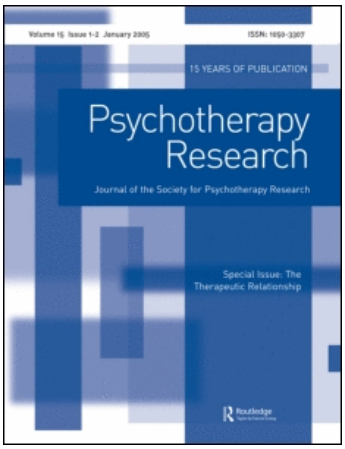

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The Adjective Check List as an outcome measure: Assessment of personality change in psychotherapy

Zohar Itzhar-Nabarro [a]; George Silberschatz [b]; John T. Curtis [b]
[a] San Francisco Psychotherapy Research Group, San Francisco [b] Department of Psychiatry, University of California, San Francisco, California, USA

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The Adjective Check List as an outcome measure: Assessment of personality change in psychotherapy

ZOHAR ITZHAR-NABARRO[1], GEORGE SILBERSCHATZ[2], & JOHN T. CURTIS[2]

[1]*San Francisco Psychotherapy Research Group, San Francisco &* [2]*Department of Psychiatry, University of California, San Francisco, California, USA*

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Abstract
To investigate the value of the Adjective Check List (ACL) as a psychotherapy outcome measure, the ACL and Symptom Checklist-90-Revised (SCL-90-R) were administered at four times (before therapy, immediately after therapy, and at 6-month and 1-year follow-ups) to 38 patients in brief dynamic psychotherapy. High correlations between selected ACL scales and SCL-90-R Global Severity Index scores (GSI) were found. GSI change from before to after therapy correlated with change on the ACL scales. Changes from before to after therapy were detected for ACL scales at both the mean group and the individual levels. Because the ACL provides valuable information on personality dimensions as well as concurrent levels of distress, it is a particularly promising psychotherapy outcome measure.

Keywords: outcome research; psychoanalytic/psychodynamic therapy; personality change; adjective check list

Psychotherapy outcome studies have traditionally looked at changes in symptom severity or level of functioning to measure improvement. Although personality and structural change have been implicit or explicit targets of many therapeutic interventions, there has been little research assessing change in personality variables following psychotherapy. Psychotherapy research would be advanced if we were able to answer questions about the nature and extent of personality change in psychotherapy, the specific parts of personality that can potentially be altered, and the amount of therapy required for noticeable change to occur. The evaluation of changes in personality variables can help confirm or reject theoretical hypotheses about structural changes in psychotherapy and may identify changes that occur in psychotherapy that have gone unnoticed (Mayer, 2004).

Measuring such changes requires a tool that assesses various personality structures, is sensitive to change, and can be included in a psychotherapy outcome research battery with minimal burden on participants or on interpretation resources. In this article, we examine the potential of the Adjective Check List (ACL) to serve as such an outcome measure.

The ACL (Gough & Heilbrun, 1983) is a well-researched, easy-to-use personality test. It covers a wide range of personality structures and is capable of detecting change over time in specific areas of personality. For instance, Helson and Wink (1992) used the ACL to assess personality changes that women undergo between their early 40s and early 50s. They found that women's scores increased on scales the authors referred to as having positive implications (Dominance, Self-Confidence, Number of Favorable Adjectives Checked, and the Ideal Self scales) and decreased on scales with negative implications (Succorance and Abasement). These changes coincided with improvement observed in the California Psychological Inventory (CPI), specifically on the scales of Responsibility, Self-Control, Femininity, and Good Impression. Those CPI scales assess one's ability to maintain positive relations with others, levels of dependence and vulnerability, and ability to apply sophisticated and flexible coping strategies. The changes observed in this study on the ACL and the CPI converged to depict a picture of greater comfort with the self, improved adjustment, and improved social functioning as women age (Helson & Wink, 1992). A second longitudinal study evaluated patterns of change from the early parental

Correspondence concerning this article should be addressed to George Silberschatz, Department of Psychiatry, University of California, San Francisco, 3368 Sacramento Street, San Francisco, CA 94118-1912, USA. E-mail: George.Silberschatz@ucsf.edu

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to the postparental life stages in each partner among married couples (Wink & Helson, 1993). Two ACL scales, Succorance and Self-Confidence (as well as several trait clusters that were generated from the ACL items), demonstrated significant gender differences in patterns of change in these personality dimensions (Wink & Helson, 1993).

Mendelsohn, Dakof, and Skaff (1995) used the ACL to measure personality change associated with Parkinson's disease. In this study, individuals with Parkinson's disease and their spouses each completed two forms of the ACL to reflect the ill spouse's personality at present (with Parkinson's) and retrospectively (before the onset of Parkinson's). A control group of community volunteers was used to distinguish changes that were specific to Parkinson's disease from normative developmental changes associated with aging. Worsening of psychological functioning as a result of the disease was detected by the ACL: scores on scales with positive connotations like Personal Adjustment and Communality decreased in Parkinson's disease patients but not in the control group.

