger (7) have outlined a theory of the etiology of autism and developed a method of treatment called rage-reduction which is derived from the theory. Briefly, they hypothesize that the autistic child (defined somewhat more broadly than Kanner's original depiction) is locked in an interpersonal system in which various autistic behaviors are used to preserve an emotional and physical distance from other people. The die is cast for this pattern, they argue, in repeated early failures of that feature of normal mothering in which distress is resolved in warm, controlling maternal contact. Instead, for a variety of possible reasons, mother and child fall into a pattern in which child's distress and anger lead always to premature termination of contact. The child thus develops a "mastery by isolation," characterized by diagnostic features of an absence of posi-

tive contact with other people and an overinvolvement with physical objects.

The "rage-reduction" method involves physically handling the child to confront and work through his rage and motor resistance in order to reinstate an affectively positive relationship.² This technique attempts to reproduce the normal mothering acts of physical control and consequent comforting in response to an outburst of distress and rage. Zaslow and Breger report that warm, sustained physical control maintained throughout the child's affective storm results in a positive closeness marked by eye contact, smiling, and other affectional signs quite unlike the autistic child's typical manner. They report clinical data supporting the immediate and long term benefits of this treatment, and argue that it may have much to offer to other classes of disorder, such as

¹ Assistant Professor of Psychology, University of North Carolina, Chapel Hill, North Carolina 27514.

² The author would like to thank Don Saposnek for training in the rage-reduction technique.

childhood schizophrenia. Friedman (2) has developed a psychiatric diagnosis procedure based on the method.

Saposnek (5) has reported some experimental evidence demonstrating the short term power of the method. With an experimental group of 15 autistic children, he showed significant pre- to post-treatment changes of each of the 18 behavioral items specified by Zaslow and Breger's theory (e.g., spontaneous eye contact, vocalization normalcy, relaxed muscle tonus). A 15-child control group showed no such changes after a comparable period of affectionate contact, without the restraining, rage-reduction element.

Saposnek and Watson (6) have also reported the total elimination, over a 6-month sequence of treatments, of severe head slapping in a 10-year-old boy diagnosed both as profoundly mentally retarded and as autistic. Slapping the experimenter's hand during the treatment was also encouraged as a more mature expression of the child's anger.

The research reported here was carried out with the intention of exploring further the method's utility by applying it to a patient somewhat older than those mentioned above. It also represented an attempt to study cumulative effects over a series of treatments on a broader range of behaviors than the simple head slapping studied by Saposnek and Watson. A single case design seemed reasonable because of the method's suitability (3) for the exploratory study of little researched treatment methods. Its field setting makes it seem promising regarding potential generalizability to other such pragmatic settings. The decision to research this intervention was made after the decision to undertake the treatments. Some weaknesses of the project in terms of research criteria stem from the pragmatic context in which it was carried out, where neither budget nor staff time were assigned research priorities. It was done in response to a feeling that an unusual and potentially controversial technique such as this one deserves objective monitoring. Campbell (1) has argued for such empirical assessment of treatment innovations; and the results obtained are

presented here, if not as conclusive, at least as heuristically suggestive.

METHOD

Subject. At the time of the treatment, Mary was a 15-year-old girl residing in a unit for adolescents in a large state hospital. She came from an upper-middle-class white family in which both parents had professional degrees. She had never attended school. She first received psychiatric attention at the age of 5 or 6, and had been institutionalized for several years. She had been given an early diagnosis of "childhood schizophrenia," updated by the time of this treatment to "chronic schizophrenia." The early records disclosed many features usually associated with autism, such as a failure to form attachments with persons, poor language development, and an anxious overconcern for physical objects. At 15, she was very withdrawn, sitting alone almost all of her waking hours, apparently absorbed in hallucinations. Her "imaginary world" was a complex, full blown affair with many "imaginary friends," an imaginary Mary (who, she insisted, was the only *real* one), and various parts of her body personified as "puppets." She typically presented quite a bizarre appearance on the ward, sitting huddled alone, gesturing peculiarly with her face and hands and conversing inaudibly with fingers (puppets). When not heavily tranquilized, she would periodically fly into temper storms and break objects. No direct aggression against a person was ever reported. Her speech was typically confused and almost incoherent, her vocalization mushy. When she could be understood, her talk contained so much private reference as to leave the listener bewildered. Six months of verbal individual psychotherapy had succeeded in the formation of a warm and fairly communicative therapist-patient relationship but had plainly done very little to alter her psychotic behavior patterns. The rage-reduction treatments were initiated in hopes of gaining more significant therapeutic benefits.

