

*THE EFFECT OF CONTINGENT REINFORCEMENT ON
TARGET VARIABLES IN OUTPATIENT PSYCHOTHERAPY FOR
DEPRESSION: A SUCCESSFUL AND UNSUCCESSFUL CASE
USING FUNCTIONAL ANALYTIC PSYCHOTHERAPY*

JONATHAN W. KANTER, SARA J. LANDES, ANDREW M. BUSCH, LAURA C. RUSCH,
KERI R. BROWN, AND DAVID E. BARUCH

UNIVERSITY OF WISCONSIN–MILWAUKEE

AND

GARETH I. HOLMAN

UNIVERSITY OF WASHINGTON

The current study investigated a behavior-analytic treatment, functional analytic psychotherapy (FAP), for outpatient depression utilizing two single-subject A/A+B designs. The baseline condition was cognitive behavioral therapy. Results demonstrated treatment success in 1 client after the addition of FAP and treatment failure in the 2nd. This study highlights the challenges in measuring treatment progress and outcome idiographically in this population.

DESCRIPTORS: depression, outpatient treatment, functional analytic psychotherapy, reinforcement

Major depressive disorder, one of the most prevalent and disabling of the psychiatric disorders, has been relatively neglected by behavior analysts. Although mainstream cognitive behavioral therapy for adult outpatient depression directly targets depressed affective states, a behavior-analytic approach targets the behavioral repertoires that lead to fewer sources of positive reinforcement, which in turn is assumed to elicit depressed affect (Ferster, 1973; Lewinsohn, 1974). By extension, cognitive behavioral therapy relies on global measures of depressive symptoms such as the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), whereas dependent variables in behavior-analytic therapies are idiographically determined by the client and the therapist. Unfortunately, the independent live observation of dependent variables outside

the therapy session is impossible from a practical standpoint. As a result, measurement typically relies on client self-observation and report.

Recently, a behavior-analytic treatment—functional analytic psychotherapy (FAP; Kohlenberg & Tsai, 1991)—was shown to be efficacious for adult outpatient depression using nomothetic outcome measures and a group design (Kohlenberg, Kanter, Bolling, Parker, & Tsai, 2002), but single-subject evaluations of FAP for depression have not been done. FAP involves in-session application of reinforcement contingencies to targeted clinically relevant behaviors (CRBs), which are further distinguished into CRB1s (in-session occurrences of target problems) and CRB2s (corresponding in-session improvements in those problems). Because CRBs are often interpersonal in nature, they are expected to occur naturally in the context of the therapist–client relationship. In FAP, therapists observe, evoke, and differentially apply consequences to CRB1s and CRB2s. CRBs are seen as functionally similar to target behaviors outside therapy, so general-

Correspondence regarding this article should be addressed to Jonathan W. Kanter, University of Wisconsin–Milwaukee, Department of Psychology, P.O. Box 413, Milwaukee, Wisconsin 53201 (e-mail: jkanter@uwm.edu).

doi: 10.1901/jaba.2006.21-06

ization of in-session gains to the outside environment should occur naturally.

We attempted to study FAP in 2 clients using a single-subject A/A+B design. The baseline condition consisted of an active, empirically supported treatment: cognitive behavioral therapy for depression (Beck, Rush, Shaw, & Emery, 1979). Because cognitive behavioral therapy does not target idiographically defined interpersonal repertoire deficits, we expected to achieve stable baselines on our dependent variables during this phase. FAP, as a behavior-analytic intervention that specifically targets these idiographically defined behaviors with contingent reinforcement, was expected to produce observable changes when implemented.

METHOD

Participants and Therapists

The 2 clients were selected based on inclusion and exclusion criteria as per Kohlenberg *et al.* (2002). (A 3rd client's improvement during the baseline phase obviated the need for a shift to FAP. This client's results are not reported.) Melissa was a 24-year-old African American female professional who had been diagnosed with major depressive disorder and histrionic personality disorder. She sought treatment for depression and for chronic interpersonal difficulties. She reported that she was excessively focused on how others felt about her and that she had difficulty being monogamous with her boyfriend. She reported engaging in flirtatious behavior with many different men and having difficulty saying "no" which often resulted in things "going farther than I want them to."

Dan was a 42-year-old unemployed Caucasian man. He had been diagnosed with chronic major depressive disorder, personality disorder not otherwise specified, and past polysubstance dependence. He had separated from his wife, who had moved with their young child to a different country, and was considering moving to this country to live closer to his child. The

separation was precipitated by a miscarriage, about which he expressed little understanding of his wife's feelings, and infidelity on his part, about which he expressed little remorse.

The therapists were advanced graduate students in clinical psychology. Melissa's therapist was male and Dan's was female. Both therapists had been supervised in FAP and cognitive behavioral therapy for depression for 2 years, and both had completed 16-hr workshops, run by national experts, in cognitive behavioral therapy for depression and FAP.