Only one study that we are aware of used a subsection of the ACL, the Transactional Analysis scales, as a psychotherapy outcome measure (Emerson, Bertoch, & Checketts, 1994). In this study, the transactional analysis scales measured by the ACL—Critical Parent, Nurturing Parent, Adult, Free Child, and Adaptive Child—correlated significantly with the Global Severity Index of the Brief Symptom Inventory (BSI; Derogatis & Spencer, 1982). Moreover, when participants who applied for psychotherapy ($n = 65$) were compared with a no-therapy control group ($n = 95$), differences were found between the groups on all but the Adult Ego State scale, confirming that the participants seeking therapy were experiencing greater psychological distress. As hypothesized by the authors, participants who underwent brief psychotherapy improved on all but the Free Child scale (Emerson et al., 1994).

Overall, these investigations provide support for the ACL's sensitivity to change over time. However, with the exception of one study, there was no clear focus on changes that occur in psychotherapy. Furthermore, because those studies were not designed with the intention of evaluating the ACL as an outcome measure, the reports do not provide the necessary information to generate conclusions about the ACL's usefulness as such.

The purpose of the present study was to investigate whether this widely used (Gough, 2000), simple personality measure is sensitive to the changes that occur in psychotherapy. To evaluate sensitivity, we applied the concepts of External and Internal Responsiveness (Husted, Cook, Farewell, & Gladman, 2000). External responsiveness refers to the degree to which a change detected by a measurement tool correlates with change measured on a verified reference measurement. Internal responsiveness is the ability of a measure to change over time and identify changes known to occur. For our purpose, demonstrating significant change from pre- to posttherapy reflects internal responsiveness.

Two main hypotheses were tested. Hypothesis I stated that the ACL will correlate with a common psychotherapy outcome measure, the Symptom Checklist-90-Revised (SCL-90-R; Derogatis & Cleary, 1977). We compared patients' scores on 13 ACL scales with scores on the SCL-90-R Global Severity Index (GSI). The scales are listed and described in Table I. We anticipated that ACL scales judged to reflect positive self-appraisals would correlate negatively with the SCL-90-R GSI. These scales are identified in Table I as "Increase" and include Number of Favorable Adjectives Checked, Self-Confidence, Personal Adjustment, Ideal Self, Creative Personality, Nurturing Parent, Adult, and Free Child. Further, we expected that scales with negative implications would correlate positively with the GSI at each of the measurement times. These scales are identified in Table I as "Decrease" and include the scales of Succorance, Abasement, Critical Parent, and Adaptive Child. We did not have a prediction regarding the nature of the correlation between the GSI and the Self-Control scale, a scale we identified as having a curvilinear relationship with adjustment (i.e., ranged from positive to negative self-appraisals).

Our Hypothesis II covered sensitivity to change, specifically external responsiveness (Hypothesis IIa; Husted et al., 2000) and internal responsiveness (Hypothesis IIb; Husted et al., 2000). Hypothesis IIa stated that a change in scores (Δ) from before to immediately after therapy of the selected ACL scales will correlate with change in scores on the SCL-90-R GSI. We anticipated that change scores of ACL scales judged to reflect positive self-appraisals would correlate negatively with the change scores on the GSI, whereas change scores of scales with negative implications would correlate positively with the GSI change scores. To test Hypothesis IIb, ACL profiles completed before a brief (16–20 sessions) psychodynamic psychotherapy were compared with patient profiles at the end of the therapy and at follow-up evaluations. As indicated previously, specific hypotheses regarding the direction of change to reflect improvement are presented in Table I, where each scale is identified as "Increase," "Decrease," or "Curvilinear."

Table I. The ACL: Description of Scales, Expected Direction of Improvement, Correlation of Sample Pre- and Posttherapy Scores, and Sample Means at Pretherapy

ACL scale	Description		Expected direction of improvement	Pre/posttherapy ACL *r*	Pretherapy mean (*SD*)	
	High score	Low score			Males ($n=8$)	Females ($n=14$)
No. favorable adjectives checked	Well adjusted, resilient, sociable; protective of others	Discouraged, self-denying, anxious; or skeptical, defiant, critical	Increase	.83**	33.5 (15.02)	40.85 (21.79)
Succorance	Feel incompetent, dependant, cope by retreating to fantasy	Independent, self confident, able to set and attain goals	Decrease	.43	0.62 (4.10)	−1.42 (3.10)
Abasement	Sensitive to criticism, readily feel guilty, avoid conflict	Self-confident, healthy sense of entitlement	Decrease	.84**	9.00 (6.59)	2.85 (6.60)
Self-Control	Diligent, dependable, responsible	Spontaneous, humorous, cannot delay gratification	Curvilinear	.64**	−6.50 (2.44)	−5.43 (3.80)
Self-Confidence	Confident, assertive, social presence, enterprising	Shy, inhibited; difficulty to take action or utilize resources	Increase	.83**	2.12 (5.11)	6.71 (8.09)
Personal Adjustment	Positive attitude, self-confident, enjoy social interactions	Moody, anxious, and avoid close relationships	Increase	.76**	3.37 (3.54)	4.86 (7.50)
Ideal Self	Correspondence between self– ideal self; viewed as grandiose	Defeated by life; Viewed as kind and modest	Increase	.79**	−3.12 (6.22)	0.93 (8.44)
Creative Personality	Enterprising, imaginative, curious	Subdued, conservative, less expressive	Increase	.82**	0.87 (4.58)	2.93 (5.00)
Critical Parent	Easily angered, indifferent of others, self-serving	Tolerant, bring people together, reduce conflict	Decrease	.84**	8.12 (4.97)	10.21 (7.81)
Nurturing Parent	Supportive, nurturing, promoting growth in others.	Temperamental, unpredictable, lack of personal meaning	Increase	.84**	0.25 (8.33)	4.71 (8.39)
Adult	Productive, ambitious, reliable; lack spontaneity	Relaxed; difficulty in coping with adult life	Increase	.78**	1.87 (5.94)	3.86 (7.53)
Free Child	Cheerful, enterprising, spontaneous, aggressive	Anxious, reserved, and self-denying	Increase	.89**	−4.00 (6.52)	0.14 (7.60)
Adaptive child	Difficulty letting go of subordinate childhood roles, conforming; dependent and easily disorganized by stress	Independent and effective; inconsiderate of others	Decrease	.84**	2.00 (5.55)	−3.43 (10.00)

