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The Components of Psychoanalysis: Factor Analyses of Process Measures of 27 Fully Recorded Psychoanalyses

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In an empirical study of psychoanalytic processes, the authors identify therapist, patient, and interaction factors from 2 instruments totaling 31 items based on clinicians' evaluation of 540 sessions from 27 completely recorded psychoanalyses. The 2 instruments, developed over 30 years studying recorded psychoanalyses, are the Analytic Process Scales (APS; Waldron, Scharf, Hurst, Firestein, & Burton, 2004b) and the Dynamic Interaction Scales (DIS; Waldron, Gazzillo, Genova, & Lingardi, 2013). This article reports the authors' simplification of the complex patterns produced by the items via factor analysis. Guided by past process-outcome literature (Lambert, 2013), therapist, patient, and interaction items were factor analyzed in 3 separate analyses. Three patient factors emerged: the patient's experience of the world, the patient's experience of the analyst, and a factor the authors call patient dynamic competence. Components contributed by the therapist reduced to therapist's relational competence and therapist's dynamic competence. Interaction items produced just 1 factor, interaction quality. The authors describe the items contributing to each of these 6 factors and the correlations among these factors to permit the reader to better understand how they interact. Moreover, 2 second-order factors emerged which show what the authors describe as a parallel process between patient and analyst, allowing for a conceptualization of the intricate process of analyst and patient working together, with differing foci, in a potentially mutually enriching way.

Keywords: process-outcome, APS, DIS, Psychoanalytic Research Consortium, factor analysis

Psychoanalysis is a complex long-term interaction between two people that has the potential to result in profound changes to the psychological functioning of the patient undergoing that treatment (Shedler, 2010). An important review of outcomes of psychoanalysis by Barber, Muran, McCarthy, and Keefe (2013; in Lambert, 2013) showed enhancements in five broad dimensions of psychic functioning: insight, adaptive defenses, interpersonal flexibility, quality of object relations, and mentalization (Bond & Perry, 2004; Grande, Rudolf, Oberbracht, & Pauli-Magnus, 2003; Müller,

Kaufhold, Overbeck, & Grabhorn, 2006; Slonim, Shefler, Gvirsman, & Tishby, 2011; Taubner, Kessler, Buchheim, Kachele, & Staun, 2011; Vermote et al., 2010).

Although there have been few systematic studies of the outcomes of psychoanalysis (e.g., Huber, Henrich, Clarkin, & Klug, 2013; Sandell et al., 2000), there have been many more studies of the outcomes of long-term psychoanalytic psychotherapy (see, for two meta-analyses, Kivlighan et al., 2015; Leichsenring & Rabung, 2008; see also Knekt, Lindfors, Saare-Jäske, Virtala, & Härkänen, 2013) and then still more studies of short-term psychotherapies, both dynamically and nondynamically oriented (for an overview of their major results, see Wampold & Imel, 2015). The question of the process differences among these therapies and psychoanalyses has been discussed from theoretical points of view (see, e.g., Gill, 1954, 1984; Kernberg, 1999) but barely explored systematically. Our view is that much may be learned about psychoanalysis from studying related therapeutic efforts, but an open mind is necessary as to the applicability of these findings to intensive long-term psychoanalytic psychoanalysis. We will briefly discuss results from this broader field of research on different psychodynamic psychotherapies as it may bear upon identifying important components of psychoanalysis.

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The sixth edition of *Bergin and Garfield's Handbook of Psychotherapy Research* (Lambert, 2013) continues a history across the previous editions of that handbook of evaluating the relative contributions of the patient, the therapist, and the interaction between them to the outcome of treatment. In the current study, we used the handbook to guide a factor analysis of the scales that we have been developing and using over a 30-year period to better articulate the factors underlying the variables/items that measure the process and within-session outcomes of 27 fully recorded psychoanalyses (Gazzillo et al., 2014; Waldron et al., 2004a; Waldron, Scharf, Hurst, Firestein, & Burton, 2004b; Waldron et al., 2011; Waldron, Gazzillo, Genova, & Lingiardi, 2013; Waldron, Gazzillo, & Stukenberg, 2015).

Estimates of the amount of variance in outcome accounted for by the patient vary considerably. Lambert (1992) estimates that patient and patient life factors—what he calls “extratherapeutic factors”—account for 40% of the variance in outcome; Orlinsky, Grawe, and Parks (1994) and Orlinsky, Ronnestadt, and Willutzki (2004) also provide evidence that patient variables are the strongest predictors of outcome. In fact, Orlinsky et al. (1994) concluded, “the quality of the patient’s participation in therapy stands out as the most important determinant of outcome” (p. 361). Along the same lines, Wampold (2010) states that most of the 82% of variance not accounted for by therapy factors are likely related to the client; and Norcross and Lambert (2011), who maintain that about 40% of the variance in outcome is unexplained, believe that half of the remaining 60% of the explained variance is accounted for by the patient and the other half by all other known factors combined.

In contrast to the patient effects on outcome, research into the effects of the therapist on outcome are “in their infancy” (Baldwin & Imel, 2013). A central reason for this has to do with the prevalence of research designed to compare one variety of treatment with another, informally called “horse-race designs.” The intent of the experimenters in these kinds of designs is to reduce the variance between the deliverers and extrinsic elements of the treatment, with the differing “brands” of treatment presumed to be the active change agent (Ablon, Levy, & Katzenstein, 2006). However, common therapist factors such as empathy, warmth, and positive regards have consistently been linked to positive treatment outcome (Lutz, Leon, Martinovich, Lyons, & Stiles, 2007; Wampold & Imel, 2015) and there is also increasing evidence of the relevance of a more general therapist effect (connected to abilities such as therapist verbal fluency, capacity to establish a good therapeutic alliance with different patients, professional self-doubt, etc.), explaining between 4% and 8% of the variance in outcome (Crits-Christoph & Gallop, 2006; Wampold & Bolt, 2006), though these findings are generally not based on studies of psychoanalysis or long-term psychodynamic psychotherapies.

