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Review

A comprehensive review of research on Functional Analytic Psychotherapy☆

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HIGHLIGHTS

- FAP's proposed mechanism is therapeutic social reinforcement.
- We conclude that FAP is not yet empirically supported for specific psychiatric disorders.
- Evidence supports FAP's mechanism as an agent of idiographic behavior change.

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ABSTRACT

Functional Analytic Psychotherapy (FAP; Kohlenberg & Tsai, 1991) is a transdiagnostic approach to outpatient psychotherapy that presented guidelines to instantiate the behavioral principle of natural, social reinforcement applied to idiographic behavioral targets within a genuine and authentic psychotherapy relationship. We present the first comprehensive review of research on FAP, including qualitative studies, uncontrolled and controlled single-case designs, group designs, and studies on training therapists in FAP. We conclude that current research support for FAP is promising but not sufficient to justify claims that FAP is research-supported for specific psychiatric disorders. There is stronger support for FAP's mechanism of therapist-as-social reinforcer: FAP techniques, when appropriately applied to idiographically defined behavioral problems—primarily in the realm of social functioning—produce positive change in those behaviors.

1. Introduction

Functional Analytic Psychotherapy (FAP; Kohlenberg & Tsai, 1991) was described in 1991 to resolve an apparent paradox: How can psychotherapy consistent with fundamental behavioral principles be practiced in standard, adult, outpatient contexts without sacrificing a strong psychotherapeutic relationship? It was particularly important to early FAP theorists (e.g., Follette, Naugle, & Callaghan, 1996) to articulate a behaviorally grounded explanation for the well-established importance of the therapy relationship (e.g., Gaston, 1990; Horvath & Symonds, 1991). FAP proposed that a primary mechanism of effective psychotherapy was the in-session, natural, social reinforcement of improved client behavior by the therapist. According to FAP, a therapist reinforcing clients in accordance with this mechanism will naturally foster the genuine, close, caring psychotherapy relationship fundamental to the therapy alliance (Horvath, 2005; Kohlenberg & Tsai, 1994a; Kohlenberg, Yeater, & Kohlenberg, 1998; Tsai, Kohlenberg, & Kanter, 2010).

The notion of the therapist as a source of positive social reinforcement was not new to FAP (Krasner, 1962; Truax, 1966); it was derived from a radical behavioral analysis of the psychotherapy relationship (e.g., Skinner, 1974), now situated within the broader framework of contextual behavioral science (Hayes, Barnes-Holmes, & Wilson, 2012; Zettle, Hayes, Barnes-Holmes, & Biglan, 2016). Consistent with the behavior analytic emphasis on describing behavior in terms of functions rather than topography (Hayes & Follette, 1992), Kohlenberg and Tsai (1991) did not specify concrete treatment techniques or an easily replicable FAP protocol; rather, they explicated five functional rules to guide the therapist. Central to these rules is the term *Clinically Relevant Behavior* (CRB) – the in-session manifestations of the client's daily-life problems (CRB1s) and improvements in those problems (CRB2s). FAP's five rules are structured around CRB: Rule 1 is to observe CRBs, Rule 2

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is to evoke CRBs, Rule 3 is to reinforce CRB2s, Rule 4 is to observe the potentially reinforcing effects of therapist behavior in relation to CRBs, and Rule 5 is to give functional interpretations of CRBs and clarify parallels between CRB and daily life problems in the service of generalization. FAP's first three rules specified FAP's central mechanism of action: in-session observation, evocation, and contingent responding by the therapist to client CRB2s with natural reinforcement to increase the frequency of these CRB2s.

Although central to FAP's behavior-analytic foundations is the idea that the clinical problems and targets defined as CRB in FAP should be idiographic to the client's presentation, given the importance of the therapeutic relationship in FAP, most descriptions of FAP's targets converge around the broad theme of social/interpersonal functioning (Maitland & Gaynor, 2012). The two primary texts on FAP (Kohlenberg & Tsai, 1991; Tsai, Callaghan, Kohlenberg, Follette, & Darrow, 2009) emphasize a treatment approach that prototypically (but not exclusively) targets a client's social and interpersonal problems, idiographically defined but often related to intimacy. Improvements in this domain are hypothesized to produce downstream transdiagnostic mental health benefits (Wetterneck & Hart, 2012) and this social functioning target is prevalent in many published FAP research projects and FAP case descriptions (Maitland, Kanter, Manbeck, & Kuczynski, 2017).

Descriptions of the clinical application of FAP emphasize that attempts to evoke (Rule 2) and reinforce (Rule 3) client CRB2s related to intimacy and social functioning should be natural (Ferster, 1967), in that the therapist should aim to respond to client CRB2s in ways that are functionally similar to ideal intimate relationships in the client's life. Thus, FAP therapists are encouraged to strategically and explicitly create a safe, authentic, and caring relationship within which the mechanism of FAP unfolds. Recent FAP writings (e.g., Tsai et al., 2009) have employed the terms *awareness, courage,* and *love* (ACL) to describe the ideal qualities of this relationship. For example, in the service of increasing accurate observation of clients' CRBs (Rule 1), FAP therapists are encouraged to be empathically attuned to and aware of the subtleties of the client's behavior and core attributes in session (i.e., awareness). To evoke CRB2s (Rule 2), FAP therapists are encouraged to take strategic, therapeutic risks which may involve authentic expression of feelings and reactions to the client (i.e., courage), and when these clients' CRB2s are observed by the therapist in the moment, the therapist attempts to respond with natural reinforcement to strengthen these repertoires (Rule 3). This natural reinforcement may involve authentic expressions of empathy and positive regard for the client (i.e., love).

Despite FAP's behavioral science foundations, transdiagnostic focus on the core human concern of intimacy, and long-standing presence in the behavioral, cognitive-behavioral, and contextual behavioral therapy communities, there is little research on the efficacy of FAP. In 2001, Corrigan identified only 17 FAP publications, most of which were theoretical and none of which provided strong empirical support for FAP. Corrigan expressed concern that FAP may have gotten ahead of its data, with its treatment developers pursuing wide dissemination without empirical justification. Hayes, Masuda, Bissett, Luoma, and Guerrero (2004), in response to Corrigan, noted that FAP "has a limited research base, but its central claim is well substantiated" (p. 35). By this, the authors meant that the proposed mechanism of FAP – the shaping of in-session behavior (CRB2s) by the therapist with contingent reinforcement (Rule 3) – "is among the oldest and best-established behavioral approaches…whether or not FAP ever emerges as an empirically supported treatment in its own right" (p. 48). However, a solid foundation in behavioral principles and broad-spectrum research findings does not obviate the need to demonstrate empirical support in well-designed studies to justify claims of efficacy. Ferro García (2008) reviewed 29 empirical and case studies of FAP and agreed that studies on FAP efficacy and effectiveness are still lacking.

Several FAP researchers have noted that FAP is difficult to research (Follette & Bonow, 2009; Maitland & Gaynor, 2012; Weeks, Kanter, Bonow, Landes, & Busch, 2012), with challenges operationalizing both its independent and dependent variables. Regarding the independent variable, Kohlenberg and Tsai's (1991) presentation of FAP's techniques as five abstract, functional rules was consistent with its behavior analytic foundations but made it difficult to manualize the treatment, measure adherence and competence, and replicate training and therapy procedures for clinical trial research. The recent use of ACL language may have amplified, rather than ameliorated, these problems, and generated concerns about the use of poorly defined, unscientific terms to describe the treatment approach (e.g., McEnteggart, Barnes-Holmes, Hussey, & Barnes-Holmes, 2015).

Regarding the dependent variable, Kohlenberg and Tsai's (1991) description of an idiographic, content-free concept of CRBs allowed subsequent FAP authors to propose a wide scope of applications, as the concept of CRBs could be brought to bear on various presenting problems and in various clinical contexts (Kanter, Tsai, & Kohlenberg, 2010). This may have made it difficult to operationalize and achieve consensus on primary research targets, link these targets to reliable and valid measures, and establish an underlying theory of disorder to guide a broader research agenda.

FAP researchers have begun to overcome and address these obstacles. Since Corrigan's (2001) review, researchers have developed replicable systems for assessing interpersonal targets in FAP (Callaghan, 2006a; Darrow, Callaghan, Bonow, & Follette, 2014; Leonard et al., 2014), manualized and evaluated FAP protocols in group designs targeting aspects of social functioning and intimacy (Holman, Kohlenberg, & Tsai, 2012a; Maitland et al., 2016b) and capitalized on existing manualized approaches by integrating FAP concepts into them, with the logic that FAP's in-session interpersonal focus will enhance the existing approaches (Gaynor & Lawrence, 2002; Gifford et al., 2011; Kohlenberg, Kanter, Bolling, Parker, & Tsai, 2002). Several researchers have explored FAP in single-subject designs that may be more suited to its functional approach to intervention and its idiographic approach to clinical targets (Cattivelli, Tirelli, Berardo, & Perini, 2012; Kanter et al., 2006; Landes, Kanter, Weeks, & Busch, 2013; Lizarazo, Muñoz-Martínez, Santos, & Kanter, 2015; Villas-Bôas, Meyer, & Kanter, 2016). Several others have exploited FAP's definition of its mechanism of action in terms of a behavioral process - the in-session client-therapist interaction – and produced detailed in-session micro-process studies that shed light on the validity of its proposed mechanism (Busch et al., 2009; Busch, Callaghan, Kanter, Baruch, & Weeks, 2010; Callaghan, Summers, & Weidman, 2003; Oshiro, Kanter, & Meyer, 2012).

The current review represents the most exhaustive and detailed summary of FAP research to date, adding to and expanding on a previous review by Ferro García (2008). Mangabeira, Kanter, and del Prette (2012) and Ribeiro, Oliveira, and Borges (2013) previously identified and reviewed 80 and 46 FAP publications, respectively, but focused their reviews on descriptive characteristics of the publications (e.g., year of publication, country of origin, methodology) and did not evaluate the evidence. Muñoz-Martínez, Novoa-Gómez, and Gutiérrez (2012) published a review of FAP theoretical, clinical, and research articles in Ibero-America but likewise did not draw empirical conclusions.

Because of substantial heterogeneity in the research designs and analytic strategies employed in the manuscripts reviewed herein, we organized our review first by research design. This allowed us to quantify effect sizes according to design and provide empirical summarizations of the extant data to the extent possible. Within each research design type, we organized studies by presenting problems, which in some manuscripts were idiographically defined but in other cases converged on several common themes: smoking cessation, depression, and social functioning. We also included in our review three studies on outcomes of FAP training protocols on therapists and separately discuss studies that measured in-session FAP processes. Because of the small number of studies, we were able to describe the methodologies,

Table 1
Study characteristics.