Note. ACL = Adjective Check List.
*$p < .05$, two-tailed. **$p < .01$, two-tailed.

Method

Participants

The data for this study were collected at the Mount Zion Hospital and Medical Center, in a research project investigating the process and outcome of brief (16–20 weekly sessions) dynamic psychotherapy (Silberschatz, Curtis, Sampson, & Weiss, 1991). Participants were referred by community agencies, physicians, and therapists. Some were self-referred, having responded to advertisements announcing the availability of time-limited psychotherapy as part of a research study. Potential participants were screened by clinical evaluators to assess appropriateness for brief therapy. Each participant provided written consent to participate in the study after the study's procedure had been fully explained. Exclusion criteria included evidence of (a) psychosis, organic brain syndrome, or mental deficiency; (b) serious substance abuse; or (c) suicide or homicide potential.

The patient sample consisted of 38 adults ranging in age from 20 to 87 years ($M = 50.37$, $SD = 17.28$). There were 25 females and 13 males, most of whom were well educated (M level of education = 15.6 years). Patients identified their race/ethnicity as follows: Caucasian, $n = 36$ (94%); Asian, $n = 1$ (3%); African American, $n = 1$ (3%); 13 (34%) were married, 13 (34%) were divorced, 7 (19%) were single, and 5 (13%) were widowed. As a result of dropout, the number of participants immediately after the end of the therapy (posttherapy), 6 months after therapy ended (Follow-Up 1), and 1 year to the end of therapy (Follow-Up 2) decreased to 37, 31, and 20 respectively. Not all patients completed the two main measurement tools at each of the assessments. ACL scores were available for 22, 24, 29, and 17 patients at pretherapy, posttherapy, Follow-Up 1, and Follow-Up 2, respectively. SCL-90-R scores were available for 37, 36, 28, and 18 patients at pretherapy, posttherapy, Follow-Up 1, and Follow-Up 2, respectively.

The majority of the participants in the study (64%) reported that they had previous psychotherapy or counseling. Scores on the SCL-90-R indicated that before the beginning of therapy participants were moderately to severely symptomatic (mean GSI = 0.98, $SD = 0.49$, $n = 37$). Using the cutoff suggested by Tingey, Lambert, Burlingame, and Hansen (1996; Table II), none of the participants were asymptomatic and five (13.5%) were mildly symptomatic. At the end of the therapy, as well as at Follow-Ups I and II, the group as a whole improved, and approximately 50% of the participants were either asymptomatic or mildly symptomatic (GSI mean = 0.59, 0.71, and 0.58 for posttherapy, Follow-Up 1, and Follow-Up 2, respectively).[1]

Materials

Adjective Check List. The ACL consists of a list of 300 adjectives (e.g., *adventurous, cynical, despondent, sociable)*, and the rater is asked to check all the items that describe him- or herself. In addition to self-description ratings, the scale may be used to assess an ideal sense of self, another person, or any other target that can be meaningfully described (e.g., a city, God). The reliable and extensively validated scoring system provides scores on 37 scales (e.g., Autonomy, Personal Adjustment, Self-Confidence). Test–retest reliability of each ACL scale is reported separately for males and females in the ACL manual (Gough & Heilbrun, 1983) and tends to be moderate to high, ranging from 0.34 to 0.86 ($M = 0.67$, $Mdn = 0.69$). Extensive psychometric analyses are reported in the ACL manual (Gough & Heilbrun, 1983).

Previous research has cross-validated self-reports on the ACL scales against observations by spouses or peers (Mendelsohn et al., 1995; Piedmont, McCrae, & Costa, 1991). In addition, the validity of the ACL as a self-report measure had been established by correlating the ACL scales with other self-report personality inventories such as the Minnesota Multiphasic Personality Inventory, the Terman Concept Mastery Test, and the CPI (Gough & Heilbrun, 1983). The ACL has also been cross-validated

Table II. Distribution of the Sample's SCL-90-R GSI Severity Level at Pretherapy, Posttherapy, and Follow-Ups (Frequency and Percentage)

	Pretherapy[a]		Posttherapy[b]		Follow-Up 1[c]		Follow-Up 2[d]	
Severity level	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Asymptomatic (GSI < 0.23)	0	0%	4	11.1%	3	10.7%	3	16.7%
Mild (0.23 < GSI < 0.51)	5	13.5%	15	41.6%	12	42.9%	6	33.3%
Moderate (0.51 < GSI < 0.97)	14	37.8%	11	30.6%	7	25%	6	33.3%
Severe (GSI > 0.97)	18	48.7%	6	16.7%	6	21.4%	3	16.7%
Total	37	100%	36	100%	28	100%	18	100%