Although common factors account for much of the variance due to therapist variability, technique also plays a role. Owen and Hilsenroth (2011), for example, have demonstrated that several individual psychodynamic techniques—including linking actual feelings or perceptions to past experiences, focusing on repetitive relational patterns, and identifying recurrent patterns in patient’s experiences and feelings—show interaction effects with alliance in affecting outcomes. And in a very rare instance of a so-called “dismantling” study of dynamic psychotherapies, Høglend et al. (2011) demonstrated that transference interpretations in the early

hours of work with patients with moderate personality difficulties were instrumental in leading to better treatment outcome. In another study, therapists’ facilitation of affective experience and expression was shown to demonstrate a moderate positive effect on outcome (Diener, Hilsenroth, & Weinberger, 2007), as did the therapist’s management of his or her feelings (Tishby & Wiseman, 2014).

The patient and therapist variables that come from the two scales in the present study are measures of patient and therapist functioning in the therapeutic hour. These variables are measures of what the patient and therapist are doing in the hour, and we believe that the consistent results reported above that have pointed to the relevance of the patient and therapist contributions to the therapeutic outcome support our grouping the patient process variables and the therapist process variables as two sets of variables whose factor structures are of interest.

In addition to the evaluation of patient and therapist contributions to the therapeutic process it will be important to estimate the specific way in which the therapist and the patient build the therapeutic relationship, since there is so much evidence that among psychotherapies, long and short, therapeutic alliance is among the most powerful predictors of outcome (Norcross, 2011). Although therapist skill is an important determinant of the alliance and should be measured directly, alliance is a relationship variable to which both the client and the therapist contribute. It can be thought of as a measure of “fit” or “match” (Kantrowitz et al., 1989) between patient and therapist, and varies across time depending on the contribution to it by both parties, something that is an ongoing result of the interaction between the patient and therapist (Safran & Muran, 2000).

The outcomes of psychodynamic treatment are also influenced by the qualities of the therapeutic relationship as experienced by the patient during the therapy. Pesale, Hilsenroth, and Owen (2012) found that patients’ experience of being happy, confident, pleased, and friendly early in therapy contributed to the improvement in a broad range of domains, from global decreases in psychopathology to reduction of problems in social and interpersonal functioning. In addition, past research has found that patients tend to provide higher positivity ratings of their therapies when their therapists help them to gain insight, to define clearly their problems and when patients feel understood, supported, encouraged, relieved, involved in the treatment, and closer to their therapists (Elliott & Wexler, 1994). Ward, Wood, and Awal (2013) also reported that patient satisfaction and perceived change are positively correlated with each other and with symptomatic improvement. Previous evidence collected by our group suggests that the quality of various therapeutic communications, as made in a given specific moment of treatment, and the quality of the therapeutic relationship, are relevant therapeutic factors in psychoanalysis (Lingiardi, Gazzillo, & Waldron, 2010; Waldron & Helm, 2004; Waldron et al., 2004b). Specification of the relationship between the therapist’s and patient’s contribution to the conversation and the subsequent development of their relationship can therefore provide the third lens (after looking at the contributions of the client and the therapist in isolation) to studying the foundations for good therapeutic outcomes.

Given these considerations, the aim of the present study was to investigate the patient, therapist and interaction contributions to the therapeutic process on the basis of the empirical assessment of

the audiorecordings and transcriptions of 540 sessions from 27 psychoanalytic treatments.

There have been other research groups that describe systematically what therapist and patient are actually doing together in the room (e.g., Ablon & Jones, 2005; Hilsenroth, Blagys, Ackerman, Bonge, & Blais, 2005; Waldron et al., 2013; Waldron & Helm, 2004). The need for this has been demonstrated by findings that, for example, CBT therapists use dynamic techniques, sometimes without even being aware of them (Ablon & Jones, 1998; Sloane, Staples, Cristol, Yorkson, & Whipple, 1975; Waldron & Helm, 2004), and this has sometimes led to a significant correlation between the unintended technique and results (Ablon & Jones, 1998). More extensive investigation of the actual exchanges that take place in therapy would therefore provide a greater basis for exploring what elements contribute to benefit from treatment and how these elements interact with each other in the different therapies. However, to our knowledge, no quantitative study has been conducted so far to empirically identify, from a “bottom-up perspective” based upon clinical psychoanalytic understanding and sound statistical methodologies applied to a large number of psychoanalytic sessions from different treatments, the basic dimensions of psychoanalysis and how they interact. By carrying out the factor analyses reported here, we make a step toward delineating the dimensions of this kind of therapy from the vantage points of what is actually contributed by the therapist, by the patient, and by the interaction between them. With these considerations in mind, we here report a study based upon 31 items from two different instruments that rate the functioning of patients, therapists, and the interactions between them developed by experienced psychoanalysts over 30 years, as the analyst-researchers listened to a series of recorded psychoanalytic cases and formulated over time what aspects of the observed processes seemed worthy of particular systematic investigation (Gazzillo et al., 2014; Waldron et al., 2004a, 2004b, 2011, 2013, 2015).