Procedure. Treatment consisted of six weekly sessions carried out in addition to

ongoing verbal psychotherapy conducted by the same primary therapist. The nature of the treatment and its intended benefits were thoroughly explained to the patient and her parents beforehand. The therapist and a cotherapist began each session by drawing two chairs side by side, sitting down, and putting Mary across their laps, saying "Mary, you act like a baby, so we're going to treat you like a baby." They then proceeded to induce rage and struggle as described by Zaslow and Breger. Initially, the contact alone was enough to induce an enraged and frightened state. Beginning with the third treatment it was necessary to dip Mary's head down, arching her back in an uncomfortable manner, and to tickle her, to induce an enraged state. Verbal reminders that she was under *our* control and not her own (along with warm reassurances that she was safe and would be protected by us) were also effective in enraging Mary. Besides controlling her warmly and flexibly but firmly, emphasis was given to two major kinds of response from Mary. She was encouraged to give clear, direct verbal expressions of her feelings in the moment, and she was encouraged to express her anger directly by hitting the therapist's hand. Sessions were from 1.5 to 2 hours long, and always ended with a few minutes of warm conversation, Mary sitting across from the therapists in her own chair. Treatments were terminated because of the imminent departure of the primary therapist to take up new employment in another state.

Rating procedure. A rating form assessing seven dimensions of behavior was constructed by the primary therapist with the help of ward personnel, focusing on those behaviors that were most peculiar and detrimental to Mary. Reference was also made to Saposnek's (5) Autism Performance Scale. All dimensions were rated on a simple ordinal scale, with discrete steps defined in collaboration with the ward personnel who were to serve as raters. The scale items were as follows. 1. "Eye contact when requested," ranging from 1 (refuses) to 4 (full, enduring contact); 2. "eye contact, spontaneous," ranging from 1 (none)

to 4 (frequent and enduring); 3. "speech quality," ranging from 1 (unintelligible) to 7 (normally articulate); 4. "expression of feelings," ranging from 1 (private, bizarre, not apparently related to any ongoing events) to 5 (normal, understandable, clearly related to ongoing events); 5. "peer interaction," ranging from 1 (complete withdrawal, alone) to 7 (full, emotional participation with others); 6. "autistic behaviors (such as talking to hands)," ranging from 1 (constant) to 6 (none observed); 7. "interactions with adults," ranging from 1 (very infantile and dependent) to 5 (as mature and independent as a normal girl her age).

Ratings for scale 4 were made on each of six kinds of affect (fear, humor, anger, anxiety, sadness, and delight). If any of the six was not observed, it was left unrated. The average rating per affect was used as the score for that period.

Ratings were made by two ward attendants and by a recreation therapist. Ward ratings represented observations of Mary's behavior in a daily free-ward period of 1 to 2 hours. Ward raters typically worked different days, and with the exception of a 5-day reliability check, only one rating per day was obtained. Ratings were collected on a period of 5 days before the treatments were to begin on Friday afternoon. Unfortunately, these "baseline" ratings were done retrospectively by one aide and the recreation therapist the Monday of the week following the actual observations. Ratings were then made each weekday during the 5 successive weeks, with a treatment given each Friday. Two ratings were done on Fridays: one in the morning before the treatment, and one early in the afternoon 2 to 2½ hours after the treatment. Beginning after the last treatment, another week of daily ward ratings was taken. Periods of observations were from 1 to 1½ hours in length.

