This article was downloaded by:

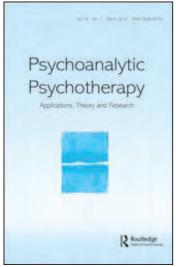
On: 14 March 2011

Access details: Access Details: Free Access

Publisher Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-

41 Mortimer Street, London W1T 3JH, UK



Psychoanalytic Psychotherapy

Publication details, including instructions for authors and subscription information: http://www.informaworld.com/smpp/title~content=t713706881

The ongoing struggle for psychoanalytic research: Some steps forward

Fredric N. Busch^a; Barbara L. Milrod^a

^a Weill Cornell Medical College, Faculty in the Columbia University Center for Psychoanalytic Training and Research New York, New York

Online publication date: 24 November 2010

To cite this Article Busch, Fredric N. and Milrod, Barbara L.(2010) 'The ongoing struggle for psychoanalytic research: Some steps forward', Psychoanalytic Psychotherapy, 24:4,306-314

To link to this Article: DOI: 10.1080/02668734.2010.519234 URL: http://dx.doi.org/10.1080/02668734.2010.519234

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: http://www.informaworld.com/terms-and-conditions-of-access.pdf

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.



Special Editorial

The ongoing struggle for psychoanalytic research: Some steps forward

Fredric N. Busch* and Barbara L. Milrod

Weill Cornell Medical College, Faculty in the Columbia University Center for Psychoanalytic Training and Research New York, New York

Although the need for psychoanalytic research is increasingly acknowledged, many psychoanalysts remain resistant to the performance and findings of this research. Objections to research include a continuing mistrust of research tools and approaches, combined with a belief in the effectiveness of psychoanalytic treatments based on clinical lore and individual experience. Furthermore, as psychoanalytic literature continues to function within its own separate domain, even well-read psychoanalysts can be sequestered from central scientific conversations occurring in the larger literature about mental health. In part due to these factors, few adequate studies of psychoanalytic treatment approaches have been performed. The lack of efficacy research has added to the marginalization of psychoanalytic treatments. Fortunately, in recent years groups of clinicians and researchers have begun to study psychoanalytic treatments, particularly approaches to specific disorders. In this context, this issue provides a welcome addition to the literature in the trailblazing work and papers of Lemma, Target, & Fonagy and Gelman, McKay, & Marks. They have developed an exportable and specific psychoanalytic psychotherapy, which has been employed in the UK's National Health Service Improving Access to Psychological Therapies (IAPT) programme. Work on manualized treatments, such as the Dynamic Interpersonal Therapy of Lemma et al., has allowed psychoanalysts to better clarify and illustrate their treatment approaches. Thus psychoanalytic research, in addition to assessing efficacy, can potentially lead to the development of more effective and rapid relief of symptoms, in a broader population of patients.

Keywords: psychoanalytic research; randomized controlled trials; resistance to research; efficacy studies; public health

Introduction

This special research edition of *Psychoanalytic Psychotherapy* comes at an important crossroad for psychoanalysis. Although small groups of clinicians and researchers are moving forward with manualization of psychoanalytic treatments and systematic outcome studies (Barkham, Shapiro, Hardy, & Rees, 1999; Bateman & Fonagy, 2008; Clarkin, Levy, Lenzenweger, & Kernberg, 2007;

*Email: FNB80@aol.com

Leichsenring et al., 2009; Milrod et al., 2007), many psychoanalysts remain indifferent or resistant to the need for research or the value of the emerging research literature, despite pleas arguing for its centrality for more than a decade (Cooper, 1993; Fonagy, 2003; Milrod & Busch, 2003a; 2003b). It is alarming how few scientifically – credible data have been collected which evaluate the utility of psychoanalytic interventions for specific psychiatric illnessess (Gerber et al., 2010). Outside of this insular field, psychoanalytic treatments are increasingly viewed as irrelevant, in large part due to the lack of demonstrated efficacy of these treatment interventions. Without more carefully conducted evaluations of efficacy that can be understood and accepted by clinicians and scientists outside the narrow discipline of psychoanalysis, psychoanalysis and related mental health interventions remain at risk of perishing as treatments for psychiatric and emotional disorders. Such an eventuality would represent a great loss to our patients, and an unnecessary limitation of the breadth of psychoanalysis.

