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## Changes in rigidity and symptoms among adolescents in psychodynamic psychotherapy

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### Abstract

The present study examined changes in the rigidity of interpersonal patterns and symptoms in adolescents (ages 15–18) in a year-long psychodynamic psychotherapy. Seventy-two adolescents (30 in treatment and 42 in a non-treatment “community group”) underwent Relationship Anecdote Paradigm (RAP) interviews according to the Core Conflictual Relationship Theme method (CCRT; Luborsky & Crits-Christoph, 1998), and completed outcome measures at two time points. Results: Adolescents in the treatment group became less rigid in their interpersonal patterns and improved significantly in their symptoms, whereas no such changes were observed in the community group. Levels of rigidity were not related to initial symptom distress; however, changes in rigidity were related to improvement in symptoms within the treatment group.

**Keywords:** adolescents; outcome; process; psychodynamic psychotherapy; rigidity

### Introduction

Recent studies have demonstrated the effectiveness of psychodynamic psychotherapy for adolescents (e.g., Baruch & Fearon, 2002; Gerber, 2004; Tonge, Pullen, Hughes & Beaufoy, 2009; Trowell et al., 2007). However, few studies have examined change processes in psychodynamic therapy for this age group. Several researchers have called for theoretically meaningful, empirically based studies of the process of child and adolescent psychotherapy, and the need to link such processes to treatment outcomes (Kazdin & Nock, 2003; Kennedy & Midgley, 2007; Shirk & Russell, 1996). The present study attempts to address these calls by identifying change processes in adolescents in psychodynamic therapy and examining the relationship between these changes and treatment outcome.

In designing this study we aimed to test change processes derived from a psychodynamic theoretical model that could be operationalized and measured. One of the foci of dynamic psychotherapy is the repetitive or rigid application of maladaptive interpersonal themes in different relationships (Luborsky, 1977). Crits-Christoph and Luborsky (1998) proposed that one index of change in dynamic therapy could be the extent to which these maladaptive

themes become less pervasive or less rigid by the end of treatment. McCarthy, Connolly Gibbons and Barber (2008) emphasized the difference between rigidity across and within relationships. Across-relationship rigidity is defined as the repetition of interpersonal patterns with *different* referents, whereas within-relationship rigidity pertains to the repetition of interpersonal patterns with the *same* relationship referent. One of the major clinical hypotheses of psychodynamic theory is that individuals who demonstrate a rigid way of thinking, feeling and behaving across relationships have a poorer quality of relationships and are higher in symptomatic behavior (Benjamin, 2002; Bowlby, 1988; Malan, 1979; Wilczek, Weinryb, Barber, Gustavsson, & Asberg, 2000). In this study we looked at rigidity through the perspective of the Relational approach to psychodynamic psychotherapy (Aron, 1996; Bromberg, 1998; Mitchell, 1993). According to this approach, the distinction between rigidity across and within relationships is of lesser importance than the distinctions between relationships in which one has a wider or narrower repertoire of responses. The essence of rigidity in Relational approach is the lack of variety of interpersonal patterns that are available to the individual in one or several relationships. Within this approach

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psychopathology is viewed as narrowness in perception; namely, a tendency to truncate new experiences into rigid stereotyped patterns. Thus, one of the main goals of relational psychotherapy is to help people get to know the conscious and unconscious parts of themselves that were not previously available to them, so they can experience themselves and others more fully and have a broader range of choices in their interpersonal interactions (Mitchell, 1993; Ogden, 2005).

There are different ways of measuring rigidity in interpersonal relationships (for a review, see McCarthy et al., 2008), one of which is the Core Conflictual Relationship Theme method (CCRT; Luborsky & Crits-Christoph, 1998). The CCRT is among the best validated and most psychometrically sophisticated clinician-based methods for assessing central relationship patterns. According to Luborsky (1977), central relationship patterns have three components: a person's Wish, desire, or intention (W), a fantasized, anticipated, or actual Response from the Other (RO), and a fantasized, anticipated or actual Response of the Self (RS). Ws, ROs, and RSs are inferred from narratives (called relationship episodes, or REs), in which patients describe specific interactions with other people. Investigations to date have relied on a number of different methods to estimate rigidity using the CCRT, including amplitude, pervasiveness, dispersion and profile correlation (for a review, see McCarthy et al., 2008). Of these measures, dispersion, defined as the spread of distribution of interpersonal themes (Cierpka et al., 1998), is most appropriate for the Relational conceptualization of rigidity, since it provides an indication of the breadth or narrowness of range of interpersonal responses. A previous study that used dispersion as a measure of rigidity (Cierpka et al., 1998) used nominally scaled CCRT data. In the present study we used the current method of rating all CCRT items on a 7-point interval scale, which made it possible to calculate dispersion in a more straightforward way simply by using the variance or standard deviation (see Method section).