The recreation therapist made daily ratings later in the afternoon on the same schedule as the ward personnel did for the first 4 rating weeks (1 pretreatment and 3 treatment weeks). Schedule problems then made it impossible to continue rating dur-

ing the last 2 treatment weeks. She later collected three more sets of ratings after the termination of treatment: one set of three daily ratings beginning 24 days after the last session, and two sets of five ratings each beginning 31 and 44 days after the last session. Periods of observation were from 30 minutes to 1 hour in length. Friday recreation therapy periods were from 4 to 5 hours after the treatment.

The two ward raters independently rated Mary's behavior for a 5-day period in order to assess rater reliability. Across all seven scales, the proportion of exact agreement was 83 per cent, and the proportion of ratings that differed by no more than 1 scale step was 94 per cent. The reliability of the recreation therapist's ratings was not checked. No attempt was made to keep raters blind as to the time of occurrence of treatments. The ward period of observation was generally quiet with only a few other children who were mostly quiet and withdrawn on the ward. Mary had typically stayed quietly to herself during these times, frequently absorbed in hallucinations, gesturing oddly by herself. If she interacted with anyone during these periods, it had typically been ward personnel.

Recreation observation periods occurred in a large room with several (usually 15 to 20) children engaged in various activities such as card games and ping pong. Mary's typical behavior there was to sit alone as far on the edge of the group as possible unless tormented by one of the more active youngsters, when she would hover near the recreation therapist as if for protection.

Analyses. Ratings were compared across weeks to see if a long term treatment effect could be observed. The gains from pre-treatment to treatment weeks were tested by *t*-tests; and the maintenance of any gain from pre- to post-treatment means was examined by *t*-tests. Because a change in the direction of symptom reduction was hypothesized, one tailed probability tests were used.

The distribution of means within the treatment weeks was also examined to see if an immediate effect of treatment would be observed. The post-treatment Friday

ratings were compared to all other ratings of the week.

The rating criterion for one scale, "expression of feelings," was misunderstood by the recreation therapist during the first 2 weeks of rating, so her ratings on that dimension were not analyzed.

RESULTS

Ward ratings across weeks are summarized in Table 1. A general change in the direction of more normal behavior was observed from pretreatment to treatment weeks. *t*-Tests of those changes, and of their maintenance to the post-treatment period are also given in Table 1.

All dimensions changed in the predicted direction. One, "expression of feelings," showed no maintenance to the post-treatment period. "Autistic behaviors" continued to diminish (improve) somewhat from treatment to post-treatment periods. The other five dimensions showed some gain from pre- to post-treatment periods, although there was some loss from the treatment periods.

The recreation therapy ratings showed more modest gains. "Eye contact when requested" and "interaction with peers" showed no improvement. Significant pre-treatment *vs.* treatment improvements were observed on four scales: "eye contact, spontaneous" ($t = 2.23$, $df = 5/15$, $p < .05$ one tailed), "speech quality" ($t = 1.74$, $df = 15/5$, $p < .05$), "autistic behavior" ($t = 5.72$, $df = 15/5$, $p < .0005$), and "interaction with adults" ($t = 2.50$, $df = 15/5$, $p < .025$). Only one scale, "autistic behavior," showed maintenance of change from pre- to post-treatment ($t = 14.55$, $df = 13/5$, $p < .0005$). Scores on that dimension quickly reached a stable level of total absence of such behaviors which was persisting 9 weeks after the termination of treatments. See Figures 1 and 2 for examples of how scores changed across the weeks of the study.