It is therefore so fortunate that at this crucial moment, this edition features two highly informative, exciting papers from the trailblazing and astute group of Lemma, Target, & Fonagy, and Gelman, McKay, & Marks. They have, with unprecedented foresight, imported a representative, exportable and specific psychoanalytically-based psychotherapeutic intervention into the realm of service research within the Improving Access to Psychological Therapies (IAPT) programme in the UK's national health service. Gaping psychiatric and mental health needs abound in communities of underserved patients around the globe (Chiu, Demler, Merikangas, & Walters, 2005), and until very recently it has not seemed likely that psychoanalysts were willing or able to contribute to this challenging problem. This worry still remains, as research from within psychoanalysis that specifically addresses salient public health needs remains sparse, but it is thrilling that such crucial progress has been made by this group of investigators.

The importance of this study, and of Fonagy, Bateman, and Target's broadly focused recent effectiveness interventions across a wide array of domains within the UK and European public health services [this includes research initiatives for assessment of outcomes of dynamic treatment of eating disorders and borderline personality disorder, an intervention study of infants of depressed mothers, a large study of teen depression, a study of the treatment of emotional abuse, a study of parent-infant psychotherapy, a study of psychotherapeutic interventions to target parenting for mothers with personality disorders — to name a few jewels in the crown of this group] cannot be underestimated. These authors have given the psychoanalytic community a roadmap toward the future of the field, and it is bright. Far from the doomsday scenario of increasing marginalization, it seems that with enough innovative, public heath-conscious research such as this broad effort, relevant elements of the domain of psychoanalysis may be able to be incorporated into mental health services of the future.

In addition to the overall importance of the public health agenda, the study reported here constitutes an excellent demonstration of core fundamental benchmarks for psychoanalytic research: (1) the adaptation of a psychoanalytic approach to a specific disorder and population of patients; (2) the development of a treatment manual that allows for both treatment adherence assessment and the capacity to reliably train others; (3) the utilization of research as a tool to clarify and refine what we are delivering in our treatments. While such efforts have been the tradition of other tested and now EBM-accepted psychotherapies (CBT, IPT), psychoanalysts have long resisted such specificity and manualization out of concern for disrupting psychoanalytic approaches by rigidifying or narrowing them (Blatt, 2001; Busch, Milrod, & Sandberg, 2009). In fact, as these papers and others show, research efforts have led to the creative development of well described treatments that demonstrate how we can best tailor our psychoanalytic approaches to short-term treatments and specific disorders (e.g. borderline personality disorder, depressive disorders, panic disorder).

While we would like to simply focus on the excitement surrounding these research efforts, we find it necessary to call attention to the ongoing resistance to psychoanalytic research, in an effort to intensify interest and participation of a broader range of psychoanalysts in research. The problem remains that critical scientific evaluation of the utility of psychoanalytic treatments has lagged far behind the evaluation of other forms of psychiatric and psychological treatment interventions (Gerber et al., 2010). The relative dearth of a research agenda within psychoanalysis has derived in part out of the field's collective mistrust of manualization and research tools (Busch et al., 2009). This paper will first describe the relative paucity of adequate research in psychoanalytic treatments, discuss the sources of resistance amongst psychoanalysts to such research, and then highlight the growing value of this research.

A dearth of randomized controlled trials

Relatively few studies and exceedingly limited systematic evidence has been collected to date that adequately evaluates the utility of psychoanalytic psychotherapy or psychoanalysis. Research studies using designs other than randomized controlled trials (RCTs) may be interesting and informative in other domains, yet they cannot address the fundamental question of efficacy, which can only be determined by comparing treatments in an RCT design (Jadad, 1998). The tools of psychotherapy research are becoming more sophisticated as the field evolves, and for psychoanalysis to survive as a mental health discipline, it is essential for the field that it fosters rigorous scholarship in this area.