Note. SCL-90-R = Symptom Checklist-90-Revised; GSI = Global Severity Index.
[a]$M = 0.98$, $SD = 0.49$. [b]$M = 0.59$, $SD = 0.37$. [c]$M = 0.71$, $SD = 0.66$. [d]$M = 0.58$, $SD = 0.42$.

against measures of the five-factor personality model (FormyDuval, Williams, Patterson, & Fogle, 1995; Piedmont et al., 1991), which further confirmed its construct validity. In these investigations, ACL scales with loadings on each of the five factors were identified. Specifically, the factor neuroticism had the highest correlations with Adaptive Child and Succorance (positive correlations) and with Adult, Affiliation, Nurturant Parent, and Ideal Self (negative correlations). The extraversion factor had the highest correlations with Dominance, Self-Confidence, Heterosexuality, and Free Child (positive correlations). The openness to experience factor had the highest positive correlations with Creative Personality, Change, Welsh's A-2, and Free Child scales (positive correlations) and Self-Control (negative correlation). The agreeableness factor had the highest correlations with Critical Parent, Autonomy, and Aggression (negative correlations) and with Deference and Nurturance (positive correlations). Finally, the conscientiousness factor had the highest correlations with Military Leadership, Adult, Order, and Endurance (positive correlations; Piedmont et al., 1991).

Four of the ACL scales, the Modus Operandi scales, were designed to evaluate validity and stylistic differences in respondents' approach to the task. Many of the ACL scales were drawn from various theoretical perspectives (15 needs scales were based on Murray's Needs Theory, five scales were based on Berne's Transactional Analysis theory, and four were based on Welsh's theory of creativity and intelligence as basic structural dimensions of personality). Other scales were created to provide information about psychological adjustment and interpersonal style (nine topical scales) and were not derived from a specific theory (see Table I for a description of each scale). The ACL scales were constructed empirically or rationally. Scales such as Personal Adjustment and Military Leadership were empirically derived by correlating individual items with external criteria and maintaining items with high or low correlations to the criteria. Other scales, such as the 15 needs scales, were developed based on conceptual understanding of the scale and having judges rate the adjectives that reflected the presence or absence of a disposition. An item was then included based on judges' agreement (Gough & Heilbrun, 1983).

Although some of the score values on the ACL can be confidently interpreted to represent better psychosocial adjustment and social functioning, other scale scores present a curvilinear relationship and can be interpreted bidirectionally. On those curvilinear scales, an extreme score in either direction suggests impaired adjustment, and the variation of scores in the middle range is not indicative of better or worse functioning but rather provides information on the character of the individual. For example, an increase in the Personal Adjustment scale clearly demonstrates clinical improvement. However, an increase or a decrease in the Self-Control scale does not necessarily reflect improvement: Low scorers tend to be impulsive and have difficulty with authority, whereas high scorers are diligent and dependable but at the cost of being inhibited, lacking in spontaneity, and neglecting their own needs.

For this study we selected 13 of the 37 ACL scales. The selection of scales was determined by three factors: (a) judges' agreement on their importance in psychotherapy research (scales that were identified by at least two of the three judges were included); (b) high loading on one or more of the factors of the Five-Factor Model of Personality, in order to allow comparison of the results with this construct (Piedmont et al., 1991); and (c) ACL scales that had been used in previous studies to assess changes in personality over time (e.g., Emerson et al., 1994; Helson & Wink, 1992; Mendelsohn et al., 1995; Wink & Helson, 1993). Each of the 13 ACL scales and their predicted direction of change to reflect clinical improvement are listed in Table I.

As indicated previously, patients completed the ACL at the first assessment (pretherapy), at the end of therapy (posttherapy), and then 6 months (Follow-Up 1) and 1 year after therapy ended (Follow-Up 2). At each, they were asked to describe their current view of self. Participants' scores were calculated by creating a computerized scoring key, based on the information provided in the ACL manual (Gough & Heilbrun, 1983). Raw scores only were used in this investigation.

SCL-90-R (Derogatis & Cleary, 1977). This self-report inventory is widely used in psychotherapy outcome research. It was designed to measure psychological as well as somatic symptoms. The SCL-90-R consists of 90 items, each measured on a 5-point Likert scale of distress ranging from *not at all* (0) to *extremely* (4). The GSI is the average score of the 90 items, each rated on a scale ranging from 0 to 4. It is reported to be a good general indicator of the current degree of distress (Derogatis & Cleary, 1977).

Procedure

Participants who met the inclusion criteria were referred to a therapist on a random basis. As indicated previously, test batteries were completed by the participant and the independent clinical evaluator before therapy (pretherapy) and immediately after the end of the therapy (posttherapy) and

at 6-month (Follow-Up 1) and 1-year follow-up (Follow-Up 2) points. Therapists completed test batteries after the first and last sessions. In addition to an extensive intake interview and subjective outcome measures, the test batteries included the ACL and the SCL-90-R.