The CCRT is the most widely used measure of transference patterns in adult psychotherapy research literature. This measure has been modified for use with children and adolescents (Luborsky & Crits-Christoph, 1998), although as yet very few studies have used it to focus on psychotherapy processes in young people (Luborsky et al., 1998; Agin & Fodor, 1996; Tishby, Raitchick & Shefner, 2007; Waldinger et al. 2002) and none of these studies examined rigidity as a central concept in psychodynamic therapy of adolescents. The CCRT is particularly suited to studying change in adolescents due to the centrality of relationships in the

developmental processes of this age group. Various studies have confirmed the importance that adolescents attribute to intimate relationships (Savin-Williams & Berndt, 1990; Tatar, 1998) and the importance of interpersonal relations to adolescents' well-being (Corsano, Majorano, & Champretavy, 2006; Noom, Dekovic, & Meeus, 1999).

The CCRT's sensitivity to changes in relationship patterns and its psychodynamic basis make it an excellent method for examining changes in rigidity over the course of psychotherapy. Several studies have used the CCRT to measure rigidity in interpersonal patterns in adult populations (for a review, see Barber, Foltz, DeRubies & Landis, 2002). Rigidity has been shown to predict longer treatment length (Crits-Christoph, Demorest, Muenz, & Baranackle, 1994), to decrease over the course of treatment (Crits-Christoph & Luborsky, 1998), and to be related to level of symptoms in one study (Cierpka et al., 1998) but not in another (McCarthy et al., 2008). Crits-Christoph & Luborsky (1998) found an association between changes in rigidity and changes in symptoms whereas Wilczek, Weinryb, Barber, Gustavsson & Asberg, (2004) did not. McCarthy et al. (2008) suggested two explanations for these contradictory findings regarding the relations between rigidity and psychological well-being. First, they point to the different measurement techniques and the various operationalizations of the construct of rigidity. In addition they argue that the relationship between rigidity and symptoms may be curvilinear—too much or too little rigidity may lead to psychopathology.

The aim of the current study was to extend our understanding of the nature of rigidity changes in psychodynamic psychotherapy. Specifically we wanted to apply this concept to the therapy of adolescents, where it has not been studied previously. We aimed to explore whether changes in rigidity can be identified in adolescents, and, if so, the relationships between these changes and treatment outcome. We also took into account that adolescents have different relationship patterns with significant others in their lives, and that these relationships undergo considerable modifications during this developmental phase. Therefore, we looked at both rigidity in the relationships of adolescents with different significant characters in their lives (parents, peers, therapist), and general rigidity pattern across all relationships.

While most studies in the field do not differentiate between children and adolescents, the present study focused on middle adolescence (ages 15–18). Adolescents are a unique group of patients, and as such should be studied separately (Rubenstein, 1998; Shirk & Saiz, 1992). They suffer increasing conflict

and stress (Larson & Ham, 1993; Larson, Moneta, Richards & Wilson, 2002), whereas their internal resources are still underdeveloped and their need for support is high. Among some adolescents the tension subsides naturally as they grow older (Larson et al., 2002; Waldinger et al., 2002), whereas in other instances therapy is needed. Adolescents are highly ambivalent towards seeking therapy or any kind of professional help (Tishby et al., 2001). Once they enter therapy, the conflict between regressive wishes on the one hand and striving for independence on the other hand (e.g. Blos, 1967) is expressed in fluctuations between dependence on the therapist and withholding, or distancing. In the process of individuation within the family, the therapist may serve as a "transitional object" (Winnicott, 1971) who can help adolescents form new relationships and define their unique identity. Dropout rates within this age group are relatively high (Kazdin, 2004) and therapists need to work flexibly and creatively to keep adolescents in treatment (Shefler, 2000).