Fortunately, there has been notable progress on this front in the past two decades (Fonagy, 2002). Some prominent members of the psychoanalytic research community have begun to embrace outcome research constructively: the American Psychoanalytic Association has awarded partial funds to begin to perform a pilot randomized controlled trial of psychoanalysis in comparison with supportive expressive psychotherapy and CBT for chronic depression (Roose, 2007), and a few psychoanalytic and psychodynamic teams of researchers have been evaluating psychoanalytically-derived therapies for a variety of psychiatric

disorders (Barkham et al., 1999; Bateman & Fonagy, 2008; Clarkin et al., 2007; Leichsenring et al., 2009; Milrod et al., 2007). These are heartening developments.

None the less, efficacy research in psychoanalysis and psychodynamic psychotherapy remains limited. Gerber et al. (2010), in an exhaustive systematic review, conducted with experts across multiple domains of interventions research, were able to identify *only 94* randomized controlled trials of any form of psychoanalytically-oriented psychotherapy for any specific set of *a priori* defined psychiatric or emotional problems, in the period between 1974 and 2010. RCTs are widely accepted in medicine as the 'gold standard' for the assessment of treatment efficacy, and there is good conceptual agreement about what constitutes a scientifically-credible study (Jadad, 1998). The CONSORT (Consolidated Standards of Reporting Trials) Statement, which has been adopted by most major medical journals, identifies 22 elements important in reporting randomized controlled trials (Moher, Schulz, & Altman, 2001). The 94 existing psychodynamic studies showed a wide range of methodological levels of rigour. Some of these studies conform to scientific standards. Many of these studies do not meet the ever-more rigorous standards (appropriately) applied in the field of psychotherapy outcome research.

No efficacy studies of psychoanalysis have been completed to date; thus the utility of psychoanalysis *per se* as a treatment for any disorder, from a medical/psychiatric standpoint, is entirely unknown. Given the time, cost, and intensity of the demands placed on patients and therapists who enter into psychoanalysis, the fact that the field has neglected to perform appropriate assessments of whether or not the treatments we routinely recommend and deliver actually work is shocking. Psychoanalysts entering or graduating after training, as well as their prospective patients, bear the burden of this failure, as psychoanalysis is rarely considered to be a treatment of choice for any mental or emotional problem in the current health care climate, in part due to the availability of many well-studied treatments with demonstrated efficacy.

Clinical lore and clinical observation: A belief in the effectiveness of psychoanalytic treatments

How can a field packed with highly erudite, thoughtful clinicians and scholars, dedicated to helping patients change, remain so fixed in obdurate resistance to systematic research? The argument that 'absence of evidence does not equal evidence of absence' (Gaskill, 1976), originally coined to justify belief in a superior, supernatural being among the religious, and common in the 1970s among psychoanalysts to justify continued usefulness of psychoanalysis, is no longer acceptable in defending the lack of an evidence base within psychoanalysis. The public has appropriately come to expect an objective evaluation of the effects (both positive and negative) of any medical or psychiatric intervention that shoulders the responsibility of caring for the sick.

We posit that one core aspect of psychoanalysts' resistance to research is their belief in the effectiveness of their treatments (Busch et al., 2009). Since they believe

that they observe the processes that form the core of psychoanalytic treatments and the responsiveness and clinical improvement of patients, the theory and treatment must perforce be correct, and further study and research do not appear to be necessary. In addition, clinical observation is linked with a large body of literature describing multiple successes of psychoanalysis. Finally, psychoanalysts interact with a wide circle of intelligent and thoughtful clinicians who also present and discuss their successful cases. Thus clinical lore, collegial interaction, and direct observations by sole practitioners can appear superficially rational as a basis for determining the effectiveness of a treatment.

However, clinical lore and observation can be highly biased, as the subjectivity of the observer can override an accurate assessment of a patient's improvement. Immersion in one method can leave individual practitioners unschooled in differences observable between therapeutic approaches. Psychoanalysts pride themselves on their awareness of the impact of fantasy and wishful thinking during their treatments, but minimize the impact of such factors on their subjective assessment of their own clinical outcomes. Identification with powerful and respected leaders and theoreticians in the field can colour a more objective assessment of treatment effectiveness. In our wish to be therapeutic and our belief in our treatment, it is all too easy to disregard patients who were treatment failures, or obtained little benefit from a lengthy and time/cost intensive treatment. Cooper (1993) refers to the historical belief in leeches as an effective intervention for medical disorders as widely disparate as pneumonia and jaundice as a parallel example of the inherent problem of such thinking. Although enough data have been obtained to assure us that psychoanalytic approaches are likely not in this category, appeal to clinical lore and a strong belief in our approaches remain a central inherent problem in the culture of psychoanalysis.