Study	N	Design	Sample: location	Assessments	Treatments (phases and sessions)	Measures used	
						Process	Outcome
Busch et al. (2009)	n/a	Secondary analysis of client in Kanter et al. (2006)	Depression, SPs: USA	Pre, weekly, post	Assessment (5 sessions), CBT (A phase: 6 sessions), FAP (B phase: 9 sessions)	FAPRS	BDI-II, SSQ
Busch et al. (2010)	1	Uncontrolled case	SPs: USA	Pre, post	FAP (24 sessions)	FAPRS	BDI-II
Callaghan et al. (2003)	1	Uncontrolled case	SPs: USA	Pre, post	FAP (23 sessions)	FAPRS	BADS, BDI-II
Cattivelli et al. (2012)	5	Single-case AB multiple baseline	Adolescents, SPs: USA	Pre, weekly, post	BL (A phase: 4–8 sessions), FAP (B phase: 8–18 sessions)	Idiographic	Idiographic
Dias and Silveira (2016)	1	Single-case ABAB	SPs (couple): Brazil	Pre, weekly, post	P-BCT (A phases: 2 sessions each), FAP (B phases, 2 sessions each)	FAPRS	CSSI
Ferro García et al. (2012)	1	Uncontrolled case	Depression: Spain	Pre, post	FAP (23 sessions over 1 year)	–	AAQ-II, BDI, EOSS
Gaynor and Lawrence (2002)	10	Single-case AB	Adolescents, depression: USA	Baseline, weekly, post, 3 m FU	BL (A phase: 2–3 sessions), LIVE (B phase: 16 bi-weekly 2 h groups)	–	BDI
Gifford et al. (2011)	291	Randomized trial	Smoking: USA	Pre, post, 6 m and 1 yr FU	Buproprion, Buproprion + combined FAP/ACT (10 individual and group sessions)	WAI	Smoking
Gómez and Gutiérrez (2008)	1	Uncontrolled case	Depression: Spain	Weekly	Combined FAP/ACT (12 sessions)	–	Idiographic
Holman et al. (2012a)	13	Uncontrolled case series	SPs (individuals in couples): USA	Pre, post	FAP (4 sessions)	–	DAS, QRI, Idiographic
Holman et al. (2012b)	5	Uncontrolled case series	Depression, smoking: USA	Pre, post	Integrated FAP protocol (24 sessions)	–	BDI, OQ-45, smoking
Kanter et al. (2006)	2	Single-case AB	Depression, SPs: USA	Weekly	Assessment (3, 5 sessions), CBT (A phase: 5, 6 sessions), FAP (B phase: 3, 9 sessions)	–	Idiographic
Kanter et al. (2005)	n/a	Secondary analysis of Kohlenberg et al. (2002)	Depression: USA	Weekly	CBT (20 sessions), CBT + FAP (20 sessions)	Other	–
Kanter et al. (2012)	16	Randomized trial	Therapist-trainees: International	Pre, post, 2 m FU	WL, FAP training (8 online sessions)	–	Training outcomes
Keng et al. (2016)	25	Randomized trial	Therapist-trainees: Singapore	Pre, post, 2 m FU	WL, FAP training (8 live sessions)	–	Training outcomes
Kohlenberg et al. (2002)	38	Non-randomized trial	Depression: USA	Pre, post, 3 m FU	CBT (20 sessions), CBT + FAP (20 sessions)	–	BDI, HRSD, SCL-90, GAF
Kohlenberg and Tsai (1994b)	1	Single-case ABC	Depression: USA	Weekly, 2w FU	CBT (A phase: 8 sessions), CBT + FAP (B phase: 5 sessions) Follow-up (C phase: 2 assessments)	–	BDI
Landes et al. (2013)	4	Single-case AB	Depression, SPs: USA	Weekly	Supportive (A phase: 6–10 sessions) FAP (B phase: 4–7 sessions)	FAPRS	Idiographic
Lizarazo et al. (2015)	3	Single-case ABC	SPs: Columbia	Weekly, 6 m FU	Rule 2 (A phase: 4–6 sessions), FAP (B phase: 10–14 sessions) Follow-up (C phase: 2–5 assessments)	FAPRS	idiographic
López (2003)	1	Uncontrolled case	Depression, SPs: USA	Pre, post	Exposure and FAP (31 sessions)	–	BDI, PSWQ, idiographic
López Bermúdez et al. (2010)	1	Uncontrolled case	Depression: Spain	pre, post, 3w FU	FAP (17 sessions)	–	BDI
Maitland and Gaynor (2016)	13	Within-subjects alternating treatments	SPs (college students): USA	Weekly	Supportive (4–5 sessions) FAP (3–5 sessions)	WAI	FIS, MSIS
Maitland et al. (2016a)	16	Randomized trial	Therapist-trainees: International	Pre, post, 2 m FU	WL FAP training (8 online sessions)	–	Training outcomes
Maitland et al. (2016b)	22	Randomized trial	SPs (college students): USA	Pre, post	WW (6 sessions) FAP (6 sessions)	WAI	FIS, MSIS
Manduchi and Schoendorff (2012)	1	Uncontrolled case	SPs: Italy	Pre, post	FAP (52 sessions)	–	BDI, WDQ, AAQ-II
Manos et al. (2009)	1	Uncontrolled case	SPs (individual in couple): USA	Pre, post	FAP + BA (8 sessions)	–	DAS, BADS
McClafferty (2012)	1	Uncontrolled case	Depression: England	Pre, post	BA and FAP (approx. 25 sessions)	–	PHQ-9, GAD-7, WSAS
Oshiro et al. (2012)	2	Single-case ABCBC	SPs: Brazil	Weekly	BL (A phase, 4 sessions), FAP (B phases, 4–5 sessions), BAT (C phases, 3–4 sessions)	FAPRS	–
Paul et al. (1999)	1	Single-case AB	Marijuana use and exhibitionism: USA	Pre, post, 6 m FU	ACT (A phase, 5 mths weekly sessions), FAP (B phase, 5 mths weekly sessions)	–	BDI, BAI, idiographic

(*continued on next page*)

Table 1 (*continued*)

Study	N	Design	Sample: location	Assessments	Treatments (phases and sessions)	Measures used	
						Process	Outcome
Pedersen et al. (2012)	1	Single-case AB	PTSD, SPs: USA	Yearly 3 yrs., quarterly 1 yr	CBT (A phase, 3 years weekly sessions), FAP (B phase, 1 yr weekly sessions)	–	PTSD, FIAT-Q
Villas-Bôas et al. (2016)	2	Single case ABCBC	SPs: Brazil	Weekly	BL (A phase, 4–5 sessions), FAP, no Rule 5 (B phases, 7–8 sessions), FAP (C phases, 7–9 sessions)	FAPRS	Idiographic

Note. AAQ-II = Acceptance and Action Questionnaire, Second Edition; ACT = Acceptance and Commitment Therapy; BADS = Behavioral Activation for Depression Scale; BAI = Beck Anxiety Inventory; BAT = Behavior Analytic Therapy; BDI = Beck Depression Inventory, First Edition; BDI-II = Beck Depression Inventory, Second Edition; BL = Baseline; CBT = Cognitive Behavior Therapy; CSSI = Conjugal Social Skills Inventory; DAS = Dyadic Adjustment Scale; EOSS = Experience of Self Scale; FAP = Functional Analytic Psychotherapy; FAPRS = Functional Analytic Psychotherapy Rating Scale; FIAT-Q = Functional Idiographic Assessment Template Questionnaire; FIS = Fear of Intimacy Scale; FU = Follow-up; GAD-7 = Generalized Anxiety Disorder-7 item; GAF = Global Assessment of Functioning; HSRD = Hamilton Rating Scale for Depression; IHSC = Inventory LIVE = Learning through In-vivo Experience; MSIS = Miller Social Intimacy Scale; OQ-45 = Outcome Questionnaire-45 item; P-BCT = Partial Behavioral Couple's Therapy; PHQ-9 = Patient Health Questionnaire-9 item; PSWQ = Penn State Worry Questionnaire; PTSD = Post-Traumatic Stress Disorder; QRI = Quality of Relationship Inventory; SCL-90 = Symptom Checklist-90 item; SPs = Social Problems; SSQ = Social Support Questionnaire; WAI = Working Alliance Inventory; WDQ = Worry Domains Questionnaire; WL = Wait list; WSAS = Work and Social Adjustment Scale.

strengths, and weaknesses of individual studies. We then describe how these studies converge on meaningful conclusions about the state of evidence in support of FAP and its purported mechanism of action: the notion of *therapist as social reinforcer*.

2. Method

2.1. Search strategy

To identify articles for this review, we ran a computerized literature search using the term “Functional Analytic Psychotherapy” in the PsychINFO database for manuscripts published through 2016, producing 195 manuscripts. Six manuscripts were removed due to being duplicates or unrelated to FAP other than brief mention. We included any manuscript that presented quantitative data in any form on a client or clients who received a course of FAP or a FAP-enhanced/integrated treatment, producing a dataset of manuscripts written in English, Spanish, Portuguese, and Polish. We excluded books (n = 4); book chapters (n = 44); unpublished dissertations (n = 7); manuscripts that were primarily clinical/theoretical descriptions of FAP, FAP techniques, or presented only qualitative data (n = 69; although qualitative studies are briefly listed below); manuscripts that were summaries, reviews or commentaries (n = 18); and manuscripts that presented quantitative data not involving clinical samples or not about therapy or therapy processes (n = 17; e.g., scale development projects, cross-sectional surveys, analog studies with college student populations). We also included three manuscripts that presented quantitative data on the effects of FAP training protocols on therapists, as these studies are relevant to concerns central to this review. This process resulted in a total of 30 manuscripts. We then manually reviewed the *references* page of https://functionalanalyticpsychotherapy.com/ and manually examined citations of and reference lists in original articles on FAP and previous reviews of FAP (Ferro García, 2008; Mangabeira et al., 2012; Muñoz-Martínez et al., 2012; Ribeiro et al., 2013) to identify additional manuscripts. This produced one additional manuscript bringing the total number of included manuscripts to 31. Table 1 presents summary information for all quantitative research studies identified.

2.2. Data analyses

There was considerable heterogeneity among the included studies with respect to research design, how FAP was implemented, and how and what dependent variables were measured. Consistent with FAP's behavior analytic foundations, studies included multiple controlled and uncontrolled presentations of single cases, several quasi-experimental and open trials, and few randomized controlled trials. Thus, the dataset was insufficient for meta-analysis (Uman, 2011) and a systematic, narrative review of the literature was conducted as the most suitable approach. However, to provide as much empirical summarization of the findings as possible, we supplement this review when possible with effect sizes comparable across studies. To do this, this review is organized in terms of four research design types: (a) qualitative studies, (b) single-case, pre-post studies with validated self-report measures, (c) controlled single-case design studies with repeated measurements, and (d) controlled and uncontrolled clinical trials.