The present study was naturalistic and was conducted in several outpatient clinics. Patients presented with a variety of symptoms and problems rather than specific disorders. The psychodynamic treatment they received represented "treatment as usual," and not a manualized form of treatment. Thus, this study was not designed as a randomized control trial (RCT), which limits its internal validity. However, the patients and the therapy represent the clinical reality in adolescent mental health clinics, which increases external validity (Bambery, Porcerelli, & Ablon, 2007). In order to differentiate the natural processes of change from those that follow psychodynamic treatment, we compared a group of adolescents who were undergoing treatment to a group of adolescents in the community who were not referred to nor sought treatment during the research period.

Our research questions were as follows:

1. Does the level of rigidity in interpersonal patterns change over the course of psychodynamic treatment of adolescents?
  - (a) Does the change in the level of rigidity observed in the treatment group differ from changes observed in the community group?
  - (b) Does the change in rigidity differ in relation to specific significant others in the lives of adolescents in treatment compared to adolescents in the community?
2. How are changes in rigidity of interpersonal patterns related to treatment outcome?
  - (a) Are there differences in symptom change and presenting problems between adoles-

cents in psychodynamic treatment and adolescents in the community?

- (b) To what extent are changes in rigidity related to changes in symptoms and presenting problems, both within the treatment and the community group?

## Method

### Participants

Seventy-two adolescents aged 15 to 18 (mean age = 16.3,  $SD = .91$ ) participated in this study, in two groups.

**1. Adolescents in treatment.** Data for the treatment group were collected from several outpatient clinics in Jerusalem that agreed to participate in the study. At intake, adolescents and their parents were asked whether they were willing to participate in the study. Those who agreed were asked to sign consent forms. Once therapy began, therapists asked their patients whether they were willing to be contacted by the research co-ordinator. From that moment on therapists were not involved in the research in any way. Forty-two adolescents who began psychodynamic treatment in these public clinics agreed to participate in the study and completed the first interview and questionnaires. Nine adolescents dropped out of treatment shortly after they began, and three adolescents who were in treatment did not appear for the second interview for various reasons (e.g., moved to a different city). A series of *t*-tests showed no significant relationship between dropout from therapy and demographic variables, the initial results of the outcome measures, or initial rigidity level. Thirty adolescents remained in treatment and came to the second interview. The results of this study are based on the data analysis of these 30 participants. Subjects were diagnosed based on the clinical intake and their scores on the YO-Q. Diagnosis indicated that 88% presented with symptoms of emotional distress such as mild to moderate depression and anxiety, 52% of whom presented somatic distress, 44% had problems in interpersonal relationships and 44% had social problems. Exclusion criteria included adolescents who came in for crisis intervention following severe trauma; those diagnosed as psychotic or drug abusers were not included in the sample.

**Therapists and therapy.** The study began with 42 treatments conducted by 42 different therapists from three different clinics in Jerusalem. After drop-outs of patients from treatment and from the study as described above, we were left with 30 adolescents

in treatment and 30 therapists. The therapists consisted of 16 clinical psychology interns, 10 licensed clinical psychologists, and four clinical social workers ranging in experience from 2 to 15 years. Interns received weekly individual supervision. The orientation of the staff in these clinics is psychodynamic, based on a blend of Object relations, Self psychology, and Relational theories (Kohut, 1984; Mitchel, 1988; Winnicott, 1971). Treatment was not time limited by policy but usually lasted about a year and consisted of weekly 45–50-minute sessions. The therapists were not involved in the study in any way, were not familiar with the CCRT method, and were blind to the research questions.