In addition to the bias of clinical belief, the limited sample of patients seen by any individual clinician can interfere with determining what types of patients the treatment is or is not effective for. Psychoanalysts are particularly vulnerable to this phenomenon, as the number of cases they treat is by necessity limited by the length and intensity of the treatments they offer. Furthermore, because of the wide clinical disparity between 'psychoanalysis' or 'psychoanalytic psychotherapy' as practised by different individual clinicians, patients being treated in modalities with these monikers are likely to have very different clinical experiences (Milrod, 1996). Also, at least for many years, the patients that psychoanalysts treated included a largely selfselecting group that presented to psychoanalysts in part out of an interest in this treatment, limiting generalizability of individual psychoanalysts' experiences further. Finally, many psychoanalysts continue even now to avoid clearly defining the diagnoses of patients they treat or to use less generally-accepted diagnostic tools than the DSM (American Psychiatric Association, 2004). These idiosyncrasies make it difficult to determine, even in direct clinical observation, which specific patients respond to which specific forms of psychoanalytic treatment. Over the years the need to tailor psychoanalytic treatments for patients with specific disorders has become apparent, but the study of which patients require what kinds of modifications is in its infancy.

Although psychoanalysts, like most other practitioners, want to believe that the positive effects of their treatments are the result of their specific psychoanalytic interventions, many other factors complicate this assessment within individual cases. A notable factor is the placebo effect (Benedetti, Mayberg, Wager, Stohler, & Zubieta, 2005), which has been found to be high in the treatment of some psychiatric disorders, and constitutes a key basis for the need for placebo-controlled studies. Also, so-called non-specific factors in psychotherapy have been found to be responsible for a significant percentage of the outcome of treatment (Frank & Frank, 1991). These include: affective arousal; feeling understood by therapist; development of a framework for understanding (therapeutic rationale); a sense that the therapist is an expert; the ritual of the therapeutic procedure; and the therapeutic alliance.

Confronted with the pressure to perform psychoanalytic research and the many realistic difficulties with this endeavour, psychoanalysts have resorted to a counterproductive series of efforts to claim that such research is unnecessary or not useful, or that adequate psychoanalytic research has already been accomplished, or that studies of psychoanalysis cannot be conducted in ways analogous to studies of other forms of psychosocial interventions. None of these claims are accurate. Guided by the belief in the effectiveness of their treatments, psychoanalysts have seized on the idea that research accomplished on other treatments is wrongheaded or not appropriate for psychoanalytic interventions (Busch et al., 2009). Manuals have been criticized as potentially being too rigid, interfering with exploration or the psychoanalytic process (Blatt, 2001). In actuality, a strength of psychoanalytic treatment manuals to date is that they allow a wide range of latitude and flexibility in therapeutic delivery to address problems in a way that is tailored to individual patients. Those with training in psychoanalysis or psychoanalytic approaches have found these treatment manuals to be consistent with their own clinical practice (Busch et al., 2001; 2009; Gelman et al., 2010 [pp. 347-361]). Realistic limitations of efficacy studies, including relative homogeneity of groups, exclusion of some complex patients, and the need to operationalize treatments, have been used to justify a failure to pursue outcome research.

Another counter-productive approach to the problem of the limited available psychoanalytic outcome research data has been to seize upon the small body of research that has been accomplished as evidence of the effectiveness of psychoanalytic treatments in general. Thus, there has been excessive focus on carefully crafted 'meta-analyses' (Driessen et al., 2010; Leichsenring & Rabung, 2008; Leichsenring, Rabung, & Leibing, 2004). No amount of complex and careful statistical modelling used in meta-analyses can substitute for scientifically-credible data acquired from RCTs. Many of the studies employed in meta-analyses contain significant methodological flaws (Gerber et al., 2010), and hence cannot shed light on problems of therapeutic response, particularly with pooled data.