Treatment was provided by 16 different therapists (14 men and two women) who saw between one and four patients (one therapist treated four patients, eight treated three patients each, three treated two patients, and four treated only one patient). All the therapists were experienced (at least 3 years of private practice experience) psychologists and psychiatrists with a psychodynamic orientation, though of varying psychodynamic schools, who had received specialized training in and were regarded as experts at brief psychodynamic therapy. They were unaware of the hypotheses of the study and received no information about the patients other than the fact that they had been screened and found appropriate for brief psychotherapy. To control for a given therapist's effect on outcome, we examined the association between therapist and change in scores on the SCL-90-R GSI from pre- to posttherapy, from pretherapy to Follow-Up 1, and from pretherapy to Follow-Up 2. The analysis of variance (ANOVA) procedure that was used yielded nonsignificant effects, $F(14, 21) = 0.7$, $p = .75$, $F(12, 15) = 1.7$, $p = .16$, and $F(11, 5) = 1.96$, $p = .24$, suggesting that the change in symptoms is not related to the identity of the therapist. However, this finding should be interpreted with caution given the low power of the ANOVA test and the relatively high F values of the latter two ANOVAs. To further explore this issue, a similar analysis using reliable change index (RCI) scores (see later discussion) was conducted to test a given therapist's effect on change in the ACL scores. Of the 13 scales, change in scores was related to the identity of the therapists only for the Personal Adjustment Scale, $F(13, 7) = 4.42$, $p < .05$.

Results

Hypothesis I

Correlations between the selected ACL scales and the Global Severity Index (GSI) of the SCL-90-R are presented in Table III. This correlation matrix provides an assessment of concurrent convergence validity between the ACL and the SCL-90-R GSI as well as predictive validity of ACL scales to future level of symptoms rated on the SCL-90-R: The first row in each 4×4 cell demonstrates the correlation between the ACL before the beginning of the therapy with the GSI at later points in time. There was no evidence that pretherapy ACL predicted GSI scores after psychotherapy.[2] We examined the convergent validity between the ACL and the SCL-90-R by evaluating the correlations between scores generated at concurrent times. These results are found in the diagonal of each 4×4 cell (indicated in boldface; e.g., the correlation between the Succorance scale pretherapy with the GSI pretherapy, Succorance scale posttherapy with GSI at posttherapy). Only 36.5% of those correlations were significant. However, when the examination of convergence validity was limited to scores at Follow-Up 1, which had the largest sample (26 participants vs. 21, 22, and 15 at pretherapy, posttherapy, and Follow-Up 2, respectively), 11 of the 13 ACL scales (84.6%) correlated significantly with the GSI, all in the expected direction. For instance, the scales with the highest positive correlations ($r > .6$) were Abasement (high scorers tend to be avoidant and worried, whereas low scorers are assertive and self-confident) and Succorance (high scorers are unable to cope with stress or crisis, whereas low scorers are independent and generally effective). Scales with the highest negative correlations ($r < -.6$) were Personal Adjustment (low scorers are anxious, moody, defensive, and preoccupied) and Creative Personality (high scorers are adventurous and quick witted and show a wide range of interests). One of the two scales that did not correlate with the GSI was the Self-Control scale, a curvilinear scale and, as such, one we did not expect would show a linear relationship with the GSI.

Hypothesis II

Hypothesis IIa: External responsiveness (Husted et al., 2000). Correlations between changes (Δ) from pre- to posttherapy GSI and pre- to posttherapy ACL scales are presented in Table IV. These correlations between change scores are generally in the predicted direction and show that symptomatic improvement (reflected in the SCL-90-R GSI) tended to correlate with improvement in the ACL scales. The highest of these correlations included the ACL scales of Personal Adjustment, Ideal Self (high scorers tend to feel effective in life whereas low scorers feel defeated), Adult (high scorers are productive, self-disciplined, ambitious), and Adaptive Child (high scorers have difficulty being independent and coping with the requirements of life).

Hypothesis IIb: Internal responsiveness (Husted et al., 2000). Scores of 21 participants for whom ACL scores were available pre- and posttherapy were used to evaluate the ACL's internal sensitivity (i.e., the measure's capacity to detect change). The 21 participants who were included in this analysis did not differ from the 17 who were excluded from the

Table III. Pearson Correlation between ACL Scales and SCL-90-R GSI at Four Times

	SCL-90-R			
Variable/time of assessment	Pretherapy	Posttherapy	Follow-Up 1	Follow-Up 2
N (Sample Size)				
Pretherapy	21	20	14	8
Posttherapy	23	22	16	8
Follow-Up 1	28	28	26	16
Follow-Up 2	16	16	15	15
No. Favorable Adjectives Checked				
Pretherapy	**−.43**	−.23	−.39	−.25
Posttherapy	−.05	**−.22**	.18	−.45
Follow-Up 1	−.43*	−.47*	**−.54****	−.15
Follow-Up 2	−.40	−.12	−.01	**−.27**
Succorance				
Pretherapy	**.05**	−.18	.18	.27
Posttherapy	.27	**.31**	.33	.59
Follow-Up 1	.51**	.37*	**.63****	.56*
Follow-Up 2	.25	−.14	.07	**.33**
Abasement				
Pretherapy	**.10**	−.16	.20	.74*
Posttherapy	.15	**.16**	.29	.70
Follow-Up 1	.50**	.41*	**.68****	.70**
Follow-Up 2	.25	.13	.32	**.66****
Self-Control				
Pretherapy	**.02**	.00	.12	−.26
Posttherapy	.13	**.09**	−.02	−.10
Follow-Up 1	.12	.14	**.17**	.14
Follow-Up 2	.30	.54*	.10	**.07**
Self-Confidence				
Pretherapy	**−.32**	−.02	−.17	−.25
Posttherapy	−.22	**−.13**	−.18	−.44
Follow-Up 1	−.44*	−.35	**−.60****	−.28
Follow-Up 2	−.51*	−.16	−.19	**−.39**
Personal Adjustment				
Pretherapy	**−.50***	−.18	−.24	−.28
Posttherapy	−.19	**−.47***	−.05	−.56
Follow-Up 1	−.53**	−.38*	**−.68****	−.12
Follow-Up 2	−.24	.09	.14	**−.04**
Ideal Self				
Pretherapy	**−.37**	−.24	−.27	−.17
Posttherapy	−.17	**−.39**	−.26	−.59
Follow-Up 1	−.52**	−.36	**−.54****	−.40
Follow-Up 2	−.46	−.05	−.18	**−.57***
Creative Personality				
Pretherapy	**−.28**	−.14	−.12	−.13
Posttherapy	−.19	**−.22**	−.17	−.34
Follow-Up 1	−.52**	−.46*	**−.62****	−.30
Follow-Up 2	−.13	−.31	−.42	**−.14**
Critical Parent				
Pretherapy	**.18**	.19	−.24	−.34
Posttherapy	.09	**.30**	.15	−.07
Follow-Up 1	.25	.07	**.19**	−.31
Follow-Up 2	.13	−.07	.04	**.08**
Nurturing Parent				
Pretherapy	**−.45***	−.29	−.31	−.27
Posttherapy	−.23	**−.42**	−.22	−.71*
Follow-Up 1	−.43*	−.32	**−.47***	−.22
Follow-Up 2	−.33	.10	.07	**−.20**