**2. Adolescents in the community.** The no-treatment group was composed of 53 adolescents similar in age and demographic background to those who were in treatment. They were recruited from two large high schools in Jerusalem where the adolescent patients in this sample were studying. The procedure of recruiting adolescents in the schools was as follows: in both schools the school counselor arranged for the research team to go to several classes. The research coordinator described the study and asked for volunteers. The rate of volunteering for this study was very high (95%), and the research team conducted a draw in every class, choosing participants randomly. Three adolescents in this sample began treatment during the year of assessment and therefore were eliminated from the study. Eight did not appear for the second interview for various reasons (e.g., moved to a different school). Forty-two adolescents came to the second interview. The results of the community group are based on data analysis of these 42 subjects. Table I presents the demographic variables for the sample. The only significant demographic difference between the two groups was the higher divorce rates in the treatment group ( $\chi^2 = 4.95$ ;  $p < .05$ ). In subsequent analyses this variable was controlled for in order to eliminate any alternative explanation to the effect of treatment. No interaction effects were found between divorce rates and change in rigidity or outcome measures. Therefore, in order to achieve greater parsimony, we do not include divorce rates in the analysis presented below.

## Instruments

**Core Conflictual Relationship Theme method (CCRT; Luborsky & Crits-Christoph, 1998).** The Relationship Anecdote Paradigm interview (RAP; Luborsky, 1998) was used to collect narratives for the CCRT. In a RAP interview, which

Table I. Numbers, means and SDs of demographic variables for the treatment and community groups

	Adolescents in treatment (n = 30)	Adolescents in the community (n = 42)
Age		
Mean	15.9	16.2
SD	1.18	.49
Gender		
Male	9	19
Female	21	23
Family status		
Intact	21	38
Divorced	9	4
Rank in family		
Firstborn	12	13
Middle	7	11
Youngest	11	13
A twin		5
Ethnic origin		
Israeli	25	37
European	3	3
American	2	2

is approximately 45 minutes in length, the patient is asked to describe specific episodes in which she or he interacted with another person, describing what happened, what was said, how she or he reacted, and how the interaction ended. These interviews are transcribed, and the episodes from the interview are regarded as relationship episode units (REs) which are scored according to the CCRT protocol (Luborsky & Crits-Cristoph, 1998). In the present study, subjects were asked to tell three relationship episodes about each of the following people: mother, father, peers and the therapist (or another significant adult who was not a family member, for the adolescents in the community group). The interviews were conducted by therapists who were trained in the CCRT method prior to the study. All interviews were recorded and transcribed.

**Outcome measures.** The *Youth-Outcome Questionnaire Self-Report* (Y-OQ-SR; Wells, Burlingame & Rose, 1996): The Y-OQ assesses adolescents' psychological, symptomatic and social functioning. This 64-item self report questionnaire is comprised of six subscales (Intrapersonal Distress, Somatic, Interpersonal Relations, Critical Items, Social Problems, and Behavioral Dysfunction) which tap behavioral domains of children and adolescents experiencing mental health difficulties. The Y-OQ is designed for repeated measurement of clients' emotional and behavioral symptoms (Burlingame, Wells & Lambert, 1996). The 64 items are summed across the six content areas to produce a total score where higher scores indicate greater severity of symptoms. The

total Y-OQ score demonstrates high internal consistency (coefficient alpha = .95) and test-retest reliability (Burlingame, Wells, Lambert & Cox, 2004). In the current study we used the total score as a measure of severity of psychological distress. The Y-OQ total score correlates highly with other frequently used assessment instruments (Wells et al., 1996), for example, with the Child Behavior Checklist (Achenbach, 1991), ( $r=.83$ ). According to the Y-OQ manual when certain cut-off scores are reached (46 for the total score of the Y-OQ), the client is said to have reached a normal level distribution of symptoms. Additionally, this manual suggests that if a client's score "decreases by 13 points or more, they have attained a significant amount of symptom reduction" (Burlingame et al., 1996). The Y-OQ was translated into Hebrew by three clinicians. The translation and back translation were supervised by the first and last authors of this study, guided by instructions from the primary author of the Y-OQ (Lambert, personal communication).

*Target Complaints Scale* (TCS; Battle et al., 1966): On this idiographic, widely used outcome measure clients describe the three main problems that prompted them to go into therapy, listing them in descending order. The severity of each complaint is rated on a scale ranging from 1 ("not at all") to 12 ("couldn't be worse"). Clients are asked to re-rate the same problems at the end of therapy. Mintz and Kiesler (1981) reported that the TCS demonstrate test-retest reliability ( $r=.65$ ), and that ratings of patients and their therapists on this measure were correlated on different time points in therapy ( $r$  ranged from 0.61 to 0.71). In the current study adolescents in the treatment group were asked to write and rate the problems that prompted them to go into therapy while adolescents in the community group were asked to write and rate three main problems that were bothering them at the time.