Short term effects of the treatments were assessed by looking only at the ratings within treatment weeks. Ratings made a short period after treatments were compared to those taken at other times during

TABLE 1
Ward Ratings across Weeks

Behavior		Pre-treat.	Treatment Weeks					Post-treat.	t pre- vs. treat.	t pre- vs. post.
			1	2	3	4	5			
Eye contact when requested	\bar{X}	1.67	2.17	2.67	2.83	2.67	2.83	2.17	4.36***	1.92*
	S	.52	.41	.52	.41	.52	.41	.41		
	N	6	6	6	6	6	6	6		
Eye contact spontaneous	\bar{X}	1.50	2.17	2.33	2.50	2.67	2.67	2.0	4.22****	2.27**
	S	.55	.41	.52	.55	.52	.52	0		
	N	6	6	6	6	6	6	6		
Speech quality	\bar{X}	3.67	3.67	4.17	5.33	4.50	4.83	4.17	2.31**	1.92*
	S	.52	.52	1.17	1.06	.55	.41	.41		
	N	6	6	6	6	6	6	6		
Expression of feelings	\bar{X}	3.0	3.17	3.50	3.50	3.67	3.33	3.0	2.35**	0
	S	0	.41	.49	.55	.52	.52	0		
	N	6	6	6	6	6	6	6		
Interaction with peers	\bar{X}	2.5	3.67	3.17	4.50	4.50	4.00	3.33	3.13***	2.17***
	S	.55	.90	1.17	1.05	.90	1.26	.52		
	N	6	6	6	6	6	6	6		
Autistic behavior	\bar{X}	2.83	5.00	5.67	5.33	4.83	5.67	5.67	5.15****	7.68****
	S	.41	1.54	.82	1.21	1.47	.52	1.63		
	N	6	6	6	6	6	6	6		
Interaction with adults	\bar{X}	2.5	3.00	3.33	4.00	4.00	4.00	3.0	4.88****	2.25**
	S	.55	0	.82	0	0	0	0		
	N	6	6	6	6	6	6	6		

* $p < .05$, one tailed test.
 ** $p < .025$, one tailed test.
 *** $p < .01$, one tailed test.
 **** $p < .0005$, one tailed test.

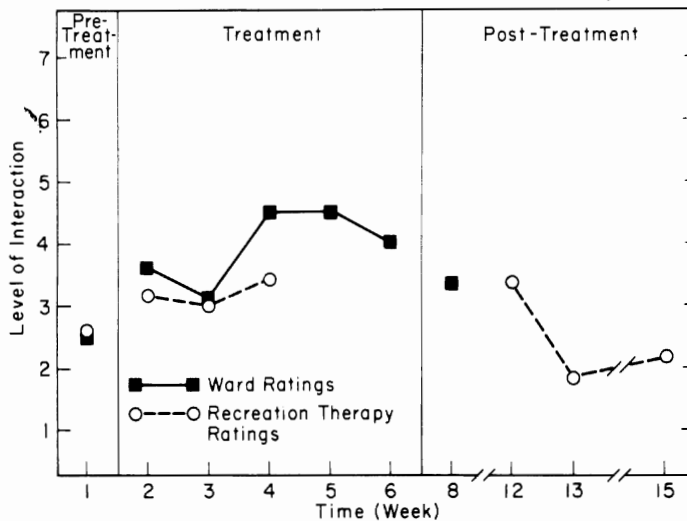


FIG. 1. Rated levels of peer interaction across weeks. Levels are: 1, Complete withdrawal, alone. 2, Around others but completely unresponsive to them. 3, Responds minimally, quickly detaches herself. 4, Responds more freely, but little initiative. 5, Initiates some interaction. 6, Interacts more freely, little emotional expression. 7, Full, emotional participation with others.

those weeks. The results for ward ratings are given in Table 2. Dimensions 1, 2, 4, and 5 showed significant differences. Within-treatment week results for recrea-

tion therapy ratings showed significant increase on only one dimension: "eye contact when requested" (from $\bar{X} = 2.0$ to $\bar{X} = 3.0$; $t = 2.78$, $df = 13$, $p < .01$). Other