Qualitative studies are listed with no indicators of effect sizes. For single-case, pre-post studies with validated self-report measures, we computed percent change scores from preintervention to post-intervention and report the measure's' range when available. When the Beck Depression Inventory (BDI) or BDI-II was employed in such a design, we were able to compute a reliable change index (RCI; Jacobson & Truax, 1991) of 9.92 points using normative-sample test-retest reliability and standard deviations reported in a recent summary of the BDI-II's psychometric properties (Wang & Gorenstein, 2013). For these analyses, we also computed Cohen's (1988)*d* as an indicator of effect size, as per guidelines for single cases presented by Beeson and

Robey (2006). For controlled single-case design studies with repeated measurements (including, in our case, repeated measurements of both out-of-session improvements and in-session CRB2s), multiple effect size calculations have been proposed. As per recommendations of Parker, Vannest, and Davis (2011), we computed the robust version of the *improvement rate difference* score (Robust IRD). Robust IRD is conceptualized intuitively as the difference between the proportion of improvements observed in Phase B (treatment) and the proportion of improvements observed in Phase A (control). A Phase B improvement is defined as a data point that does not overlap with any Phase A data, and a Phase A improvement is defined as a data point that overlaps with Phase B data. Scores range from 0.00 to 1.00, with 1.00 representing a situation in which all data in Phase B were improvements with respect to all data in Phase A, with no Phase A improvements (Parker, Vannest, & Brown, 2009). Finally, for controlled and uncontrolled trials in which data were presented in group form, we report or compute Cohen's (1988)*d* for both within-group (i.e., pre-post) and between-group comparisons when available.

3. Results and discussion

3.1. Qualitative studies

Consistent with the broad scope of application of FAP's five rules and the content-free concept of CRBs, a large number (20) of descriptive/qualitative case studies on FAP were identified. Cordova and Koerner (1993) discuss that such case studies, although limited as data, do represent a source of influence on clinicians. We describe them here for interested readers and in the service of fully describing the available literature on FAP. Presenting problems in these case descriptions included depression (Dougher & Hackbert, 1994; Ferro García, Valero Aguayo, & Vives Montero, 2000, 2006; Kohlenberg, Tsai, Parker, Bolling, & Kanter, 1999; Wagner, 2005), panic and agoraphobia (Pezzato, Brandão, & Oshiro, 2012; Sousa, 2003), post-traumatic stress disorder (Wagner, 2005), anorexia (Martín-Murcia, Cangas Díaz, & Pardo Gonzalez, 2011), obsessive compulsive disorder (Kohlenberg & Vandenberghe, 2007; Mendes & Vandenberghe, 2009; Vandenberghe, 2007), borderline personality disorder (BPD) and BPD symptoms (Ferro García, Valero Aguayo, & López Bermúdez, 2009; Sousa, 2003; Wagner, 2005), schizotypal personality disorder (Ferro García et al., 2009; Olivencia & Cangas, 2005), a "disorder of the self" (Ferro García et al., 2009, p. 260), thought disorder (Holmes, Dykstra, Williams, Diwan, & River, 2003), stuttering (Dias, Alves, & Vandenberghe, 2014), chronic pain (Vandenberghe & Ferro, 2005; Vandenberghe, Ferro, & da Cruz, 2004), inappropriate touching behavior (Holmes et al., 2003), orgasmic disorder (Oliveira Nasser & Vandenberghe, 2005; Vandenberghe, Oliveira Nasser, & e Silva, 2010), oppositional and defiant behavior (Gosch & Vandenberghe, 2004), and social problems (Vandenberghe et al., 2010).

3.2. Single-case, pre-post studies with validated self-report measures

We identified 12 publications presenting results of individual clients in uncontrolled pre-post designs (Table 2). Across these pre-post studies, clients were treated with either FAP alone (Busch et al., 2010; Callaghan et al., 2003; Ferro García, López Bermudez, & Valero Aguayo, 2012; López Bermúdez, Ferro García, & Valero Aguayo, 2010; Manduchi & Schoendorff, 2012) or FAP combined with another treatment, including CBT (Busch et al., 2009; Gaynor & Lawrence, 2002), exposure therapy (López, 2003), behavioral activation (BA; Manos et al., 2009; McClafferty, 2012), couple's therapy (Dias & Silveira, 2016), and acceptance and commitment therapy (ACT; Paul, Marx, & Orsillo, 1999). Of the 20 clients reported on in these studies, a BDI or BDI-II was employed as one of the primary self-report measures for 18 of them. Of these, 10 of 18 were presented in a single publication, an open trial of a FAP enhancement approach for adolescent depression, which combined the empirically-supported CBT group course *Coping with Depression* (CWD; Clarke, Lewinsohn, & Hops, 1990) with a FAP protocol called "Living through In-Vivo Experience" (LIVE). Results indicated clinically reliable changes in depression according to the BDI-II for 7 of these 10 clients; however, it is not clear if successes should be attributed to the CWD, LIVE, or integrated elements of the protocol. Furthermore, consistent with difficulties interpreting time-sequential data in depression trials in general (Ilardi & Craighead, 1994), the authors noted that several clients demonstrated rapid, early improvement, suggestive of a nonspecific rather than specific effect of treatment for at least some of the treatment responders.

Of the remaining eight clients from eight publications for whom BDI or BDI-II scores were obtained, all but one demonstrated clinically reliable changes. The one client who did not demonstrate improvement on the BDI-II, from Callaghan et al. (2003), was not depressed at pre-treatment. Another client, from McClafferty (2012), demonstrated a large (95%) change on the Patient Health Questionnaire-9, an equally validated measure of depression symptoms. Clients reported moderate-to-large pre-post changes on several additional validated self-report measures in these studies, including measures of anxiety and worry (42–95% change; López, 2003; Manduchi & Schoendorff, 2012; McClafferty, 2012; Paul et al., 1999), experiential avoidance (33–60% change; Ferro García et al., 2012; Manduchi & Schoendorff, 2012), and sense of self (53% change; Ferro García et al., 2012). Two measures of social functioning, however, evidenced smaller changes (2–13% change; Busch et al., 2009; Manos et al., 2009). Both of these reports were handicapped by high pretreatment scores, which left little room for improvement. Finally, Dias and Silveira (2016) presented the results of a couple treated with a combination of FAP and couple's therapy techniques, and documented 40% change in social skills for the woman but no meaningful change for the man.

Overall, these cases suggest FAP's potential, particularly with respect to depression treatment, but we caution that these single case presentations may represent uniquely successful cases published because they were successful, may not be replicable, and may be skewed by recall and other sources of unintentional author bias. Furthermore, the several cases in which FAP was combined with another treatment do not allow for disentangling the unique effects of FAP per se, although they do speak to interest in viewing FAP as an approach that can be integrated into ongoing treatment, particularly CBT or other third-wave approaches (e.g., Kanter et al., 2010).

3.3. Controlled single-case design studies with repeated measurements

We identified seven FAP publications, with a total of 22 clients, which employed controlled single-subject designs with repeated outcome measurements during different treatment phases (Table 3; the 10 adolescent clients in Gaynor & Lawrence, 2002, reported above, also provided data for this section). Consistent with the pre-post results, the adolescent clients in Gaynor and Lawrence (2002) evidenced Robust IRDs ranging from 0.63 to 1, documenting weekly improvements in depression from a 3-session baseline phase through the combined LIVE treatment phase. One additional publication (Kohlenberg & Tsai, 1994b) also employed BDI scores in a controlled single-subject design with one subject. This client evidenced a Robust IRD of 0.68 comparing eight CBT sessions to five FAP sessions, and a Robust IRD of 1.00 comparing the initial CBT sessions to two follow-up assessments.

The remaining 11 clients in these publications reported on a heterogeneous mix of idiographically defined outcomes, including a variety of socially oriented behaviors (Kanter et al., 2006; Landes et al., 2013; Lizarazo et al., 2015), PTSD symptoms (Pedersen, Callaghan, Prins, Nguyen, & Tsai, 2012) and a case focusing on decreasing exhibitionism and marijuana use (Paul et al., 1999). Outcome measurements in these publications were obtained repeatedly across Phase A intervention sessions which included CBT (Kanter et al., 2006; Pedersen

Table 2
Single-case, pre-post studies with validated self-report measures.

Study	Client	Treatment	Measure (range)	Pre	Post/FU	% change	Reliable change?	Effect size (Cohen's *d*)
Busch et al. (2009)	24-Yr-old Black female: MDD, HPD	CBT + FAP (20 sessions)	BDI-II (0–63)	17	0	− 100%	Yes	2.01
			SSQ-S (1–6)	5.3	6	13%	N/A	N/A
Busch et al. (2010)	Late-20′s White female: depression, BPD	FAP (24 sessions)	BDI-II (0–63)	18	8	− 55%	Yes	1.18
Callaghan et al. (2003)	30-Yr-old White male: SPs	FAP (23 sessions)	BDI-II (0–63)	8	4	− 50%	No	0.47
Dias and Silveira (2016)	33-Yr-old woman (couple)	P-BCT + FAP (8 sessions)	CSSI (NA)	52	73	40%	N/A	N/A
	35-Yr-old man (couple)	P-BCT + FAP (8 sessions)	CSSI (NA)	52	54	04%	N/A	N/A
Ferro García et al. (2012)	24-Yr-old female: MDD, unstable sense of self	FAP (23 sessions over 1 year)	AAQ (9–63)	36	24	− 33%	N/A	N/A
			BDI-II (0–63)	19	3	− 84%	Yes	1.90
			EOSS (0–140)	113	52	− 53%	N/A	N/A
Gaynor and Lawrence (2002)	14-Yr-old female: MDD, ODD	LIVE (16 2 h groups)	BDI-II (0–63)	16	1	− 93%	Yes	1.78
	18-Yr-old female: MDD, GAD, ODD	LIVE (16 2 h groups)	BDI-II (0–63)	16	1	− 93%	Yes	1.78
	17-Yr-old male: MDD, OCD, ODD	LIVE (16 2 h groups)	BDI-II (0–63)	13.5	0	− 100%	Yes	1.6
	15-Yr-old male: MDD, ODD, CD	LIVE (16 2 h groups)	BDI-II (0–63)	8.7	2	− 76%	No	0.79
	14-Yr-old male: MDD, SAD, ODD	LIVE (16 2 h groups)	BDI-II (0–63)	15.7	2	− 87%	Yes	1.62
	18-Yr-old female: MDD, SAD	LIVE (16 2 h groups)	BDI-II (0–63)	25.7	16	− 37%	Yes	1.15
	16-Yr-old female: MDD	LIVE (16 2 h groups)	BDI-II (0–63)	22.8	2	− 91%	Yes	2.46
	16-Yr-old male: MDD, ODD, CD	LIVE (16 2 h groups)	BDI-II (0–63)	25.7	17	− 33%	No	1.03
	14-Yr-old female: MDD, ADHD, ODD	LIVE (16 2 h groups)	BDI-II (0–63)	26.5	27	01%	No	− 0.06
	18-Yr-old female: MDD, SAD, GAD, ODD	LIVE (16 2 h groups)	BDI-II (0–63)	24.0	1	− 95%	Yes	2.73
López (2003)	34-Yr-old male: depression, anxiety, jealousy	Exposure and FAP (31 sessions)	BDI (0–63)	22	9	− 59%	Yes	1.54
			PSWQ (16–80)	49	28	− 42%	N/A	N/A
López Bermúdez et al. (2010)	35-Yr-old woman: depression, panic, SPs	FAP (17 sessions)	BDI-II (0–63)	29	6	− 79%	Yes	2.73
Manduchi and Schoendorff (2012)	36-Yr-old woman: OCPD	FAP (52 sessions)	BDI-II (0–63)	25	14	− 44%	Yes	1.30
			WDQ (0–80)	49	28	− 42%	N/A	N/A
			AAQ II (10–70)	25	40	60%	N/A	N/A
Manos et al. (2009)	22-Yr-old lesbian White female: relationship distress	FAP + BA (8 sessions)	DAS (0–151)	101	104	02%	N/A	N/A
McClafferty (2012)	35-Yr-old White male: depression	FAP + BA (approx. 25 sessions)	PHQ-9 (1–27)	24	1	− 95%	N/A	N/A
			GAD-7 (0 − 21)	20	1	− 95%	N/A	N/A
			WSAS (0–40)	30	1	− 96%	N/A	N/A
Paul et al. (1999)	20-Yr-old White male: marijuana use, exhibitionism	ACT + FAP (10 mths weekly sessions)	BDI (0–63)	22	2	− 90%	Yes	2.37
			BAI (0–63)	22	1	− 95%	N/A	N/A