Table III (*Continued*)

Variable/time of assessment	SCL-90-R			
	Pretherapy	Posttherapy	Follow-Up 1	Follow-Up 2
Adult				
Pretherapy	**−.46***	−.18	−.32	−.38
Posttherapy	−.22	**−.30**	−.34	−.78*
Follow-Up 1	−.49**	−.37	**−.57****	−.37
Follow-Up 2	−.52*	−.19	−.33	**−.64***
Free Child				
Pretherapy	**−.33**	−.21	−.21	−.11
Posttherapy	−.31	**−.29**	−.13	−.10
Follow-Up 1	−.53**	−.34	**−.52****	−.14
Follow-Up 2	−.14	−.18	−.38	**−.41**
Adaptive Child				
Pretherapy	**.35**	.05	.21	.44
Posttherapy	.18	**.36**	.28	.71
Follow-Up 1	.27	.34	**.45***	.41
Follow-Up 2	.32	−.10	.17	**.54***

Note. Convergent validity between the ACL and the SCL-90-R was determined by evaluating the correlations between scores generated at concurrent times. These results are found in the diagonal of each 4 × 4 cell (indicated in boldface). ACL = Adjective Check List; SCL-90-R = Symptom Checklist-90-Revised; GSI = Global Severity Index.
*$p < .05$, two-tailed. **$p < .01$, two-tailed.

analysis in the duration of their presenting complaints or their level of symptoms before or at the end of the therapy. In addition, the groups of included and excluded participants were similar in their gender distribution.

Two dimensions of change were assessed: mean level change and individual level change. Mean level change is the increase or decrease of an aggregated group score of a certain personality trait over time. Individual level change identifies individuals who have demonstrated change on the personality traits. Examination of the individual level change is complementary to the mean level change evaluation, and neglecting to evaluate either one of those might lead to misinterpretation of the data.

Mean level change was tested with a paired-sample *t* test. The group of participants as a whole demonstrated significant change in scores on 11 of

Table IV. Pre- and Posttherapy Scores of ACL: Correlation between ACL and SCL-90-R Change Scores (Δ) and Evaluation of Mean Level Change (*t* Test), Effect Size (Cohen's *d*), and Clinically Significant Change at the Individual Level (RCI and Cutoff)

ACL scale	*r* Δ score ($n = 19$)[a]	Difference[b]		*t*(20)[d]	Cohen's *d*	RCI			Clinical significance[c]
		M	*SD*			Decrease <1.28	No change	Increase >1.28	
No. favorable adjectives checked	−.48*	5.00	10.470	2.19*	0.98	0%	86%	14%	10%↑
Succorance	.06	3.38	4.200	3.66**	1.64	0%	62%	38%	0%↓
Abasement	.43	−2.09	3.950	−2.43*	1.09	14%	81%	5%	10%↓
Self-Control	−.11	6.71	3.690	8.34**	3.73	0%	14%	86%	
Self-Confidence	−.41	2.24	4.480	2.29*	1.02	0%	76%	24%	24%↑
Personal Adjustment	−.61**	2.57	4.140	2.84**	1.27	0%	76%	24%	19%↑
Ideal Self	−.59**	3.76	4.950	3.48**	1.56	0%	67%	33%	24%↑
Creative Personality	−.31	0.90	2.860	1.45	0.65	0%	90%	10%	5%↑
Critical Parent	.20	−1.43	3.920	−1.67	1.75	14%	81%	5%	14%↓
Nurturing Parent	−.54*	2.43	4.720	2.36*	1.06	0%	81%	19%	10%↑
Adult	−.61**	2.86	4.672	2.80*	1.25	5%	81%	14%	14%↑
Free Child	.02	2.86	3.480	3.76**	1.68	0%	76%	24%	19%↑
Adaptive child	.80**	−3.67	4.900	−3.43**	1.53	29%	71%	0%	10%↓

Note. ACL = Adjective Check List; SCL-90-R = Symptom Checklist-90-Revised; RCI = Reliable Change Index.
[a]Correlation between change in ACL scores (Δ) from pre- to posttherapy and change (Δ) in SCL-90-R from pre- to posttherapy. [b]Pre to posttherapy. [c]Meet criteria for RCI plus cutoff; [d]A negative *t* score indicates that the sample's mean is lower than the population mean and vice versa.
*$p < .05$, two-tailed. **$p < .01$, two-tailed.