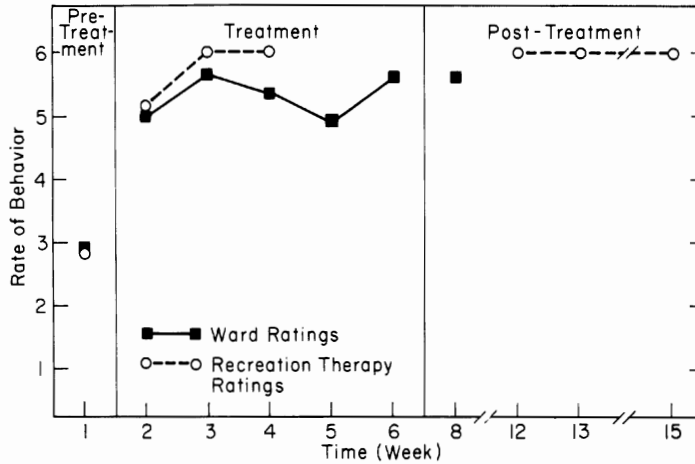


FIG. 2. Rated frequency of autistic behaviors (such as talking to hands) across weeks. Levels are: 1, Constant. 2, More frequent than usual. 3, About as usual. 4, Less frequent than usual. 5, Very little observed. 6, None observed.

TABLE 2
Ward Ratings within Treatment Weeks

Behavior		Post-treatment Friday Ratings	Other treatment Week Ratings	Post vs. other
Eye contact when requested	\bar{X}	3.0	2.56	
	S	0	.51	2.00*
	N	5	25	
Eye contact, spontaneous	\bar{X}	3.0	2.36	
	S	0	.49	2.88***
	N	5	25	
Speech quality	\bar{X}	4.80	4.44	
	S	.45	.92	.86
	N	5	25	
Expression of feelings	\bar{X}	4.0	3.28	
	S	0	.54	3.00***
	N	5	25	
Interaction with peers	\bar{X}	5.00	3.76	
	S	1.00	1.01	2.38**
	N	5	25	
Autistic behaviors	\bar{X}	6.00	5.16	
	S	0	1.21	1.53
	N	5	25	
Interaction with adults	\bar{X}	3.80	3.64	
	S	.45	.57	.62
	N	5	25	

* $p < .05$, one tailed test.

** $p < .025$, one tailed test.

*** $p < .005$, one tailed test.

differences were in the expected direction but were not significant.

DISCUSSION

These findings suggest that rage-reduction is an effective mode of treatment in the promotion of more normal behavior in adolescent schizophrenics, at least ones

with many autistic features like Mary. Long term group studies would now seem desirable for testing the generalizability of these conclusions.

It appeared that changes were more apparent in the quiet ward setting than in the crowded recreation therapy. It should also be remembered that ratings in the

latter setting were not tested for inter-rater reliability. If reliability was low, the lessened effect could to some extent be due to that. Also, fewer treatment period observations were obtained in the recreation setting so a stronger effect is required to attain statistical significance. It may also be that the additional passing of time between treatment and observation was enough for a genuine delay of the immediate post-treatment effects to be observed.

An obvious difficulty with this study was the lack of control over the raters' knowledge of when treatments had been given. For this reason alone, the results can be considered only suggestive. Further research using blind raters appears warranted. Another difficulty is the retrospective nature of the baseline ratings. Because they were done from memory, they should not be assumed to represent the same level of reliability as other ratings. Future research should avoid such difficulties. Further research would also profit from use of some type of reversal, or return to baseline approach. This would give further assurance that the treatment was the causal element in the situation.

One major area of change which went unmeasured in this research was that of Mary's behavior during the verbal individual and family psychotherapy sessions. It seemed to the primary therapist that dramatic changes occurred in that Mary became much more articulately self-disclosing and self-exploring in the individual sessions and much more clear and confrontive

in the family discussions. A new turn was taken in these endeavors, and they seemed to become much more involving and productive. A more global change seemed to take place in Mary than that represented by the modification of a few discrete behaviors. For example, the patient's profound ambivalence toward her mother was expressed directly and unavoidably by Mary, leading to shifts in the ways the family had construed Mary and her place in the family. A study of therapeutic process by such scales as those developed by Rogers *et al.* (4) would seem to be an interesting line for future research.

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