Method

Participants

The Psychoanalytic Research Consortium, New York, New York, the source of the sample, has collected a total of 27 fully recorded analyses from various sources over the past 28 years. The treatments were delivered in the United States, in both academic and private settings, by seven male U.S. experienced analysts (more than 10 years of practice after having completed their training in U.S. analytic institutions affiliated with the International Psychoanalytic Association). All these analysts were involved in empirical research on process and outcomes of psychoanalysis; they lived and worked in New York, Chicago, and Philadelphia and they all were trained in the American ego psychology tradition. Two of them, however, since the 1980s were influenced by the relational movements in psychoanalysis.

Thirteen of the patients were women and 14 were men. The patients at the beginning of their analysis averaged 33 years old, ranging from 20 to 70 years. These analyses were conducted from the end of the 1960s to 2011, and transcripts of them are available for research and teaching (www.psychoanalyticresearch.org). All patients agreed to be recorded, and the audio recordings and some transcriptions of their cases were donated by psychoanalysts after

the completion of treatment. Patients are not randomly assigned to treatment. Thus, this is a sample of convenience which includes all psychoanalytic treatments in English available for systematic study when analysts are willing to record their own work.

The treatments averaged 3.4 sessions per week. Some treatments tailed off at the end of a long analysis to much less frequent sessions. The average duration was 366 sessions, ranging from 120 to 2,836 sessions. We selected and analyzed 20 sessions from each treatment: the first four consecutive sessions, four consecutive sessions from about 20 sessions later (all representative of the first phase of treatment); four consecutive sessions from the middle of the treatment (middle phase); four consecutive sessions from an average of 20 sessions before the termination; and the last four consecutive sessions (these last 8 sessions representing the termination phase of the treatment). Most of the 540 sessions studied were conducted on the couch (~70%), with about a quarter (~26%) face-to-face, and a relatively small number (~4%) were conducted via telephone or Skype. In several cases, the patient passed from the couch to chair or vice versa.

Measures

The Analytic Process Scales. The Analytic Process Scales (APS; Waldron et al., 2004b) contains 29 Likert format items (rated 0 to 4) each aimed at assessing a dimension of the therapeutic process. The patient's contribution to the therapy is assessed with 12 items, the therapist's contribution is assessed with 16 items, and interaction with one item. Definitions of each of these items and clinical examples at the level of 0 (*absent*), 2 (*present and explicit*), and 4 (*present, explicit, complex and articulated*) are assembled into an 81-page coding manual (Scharf, Waldron, Firestein, Goldberger, & Burton, 1993; revised 2010). The anchoring of clinical judgments made possible by the APS coding manual facilitates accurate and reliable measurements (Waldron et al., 2015). The APS patient items assess the degree to which the patient is able to convey their experiences, reflect on them, and convey their feelings, both in regard to the therapist and therapeutic relationship and in regard to other relationships; the extent of their communications about contents such as romantic and sexual themes; and aggressiveness; extent of awareness of their own feelings or behavior as problematic; self-esteem issues; communications about the developmental period; and the overall productivity of their communications, that is, the degree to which there is a sense of forward movement during the session in the depth or breadth of the patient's or rater's emotional understanding, in the intensity of the patient's involvement and collaboration with the therapist, or in the quality of other emotional expressions. One item we now classify as an interactional item: the degree to which the patient responds to the therapist in a useful manner. The 16 APS therapist items assess the level of different kinds of interventions (encouraging elaboration, clarification, interpretation, and support), different targets of these interventions (defenses/resistances, relationship with the therapist, and conflicts), and different themes dealt with by them (romantic and sexual life, assertiveness and aggression, self-esteem, and development). And there is an item assessing how confronting the therapist is. Therapist items also assess the degree to which the therapists' communications were shaped by their feelings, with separate assessment of how amicable or hostile the feelings were. Finally, there is a specific item aimed at the assessment

of the overall goodness of therapist interventions for the hour, that is, their aptness in kind, content, language, and timing.

The APS items were originally developed to be applied to segments of each session, and this facilitated the close study of individual cases, but the procedure has been applied in the current study to rate each session in its entirety, so that we could accomplish a comparison of a much larger number of sessions. The session scores do not represent an average value of the items during a session, but reflect *the highest level* reached in that session on any given item. The average intraclass correlation coefficient (ICC) of the APS patient items applied by three independent raters with this procedure to 120 sessions was .76 (ranging from .67 to .83); the average ICC for APS therapist items was .77, ranging from .63 to .85.

The Dynamic Interaction Scales. The Dynamic Interaction Scales (DIS; Waldron et al., 2013) consist of 12 Likert-format items (rated on a 0 to 4 scale similar to the one used for the APS assessment) aimed more specifically at the assessment of global, relational, and interactional aspects of the therapeutic process. Five DIS therapist items assess the degree to which the therapist is straightforward, warmly responsive, responsive moment-to-moment to the patient's feelings, the degree to which the therapist conveys aspects of their subjective experience to the patient; and how well the therapist is addressing the patient's troubling patterns of relating and feeling. Three DIS patient items assess the degree to which the patient flexibly shifts to and from experiencing and reflecting, shows a flexible interplay between conscious waking life and dreams, and how well the patient is working with their problematic patterns of relating and feelings. Then four DIS interaction items assess the degree to which: the patient experiences the therapist as empathic; the therapist's contribution leads to the further development of the patient's awareness of feelings; there is an integration of understanding of the relationship with the therapist to other relationships; and the engagement in the therapeutic relationship by the two parties is experienced in an emotionally meaningful way.

The average ICC for the DIS items assessed by three independent raters on 120 sessions was .68, ranging from .60 to .88.