Note. AAQ = Acceptance and Action Questionnaire, First Edition; AAQ-II = Acceptance and Action Questionnaire, Second Edition; ADHD = Attention-Deficit/Hyperactivity Disorder; BA = Behavioral Activation; BAI = Beck Anxiety Inventory; BDI = Beck Depression Inventory, First Edition; BDI-II = Beck Depression Inventory, Second Edition; BPD = Borderline Personality Disorder; CBT = Cognitive Behavior Therapy; CD = Conduct Disorder; CSSI = Conjugal Social Skills Inventory; DAS = Dyadic Adjustment Scale; EOSS = Experience of Self Scale; FAP = Functional Analytic Psychotherapy; GAD = Generalized Anxiety Disorder; GAD-7 = Generalized Anxiety Disorder-7 item; HPD = Histrionic Personality Disorder; MDD = Major Depressive Disorder; NA = Not available; OCD = Obsessive Compulsive Disorder; ODD = Oppositional Defiant Disorder; P-BCT = Partial Behavioral Couple's Therapy; PHQ-9 = Patient Health Questionnaire-9 item; PSQW = Penn State Worry Questionnaire; SAD = Social Anxiety Disorder; SSQ-S = Social Support Questionnaire – Satisfaction Subscale; WDQ = Worry Domains Questionnaire; WSAS = Work and Social Adjustment Scale.

et al., 2012), supportive therapy (Landes et al., 2013), FAP's Rule 2 (Lizarazo et al., 2015), and ACT (Paul et al., 1999), compared to Phase B FAP sessions. The client who produced the lowest Robust IRDs in these comparisons (0.25), a 42-year-old White male treated first with CBT and then FAP by Kanter et al. (2006), was described as a treatment failure in that report due to premature dropout. Another client, from Landes et al. (2013), was also described as a treatment failure due to premature dropout even though he evidenced a high (0.98) Robust IRD. All other clients produced moderate-to-large Robust IRDs in various comparisons, and all three clients who provided Phase C follow-up assessments evidenced Robust IRDs of 1.00 for Phase A-Phase C comparisons.

Several studies in this group (Kanter et al., 2006; Landes et al., 2013; Lizarazo et al., 2015) and a fourth study by Villas-Bôas et al. (2016)[2] will be described in more detail, as they collectively represent the more unique features of FAP and a systematic sequence of controlled explorations of FAP treatment components to increasingly isolate the impact of FAP's purported mechanism of action on idiographically defined social-behavioral outcomes. In the first study in this sequence, following up on group research in which FAP and CBT were combined into an integrative treatment (Kohlenberg et al., 2002; discussed below), Kanter et al. (2006) conducted a single-subject AB design with two clients in which Phase A consisted of CBT and Phase B consisted of FAP. In this study, during an initial case conceptualization period, the clients and therapists engaged in a collaborative clinical assessment to define clinical target behaviors and then clients were trained to complete daily diary cards to track the frequencies of these behaviors as outcome assessments across the CBT and FAP sessions. One client evidenced successful outcomes (Robust IRDs of 0.74 and 0.48 across two target behaviors) and one client was unsuccessful (Robust IRDs of 0.25 and poor treatment attendance) after the phase shift from CBT to FAP.

Landes et al. (2013) replicated and extended the results of Kanter et al. (2006) with four clients, changing the Phase A intervention from CBT to supportive listening and including FAP's Rule 1 in this phase to better control for a possible nonspecific effect on the therapeutic

[2] Robust IRD could not be calculated because only one outcome assessment was reported per phase.

Table 3
Individual effect sizes for controlled single-case design studies with repeated measurements.

Study	Client	Phases (Assessments/phase)			Measure	Robust IRD	
		A	B	C		A–B	A–C
Gaynor and Lawrence (2002)	14-Yr-old female: MDD, ODD	BL(3)	LIVE(8)	–	BDI-II	1.00	–
	18-Yr-old female: MDD, GAD, ODD	BL(3)	LIVE(8)	–	BDI-II	1.00	–
	17-Yr-old male: MDD, OCD, ODD	BL(2)	LIVE(7)	–	BDI-II	1.00	–
	15-Yr-old male: MDD, ODD, CD	BL(3)	LIVE(7)	–	BDI-II	1.00	–
	14-Yr-old male: MDD, SAD, ODD	BL(3)	LIVE(7)	–	BDI-II	1.00	–
	18-Yr-old female: MDD, SAD	BL(3)	LIVE(7)	–	BDI-II	1.00	–
	16-Yr-old female: MDD	BL(4)	LIVE(7)	–	BDI-II	0.89	–
	16-Yr-old male: MDD, ODD, CD	BL(3)	LIVE(7)	–	BDI-II	1.00	–
	14-Yr-old female: MDD, ADHD, ODD	BL(3)	LIVE(4)	–	BDI-II	0.63	–
	18-Yr-old female: MDD, SAD, GAD, ODD	BL(3)	LIVE(2)	–	BDI-II	1.00	–
Kanter et al. (2006)	24-Yr-old Black female: MDD, HPD, SPs	CBT(9)	FAP(14)	–	Target 1: Excessive social control over self	0.74	–
					Target 2: Histrionic social behavior	0.48	–
	42-Yr-old White male: PDNOS, SPs	CBT(6)	FAP(3)	–	Target 1: Excessive self-criticism, rumination	0.25	–
					Target 2: Poor communication with wife	0.25	–
Kohlenberg and Tsai (1994b)	35-Yr-old White male: depression	CBT(8)	FAP(5)	FU(2)	BDI	0.68	1.00
Landes et al. (2013)	44-Yr-old White female: MDD, GAD, SPs	Rule 1(4)	FAP(8)	–	Initiating social conversations	0.69	–
	20-Yr-old White female: MDD, APD, SPs	Rule 1(3)	FAP(8)	–	Making critical social comments	1.00	–
	28-Yr-old biracial male: MDD, APD, BPD, SPs	Rule 1(8)	FAP(3)	–	High self-esteem behaviors	.98[a]	–
	26-Yr-old White male: MDD, SPs	Rule 1(5)	FAP(8)	–	Being socially assertive in risky situations	0.68	–
Lizarazo et al. (2015)	25-Yr-old male: BPD, SPs	Rule 2(3)	FAP(10)	FU(3)	Avoiding and escaping criticism	0.35	1.00
	47-Yr-old female: SPs	Rule 2(4)	FAP(12)	FU(5)	Avoiding and escaping demands	0.58	1.00
	21-Yr-old female: SPs	Rule 2(3)	FAP(5)	FU(2)	Avoiding and escaping judgments	1.00	1.00
Paul et al. (1999)	20-Yr-old White male: marijuana use, exhibitionism	ACT(5 m)	FAP(5 m)	–	Target 1: Urges to expose	0.55	–
					Target 2: Marijuana use	1.00	–
Pedersen et al. (2012)	41-Yr-old White female: PTSD	CBT(3y)	FAP(1y)	–	Target 1: Re-experiencing	1.00	–
					Target 2: Hyperarousal	0.71	–
					Target 3: Avoidance and detachment	0.71	–

Note. ACT = Acceptance and Commitment Therapy; ADHD = Attention-Deficit/Hyperactivity Disorder; APD = Avoidant Personality Disorder; BDI = Beck Depression Inventory, First Edition; BDI-II = Beck Depression Inventory, Section Edition; BL = Baseline; BPD = Borderline Personality Disorder; CBT = Cognitive Behavior Therapy; CD = Conduct Disorder; FAP = Functional Analytic Psychotherapy; FU = Follow-up; GAD = Generalized Anxiety Disorder; HPD = Histrionic Personality Disorder; IRD = Improvement Rate Different; LIVE = Learning through In-vivo Experience; MDD = Major Depressive Disorder; OCD = Obsessive Compulsive Disorder; ODD = Oppositional Defiant Disorder; PDNOS = Personality Disorder Not Otherwise Specified; PTSD = Post Traumatic Stress Disorder; SAD = Social Anxiety Disorder; SPs = Social Problems. [a]Although IRD is positive, client dropped out of treatment after 3 sessions of FAP and is described as a failure in the report.

alliance in FAP that may result from Rule 1's increased attention to the client during the session (Maitland & Gaynor, 2012). Therapists were encouraged to develop a strong alliance with the client and to observe CRBs (Rule 1) but avoid active evoking, contingent responding, and promotion of generalization of CRBs (Rules 2–5) in Phase A. No client demonstrated improvements in Phase A, while robust IRDs ranging from 0.68 to 1.00 documented that all four clients demonstrated marked improvements after the phase shift to FAP. However, one these clients, similar to the unsuccessful client in Kanter et al. (2006), dropped out of treatment shortly after the introduction of FAP and was reported as a failure by these researchers. Overall, this study replicated Kanter et al. (2006) and suggested that the effect of FAP on idiographic social-behavioral outcomes is not primarily due to Rule 1 or an improved therapeutic alliance.