Assessment of the Dependent Variable

Dependent variables were determined via a clinical assessment conducted by the therapist at the beginning of therapy. Assessment lasted five sessions for Melissa and three sessions for Dan. As is typical in outpatient psychotherapy, assessment was unstructured and involved collaboration with the client in developing treatment targets, with behaviorally anchored examples, in line with the client's goals. The assessment was based on the structure of the Functional Idiographic Assessment Template, which has been used to describe and track functional behavioral classes (Callaghan, Summers, & Weidman, 2003). See Table 1 for descriptions of the target behaviors, specific examples, and goals generated by this process. At the end of the assessment, diary cards were produced that asked the client to report whether or not each target problem occurred daily over the course of therapy. Diary cards were reviewed weekly by therapists who provided instruction and clarification to the clients on how to report the occurrence of target behaviors accurately.

Experimental Design and Procedure

Baseline. During baseline, therapists employed the techniques of cognitive behavioral therapy for depression as per Beck *et al.* (1979). All FAP techniques were proscribed during the baseline condition. If CRBs were observed, therapists were instructed to ignore them to the

Table 1
Target Problems, Examples, and Goals for Melissa and Dan

	Target problem	Example 1	Example 2	Goal
Melissa	Histrionic behavior (seeking attention, validation, and approval).	Flirting with men in social situations to get validation.	Acting in ways to draw attention to myself ("I always have to wear my happy mask").	Increase "being genuine and real."
	Excessive public control over self.	Worrying about what others think of me ("I can never let my guard down").	Questioning my value or decisions ("I cannot be my real self").	Increase private control (also "being genuine and real").
Dan	Poor communication with wife (not being honest about hard issues).	Lying about relationships with other women.	Not telling wife how I truly feel about moving to another country.	Increase honest and sensitive communication with wife.
	Excessive self-criticism and rumination.	"I am a failure."	"I am disorganized and don't use my time well."	Increase more effective and accurate thinking.

extent possible and steer the discussion back to the outside environment.

FAP and treatment integrity. See Kohlenberg and Tsai (1991) and Kohlenberg et al. (2002) for a full description of FAP and the techniques used in this study. Consistent with a "natural" single-subject design (Hayes, 1981), the timing of the phase shift was determined subjectively, when both dependent measures for a client had achieved as much stability as possible. To maximize the shift's impact, therapists were instructed to prompt and contingently respond to CRBs as much as possible in the first FAP session.

To assess the occurrence of FAP's key functional process—contingent responding to CRBs—four trained raters, coding as two-rater teams, watched videotapes of Melissa's sessions as part of a separate coding study. Melissa was chosen because she appeared to be the successful FAP case. Using a modification of the FAP Rating Scale (Callaghan, Ruckstuhl, & Busch, 2005), raters coded each therapist turn-at-speech as either an accurate contingent response to a CRB (i.e., blocking or punishing CRB1 and reinforcing CRB2) or as one of several other codes. Raters were given a full case conceptualization to help determine the presence of CRBs and effective contingent responses and were blind to the timing of the phase shift. Prior to coding Melissa's tapes, the coding

teams coded four 10-min tape segments from other FAP cases to a preestablished criterion. Percentage agreement for each rater with the criterion was 76%, 86%, 100%, and 90%.

RESULTS AND DISCUSSION

As seen in Figure 1, the shift from cognitive behavioral therapy to FAP appeared to be successful for Melissa. Her results clearly require replication, particularly given that her rapid response to the phase shift was documented by self-report data that are susceptible to demand characteristics. Accurate contingent responding by the therapist over the course of Melissa's therapy is depicted in Figure 2 and indicates almost no contingent responding during the baseline phase, a large shift in responding in the first FAP session, and variable responding throughout the remainder of FAP. Although this provides some evidence that FAP's purported processes occurred, many questions about the treatment process remain. For example, it is not clear if CRB1s decreased and CRB2s increased during the FAP phase. Also, additional therapist behaviors may have influenced the occurrence of CRBs, particularly the therapist's attempts to evoke and discuss CRBs but not to apply consequences to them specifically.

Figure 1 shows that Dan dropped out of treatment prematurely and was inconsistent in

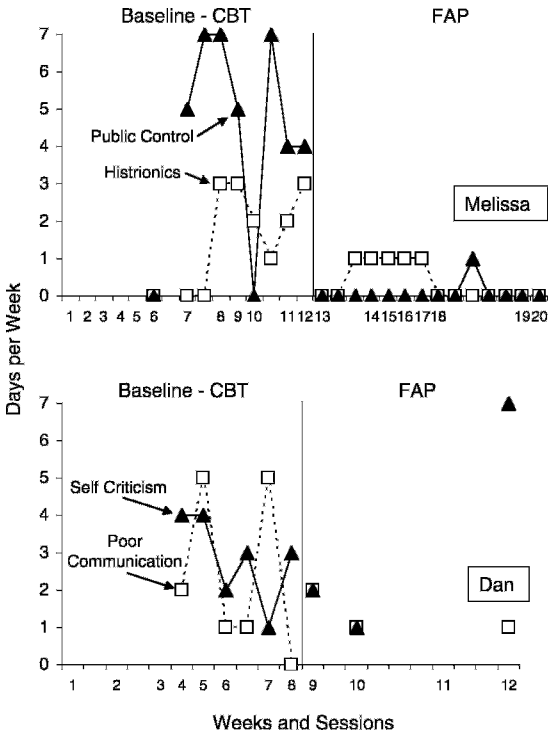


Figure 1. Days per week on which target variables occurred over the course of therapy for Melissa and Dan. Weeks are indicated by tic-marks on the x axis, and sessions are indicated numerically.