Procedure

Three independent raters assessed all sessions for all the patients with the APS and the DIS. The first rater was an experienced psychoanalyst (more than 5 years of posttraining experience) and researcher, and trained the other two raters, both doctoral-level students in Dynamic Psychology, in the assessment of transcribed sessions with the APS and DIS. In this case, the training was considered as completed after both raters were able to assess four sessions of four different patients with differences ≤ 1 units among each other in the scoring of every APS and DIS Scale.

We hypothesized that although the items of the APS and DIS were intended to measure discrete aspects of the analytic process, these aspects are, in fact, intercorrelated. Deriving the factor structure of the items will: help reveal the structure of the analytic process as the items on the APS and DIS have been derived from the psychoanalytic literature and applied to psychoanalyses; and help reduce the data so that we have a more manageable set of independent variables with which to test hypotheses about the relationship between analytic process and outcome in our sample and in future research.

Each item set was subjected to exploratory factor analyses with maximum likelihood solutions using the Mplus program, Version 8 (Muthén & Muthén, 2015). It should be noted that observations were nested within seven therapists and within 27 patients. Each of the 27 psychoanalyses yielded 20 session records for a total of 540 measures of each variable. In order to examine the variance that might be attributed to between-therapist and between-patient variance, multilevel factor analyses were applied, using Mplus's TWOLEVEL procedures.

The patient items, the therapist items, and the interaction items were analyzed in separate factor analyses. There were several considerations leading us to factor-analyze the patient, therapist and interaction items separately. First, each subset of items is assessed taking into account different parts of each session, that is, the patient items are assessed on the basis of the patients' communications, the therapist items on the basis of the therapists' communications and the interaction items are assessed taking into account the interaction between patient and therapist. The second reason was that, when we factor analyzed all the items together, we obtained results that were clinically difficult to interpret and the factor solutions changed substantially when the within-patient and within-therapist variance was controlled for.

To arrive at factors reflecting more general aspects of the treatments, we decided to exclude the items that assessed specific contents of both the therapist and the patient communications (i.e., romantic and sexual life, assertiveness and aggressiveness, self-esteem and developmental themes). This choice was based on our interest in investigating how therapist and patient communicated and interacted, and not what they were talking about. Moreover, when we factor analyzed these "content items" together with the other items, the factor solutions obtained were incoherent and unstable.¹

Finally, we excluded from our analyses an item assessing to what degree patient and therapist worked on the patient's dreams because dreams were absent from most of the sessions (dreams were discussed only in 127 sessions). For the same reason, we excluded one item aimed at the assessment of the therapist's hostility, which received a score greater than 2 in only one session (i.e., the analyst was considered explicitly hostile only in one of our 540 sessions).

Results

Overall Characteristics of the Therapeutic Work

Each of the 540 sessions received one score for each of the APS and DIS items, which ranged from 0 to 4. Because the raters were instructed to rate each session based upon the highest level observed during the entire session for that variable, we report the percentage of the average scores of our three raters above the level of 2.0 (the midpoint in our scales) to indicate a substantial level of the activity or characteristic assessed by that item. With this criterion, we found that the analysts in the sample used a medium to high level of interpretation, addressing patients' defenses and their reactions to the analyst (transference), addressing patients'

¹ The results of these preliminary factor analyses can be requested from the first or third authors of this paper.

Table 1
Therapist Activities Scored Greater than 2

Therapist activities	% of sessions with scores > 2.0
Interpretation	72
Addressing defenses	49
Addressing transference	53
Addressing conflicts	56
Approaching troubled patterns of feeling/relating	74
Amicable	79
Supportive	61
Warm	78
Subjective	70
Intervention goodness	76

intrapsychic conflicts, and addressing troublesome patterns of feeling or behavior in the majority of sessions. These findings demonstrate that ordinary elements of psychoanalytic work were amply in evidence in our sample (see Table 1).

There were also significant elements in our sample of what heretofore would have been described as more typical of psychoanalytic psychotherapy, expressive or supportive. In the majority of sessions, supportive remarks were substantially present; the analyst was rated as amicable and warm in more than three quarters of sessions; and the analyst expressed in one way or another his subjective point of view in more than half the sessions.

Raters evaluated the top level reached in the therapeutic communications as good (above 2.0) in more than three-quarters of the sessions (see Table 1).

Arriving at a statistically sound factor structure in our database entails taking into account that in our sample the 540 scores are not

independent of one another. Each 20 scores are clustered within one patient, and furthermore, there are seven superordinate clusters constituting the scores of the patient or patients of each of the seven treating psychoanalysts. In our sample, three analysts treated only one patient each, then the other four analysts treated four, five, six and nine patients respectively. This allows for a possible confound in our data: if a relevant amount of the variance in scores is attributable to variations among the seven analysts, or the restrictions in the data due to clustering within each of the 27 patients, the factor structure obtained could be misleading. And preliminary analyses indicated that there were substantial intra-class correlations in each patient's and therapist's data suggesting among-therapist and among-patient shared variance. These ICCs ranged from .07 to .32 for among-therapist variance and .28 to .56 for between-patient variance. Therefore, to examine the degree to which patient and/or therapist variance may have influenced the resulting factor structures of the therapist items, three factor analyses were performed: (a) single-level analysis uncorrected for either patient or therapist variables—marked "In General" on all tables; (b) a two-level analysis controlling for between therapist variance, and (c) a two-level analysis controlling for between-patient variance.