Conclusion

It is time to relinquish our magical wish that the clinical efforts of a highly trained group of clinicians can claim effectiveness of a set of treatments based on clinical experience, training, experience, and literature. The few RCTs that have been conducted to date are grossly inadequate to assess the vast swath of psychoanalytic treatments that continue to be delivered, albeit less frequently than in the past. Carefully conducted efficacy research is a necessity for the appropriate assessment of any treatment, and it is essential for the survival of our field.

In addition, as the papers by Lemma et al. and Gelman et al. demonstrate, psychoanalytic research yields a wide range of benefits in addition to essential efficacy studies. These include the development of psychoanalytic treatments tailored for use in specific disorders, such as Dynamic Interpersonal Therapy (Lemma et al.) for treatment of depression, panic-focused psychodynamic psychotherapy (Milrod et al., 1997), and mentalization based and transference focused psychotherapies for borderline personality disorder (Clarkin, 2006). Manualization of treatments, rather than rigidifying psychoanalytic approaches, has led clinicians and researchers to define and illustrate more clearly what they do in their treatments. As Gelman et al. note: 'what DIT really helped us with was in focusing the focus – having some way to think in a structured and theoretical way about the direction of our interventions' (pp. 347-361). In these manualized treatments modifications of psychoanalytic techniques have been developed to more effectively and rapidly relieve patients of symptoms and distress. Thus research provides the opportunity to refine, clarify, and more clearly communicate what we do in our treatments, expand the range of patients we can treat, and more accurately assess whether we are helping our patients to improve. Furthermore, with efforts such as those exemplified by Lemma et al., we have the potential of providing relief to a wide array of patients in the community who previously may not have even had the option of being in any psychotherapy at all.

Acknowledgements

Dr Milrod's work is supported in part through NIMH R01 MH70918-01A2.

References

- American Psychiatric Association (2004). Diagnostic and statistical manual of mental disorders (4th edn). Washington, DC: American Psychiatric Association.
- Barkham, M., Shapiro, D.A., Hardy, G.E., & Rees, A. (1999). Psychotherapy in two-plusone sessions: Outcomes of a randomized controlled trial of cognitive-behavioral and psychodynamic-interpersonal therapy for subsyndromal depression. *Journal of Consulting & Clinical Psychology*, 67, 201–211.
- Bateman, A., & Fonagy, P. (2008). 8 Year follow-up of patients treated for borderline personality disorder: Mentalization-based treatment versus treatment as usual. *American Journal of Psychiatry*, 165, 631–638.
- Benedetti, F., Mayberg, H.S., Wager, T.D., Stohler, C.S., & Zubieta, J.K. (2005). Neurobiological mechanisms of the placebo effect. *Journal of Neuroscience*, 25(45), 10390–10402.