## Procedure

Before initiating the study, the researchers submitted all research materials to the regional Helsinki ethics committee (for patients) and to the Ministry of Education (for the community group). Permission to proceed with the study was granted from both committees. The participants were interviewed twice: at the beginning of treatment for the treatment group or the beginning of the school year for the community group and twelve months later.

**Time 1.** A week after the beginning of treatment the initial Y-OQ and TCS were administered to the

adolescents by the research coordinator. The initial RAP interviews were conducted for the participants in the treatment group 4–5 weeks after beginning therapy. Based on findings by Barber, Luborsky, Crits-Cristoph, & Diguer (1995), at this point in time the therapeutic relationship is presumed to have begun to develop, though changes in CCRTs are not yet expected to occur. The same questionnaires and interviews were administered to adolescents in the community, in a one-session meeting, at the beginning of the school year. Although there was a 4–5-week difference between the administration of the outcome questionnaires and the RAP interviews within the treatment group while within the community group both questionnaires and interview were administered at the same session, the order of administration was the same and the interval between the first and the second completion of the outcome measures was identical for both groups. Before starting the interview participants were told that this was a study about relationships in adolescence, and that they would be interviewed again within a year. Participants from the treatment group were asked to narrate three short relationship episodes about each of the following figures: their parents, peers and the therapist. Participants from the community group were asked to tell three narratives about parents, peers and a significant adult who was not a family member. The interviewers were instructed not to interfere with the flow of the narrative, but to ask for clarifications and details if the RE was a bit brief or vague.

**Time 2.** Twelve months after the first time they completed the outcome questionnaires, participants from both groups were invited for a second meeting in which they were administered the Y-OQ, TCS and the RAP interview. All questionnaires and interviews were conducted identically to time 1.

Participants in both groups were paid 30 NIS (about \$7.00) for each interview as a token of appreciation for their time and their readiness to cooperate.

## Rating the CCRT

The RAP interviews were audiotaped, transcribed and given to one of three CCRT judges. The judges were a senior clinical psychologist, a clinical psychology graduate student, and a social work graduate student. All the judges had gone through extensive training in the CCRT rating method as described in Luborsky & Crits-Cristoph (1998). The judges were asked to read each relationship episode and rate the extent to which each of the Ws, ROs, and RSs categories were present in the episode on a scale of

1–7, according to the standard category list in Luborsky & Crits-Cristoph (1998) that has 39 Ws, 36 ROs and 42 RSs. According to Barber et al. (2002), unlike the classic CCRT method that uses dichotomous ratings of present versus absent, the continuous scores increase the reliability of the ratings and allow judges to better capture the presence of specific interpersonal themes. The judges were blind to participants' group status (treatment/community), the time of the interview and research hypotheses. To estimate interrater agreement 20% of the REs were rated by two randomly assigned judges out of the three, in a balanced incomplete block design (Fleiss, 1981). Interrater reliability was determined by calculating intraclass correlations (ICC [2 k]; Shrout & Fleiss, 1979), where "judge" is considered a random effect, and  $k$  is the number of judges ( $k = 2$  in the current study). Thus, the ICC estimates in the current study refer to the reliability of the aggregated score from two judges' ratings. The average ICC [2,2] was .90 for Ws, .90 for ROs and .87 for the RSs.