Neither Kanter et al. (2006) nor Landes et al. (2013) made a reasonable attempt to target the client's target behaviors in Phase A. In Kanter et al. (2006), CBT in Phase A focused on cognitive distortions as defined by Beck, Rush, Shaw, and Emery (1979), without an idiographic behavioral conceptualization of targets as per FAP; and in Landes et al. (2013), Phase A was supportive but non-specific. Lizarazo et al. (2015), with three clients, changed Phase A to target the client's defined behavioral problems with a standard behavior analytic approach which included the use of FAP's Rule 1 and Rule 2. This allowed for a more precise test of whether improvements in FAP could be attributed to Rule 3 (i.e., reinforcement of CRBs) specifically over and above a behavior analytic conceptualization and evocation of these targets in treatment. Results indicated stable or worsening behavior during the A phases of treatment, followed by observable and steady improvements during the FAP phases for two clients (Robust IRDs of 0.35[3] and 0.58), while the third client was inconsistent in completing daily diary cards during the FAP phase but Robust IRD on her available data was 1.00. All three clients demonstrated maintenance of improvements at a 6-month follow-up assessment (Robust IRDs = 1.00). Overall, results indicated FAP was successful with these three clients, with no support for the functional role of Rule 2 in FAP's mechanism without the contingent occurrence of Rule 3 to reinforce the evoked behavior.

Finally, Villas-Bôas et al. (2016), conducted an ABCBC withdrawal design with two clients, in which Phase A corresponded to behaviorally informed therapy without systematic FAP (consistent with Phase A in Lizarazo et al., 2015); Phase B introduced Rules 1 to 4; and Phase C added Rule 5. As discussed by Villas-Bôas, Meyer, Kanter, and Callaghan (2015), Rule 5 encourages the therapist to discuss the client-therapist interactions in FAP after they have occurred to maximize the effect of the interaction on daily life behavior (see also Weeks et al., 2012), specifically helping the client develop verbal functional analyses of the antecedents and consequences of their problems and improvements, and to teach clients to engage in these functional analyses themselves (referred to as CRB3). Theoretically, Rule 5 in FAP is consistent with much of what happens in behaviorally oriented talk therapy and may facilitate client behavior change on its own; thus, Villas-Bôas et al. (2016) tested the impact of Rule 5 added to the rest of FAP. Results indicated that both clients improved over the course of the study after Phase A but the specific introduction and withdrawal of Rule

[3] Visual observation of these clients' data suggests clear worsening trends in Phase A which are shifted in Phase B; Robust IRD is not sensitive to the impact of worsening Phase A trend lines.

5 in Phase C had no observable effects on target behavior for either client.

To summarize the four studies reviewed in more detail in this section, FAP processes and interventions appear to have produced successful outcomes, with respect to idiographically defined targeted social behaviors, for 9 of 11 clients. For one client, FAP sessions demonstrated an effect over CBT sessions (Kanter et al., 2006); for three clients, FAP sessions demonstrated an effect over non-specific, supportive sessions (Landes et al., 2013); and for five clients, FAP sessions demonstrated an effect over behaviorally informed treatment sessions (Lizarazo et al., 2015; Villas-Bôas et al., 2016). Across these studies, the designs converge on the conclusion that Rule 3 is the active mechanism of behavior change in that treatment phases that included Rule 1 (Landes et al., 2013; Lizarazo et al., 2015), Rule 2 (Lizarazo et al., 2015), and Rule 5 (Villas-Bôas et al., 2016) did not produce observables changes in behavior, but treatment phases that included Rule 3 did produce changes.

Collectively these studies demonstrate several limitations. In Lizarazo et al. (2015) and Villas-Bôas et al. (2016), the researcher was the therapist, introducing possible bias in results and demand characteristics on the clients. In only one study are follow-up data reported (Lizarazo et al., 2015). It is also difficult in these studies to link the clinical presentations to diagnostic categories, as only Kanter et al. (2006) and Landes et al. (2013) employed a structured diagnostic assessment or documented decreases in depression for successful cases, and these decreases were not linked specifically to the FAP phases. Nonetheless, the detailed weekly measurement and consistent findings across these studies suggests that FAP's mechanism produced targeted behavioral changes across several clinical presentations and therapists. Documentation that therapists adequately implemented Rule 3 in these studies is discussed below.

3.4. Controlled and uncontrolled clinical trials

We identified 6 publications of uncontrolled and controlled clinical trials of FAP targeting different problems (Table 4), including smoking cessation (n = 2), social problems (n = 3), and depression (n = 1). We also located three publications reporting on clinical trials of the effects of FAP training protocols on therapists. Each of these is discussed in turn.

Smoking cessation. The largest study in our review, by Gifford et al. (2011), was a randomized trial targeting smoking cessation with 290 adult heavy smokers. The design randomized clients to 10 weeks of bupropion or 10 weeks of bupropion plus one weekly group and one weekly individual counseling session, both of which incorporated a protocol that combined elements of ACT and FAP. Primary outcomes (smoking quit rates) were positive for the integrated treatment compared to bupropion alone and results remained significant at a one-year follow-up (ACT/FAP = 32% quit; bupropion alone = 18% quit; Cohen's d = 0.33).

On a smaller scale, Holman et al. (2012b) provided data on five smokers with clinical depression who completed an integrated 24-session individual therapy protocol that combined elements of FAP, ACT, and behavioral therapy for smoking cessation. They reported successful smoking abstinence in three of the five participants and large effect sizes on measures of depression and overall psychiatric symptomatology (d's = 1.93 for both). Overall, these publications, while positive, are limited because treatment effects cannot be attributed to FAP elements of the protocols isolated from other elements, especially as subsequent research on pure ACT protocols for smoking cessation and drug abuse has been positive (Bricker, Bush, Zbikowski, Mercer, & Heffner, 2014; Stotts et al., 2012).

Social functioning. Consistent with the controlled single-subject research reviewed above (Kanter et al., 2006; Landes et al., 2013; Lizarazo et al., 2015; Villas-Bôas et al., 2016), Maitland & Gaynor (2016) hypothesized that FAP will impact transdiagnostic psychopathology by directly targeting social functioning (intimate relating in particular) and tested this prediction in two studies. First, they conducted a unique alternating treatments design with 13 college-student clients who presented for treatment with social difficulties, as indexed by high levels of pretreatment fear of intimacy (FIS; Descutner & Thelen, 1991) or problems with social intimacy (Miller & Lefcourt, 1982). Each client received a maximum of five FAP sessions and five sessions of supportive-listening (SL) in an alternating sequence. Clients demonstrated significant reductions in both fear of intimacy (d = 1.57) and problems with social intimacy (d = 1.35) over the course of treatment. Although the alternating-treatments, within-subjects design did not allow for these improvements to be attributed directly to FAP techniques, it is noted that it is common to observe varying levels of FAP focus from session-to-session across courses of FAP, with some sessions devoted more to exploration of daily-life content and supportive listening and other sessions devoted more to in-session content and the therapeutic relationship (e.g., Busch et al., 2010, 2009; Landes et al., 2013; Lizarazo et al., 2015). In other words, this study may be considered an attempt to systematically observe the effects of an uncontrolled, variable 10-session course of FAP.

Following up on this report, Maitland et al. (2016b) completed a randomized trial of FAP compared to a watchful waiting (WW) condition with a distressed college student sample (N = 22). The FAP condition consisted of six weekly sessions employing a full FAP protocol directly targeting the client's social problems and the WW condition consisted of six brief (15-min) weekly check-ins to provide non-specific support. Clients were selected for inclusion in the study if they demonstrated high levels of pretreatment fear of intimacy as in Maitland and Gaynor (2016) and met criteria for at least one DSM-IV disorder, including major depression, social anxiety, generalized anxiety, avoidant personality, or dependent personality disorders. Results documented a large, statistically significant decrease in fear of intimacy for FAP participants compared to WW participants (d = 0.92), and a similar decrease in psychiatric symptom severity for FAP compared to WW (d = 1.02).

One less successful attempt to develop FAP for social functioning is noted. Holman et al. (2012a) presented results of two case series of FAP to improve relationship satisfaction in couples with a brief (4-session), highly structured FAP intervention implemented with one member of a healthy, nondistressed couple. In both series (n = 7 and n = 6), participants who received the intervention reported large improvements in feelings of respect for and connection with their partner (d's ranged from 0.63 to 1.22), but these were unvalidated, single-item ratings and only small, insignificant improvements were reported on the validated Dyadic Adjustment Scale (d's of 0.30 and 0.07). The authors noted that many couples were already highly satisfied at pretreatment and the measure may not have been sensitive enough to detect change in the high satisfaction range. Furthermore, postsession ratings of therapist behavior in the sessions by independent raters suggested that only 17% of therapist behavior was specific to FAP, suggesting the need for additional changes in the intervention, or training of the intervention, to bring FAP processes more to the fore.

Overall, these three studies are mixed. One study failed to find an effect on relationship satisfaction, but that study demonstrated difficulties implementing FAP and measuring outcomes. In contrast, the randomized trial by Maitland et al. (2016b), important as the first randomized trial of FAP as a stand-alone treatment across any treatment target, produced clear and encouraging findings. These results suggested that a brief FAP intervention may have benefits in terms of improving intimate relating and decreasing transdiagnostic symptom severity in a largely comorbid sample. This study, however, was limited in several ways, including a small sample size, a relatively weak control condition, and the fact that only a single therapist was used (the first author). However, WW participants did demonstrate pre-post changes in fear of intimacy and psychiatric symptom severity over the course of treatment, suggesting that it did successfully control for some active, nonspecific therapy effects.

Table 4
Effect sizes for controlled and uncontrolled group trials.