Patient Factors

A three-factor solution seemed plausible based upon Cattell's (1966) scree test, the eigenvalues-greater-than-1.0 rules, and the proportion of common variance accounting for at least 80% of the variance in each analysis. The oblique factor loadings and their intercorrelations are presented in Table 2. Using the statistical methods described in the Methods section, we evaluated whether the items loaded on the factors described below, which appear in

Table 2
Factor Analysis of Analytic Process Scales and Dynamic Interaction Scales Patient Items

Item	In general			Controlling for therapist			Controlling for patient		
	F1	F2	F3	F1	F2	F3	F1	F2	F3
Patient conveys experiences permitting the rater to delineate his/her conflicts about the therapist and/or the therapeutic situation	1.00	.25	.28	1.00	.01	-.02	1.00	.01	-.03
Maintains self-reflection promoting self-understanding about therapist/therapeutic situation	.98	.24	.29	.98	.00	.01	.98	.01	.00
Patient's feelings contribute to rater's perception of patient's experiences with therapist or therapeutic situation	.96	.23	.28	.96	-.01	.01	.95	-.04	.02
Maintains self-reflection in a way that promotes self-understanding	.25	.95	.50	.02	.93	.02	.03	.93	.02
Patient's overall productivity	.25	.51	.77	.01	.16	.68	.01	.10	.70
Patient flexibly shifts between experiencing and reflecting	.24	.44	.89	-.01	-.02	.90	.00	-.03	.90
Patient conveys experiences permitting rater to delineate conflicts outside of analysis	.23	.99	.49	-.02	1.00	-.01	-.03	.99	-.01
Patient's feelings contribute to rater's understanding of conflicts outside of analysis	.22	.96	.48	-.01	.97	-.01	-.01	.96	.00
Regards emotional experiences or expressions as problematic	.22	.47	.34	.09	.39	.12	.03	.27	.17
The patient is working with his/her typical patterns of relating and patterns of emotion which most trouble his/her life adjustment	.19	.38	.75	-.03	.01	.75	-.02	.01	.79
Eigenvalues	4.98	2.30	1.21	4.73	2.35	1.29	4.52	2.56	1.17
% of common variance	.50	.23	.12	.47	.24	.13	.45	.26	.12
Factor intercorrelations									
F1	1			1			1		
F2	.25	1		.25	1		.18	1	
F3	.36	.54	1	.29	.51	1	.25	.57	1

Note. The loadings $\geq .40$ are in bold.

Table 3
Factor Analysis of Analytic Process Scales and Dynamic Interaction Scales Therapist Items

Item	In general		Controlling for therapist		Controlling for patient	
	F1	F2	F1	F2	F1	F2
Therapist addresses patient's conflicts	.87	-.01	.82	-.01	.79	-.02
Therapist interprets	.77	.06	.70	.12	.74	.01
Therapist draws attention to patient's reaction to therapist or therapeutic situation	.68	-.13	.56	-.01	.48	-.03
Therapist addresses patient's defenses	.66	.08	.59	.10	.57	.04
Therapist good communication	.64	.25	.57	.29	.57	.24
Therapist clarifies	.41	.25	.35	.35	.28	.34
Therapist helps patient work with his/her typical troubled patterns of relating and feelings	.40	.46	.37	.44	.43	.39
Therapist encourages elaboration	.33	.14	.26	.26	.16	.16
Therapist addresses patient's moment-to-moment feelings	.27	.62	.19	.64	.30	.51
Therapist confronts patient	.18	.40	.20	.33	.32	.20
Therapist expresses feelings	.12	.75	.10	.75	.21	.58
Therapist straightforward	.10	.78	.07	.78	.05	.79
Therapist expresses subjective point of view	.05	.82	.01	.81	.10	.65
Therapist provides support	.00	.63	-.01	.60	-.07	.58
Therapist amicable	-.06	.82	-.10	.81	.00	.64
Therapist is warmly responsive to patient	-.16	1.02	-.17	.98	-.14	.94
Eigenvalues	8.63	1.33	7.76	1.42	6.82	1.37
% of common variance	.54	.08	.49	.09	.43	.09
Factor intercorrelations		.71		.63		.65

Note. The loadings $\geq .40$ are in bold.

the first set of columns of Table 2, are adequately stable when controlling for the clustering by patient and by analyst. It may be seen in column sets 2 and 3 of both Tables 2 and 3 (described below) that controlling for the patient, and for the analyst, does not substantially alter the scores. Therefore, we focus below on the description of the factors based upon the first column set in the tables, marked "In general."

We named the first patient factor F1, *patient communicates about the analyst or analytic situation*² and has the highest loadings on items rating the patient maintaining self-reflection in a way that promotes self-understanding, patient conveys experiences permitting the rater to delineate his or her life issues and patient's feelings contribute to rater's understanding of his or her life issues all in regard to the analyst or analytic situation. The other items had very small loadings on this factor. This factor explains 50% of the common variance, with an alpha value of .99.

We named the second patient factor F2, *patient communicates about her/his world*. This factor includes the highest loadings on items rating the patient's conveying her/his experiences outside the therapeutic room, reflecting on these experiences, conveying the feelings about these experiences and being aware of her/his problems. It has smaller loadings on patient productivity and flexibly shifting between experiencing and reflecting. This factor accounts for 23% of the common variance in the general equation, with an alpha of .90.

We named the third and last patient factor F3, *patient dynamic competence*. It has primary item loadings on the patient oscillating flexibly between experiencing and reflecting, on patient overall productivity (these two factors, it should be noted, also had moderate loadings on the F2 factor), and working on troublesome patterns of experiencing and relating to other people. Three secondary items include maintaining self-reflection in a way that

promotes self-understanding in regard to their world, conveying experiences permitting rater to delineate conflicts outside of analysis and communicating feelings that contribute to rater's understanding of conflicts outside of analysis. This factor explains 12% of the variance and has an alpha of .86.

Examination of the intercorrelations of these factors shows a strong correlation (.54) between the second and third patient factors.