### Rigidity as a Measure of Relationship Quality

Rigidity was calculated as follows: (1) General rigidity was measured by calculating standard deviation (SD) scores for each CCRT component (W, RO, RS) across all 12 narratives (three narratives for each character—mother, father, friend and therapist) at each time point, which yielded six rigidity scores for each participant. (2) Relationship-specific rigidity was calculated in a similar way, but based only on the three narratives told about a specific character. High SD scores represent a wide variety of wishes

and responses, which according to psychoanalytic theory means emotional flexibility and low rigidity. In contrast, lower SD values represent a narrow range of wishes and responses, which corresponds to low flexibility and emotional rigidity. The example that follows of a rigid versus flexible profile can help clarify this operational definition. One subject received a rating of 7 on two specific Responses of Self—"angry" and "am not open," which recurred in most of his narratives, whereas other RSs were rated 1 (i.e., they were not present in his narratives). This person had a limited repertoire of responses, resulting in a low SD score, and therefore he was seen as quite rigid. In contrast another adolescent received ratings that ranged between 2 and 7 on a variety of RSs across different narratives (e.g., 2 for "feeling anxious," 3 for "feeling confident," 7 for "feeling angry," 4 for "feeling understood," 5 for "feeling open" and so on). This adolescent had a higher SD score in the RS component, reflecting a wider scope of emotions and was thus considered less rigid.

## Results

### Research Question 1: Changes in Rigidity

In order to test the first research question we conducted a two-way repeated measures ANOVA separately for each component of the CCRT (W, RO and RS), with rigidity (SD change) at time 1 and time 2 as the within-subject variable and the group (treatment vs. community) as the between-subject variable. Table II presents the means and SDs for general and specific rigidity for each component of the CCRT for both groups at the two time points.

Table II. Means and SDs of general and character specific rigidity scores for each component of the CCRT at the two time points

	CCRT Component	Wish		RO		RS	
		Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
All characters	Treatment	1.34 (.14)	1.41 (.16)	1.46 (.12)	1.53 (.16)	1.39 (.12)	1.50 (.15)
	Community	1.25 (.21)	1.28 (.21)	1.45 (.19)	1.45 (.19)	1.33 (.19)	1.34 (.18)
Parents	Treatment	1.37 (.20)	1.43 (.16)	1.54 (.18)	1.58 (.18)	1.44 (.17)	1.55 (.16)
	Community	1.30 (.23)	1.30 (.22)	1.46 (.21)	1.47 (.21)	1.33 (.21)	1.34 (.18)
Peers	Treatment	1.33 (.22)	1.37 (.21)	1.42 (.14)	1.44 (.21)	1.36 (.13)	1.46 (.20)
	Community	1.26 .24	1.27 (.24)	1.39 (.24)	1.38 .25	1.31 (.20)	1.31 (.21)
Therapist/adult	Treatment	1.26 (.18)	1.38 (.22)	1.30 (.21)	1.48 (.25)	1.28 (.19)	1.45 (.22)
	Community	1.23 (.28)	1.22 (.33)	1.46 (.25)	1.46 (.25)	1.33 (.25)	1.36 (.24)

Note. W = Wish; RO = Response of Other; RS = Response of Self.

(a) Change in general rigidity: The first sub-question was whether rigidity in general changed across time with and without psychodynamic psychotherapy. The results of the ANOVA conducted for the general rigidity score of the W component yielded a significant main effect for group ( $F_{(1,70)} = 4.77, p < .03$ ), indicating that the treatment group was less rigid than the community group, and close to a significant interaction (time  $\times$  group) effect ( $F_{(1,70)} = 3.03, p = .08$ ). In the analysis of the RO component we found a significant main effect for time ( $F_{(1,70)} = 3.73, p < .05$ ) and a significant interaction (time  $\times$  group) effect ( $F_{(1,70)} = 3.84, p < .05$ ), indicating that the treatment group became less rigid in the RO component over time compared to the community group which evidenced no change. A similar and even stronger result was found for the RS component, where all the effects were significant (time:  $F_{(1,70)} = 13.4, p < .001$ ; group:  $F_{(1,70)} = 9.04, p < .01$ ; interaction effect:  $F_{(1,70)} = 10.45, p < .001$ ), indicating that the treatment group became less rigid in the RS component over time compared to the community group.

(b) Changes in rigidity towards specific characters: The second sub-question was whether changes in rigidity were different in relationships with specific significant others.

As the number of hypotheses considered for each character (parents, peers, therapist) is relatively small (three analysis for each character according to the three components of the CCRT), we henceforth only report the  $p$  value obtained directly from the statistical tests with no correction for multiple hypotheses testing. We note that in most cases the reported  $p$  value would have been considered significant even under the Bonferroni correction.