Target and Study	Intervention (n)	Comparison (n)	Measure	Effect size: pre versus post			Effect size: pre versus FU		
				FAP	Control	Between-groups	FAP	Control	Between-groups
Smoking									
Gifford et al. (2011)	Buproprion + ACT/FAP (120)	Buproprion (170)	Smoking quit rates	50%[a]	27.9%[a]	0.46	31.6%[b]	17.5%[b]	0.33
Holman et al. (2012a), Holman et al., 2012b	FAP (5)	–	BDI-II	1.93	–	–	–	–	–
			OQ-45	1.93	–	–	–	–	–
			Smoking quit rates[a]	60%[a]	–	–	–	–	–
Social functioning									
Holman et al. (2012a), Ex. 1	FAP (8)		DAS	0.31	–	–	–	–	–
		–	"Respect for partner"	1.09	–	–	–	–	–
			"Connection with partner"	1.23	–	–	–	–	–
Holman et al. (2012b), Ex. 2	FAP (6)		DAS	0.07	–	–	–	–	–
		–	"Respect for partner"	0.46	–	–	–	–	–
			"Connection with partner"	0.93	–	–	–	–	–
Maitland and Gaynor (2016)	FAP + SL (13)	–	FIS	1.57	–	–	–	–	–
			MSIS	1.35	–	–	–	–	–
Maitland et al. (2016a), Maitland et al., 2016b	FAP (11)	WW (11)	FIS	1.82	0.80	0.92	–	–	–
			PDSQ	1.70	0.55	1.05	–	–	–
			% reduction in diagnoses [c]	82%[c]	36%[c]	1.04	–	–	–
Depression									
Kohlenberg et al. (2002)	FAP (23)	CBT (15)	BDI	2.41	1.21	0.28	2.73	1.65	0.17
			HRSD	2.19	1.09	0.53	2.85	2.52	0.08
			SCL-90	1.84	0.90	0.61	1.11	0.65	0.48
			GAF	1.61	1.34	0.19	3.47	2.72	0.65
			SSQ-S	0.38	0.03	0.91	0.38	0.01	0.99
			SAD	0.48	0.14	0.38	0.59	0.25	0.36
Training									
Kanter et al. (2012)	FAP training (8)	WL (8)	FAPIS	0.76	−0.11	1.23	–	–	–
			Clinical vignettes	1.67	0.15	1.45	–	–	–
	FAP training (8)[d]	–	FAPIS	1.21	–	–	–	–	–
			Clinical vignettes	0.59	–	–	–	–	–
Keng et al. (2016)	FAP training (13)	-WL (12)	FAPIS	0.63	0.14	0.60	1.00	0.53	0.40
			Clinical vignettes	1.03	0.04	0.96	0.87	0.01	1.33
			Empathy	0.57	0.15	1.13	0.40	0.09	0.66
			Compassionate love	0.43	0.05	0.85	0.51	0.64	−0.53
			Mindfulness	0.43	0.17	0.60	0.43	0.20	0.28
			Authenticity	0.07	0.83	−0.80	0.16	0.40	−0.20
Maitland et al. (2016a)	FAP training (8)	-WL (8)	FAPIS	1.38	0.02	1.88	–	–	–
			Clinical vignettes	1.04	0.04	1.25	–	–	–
			Competency[e]	–	–	1.25	–	–	–
	FAP training (8)[d]	–	FAPIS	2.21	–	–	–	–	–
			Clinical vignettes	0.31	–	–	–	–	–

Note. ACT = Acceptance and Commitment Therapy; BDI = Beck Depression Inventory, First Edition; BDI-II = Beck Depression Inventory, Second Edition; CBT = Cognitive Behavior Therapy; DAS = Dyadic Adjustment Scale; FAP = Functional Analytic Psychotherapy; FAPIS = Functional Analytic Psychotherapy Impact Scale; FIS = Fear-of-Intimacy Scale; FU = Follow-up; GAF = Global Assessment of Functioning Scale; HRSD = Hamilton Rating Scale for Depression; MSIS = Miller Social Intimacy Scale; OQ-45 = Outcome Questionnaire–45 item; PDSQ = Psychiatric Diagnostic Screening Questionnaire; SAD = Social Anxiety Disorder; SCL-90 = Symptom Checklist-90 item; SL = Supportive Listening; SSQ-S = Social Support Questionnaire-Satisfaction Subscale; WL = Wait List; WW = Watchful Waiting.

[a] Percentage of sample abstinent from smoking at post-treatment.

[b] Percentage of sample abstinent from smoking at 1-year follow-up.

[c] Number of psychiatric diagnoses at post-treatment/number of psychiatric diagnoses at pre-treatment.

[d] The WL group received FAP training in a cross-over design.

[e] Only post-training competency scores for FAP training and WL groups were available for comparison, so no pre-post effect sizes could be calculated.

Depression and social functioning. Kohlenberg et al. (2002) conducted a non-randomized, controlled trial of CBT versus a combined CBT + FAP treatment they called FAP-Enhanced Cognitive Therapy (FECT). In this study, four experienced CBT therapists provided standard CBT for depression to four clients each (n = 16), then were trained in the FECT procedures and provided FECT to six clients each (n = 24). Because standard CBT is an empirically supported treatment for depression and was provided by experienced CBT therapists, this study challenged FECT to statistically outperform a strong comparison condition. Although standard measures of depressive symptoms, response, remission, and relapse all favored FECT at post-treatment and a 3-month follow-up (with an average post-treatment d across measures of 0.40 and a follow-up d of 0.35), very few differences were statistically significant. The remission rate of 78% for FECT compared to 48% for standard CBT was encouraging. As predicted, stronger and more consistent effects were obtained on measures of social functioning, including statistically significant and large differences between conditions on relationship satisfaction (d = 0.91), and moderate differences on social avoidance (d = 0.38). Interestingly, while FECT clients improved on both these measures, CBT clients demonstrated little change in social functioning according to these measures over the course of treatment.

Although the lack of randomization of clients to condition in this study was a limitation, this limitation should be weighed against the study's strengths. The standard CBT condition in the FECT study was conducted by established CBT experts and it is unlikely that therapist skill at treating depression improved naturally over the time course of the study coincident with the transition to FECT. It also is unlikely that the clients assigned to CBT were meaningfully different from those assigned to FECT (pre-treatment depression severity, for example, was similar). On the other hand, the within-therapists design controlled for therapist effects in that the FECT condition results cannot be attributed to more skilled or committed therapists, or to allegiance.

Training therapists in FAP. Several authors have extended the logic of FAP's mechanism of therapeutic change to the domain of supervision and training of FAP therapists (Callaghan, 2006b; Follette & Callaghan, 1995; Silveira et al., 2009; Sousa & Vandenberghe, 2007; Tsai et al., 2009), and three studies have explored the effectiveness of a structured protocol for training FAP therapists according to this logic. This protocol, based on a universal case conceptualization of FAP therapists proposed by Tsai et al. (2009), emphasizes the terms *awareness*, *courage*, and *love* (ACL) as important qualities related to implementation of FAP, and employs a set of structured experiential exercises in which trainees engage in interactions characterized by ACL in the service of shaping these repertoires (Nelson, Yang, Maliken, Tsai, & Kohlenberg, 2016). The protocol involves eight structured sessions which may be implemented live or online with groups of trainees and two trainers.

An initial evaluation of this protocol involved randomization of 16 mental health professionals to a FAP training or a waitlist group (Kanter, Tsai, Holman, & Koerner, 2013). The effects of the training were measured in two ways: a) with trainee self-reported responses to hypothetical clinical vignettes as an index of FAP skill, and b) with the FAP Impact Scale (FAPIS), a measure developed to assess the impact of FAP training on trainees' self-reported employment of ACL-related behaviors in session with clients. Kanter and colleagues found significant improvements in FAP skill according to objectively coded vignette responses and significant self-reported improvements on the FAPIS for training participants compared to waitlist participants (*d*'s of 1.45 and 1.23, respectively), with waitlist participants demonstrating equivalent improvements after they received the training.

With 16 new trainees, Maitland et al. (2016a) replicated the effects found by Kanter et al. (2013) on the FAPIS and clinical vignettes. Because these measures were self-report and could be biased by demand characteristics and expectancy effects, Maitland et al. (2016b) also developed the FAP Competency Scale (FAPCS) and requested that trainees submit an audiotape of a therapy session before and after the FAP training to be coded by a blind rater using the FAPCS. They also evaluated the degree to which trainee's previous training experiences with FAP moderated key findings. They found that FAP training improved competency on the FAPCS (d = 1.25), that no trainees met the threshold for competency established by the FAPCS at any time point, and that the training was more effective for those with less previous experience with FAP.

These two previous studies were limited by the trainer being one of the developers of FAP and the trainees having self-selected into the study to work with the developer. Keng et al. (2016) addressed these issues with a small, randomized trial of an 8-week, live FAP training versus waitlist with a sample of 25 clinical psychology master's students in Singapore. In addition to self-reported FAP skills as per Kanter et al. (2013), the study also explored the impact of FAP training on a set of broadly desirable therapist qualities related to the therapeutic alliance, including empathy, compassionate love, trait mindfulness, and authenticity pre-and posttraining, and at two-month follow-up. Results suggested that FAP training improved empathy and compassionate love (between-subjects *d*'s of 1.13. and 0.85, respectively), supporting previous indications (Maitland & Gaynor, 2012, 2016) that FAP may benefit qualities related to the alliance. FAP skill increased for trainees compared to waitlist, but effect sizes were smaller than in Kanter et al. (2013). This is not surprising given that this was the first attempt to demonstrate effects of training with a less motivated sample and a less experienced set of trainers. Overall, the training appeared to be acceptable in the Singaporean context but feedback from trainees suggested important refinements to improve the cultural fit, such as a more sensitive, nuanced emphasis on expression of emotions and feelings in the structured experiential exercises.

Overall, the structured protocol employed in FAP trainings has facilitated research on the impact of these trainings on trainees, including documentation of self-reported improvements in FAP skill and implementation of FAP techniques (Kanter et al., 2013), independent-observer rated improvements in in-session FAP competency (Maitland et al., 2016a), and additional self-reported improvements in several therapeutic qualities related to the therapy alliance (Keng et al., 2016). Although two of these studies are limited by small sample sizes and potential allegiance effects due to the role of a FAP treatment developer as a trainer, the randomized trial with new trainers in a very different context (Singapore) by Keng et al. (2016) provides an important independent replication. Given the FAP training focus on ACL, their finding that training may facilitate the therapy alliance is intriguing and deserves further attention.

Important concerns and limitations remain. First, some theoretical and professional policy concerns have been raised by these efforts. Theoretically, the idea of a universal case conceptualization, in which the intervention targets (in this case, ACL) are specified in advance, is somewhat at odds with FAP's behavior analytic foundations which encourage an idiographic assessment and intervention approach that presumably maximizes the degree to which the treatment fits the client's unique values and social community (Bonow, Maragakis, & Follette, 2012). While training efforts employing more idiographic methods also occur in FAP, these have not been empirically evaluated. Furthermore, the dissemination of FAP training approaches to a degree provides support for Corrigan's (2001) claim that FAP may have gotten ahead of its data, although as our discussion below articulates, these issues are complex.

Methodologically, no evaluation of the impacts of FAP training on client outcomes has occurred. In other words, if we tentatively conclude that FAP training increases in-session FAP skill, we have no data that these increases in FAP skill improve client outcomes. Furthermore, in both Maitland et al. (2016a) and Keng et al. (2016), results suggest that training does not consistently produce therapists who demonstrate threshold levels of competency (although the thresholds themselves were logically, rather than empirically, set, so it also remains to be determined if threshold FAP competency predicts improved outcomes). The preliminary analysis by Maitland et al. (2016a) further suggests that the existing FAP training protocol may have its strongest effects with respect to increasing FAP skill in trainees with less previous experience in FAP, with smaller effects on those with more skill, suggesting that different training protocols, perhaps more idiographically defined, may be needed to move more advanced therapists from some FAP skill into full competency.