- Blatt, S.J. (2001). The effort to identify empirically supported psychological treatments and its implications for clinical research, practice, and training: Commentaries on papers by Lester Luborsky and Hans H. Strupp. *Psychoanalytic Dialogues*, 11, 635–646.
- Busch, F.N., Milrod, B.L., & Sandberg, L.S. (2009). A study demonstrating efficacy of a psychoanalytic psychotherapy for panic disorder: Implications for psychoanalytic research, theory, and practice. *Journal of the American Psychoanalytic Association*, 57(1), 131–148.
- Busch, F.N., Milrod, B.L., Rudden, M., Shapiro, T., Roiphe, J., Singer, M., & Aronson, A. (2001). How treating psychoanalysts respond to psychotherapy research constraints. *Journal of the American Psychoanalytic Association*, 49, 961–983.
- Chiu, W.T., Demler, O., Merikangas, K.R., & Walters, E.E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 617–627.
- Clarkin, J.F., Levy, K.N., Lenzenweger, M.F., & Kernberg, O.F. (2007). Evaluating three treatments for borderline personality disorder: A multiwave study. *American Journal* of Psychiatry, 164, 922–928.
- Clarkin, J.F., Yeomans, F., Kernberg OF: Psychotherapy of Borderline Personality. New York, John Wiley and Sons, 1999 and Bateman AW, Fonagy P: Mentalization Based Treatment for Borderline Personality Disorder: A Practical Guide. Oxford, UK, Oxford University Press, 2006.
- Cooper, A.M. (1993). Discussion: On empirical research. Journal of the American Psychoanalytic Association, 41, 381–392.
- Driessen, E., Cuijpers, P., de Maat, S.C., Abbass, A.A., de Jonghe, F., & Dekker, J.J. (2010). The efficacy of short-term psychodynamic psychotherapy for depression: A meta-analysis. *Clinical Psychology Review*, 30(1), 25–36.
- Fonagy, P. (2002). An open door review of outcome studies in psychoanalysis. Report for the IPA.
- Fonagy, P. (2003). Genetics, developmental psychopathology, and psychoanalytic theory: The case for ending our (not so) splendid isolation. *Psychoanalytic Inquiry*, 23, 218–248.
- Frank, J.D., & Frank, J.B. (1991). Persuasion and healing (3rd edn). Baltimore, MD: Johns Hopkins University Press.
- Gaskill, H.S. (1976). An assessment of psychoanalysis as viewed from within. *Journal of the American Psychoanalytic Association*, 24(3), 553–588.
- Gelman, T., Mckay, A., & Marks, L. (2010). Dynamic Interpersonal Therapy: Providing a focus for time-limited psychodynamic work in the National Health Service. Psychoanalytic Psychotherapy, 24(4), 347–361.
- Gerber, A.J., Kocsis, J.H., Milrod, B.L., Roose, S.P., Barber, J.P., Thase, M.E., Perkins, P., & Leon, A.C. (2010). A quality-based review of randomized controlled trials of psychodynamic psychotherapy. *American Journal of Psychiatry*. DOI: 10.1176/appi. ajp.2010.08060843.
- Jadad, A. (1998). Randomised controlled trials. London: BMJ Books.
- Leichsenring, F., & Rabung, S. (2008). Effectiveness of long-term psychodynamic psychotherapy: A meta-analysis. *Journal of the American Medical Association*, 300, 1551–1565.
- Leichsenring, F., Rabung, S., & Leibing, E. (2004). The efficacy of short-term psychodynamic psychotherapy in specific psychiatric disorders: A meta-analysis. *Archives of General Psychiatry*, 61(12), 1208–1216.
- Leichsenring, F., Salzer, S., Jaeger, U., Kächele, H., Kreische, R., Leweke, F., Rüger, U., Winkelbach, C., & Leibing, E. (2009). Short-term psychodynamic psychotherapy and

- cognitive-behavioral therapy in generalized anxiety disorder: A randomized, controlled trial. *American Journal of Psychiatry*, 166, 875–881.
- Milrod, B. (1996). Anxiety as symptom and signal. *International Journal of Psychoanalysis*, 77, 850–853.
- Milrod, B.L., Busch, F.N., Cooper, A., & Shapiro, T. (1997). *Manual of Panic-Focused Psychodynamic Psychotherapy*. Washington, DC: American Psychiatric Press.
- Milrod, B., & Busch, F. (2003a). Prologue to psychoanalytic research: Current issues and controversies. *Psychoanalytic Inquiry*, 23, 211–217.
- Milrod, B.L., & Busch, F.N. (2003). Epilogue to psychoanalytic research: Current issues and controversies. *Psychoanalytic Inquiry*, 23, 405–408.
- Milrod, B., Leon, A.C., Busch, F.N., Rudden, M., Schwalberg, M., Clarkin, J., Aronson, A., Singer, M., Turchin, W., Klass, E.T., Graf, E., Teres, J.J., & Shear, M.K. (2007). A randomized controlled clinical trial of psychoanalytic psychotherapy for panic disorder. *American Journal of Psychiatry*, 164, 265–272.
- Moher, D., Schulz, K.F., & Altman, D.G. (2001). The CONSORT statement: Revised recommendations for improving the quality of reports of parallel-group randomized trials. *Journal of the American Medical Association*, 285(15), 1987–1991.
- Roose, S.P., Caligor, E., Hilsenroth, M., Devlin, M., Terry, M. "Will Patients Accept Randomization to Psychoanalysis in a RCT?: A Pilot Study", submitted to Journal of the American Psychoanalytic Association 2010.