The results of the ANOVA conducted for the rigidity score towards parents and peers yielded a significant interaction effect for the RS component (time  $\times$  group: parents  $F_{(1,70)} = 5.43, p < .05$ ; peers  $F_{(1,70)} = 5.58, p < .05$ ), indicating that the treatment group varied over time in the repertoire of self responses towards their parents and peers. In addition, main group effects were found in the W, RO and RS components toward parents and in the RS towards peers ( $F_{(1,70)} = 5.05, p < .05; F_{(1,70)} = 4.50, p < .05; F_{(1,70)} = 17.09, p < .001; F_{(1,70)} = 5.57, p < .05$ , respectively). Main effects for time were found in the RS component towards parents and peers ( $F_{(1,70)} = 5.67, p < .05; F_{(1,70)} = 4.55, p < .05$ , respectively).

We did not compare the treatment and the community groups regarding their relationship with the therapist versus a significant adult who is not a family member, since the therapeutic relationship is very different from the relationship with other

significant adults.<sup>1</sup> The comparison that seemed most appropriate here was the change between the two time points within each of the two groups. Paired samples  $t$ -tests indicated a significant change from time 1 to time 2 in the rigidity of the relationship of the treatment group with the therapist, in all components of the CCRT (W:  $t_{(29)} = -2.31, p < .05$ ; RO:  $t_{(29)} = -3.61, p < .001$ ; RS:  $t_{(29)} = -3.52, p < .001$ ), such that the relationship with the therapist became less rigid throughout the treatment. In order to test whether rigidity change in the relationship with the therapist was greater than the change in rigidity with parents and peers, we used paired sample  $t$ -tests to compare the overall SD score (W, RO, RS). Results showed that changes in rigidity towards the therapist were indeed higher although only close to significance (therapist-parents:  $t_{(29)} = -2.37, p < .05$ ; therapist-peers:  $t_{(29)} = -1.88, p = .07$ ; parents-peers:  $t_{(29)} = .37, p = .71$ ). No significant differences in the rigidity scores between the two time points were found for the adolescents in the community group regarding their relationship with a significant adult.

### **Research Question 2: The Relationship between Changes in Rigidity and Changes in Outcome**

(a) Changes in outcome measures: In order to examine symptomatic change with and without treatment, a two-way repeated measures analysis of variance (ANOVA) was conducted separately for each outcome measure (Y-OQ and TCS), with the change in the outcome measure from time 1 to time 2 as the within-subject variable and the group status (treatment vs. community) as the between-subject variable. Descriptive statistics for the change in the outcome measures are presented in Table III.

Y-OQ-SR: We used the mean of the Y-OQ total score at each time point. The cut-off for clinical range of the Y-OQ is 46. As shown in Table III, the Y-OQ mean score for the treatment group at time 1 was above the cut-off whereas the mean score for the community group was below the cut-off. At time 2 there was a significant decrease of 15.6 points within the treatment group.<sup>2</sup> Specifically, in the treatment group 28 subjects (93%) were above the cut-off score at time 1, while at time 2 only 20 (66%) were above this cut-off. Fifteen adolescents (50%) in the treatment group went through clinically significant change. In the community group 13 subjects (30%) were above the cut-off score at time 1, while at time 2 seven adolescents (16%) were above the cut-off.

The results of the ANOVA indicated significant main effects for both time ( $F_{(1,70)} = 24, p < .001$ ) and

Table III. Means and SDs of outcome measure scores (Y-OQ and TCS) at two time points, for the treatment and community groups

Outcome measure	Y-OQ		TCS	
	Time 1	Time 2	Time 1	Time 2
Adolescents in treatment ( <i>n</i> = 30)	74.33 (23.86)	58.73 (28.75)	9.46 (1.62)	4.35 (2.42)
Adolescents in the community ( <i>n</i> = 42)	37.59 (24.47)	30.90 (21.60)	8.26 (2.13)	5.99 (2.49)

Note. Y-OQ = Youth Outcome Questionnaire; TCS = Target Complaint Scale.

group ( $F_{(1,70)} = 35.67$ ,  $p < .001$ ), and a significant interaction effect (time  $\times$  group:  $F_{(1,70)} = 3.84$ ,  $p < .05$ ), confirming that the treatment group improved significantly more than the community group from time 1 to time 2.