coming to sessions and completing his diary cards after the start of the FAP condition. He demonstrated a slight decrease in self-criticism during cognitive behavioral therapy, but self-criticism spiked in his last report during the FAP phase. Poor communication varied during baseline and decreased to 1 day per week during FAP, but Dan reported that the decrease was due to avoidance of all communication with his wife, rather than communication between them going well. During FAP, the therapist pointed out parallels between Dan's inhibited disclosure with his wife and his possible resistance to being reliant on and disclosing his feelings to the therapist. Eventually, Dan dropped out of treatment. We speculate that these parallels were aversive to Dan, and his avoidance of communication with his wife may have generalized to therapy. Dan's case highlights an

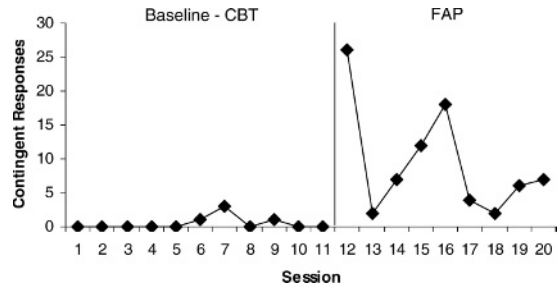


Figure 2. Number of effective contingent responses by the therapist to CRBs over the course of therapy for Melissa.

interesting question for FAP researchers. What therapeutic establishing operations are necessary for clients for whom intimate and genuine social interactions are not particularly reinforcing?

This study highlights several methodological challenges inherent in behavior-analytic outpatient research and hopefully sparks interest in empirical behavior-analytic study of FAP, depression, and related concerns typically addressed in outpatient psychotherapy. First, it is rare for several clients with the same or similar problems to present for adult outpatient treatment at the same time. Thus, our study did not obtain the level of control over historical influences obtained by a concurrent multiple baseline design. Future work should attempt concurrent designs if possible. Second, true functional assessment was not conducted to determine clinically relevant behaviors in the present study. Such applications for adult outpatient clinical populations have yet to be developed. Thus, we encourage researchers to explore and develop these assessments for FAP and related approaches. Third, the identified problem behaviors were tracked using client self-report rather than observer measurement. This is a major limitation but a necessary one if behavior analysts are to work in the adult outpatient arena and remain focused on idiographic assessment. Improvements in the current self-report measurement system could include the use of frequency counts or di-

mensional ratings of the amount, severity, or intensity of the problem behavior, and an attempt to distinguish avoidance of stimuli that evoke the problem behavior from lack of occurrence of the problem behavior, which presented some difficulties in interpreting Dan's data.

REFERENCES

- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, *4*, 561–571.
- Callaghan, G. M., Ruckstuhl, L. E., & Busch, A. M. (2005). *Manual for the functional analytic psychotherapy rating scale*. Unpublished manual, University of Wisconsin–Milwaukee.
- Callaghan, G. M., Summers, C. J., & Weidman, M. (2003). The treatment of histrionic and narcissistic personality disorder behaviors: A single-subject demonstration of clinical effectiveness using functional analytic psychotherapy. *Journal of Contemporary Psychotherapy*, *33*, 321–339.
- Ferster, C. B. (1973). A functional analysis of depression. *American Psychologist*, *28*, 857–870.
- Hayes, S. C. (1981). Single case experimental design and empirical clinical practice. *Journal of Consulting and Clinical Psychology*, *49*, 193–211.
- Kohlenberg, R. J., Kanter, J. W., Bolling, M. Y., Parker, C. R., & Tsai, M. (2002). Enhancing cognitive therapy for depression with functional analytic psychotherapy: Treatment guidelines and empirical findings. *Cognitive and Behavioral Practice*, *9*, 213–229.
- Kohlenberg, R. J., & Tsai, M. (1991). *Functional analytic psychotherapy: A guide for creating intense and curative therapeutic relationships*. New York: Plenum.
- Lewinsohn, P. M. (1974). A behavioral approach to depression. In R. J. Friedman & M. M. Katz (Eds.), *Psychology of depression: Contemporary theory and research* (pp. 157–178). Oxford, UK: Wiley.

Received February 22, 2006

Final acceptance May 9, 2006

Action Editor, Douglas W. Woods