Therapist Factors

Using the same approach as described for patient factors above, a two-factor solution was indicated, and accounted for approximately 60% of the variance in each of the three factor analyses. To achieve simple structure Yates's (1987) geomin rotation strategy was employed. Table 3 presents the factor loadings of the therapist items for all three solutions.

As can be seen in Table 3, the uncontrolled "in general," "controlled for therapist," and "controlled for patient" solutions were performed as described for the patient variables and were highly similar. We named the first factor F1, *therapist dynamic competence*; it explained 54% of the variance in the "In General" solution. This factor had substantial loading on items that reflect addressing patient's conflicts, interpreting, addressing the patient's reactions to the analyst or analytic situation, addressing the pa-

² In Tables 2 and 3, items contributing to each factor substantially, that is at the level of .4 or above, are bolded in the appropriate column. As may be seen in inspecting the tables, some items contribute significantly to more than one factor, which in turn is reflected in correlations among the factors. The reader may scan down each column for bolded items to confirm what items are contributing to what extent.

tient's defenses, the overall quality of the therapist's communication, and clarifying. In addition, "the therapist is working with and helping the patient work with his/her typical patterns of relating and patterns of feelings which most trouble his/her life" has moderate loadings on this factor and factor 2 below. Using Hwang and Takane's Generalized Structural Component Analysis Confirmatory (gesca; Hwang & Takane, 2014; Kim, Cardwell, & Hwang, 2016) package in *R*, Cronbach's alpha for this factor is .89.

We named it *therapist relational competence* because it includes items that rate the therapist's being warmly responsive to the patient, expressing his subjective point of view, being amicable, straightforward, expressing his feelings, providing support, addressing the patient's moment-to-moment feelings, and confronting, and shared with F1 the analyst working with patient's maladaptive patterns. The second factor accounted for 8% of the common variance, and the alpha is .91.

The two factors were highly correlated (.71) and as we will see below may be viewed as combining into a higher-order therapist factor.

Interaction Factor

Exploratory analyses of the APS and DIS interaction scales produced a single factor we call *interaction quality*. As can be seen in Table 4, the factor emerged in all three analyses. This factor is composed of the following items in order of their loading: analyst's contribution leads the patient to become more aware of her/his feelings; analyst and patient are both engaged in the therapeutic process in an emotionally meaningful way; patient responds usefully to therapist communications; analyst is experienced as being empathic by the patient; there is an integration of the understanding of the patient's relationship with the therapist to other relationships. While all loadings were moderate to high, the loading from the item, "There is an integration of understanding of the relationship with the therapist to other relationships, past or present" was less strong. Cronbach's alpha was .83.

Intercorrelations of the Factors

To obtain estimates of intercorrelations among the factors, all data were subjected to a confirmatory factor analysis using the gesca package (Hwang & Takane, 2014; Kim et al., 2016) in which the salient items (loadings >0.40) for each factor found in the analyses above were used as factor indicators. The resulting factor

correlation matrix is shown in Table 5. As can be seen in the table, there were substantial correlations among the factors, suggesting a higher-order factor structure. The correlation matrix was subjected to a two-factor principal components factor analysis solution with an oblique promax rotation. The resulting structure is shown in Table 6.

The first higher-order factor, RC1, accounting for 37% of the total variance, had its highest loadings on therapist relational competence, therapist dynamic competence, and patient communicates about the analyst or analytic situation factors. It may be considered to represent the efforts made by patient and therapist to understand and modulate what happens in the therapeutic relationship. The second factor, RC2, accounted for 35% of the total variance and had its highest loadings on patient communicates about her/his world, patient dynamic competence, and interaction quality. This factor may be considered to represent the dynamic productiveness and the overall quality of the therapeutic interaction. The two factors were highly correlated (.58), indicating that therapist activity was tightly linked to patient and dyadic interaction.

Graphic representation of these relationships can be seen in Figure 1.

Discussion

We worked from a "bottom-up" perspective to identify the factors describing patient, therapist and interaction contributions to the therapeutic process using this sample. The factors identified appear to be psychometrically sound and clinically sensible. They necessarily fell into three broad groups because of our a priori decision to group them based on content related to the therapist's functioning, the patient's functioning, and the interactional components of their functioning.

Analyzing the patient items, we identified three factors:

1. *Patient communicates about the analyst and analytic situation*, which includes the patient conveying their experiences, reflecting about and expressing feelings about the analyst and the analytic situation. This factor can be used for understanding which kinds of therapist communications are facilitated by and facilitate communications by the patient about their experience of the relationship with the therapist. Moreover, this factor may be useful in future research aimed at understanding if there are dif-

Table 4
Factor Loadings of the "Interaction Quality" Items

Item	In general	Controlled for therapist	Controlled for patient
Therapist's contributions lead to the further development of the patient's awareness of his or her own feelings	.85	.82	.83
The engagement in the therapeutic relationship by the two parties is brought forward or experienced in an emotionally meaningful way	.79	.76	.72
Patient responds usefully to therapist interventions	.69	.69	.70
Therapist is experienced as empathic by patient	.68	.63	.58
There is an integration of understanding of the relationship with the therapist to other relationships, past or present	.47	.46	.41

Note. The loadings $\geq .40$ are in bold.

Table 5
Second-Order Factor Correlation Matrix

Factor	1	2	3	4	5	6
1. Therapist relational competence	1.00					
2. Therapist dynamic competence	.74	1.00				
3. Patient communicates about her/his world	.33	.40	1.00			
4. Patient about the analyst or analytic situation	.26	.46	.27	1.00		
5. Patient dynamic competence	.36	.45	.54	.33	1.00	
6. Interaction quality	.59	.66	.49	.41	.80	1.00

ferences among patients with different personality styles/disorders in their ability to talk and reflect with the therapist about their therapeutic experience.