13 ACL scales following their therapy (see *t* test in Table IV).

Clinical significance of change at the individual level was assessed using a combination of the RCI and a cutoff value (Jacobson, Roberts, Berns, & McGlinchey, 1999; Jacobson & Truax, 1991). The RCI indicates that the magnitude of change goes beyond what could be attributed to chance or measurement error, so the change is statistically reliable. The RCI was computed using the following formula: $\text{RCI} = X_2 - X_1 / S_{\text{diff}}$ (Jacobson et al., 1999; Jacobson & Truax, 1991): X_1 represents the individual score pretherapy, and X_2 represents the score of the individual posttherapy. S_{diff} is the standard error of difference between the two tests scores. It is computed as $S_{\text{diff}} = \sqrt{2(S_e)^2}$, where $S_e = \text{S}_1\sqrt{1 - r_{xx}}$. In the latter, S_1 equals the standard deviation reported for males or females in the ACL manual for each scale. r_{xx} is the test–retest reliability reported for males and females in the ACL manual for each of the scales (Gough & Heilbrun, 1983).

The cutoff value is a criterion indicating whether an individual is more similar to a well-functioning group than to a dysfunctional group. The cutoff value for each scale was computed using the formula for cutoff point *C*: $C = M_0 + M_1/2$, where M_0 is the mean of the population as reported in the ACL manual and M_1 is the mean of the sample. Patient status against the cutoff value was calculated on those scales where the expected directionality of improvement was clear. A change in scores was determined to be clinically significant when the change was statistically reliable and the score was beyond the cutoff in the direction predetermined to be an improvement.

Clinically significant change in the expected direction of improvement was observed on most of the scales (see RCI and clinical significance in Table IV). The vast majority of patients who demonstrated a reliable change changed in one direction. For example, on the Self-Confidence scale, 24% of the sample population had a clinically significant increase in their score, an increase consistent with the hypothesized direction of change. However, not all scales changed in the hypothesized direction. On the Succorance scale, where a decrease in score was expected, the score of 38% ($n = 8$) of the sample increased at posttherapy while none demonstrated a decrease in scores. Thus, in the case of this scale, although many patients changed at the individual level, none of them was considered clinically significant because it was not in the expected direction. On the Self-Control scale, 86% ($n = 18$) of the sample had a reliable increase in score. However, we did not make any specific hypotheses about the direction of change on this particular scale, and thus the clinical significance could not be evaluated. Three scales on which patients changed in more than one direction were Abasement, Critical Parent, and Adult. On each of these scales, 14% ($n = 3$) of the sample changed in the expected direction to reflect improvement and 5% ($n = 1$) of the sample changed in the opposite direction.

Effect size of the change in scores on the ACL from pre- to posttherapy (see Table IV) ranged from 0.65 to 3.73. One scale demonstrated a medium effect size and 12 scales (representing 92% of the scales) a large effect size.

Discussion

In designing this study, we wanted to assess whether the ACL (Gough & Heilbrun, 1983) is a useful measure in psychotherapy outcome research. To address this, we explored how the ACL related to another common outcome measure and whether it was sensitive to changes that occur in psychotherapy. Our findings suggest that the ACL reliably assesses changes that occur from pre- to posttherapy. These results provide preliminary evidence for this tool's internal responsiveness, which is established when a measure changes in the expected direction following treatment known to be effective (Husted et al., 2000). The ACL's external responsiveness (Husted et al., 2000) is supported by evidence that change scores from pre- to posttherapy in SCL-90-R GSI scores correlated with change scores on many of the selected ACL scales. Change scores of scales that did not correlate with GSI change suggest that these ACL scales detect changes that are unaccounted for by the GSI. In other words, they reflect change in personality that is not manifested in a general measure of symptomatic improvement. This conclusion should be qualified by the possibility that scales that are less loaded on measures of general distress may be more prone to chance occurrences or error (Beutler & Hamblin, 1986). The scales with the lowest correlation of change scores were the Free Child ($r = .02$), Succorance ($r = .06$), and Self-Control ($r = .11$). The latter two are discussed further later.

The high correlations between many of the selected ACL scales and the GSI are impressive given the very different rating methods of these two scales. In completing the SCL-90-R, respondents rate the degree to which a certain symptom is distressing, whereas with the ACL they select salient adjectives that they perceive as self-descriptive (Teeter, 1985). Because the ACL provides valuable information on personality dimensions as well as concurrent levels of distress, it is a particularly promising psychotherapy outcome measure.

Mayer (2004) suggested that personality evaluations could highlight benefits and changes that occur as a result of therapy, changes that general adjustment and symptom measures cannot adequately detect. The ACL can thus be used as a tool in psychotherapy research to explore the effects of treatment on specific personality traits. It can also be used by clinicians to facilitate discussion about personality change in therapy (Mayer, 2004). For example, when setting goals for therapy, the ACL profile can be reviewed collaboratively by the therapist and the patient to identify specific personality traits they would like to target for change. Later, regular ACL administrations can provide feedback about the progress in therapy. In working with patients, the ACL is appealing because most of its scales are described in nonpathologizing language, which does not require familiarity with professional terminology.