3.5. Process analyses

We identified 13 publications that presented analyses of in-session FAP processes or the effects of FAP on the therapeutic alliance. Nine of these publications employed the FAP Rating Scale (FAPRS; Callaghan et al., 2003; Callaghan, Follette, Ruckstuhl, & Linnerooth, 2008) or an equivalent measure designed to observe and document FAP's in-session mechanism with turn-by-turn coding of the interaction. Three publications reported effects of FAP or treatments including FAP on the working alliance inventory (WAI), and one developed a process measure unique to the study. Each of these is discussed in turn.

FAPRS. Using the FAPRS, raters observe or listen to sessions and code each client turn-of-speech to identify when a client turn represents

Table 5
Process analyses employing the functional analytic psychotherapy rating scale.

Study and coding procedure	Client	Non-FAP sessions		FAP sessions		Increase in CRB2s during FAP?
		Proportion of CRB2s to total client turns?	% CRB2s followed[a] by Rule 3?	Proportion of CRB2s to total client turns?	% CRB2s followed[a] by Rule 3?	
Busch et al. (2010): Coded 10 of 24 sessions	Late-20's White female	–	–	7%	70%	Visual inspection reveals clear increase in CRB2s across sessions
Busch et al. (2009): Coded all sessions of case from Kanter et al. (2006)	24-Yr-old Black female	0%	100%[b]	5%	67%	Robust IRD (FAP to BL/CBT): 0.80
Callaghan et al. (2003): Coded 15 m segments of 4 of 23 sessions	30-Yr-old White male	–	–	22%[c]	72%[d]	% of CRB2s in Sessions 3, 9, 15, 17: 0.0, 0.07, 0.35, 0.44
Cattivelli et al. (2012): Therapist report on in-session CRB2 frequencies in all sessions	12-Yr-old male	0.00	NR	2.36 per session	NR	Robust IRD (FAP to BL CRB2s): 1.00
	11-Yr-old male	0.00	NR	1.55 per session	NR	Robust IRD (FAP to BL CRB2s): 1.00
	12-Yr-old male	0.00	NR	2.88 per session	NR	Robust IRD (FAP to BL CRB2s): 1.00
	13-Yr-old male	0.00	NR	2.64 per session	NR	Robust IRD (FAP to BL CRB2s): 1.00
	15-Yr-old male	0.00	NR	2.72 per session	NR	Robust IRD (FAP to BL CRB2s): 1.00
Dias and Silveira (2016): Coded all sessions	33-Yr-old woman	0[e]	16.7%	4[e]	63.1%	The woman demonstrated a clear increase; the man did not
	35-Yr-old man	1[e]	19.2%	2[e]	48.9%	
Oshiro et al. (2012)[f]: Coded all sessions	46-Yr-old female	36%	NR	55%	NR	Robust IRD (FAP to non-FAP CRB2s): 0.68
	18-Yr-old male	44%	NR	56%	NR	Robust IRD (FAP to non-FAP CRB2s): 0.92
Landes et al. (2013): Coded last BL and first FAP session for each client	44-Yr-old White female	0%	6% (average for all 4 clients)	20%	69% (average for all 4 clients)	Percentage of CRB2s higher in all FAP vs. BL sessions but only one FAP session coded
	20-Yr-old White female	0%		05%		
	28-Yr-old biracial male	3%		12%		
	26-Yr-old White male	1%		17%		
Lizarazo et al. (2015): Coded all sessions	25-Yr-old male	17%	NR	52%	NR	Robust IRD (FAP to BL CRB2s): 0.90
	47-Yr-old female	15%	NR	35%	NR	Robust IRD (FAP to BL CRB2s): 0.58
	21-Yr-old female	14%	NR	35%	NR	Robust IRD (FAP to BL CRB2s): 0.90
Villas-Bôas et al. (2016): Coded all sessions	40-Yr-old female	13%	NR	33%	NR	Robust IRD (FAP to BL CRB2s): 0.76
	30-Yr-old female	15%	NR	42%	NR	Robust IRD (FAP to BL CRB2s): 0.96

Note. BL = Baseline; CBT = Cognitive Behavioral Therapy; FAP = Functional Analytic Psychotherapy; NR = Not reported.
[a] Within the next three turns-of-speech.
[b] Only 1 CRB2 occurred across the 11 sessions of the non-FAP phase so this percentage is not meaningful.
[c] Includes CRB3s.
[d] Estimate obtained in Busch et al. (2010).
[e] Frequencies of CRB2s reported without proportion of total client turns.
[f] Data obtained from author.

a CRB1 or CRB2 (as per a case conceptualization typically provided by the therapist) and code each therapist turn-of-speech to identify when a therapist turn represents an attempt to apply any of FAP's rules (among other client and therapist categories less relevant to the current discussion). This produces a dataset which can be analyzed to investigate the sequence of and relations between client and therapist behavior in session, using lag sequential analysis (Bakeman, Gottman, & Mordechai, 1997) or similar procedures. The primary mechanism question is: In a successful FAP case, when a client's CRB2s occurred in session, did the therapist reliably respond to these CRB2s with attempts at reinforcement? To document with FAPRS coding that FAP's in-session mechanism occurred in a successful FAP case, two hypotheses may be explored. Hypothesis 1 is that when CRB2s occurred in FAP sessions, a high percentage of them were immediately (i.e., within three turns-at-speech) followed by therapist Rule 3 (attempts at reinforcement). Hypothesis 2 is that the frequency of CRB2s increased over the course of these sessions during which they were presumably reinforced.

Table 5 summarizes results of process studies that employed the FAPRS in these terms. Five of these studies (Busch et al., 2010, 2009; Callaghan et al., 2003; Dias & Silveira, 2016; Landes et al., 2013) provided documentation of rates of therapist contingent responding to CRB2s in FAP sessions (Hypothesis 1) and results were quite specific, ranging from 49 to 72% of client CRB2s responded to by therapists with Rule 3 in these observations, with the lowest rate reported by Dias and Silveira (2016), for a male member of a couple who did not improve with treatment. All of these studies provided some indication of rates or frequencies of CRB2s in FAP and (when included in the design) non-FAP sessions (Hypothesis 2), and in general results are positive, with Robust IRDs ranging from 0.58 to 1.00 across 13 clients.

Several of these studies conducted FAPRS coding of the controlled single-case designs described above, allowing for more specific conclusions about mechanism. Busch et al. (2009) conducted blind, independent coding of all 20 sessions of the successful single-subject case in Kanter et al. (2006) and documented a low frequency of CRB2s during the CBT-only baseline sessions as expected. After the shift to FAP, rates of CRB2s increased over the course of therapy (Robust IRD = 0.80). The therapist successfully attempted to reinforce most CRBs that occurred in the FAP phase (a 0.68 probability of a Rule 3 response to a CRB). Similarly, independent FAPRS coding of the last A phase sessions and the first B phase sessions of the Landes et al. (2013) study demonstrated no evidence for FAP processes occurring in baseline sessions and use of FAP rules, particularly Rule 3, in the first FAP sessions (a 0.69 probability of Rule 3 in response to a CRB). Likewise, FAPRS coding of Lizarazo et al. (2015) and Villas-Bôas et al. (2016) documented that the FAP and no-FAP phases were implemented as intended and Robust IRDs (ranging from 0.58 to 0.96) suggest increases in CRB2s in the FAP phases.

Overall, this series of FAPRS analyses provides supportive evidence that FAP's mechanism is a viable explanation and can be observed in the turn-by-turn client-therapist interaction of successful cases by either raters familiar with the case (Callaghan et al., 2003; Oshiro et al., 2012) or by blind, independent raters given a case conceptualization and a lengthy training (Busch et al., 2010, 2009; Landes et al., 2013). As discussed by Callaghan et al. (2003), this turn-by-turn methodology simultaneously documents a FAP therapist's adherence to, and competence with, implementation of FAP principles, offering more precision than typical session-level adherence or competence analyses. Thus, these results suggest FAP's mechanism was instantiated in published controlled single-case designs suggesting an impact of this mechanism on idiographically defined social functioning targets (Kanter et al., 2006; Landes et al., 2013; Lizarazo et al., 2015; Villas-Bôas et al., 2016). Limitations of these studies include a failure to evaluate alternate explanations for success, such as the possibility of cognitive change co-occurring with the in-session work. Furthermore, as these are single subject cases, we cannot speculate about the degree to which these results will occur in other FAP cases with other therapists. Finally, it is a limited dataset produced largely by FAP experts, or therapists supervised directly by FAP experts, and does not speak to the ability of other therapists to implement FAP's mechanism.

Working Alliance Inventory. Three of the above studies included the client form of the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989) as a measure of psychotherapy process. In Maitland and Gaynor's (2016) study of 10 clients with social functioning problems who received five sessions of FAP and SL in an alternating treatments design, clients completed the WAI after each session to explore the hypothesis that FAP naturally leads to a heightened focus on the therapeutic alliance. Clients reported higher session-by-session ratings of the therapeutic alliance following FAP sessions than following SL sessions, with the highest therapeutic alliance ratings occurring when a FAP session followed a SL session. In the randomized trial and Maitland and Gaynor (2016), the client-rated WAI emerged as a statistically significant, treatment-specific mediator of primary outcomes (reductions in fear of intimacy). In the trial of Gifford et al. (2011), which evaluated a treatment protocol that integrated ACT and FAP, the client-rated WAI also emerged as a significant, treatment-specific mediator of outcomes (smoking quit rates), but so did client changes in acceptance, a mediator hypothesized as important by ACT. When both acceptance and WAI were entered into the mediation model simultaneously, only acceptance remained significant.

Other process measures. One additional set of process analyses was identified from the quasi-experimental comparison of CBT and FECT for depression (Kohlenberg et al., 2002). These analyses were reported across two publications (Kanter, Schildcrout, & Kohlenberg, 2005; Kohlenberg et al., 2002). As described by Kohlenberg et al., FECT therapists were trained in a specific FAP process, called in-vivo *CBT,* in which they were expected to conduct standard CBT, but look for CRBs related to the CBT targets. For example, if a client is working with depressogenic schemas related to being worthless or unlovable, the therapist may observe CRBs related to the client feeling worthless in the therapist's eyes. Therapists then apply FAP's rules to this CRB, including reinforcing a more accurate way of thinking about and perceiving the therapist. Independent adherence analyses conducted by Kohlenberg et al. (2002) indicated that this specific therapeutic technique of in-vivo *CBT* uniquely predicted both depression and relationship satisfaction outcomes, providing some evidence that FAP-specific processes were active in this protocol. FECT clients also reported that they liked the FECT rationale, with its inclusion of relational processes and more focus on the client-therapist relationship, more than CBT clients liked the standard CBT rationale. Additional analyses by Kanter et al. (2005) confirmed that clients appreciated the in-vivo CBT work and found it to be beneficial; clients reported significantly more progress following sessions characterized by higher rates of relational focus and in-vivo CBT.