2. *Patient communicates about their world*, which has the highest loadings on items rating the patient's conveying her/his experiences outside the therapeutic room, reflecting on these experiences, conveying the feelings about these experiences and being aware of her/his attitudes or feelings as problematic. This factor contributes to the analytic process by providing material for the analyst's comments, and this factor also reflects the response of the patient, in treatments that are progressing successfully, to the clinician's contributions and to the interaction between patient and clinician.
3. *Patient dynamic competence*, which includes three items that assess: the patient oscillating flexibly between experiencing and reflecting, patient overall productivity, and working on troublesome patterns of experiencing and relating to other people, as well as patient conveying experiences and maintaining self-reflection in general. This last factor can be used as an "intra-session" outcome indicator, describing dimensions of the patient functioning which have always been considered as expressions and mediators of psychological health (Ackerman & Hilsenroth, 2003; Barber et al., 2013; Gazzillo et al., 2014; Lacewing, 2014; Raingruber, 2000; Ross, 2012;

Waldron et al., 2013, 2015). And it may help to identify which kind of therapeutic interventions can be more useful for increasing the dynamic competence of patients with different clinical problems and personality styles/disorders, and which kind of patients seem to improve thanks to improvement in their insight/self-reflection ability (Blass & Blatt, 1992; Wallerstein, 1986).

The therapist contributions to the process of analysis are grouped in two factors:

1. *Therapist dynamic competence*, which includes virtually all aspects of analytic technique: addressing patient's conflicts, interpreting, addressing the patient's reactions to the analyst or analytic situation, addressing the patient's defenses, the overall quality of the therapist's communication, and clarifying and also an evaluation of the degree to which the therapist is working with and helping the patient work with his or her typical patterns of relating and patterns of feelings which most trouble his or her life. Thus, this factor assesses the use of classical analytic tools (Brenner, 1967; Fenichel, 1941; Freud, 1914; Gill, 1982; Strachey, 1932), enabling us to study their specific impact on the patient communications and on the therapeutic relationship and outcome. It is worth noting that previous studies (Seybert et al., 2011; Sloane et al., 1975; Waldron & Helm, 2004) have found that the core analytic activities described by this factor are present in psychoanalyses, long-term psychodynamic psychotherapies, short-term psychodynamic therapies, and some cognitive-behavioral therapies. For this reason, we think that both these therapist factors can be useful for assessing the therapeutic process of all kinds of talking therapies. The items themselves address very different aspects of therapeutic functioning; and an item-based analysis of several sessions and therapies, which is what we have done to this point (e.g., Waldron et al., 2015), allows us to be specific about relating particular therapeutic functions to outcome. The current methodology allows us to create a broader empirical base for asking questions about relationships between theoretically important aspects of psychodynamic psychotherapies and symptomatically based measures of psychological functioning.
2. *Therapist relational competence*, which includes dimensions such as the analyst being warm, amicable, expressing his own subjective points of view, expressing his

Table 6
Second-Order Factor Analyses Results

Factor label	RC1	RC2	h2
Therapist relational competence	.95	-.13	.78
Therapist dynamic competence	.92	.02	.86
Patient communicates about her/his world	-.13	.88	.66
Patient about analyst or analytic situation	.52	.12	.35
Patient dynamic competence	-.05	.94	.83
Interaction quality	.38	.63	.82
Sum of squared loadings	2.2	2.11	
Proportion of variance	.37	.35	
Cumulative variance	.37	.72	
Proportion of explained variance	.51	.49	
Cumulative proportion of explained variance	.51	1	
Factor correlations			
RC1	1	.58	
RC2	.58	1	

Note. RC1 and RC2 are the two Higher Order Factors. Factor loadings > .40 are in bold.

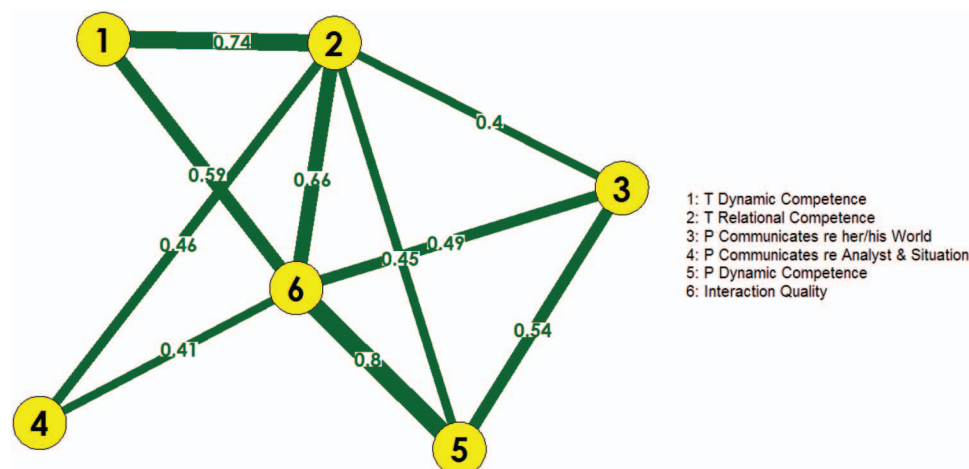


Figure 1. The relationship among patient, therapist and interaction factors. See the online article for the color version of this figure.

feelings, being supportive, straightforward, and addressing moment-to-moment shifts in the patient's feelings and the patient's maladaptive patterns. This factor can be useful in studying the effects on patients of several dimensions of analytic work emphasized by contemporary relational authors (Aron, 1996; Bromberg, 2012; Mitchell, 1997; Renik, 1995, 1998). It is useful as well to evaluate aspects of the therapeutic alliance and what activities of the analyst may contribute to the alliance (Høglend et al., 2011).