The results of this study are comparable to those of other studies that have evaluated changes on the ACL. Similar to the findings by Emerson et al. (1994), the Transactional Analysis Scales, with the exception of the Critical Parent scale, correlated with a symptom severity measure. In addition, in both our sample and that of Emerson et al., a significant change was detected in the predicted direction from pre- to posttherapy on most of the Transactional Analysis Scales. In the current study, as in the other studies that examined change in ACL scores, change occurred in the expected direction (Helson & Wink, 1992; Mendelsohn et al., 1995; Wink & Helson, 1993). One exception to this is the increase in Succorance observed in this investigation. High scorers on Succorance are prone to feel incompetent and solicit other people's support. They cope by retreating to personal fantasy and daydreams. Low scorers are independent, mostly free of self-doubt, and able to set and attain their goals. In other research that used the ACL, changes in Succorance were in a more predictable direction. For instance, in a longitudinal study evaluating personality changes in women from their early 40s to early 50s (Helson & Wink, 1992), those who demonstrated improved psychological functioning tended to show decreased Succorance (Helson & Wink, 1992). In a study with older adults who experienced deteriorating psychological functioning (Mendelsohn et al., 1995), an increase in Succorance was reported. One possible explanation for the increase in Succorance following psychotherapy is that the therapy relationship temporarily evoked feelings of dependency and increased participants' reliance on others for support and guidance.

The patterns of change of the Self-Control scale seem to be particularly important to examine. This scale appears to have a curvilinear relationship with adjustment, because an increase in the Self-Control scale does not necessarily reflect improvement; that is, individuals who score high on Self-Control are described as diligent, dependable, and responsible but less spontaneous. We also found that scores on this scale did not correlate with the GSI scores, nor did the Self-Control change scores correlate with GSI change scores. Finally, an examination of this scale in a study of developmental changes in older adults with and without Parkinson's disease revealed that this was one of the few scales in which no change was reported with aging or with the deterioration of the disease (Mendelsohn et al., 1995). Combining all these findings, we did not predict a clear direction of change on this scale following therapy. Nonetheless, there was a clear increase in scores from pre- to posttherapy: The group as a whole had an increase, indicated by a t score of 8.34, which is the largest mean difference from pre- to posttherapy scores of all scales. Furthermore, we found that 86% of the patients had a statistically reliable increase in scores, and 76% met the combined criteria for a clinically significant increase in scores (because this scale was hypothesized to have a curvilinear relationship, we only applied the cutoff criterion post hoc). Further examination revealed that the overall mean score of research participants before the beginning of therapy was significantly lower than the mean of the population (6.31 and 5.10 points lower than the normative sample's mean for males and females, respectively). At the end of the therapy, there was no difference between the participants' and the normative sample's mean ($t = 1.55$, *ns,* for males; $t = 0.13$, *ns,* for females). These dynamics, in fact, demonstrate what can be expected from a scale that has a curvilinear shape, where improvement is not captured by getting to the highest or lowest score but by a shift of the patient toward greater balance. At this point, it is also important to understand what it is about this specific scale that captured so well unique characteristics of people who are seeking therapy compared with those who do not and why such dramatic changes were observed over 16-week therapy. This can be done in future research that will examine the change dynamics of the ACL compared with measures that assess a broad variety of content areas and go beyond symptom distress.

One limitation of this study is the small sample size of 38 patients (and for some of the calculations our sample was even smaller because of missing data). Another limitation is the use of relatively brief treatment to assess personality change. Dose–effect studies of psychotherapy (e.g., Huber, Henrich, & Klug, 2007) suggest that the ability to detect

structural or personality changes following a 16-week psychotherapy may be limited. It would, therefore, be useful to compare ACL changes in longer treatments with the results reported here.

As discussed, interpreting the direction of change in some ACL scales is often not straightforward. In addition, not only is it difficult to assign value to high or low scores on some of the scales, but in some cases it is not possible to generalize one direction to all patients without identifying a patient's individual profile. For one patient an improvement can be indicated by an emerging ability to demonstrate greater endurance, whereas for another more spontaneity is warranted. When used as a tool in psychotherapy, an individualized profile of the ACL for each patient will be helpful in setting goals that match the needs and the personality structure of each person.

To further our understanding of the utilization of the ACL as a tool in psychotherapy research and clinical work, we believe that future studies should include the ACL in conjunction with other measurements of personality. This will allow for further testing of the external responsiveness of the ACL (Husted et al., 2000) and comparisons of the tools' ease of use, range, and specificity of information that each scale provides. Such an exploration will also facilitate a productive discussion about the importance of measuring personality changes in psychotherapy.

The findings of this study support further exploration of the ACL as a psychotherapy outcome measure. The ACL has been shown to be a reliable and valid measure; it is easy to administer and provides data on various personality variables that may prove useful to clinicians. It also shows promise as a case-specific outcome measure in that therapists and patients could delineate particular changes they would like to achieve in therapy.

Notes

[1] Caution is warranted when interpreting the results at Follow-Up 2, because only approximately half of the original sample is represented.

[2] This does not rule out the possibility that predictive validity would have been detected with a larger sample.

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