4. General discussion

The current research support for FAP is diverse and promising but not sufficient to justify claims that FAP is evidence-based or research-supported for specific psychiatric disorders (APA Presidential Task Force on Evidence-Based Practice, 2006) or populations. Three publications related to FAP combined with ACT and behavioral therapy for smoking cessation and marijuana abuse (Gifford et al., 2011; Holman et al., 2012a; Holman et al., 2012b; Paul et al., 1999) suggest that FAP may produce incremental benefits when added to ACT or other protocols for drug or nicotine problems, but it is unlikely that traditional FAP approaches will be investigated without significant tailoring to adapt the approach for these populations. Likewise, preliminary findings from two studies of FAP for children and adolescents (Cattivelli et al., 2012; Gaynor & Lawrence, 2002) are encouraging but limited, and it is difficult to integrate and draw overall conclusions from them.

The most frequent FAP diagnostic target has been depression, a logical target given FAP's focus on social functioning and interpersonal

problems which are established as significant causes, correlates, and consequences of depression (Barnett & Gotlib, 1988; Pettit & Joiner, 2006). Suggestions for integrating FAP with CBT (Kanter et al., 2006; Kohlenberg et al., 2002; Kohlenberg & Tsai, 1994b) and behavioral activation (BA; Kanter, Manos, Busch, & Rusch, 2008; Manos et al., 2009; McClafferty, 2012) for depression have been presented. Multiple qualitative case studies (Dougher & Hackbert, 1994; Ferro García et al., 2000; Gómez & Gutiérrez, 2008; Kohlenberg et al., 1999; López Bermúdez et al., 2010), uncontrolled single-case pre-post studies (Busch et al., 2010; Ferro García et al., 2012; Gaynor & Lawrence, 2002; Kohlenberg & Tsai, 1994b; López, 2003; López Bermúdez et al., 2010; McClafferty, 2012), controlled single-case designs (Kanter et al., 2006; Landes et al., 2013), and the quasi-experimental FECT study (Kohlenberg et al., 2002) are encouraging with respect to FAP as either a stand-alone or integrative treatment for depression. Furthermore, the small, open trial of depressed smokers by Holman et al. (2012b) and the randomized trial of FAP for distressed college students with interpersonal problems (Maitland et al., 2016b) provide additional support for FAP for depression.

These results are positive for FAP but also not particularly surprising as several treatments, including interpersonally oriented approaches, are supported for depression and this may be indicative of a larger, nonspecific effect at work with depression treatments in general (Cuijpers et al., 2012). That said, several of the above studies suggest some specific effects, including positive impacts on idiographically defined behavioral targets of depressed clients, improvements in social functioning of depressed clients (which may be a specific effect compared to CBT), and benefits for the therapy alliance (Maitland et al., 2016a; Maitland et al., 2016b), an important common element across depression treatments.

From a methodological standpoint, however, the evidence accumulated for FAP as a treatment for depression across these single-case and open trials is not as strong as a randomized trial with the same number of clients, and the available evidence should not be overstated ("Levels of Evidence", 2017). With a randomized trial, researchers must report the number of clients recruited, excluded, and enrolled according to clear, a priori eligibility criteria and report outcomes for all eligible clients against a comparison condition, ideally defined to rule out threats to internal validity such as allegiance, expectancy, regression to the mean, and repeated testing. None of these factors are addressed in most of these reports on FAP, and the lack of control may have produced systematic bias in favor of FAP. Well-designed trials are needed to confirm these preliminary findings and, given the nature of outcomes in depression treatment, it is important to compare FAP against well designed, active control conditions in this area. Evaluation of long-term follow-up results is crucial to distinguish any treatment from the pack of effective depression treatments.

4.1. Getting ahead of the data?

It is interesting to note that three randomized trials have been published on the effects of FAP training (all with small samples), while – multiple uncontrolled and controlled single-case results notwithstanding – only one randomized trial has been published on FAP treatment efficacy (also with a small sample). This may be interpreted as providing additional evidence to validate Corrigan's (2001) claim that FAP treatment developers' dissemination efforts have outpaced the data in support of the treatment. Although the one randomized trial (Maitland et al., 2016b) on FAP produced encouraging findings, the trial suffered a number of limitations that discourage interpreting these findings confidently.

Although FAP is not research-supported for specific psychiatric disorders, however, our review of the research lends support for different, somewhat more specific conclusions about FAP: (a) evidence does support the notion that FAP techniques, when appropriately applied to idiographically defined behavioral problems, produce positive change in those behaviors, and (b) its purported mechanism is active and valid. Multiple micro-process studies employing the FAPRS with (Kanter et al., 2006; Landes et al., 2013; Lizarazo et al., 2015; Villas-Bôas et al., 2016) and without (Busch et al., 2010, 2009; Callaghan et al., 2003; Oshiro et al., 2012) concurrent outcome measurement all point to this conclusion, and have progressively isolated contingent responding to CRB2s as a specific active mechanism in successful cases. Because of the small number of clients in these studies and differences in study methodologies, particularly with respect to measurement of dependent variables, it is difficult to summarize these findings as overall effect sizes; however, our review suggests that these findings are generally clinically meaningful and the Robust IRD calculations suggest clear effects of FAP techniques on both in-session CRB2s and out-of-session behavior changes. Additional replications, especially by independent research teams using similar methodologies, will bolster confidence in our conclusions, and the subset of clients identified in these studies as treatment drop-outs or failures calls for more research to better understand who will benefit from FAP techniques and who will not, and how to maximize success and minimize drop-out.

These single-case results provide support for FAP's emphasis on the therapist as a social reinforcer as a mechanism of behavior change. FAP's original statement of its techniques and mechanism in functional, behavioral terms likely facilitated the success of micro-process mechanism research on behavioral targets and the therapist-as-social-reinforcer, even as it made randomized clinical trial research on efficacy with respect to psychiatric symptomatology difficult. Consider a comparison between FAP and Interpersonal Therapy (IPT; Klerman, Weissman, Rounsaville, & Chevron, 1984). IPT, like FAP, focuses on the client's interpersonal problems and suggests that addressing these problems may have transdiagnostic benefits. However, unlike FAP, IPT specifies concretely what the client's interpersonal problems will be, provides a concrete protocol of three treatment phases, with core psychoeducational content and specific strategies, and employs an integrative theoretical model that incorporates the medical model of diagnosis and utilizes psychiatric nosology. Researchers have adapted and evaluated IPT for major depression and other depressive disorders, eating disorders, and multiple anxiety disorders, with substantial empirical success (Cuijpers et al., 2011). Yet, prominent IPT researchers note: "Considering interpersonal therapy's (IPT's) extensive evidence base in outcome research, researchers have devoted surprisingly little effort to explaining mechanisms of change in IPT. We know that IPT works well for some disorders, but little about why and how" (Lipsitz & Markowitz, 2013, p. 1135).

The research support for FAP may be considered the opposite of that for IPT. Since its inception in 1991, researchers have devoted little effort to establishing FAP efficacy for different disorders, so we cannot speak with confidence about for whom FAP works, or how well FAP works, at the diagnostic group level. Instead, research has accumulated in support of FAP's mechanism and in-session processes. This research, albeit slow and not without limitations, may be more representative of the original promise of behavior therapy's first generation: the identification of empirically supported principles that are tailor-made to guide clinical practice (Follette & Bonow, 2009; Rosen & Davison, 2003). We have some confidence that, in FAP, when specific clients' therapy goals are operationalized behaviorally as CRB and targeted in-session by the *therapist as social reinforcer*, behavioral improvements can be observed for these clients. This review supports the notion that natural therapeutic reinforcement of in-session behavior is an effective clinical behavior change strategy, especially when the in-session behavior is interpersonal and relevant to intimate relating. This conclusion adds some specific support to Hayes et al.'s (2004) statement that FAP's central claim was well substantiated by a broad foundation of empirically supported behavioral principles.

4.2. FAP and social functioning

Social problems appear to be targets that are particularly amenable to FAP's focus on therapist-as-social-reinforcer. The hypothesis in FAP is that FAP produces positive social behavior change and - to the extent that the case conceptualization was accurate in relating the client's interpersonal repertoire to psychopathology - this will have downstream effects on psychopathology (Maitland & Gaynor, 2012). This hypothesis appears reasonable, as many social functioning deficits contribute to psychiatric disease severity and relapse prevention across multiple disorders (Barnett & Gotlib, 1988; Beck, 2010; Heyman et al., 2009; Horowitz, 2004; Leach & Kranzler, 2013; McEvoy, Burgess, Page, Nathan, & Fursland, 2013; Wetterneck & Hart, 2012). A direct psychotherapeutic focus on improving social functioning may have additional significance and benefits. The number of people in the United States who report having no social support has tripled since 1985, the modal American now reports no close confidants (McPherson, Brashears, & Smith-Lovin, 2006), and these social functioning deficits have critical health effects (Cohen, 2004; House, Landis, & Umberson, 1988) including large effects on mortality (Holt-Lunstad & Smith, 2012).

Thus, developing FAP as a specific therapeutic approach targeting social functioning has public health significance, and work in this area has already begun. A system to guide assessment and conceptualization of interpersonal problems in FAP, the Functional Idiographic Assessment Template (FIAT; Callaghan, 2006a; Darrow et al., 2014), has been developed and employed in several studies (Busch et al., 2010; Callaghan et al., 2003). Many of the qualitative, uncontrolled, and controlled cases reviewed herein indicate the interest of FAP clinicians and researchers in focusing on social functioning targets, broadly defined, and their ability to produce measurable improvements in social functioning targets. Although one study failed to find an effect on relationship satisfaction, that study demonstrated difficulties implementing FAP and measuring outcomes (Holman et al., 2012a; Holman et al., 2012b). More encouragingly, the trial by Maitland et al. (2016b), important as the first randomized trial of FAP as a stand-alone treatment across any treatment target, produced clear and encouraging findings in which a brief FAP intervention improved intimate relating and decreased transdiagnostic symptom severity in a largely co-morbid sample. Overall, the trial established a methodological approach to nomothetic FAP research targeting intimate relating that may be employed in future studies with larger samples, stronger controls, and long-term follow-up to assess a model in which FAP produces proximal effects on social functioning targets and distal effects on transdiagnostic outcomes. This may offer a pathway forward for FAP research, particularly given that our current psychiatric diagnostic system has underperformed scientifically and new, more functionally defined approaches are needed to guide research efforts (Cuthbert & Kozak, 2013).

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Kanter wrote the first draft of the manuscript and all authors contributed to subsequent drafts with original writing and review. Villas-Boas and Reyes Ortega contributed review and summary of articles in Portuguese and Spanish, respectively. All authors have approved the final manuscript.

Conflict of interest

There are no conflicts of interest.

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