The APS and DIS interaction items produced a single factor, called *interaction quality*. This factor includes the analyst's contribution leads the patient to become more aware of her/his feelings; analyst and patient are both engaged in the therapeutic process in an emotionally meaningful way; patient responds usefully to therapist communications; analyst is experienced as being empathic by the patient; and there is an integration of the understanding of the patient's relationship with the therapist to other relationships. This factor describes the ability of the patient and therapist to work together in a dynamic treatment and is consistent with the very large psychotherapy literature documenting the strong relationship between the alliance and psychotherapy outcome (Norcross, 2011; Wampold & Imel, 2015). Having a measure of alliance within our scale structure will allow us to make use of this construct as we move forward, including in the discussion below of the higher order factors.

Finally, the second-order factor analysis results suggest that analytic process may be conceptualized as articulated on two distinct but interacting dimensions: On one hand, we have the therapeutic couple engaged in a process of regulation and understanding of what happens in their relationship, and on the other hand how the quality of their interaction affects and is affected by the patient reflecting on what happens in their life outside the therapeutic room. One way of thinking about the implications of this factor structure is that the analyst and the analysand appear to be engaged in highly related but essentially parallel play. The analyst's primary focus is the transference: what is happening in

the room between the patient and him or herself. Meanwhile, the patient is working very hard to understand the issues and difficulties that he or she is confronting in his or her life. The second-order factor analysis suggests that, when the state of affairs described in the paragraph above is the case, namely that there is high interaction quality, this also indicates that the patient is functioning at optimal levels.

In order to arrive at this conclusion, it may be helpful to refer to Figure 1. Patient Dynamic Competence—our process-based outcome variable—is most highly correlated with Interaction Quality (.80). This result seems to be in line with what we know from research in psychotherapy in general: the therapeutic relationship is the most relevant therapeutic factor in affecting outcome (Wampold & Imel, 2015). The patient communicating about his or her world and therapist relational competence are also correlated with patient dynamic competence (.54 and .45, respectively). That is to say that patient's highest functioning as a patient occurs when the quality of the interaction with the therapist is high, but also when he or she is focused on and talking about his or her world and, meanwhile, the therapist is tuned into him or her and what is occurring between the two of them. At the same time, however, therapist dynamic competence is highest when therapist relational competence is high (correlation of .74), and both are related to interaction quality (.59 and .66, respectively) which, in turn, is related to patient dynamic competence (.45, as stated previously). That seems to be the central core of the correlations—as suggested in a previous paper (Waldron et al., 2013), most of the times classical and relational elements in psychoanalysis go hand-in-hand. Patient communicates about the analysis seem to be less central to what is going on; indeed, there is no significant direct link between patient communicates about the analysis and patient's dynamic competence.

So, with that as background, we can move to interpret the higher-order factors. The first higher-order factor seems to reflect what is going on inside the analysis. We can call it the *therapeutic factor* for a moment. It is a primary focus for the psychoanalytic clinician. The second factor might be labeled as the *patient's*

experience factor as it seems to reflect what the patient is most focused on, tracking and working on. These two factors are so highly correlated that we might consider them as two parallel processes—the one supporting the other. The activity of the therapist, which is crucial to the treatment and undergirds it, is primarily felt by the patient through the portal of the quality of the relationship. When that quality is high, the patient is able to focus on his or her lived experience in analytically fruitful and productive ways, and vice versa. The analyst, not surprisingly, tracks how this is related to the transference, and interprets it. That provides the patient with an experience within the therapeutic setting that is related with the issues outside that the patient is struggling with, providing confirmation as well that he or she and the analyst are on the same page—that the two of them are working well together. The patient then can continue to explore what is important to him or her—to manage his or her current external and internal world, a world that parallels but is not encompassed by the lived relationship with the analyst. Meanwhile, the analyst, whose only experience of the patient's world occurs through the relationship with the patient, focuses on that relationship particularly, although he may also contribute directly to the patient's finding new pathways for changing characteristic behaviors in the rest of his or her life.

To think about this a bit more concretely; the analysand is forever in a position of looking for “fodder” for the psychoanalytic work. And the fodder comes from such sources as the things that are happening in the patient's day-to-day world. The interpretation of that material—tying it into the ongoing relationship with the analysand and linking it to developmental moments—may be, from this perspective, at least as important for maintaining the sense of the relationship with the analyst, which serves as a springboard for thinking analytically, as for any mutative power of the interpretation, per se. As in all good teaching, it is more important what is going on in the mind of the student, in this case the analysand, than what is going on in the mind of the analyst. The analyst's focus on the relational aspects of their interaction may facilitate the patients' thinking more clearly about experiences in their lives, the current day-to-day “stuff” of their lives that which is of most importance to her or him. Of course, they are also putting this into a larger context, but this may not be the central conscious (and rateable) focus of the analysand.

This study, which is a rigorous evaluation of the processes and outcomes of psychoanalyses based on the largest known sample of audio recorded and transcribed sessions, is based on a limited sample of analyses (only 27) and involves an even more limited sample of analysts (only 7). To overcome the limitation of sample size and to refine our research on the basis of the results of this study, we will be very happy to correspond with psychoanalysts about how to produce additional audio recordings and transcripts of psychoanalytic treatments, as well as other variants of psychodynamic therapies with which the psychoanalyses may be contrasted. We believe a great deal more could be discovered with a much larger sample size.

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