TCS: For each subject we calculated the mean score for all three complaints at each time point. Results indicated significant main effects for time ( $F_{(1,70)} = 94.58$ ,  $p < .001$ ) and a significant interaction effect (time  $\times$  group:  $F_{(1,70)} = 14.03$ ,  $p < .001$ ), confirming that improvement in the treatment group from time 1 to time 2 was significantly higher than in the community group.

(b) The relationship between rigidity change and symptom change: Following previous studies that examined this relationship within adult samples (Luborsky & Crits-Christoph, 1998; Wilczek et al., 2004) we first examined whether initial levels of rigidity were related to initial symptom level: Pearson correlation coefficients were calculated between rigidity scores at time 1 for each component of the CCRT (W, RO, RS) and each of the outcome measure scores (Y-OQ and TCS) at time 1. The correlations were calculated for the whole sample and for each of the two groups (treatment and community) separately. These analyses showed that initial levels of rigidity were not related to initial levels of symptom distress and presenting problems. This result indicates that rigidity level is not necessarily an indication of psychopathology, at least not in a simple linear fashion. However, this does not rule out the possibility of a non-linear relationship between these variables, as proposed by McCarthy et al. (2008), or a relationship between changes in rigidity and symptoms across time. In a study by Luborsky & Crits-Christoph (1998), no correlation was found between rigidity and symptoms at the onset of therapy; however, changes in symptoms were significantly correlated with changes in rigidity within an adult sample. We therefore proceeded to study the relationships between rigidity change and symptom change within the adolescent sample. For this purpose we took a more holistic approach that looked at the general change in rigidity throughout treatment. This approach was supported by factor

analysis results (principal component method without rotation was used in which the eigenvalue was set to 1), suggesting that change in rigidity in all CCRT components was closely related. Specifically, the rigidity change score (difference between rigidity score at time 2 and rigidity score at time 1) in all three components of the CCRT had very high loadings on only one factor (W: .87, RO: .89, RS: .85; eigenvalue was 2.3 and the explained variance was 77%). Therefore each subject was assigned a “peak score” that was based on the highest rigidity change of the three CCRT components (W, RO or RS). For example, if the rigidity change score of the W component was higher than the rigidity change score of the RO and RS components, then the rigidity peak score was equal to the rigidity change score of the W component. A similar method has been used in several other studies in the field (e.g., Klein, Mathew-Conghlan, & Kiesler, 1986; Markevich, 2007).

When testing the relationship between change in rigidity and change in symptoms, with rigidity as a continuous variable, no significant results were found. One explanation for this result could be that there is too much “noise” in this level of analysis. We believe that different levels of rigidity which are also clinically meaningful are not detected by small differences on an interval scale. We therefore transformed the continuous rigidity change variable into an ordinal one, dividing it into four quartiles, to represent four levels of rigidity. We hypothesized that this transformation would eliminate some of the noise and would allow us to detect patterns of change. Our approach is similar to the one used in the FACES circumplex model for assessing families (Olson, 2000), where the dimension of family flexibility consists of four levels of flexibility/rigidity. Applying an ordinal scale can detect client change from one level of rigidity to another, and the relationship between these changes and symptomatic improvement.

Using two regression models we tested whether change in rigidity was a predictor of change in symptoms and presenting problems. A squared term was entered into the models in order to allow

for curvilinear relations (McCarthy et al., 2008). The model for the first outcome measure (YO-Q) was significant only for the treatment group (adjusted  $r^2 = .14$ ) and suggested modest support for the curvilinear relation (change in rigidity:  $\beta = 2.2$ ,  $t = 2.16$ ,  $p < .05$ ; change in rigidity squared term:  $\beta = -1.9$ ,  $t = 1.9$ ,  $p = .07$ ). As can be seen in Figure 1, the most significant decrease in symptoms occurred in the mid-categories of change in rigidity. The regression model for the second outcome measure (TCS) did not yield significant results.

### Gender differences

Since this was a naturalistic study we examined our data for gender differences. Following our research questions, we found a close to significant main effect for gender in rigidity change peak scores indicating that girls were in general more flexible than boys ( $F_{(1,68)} = 3.7$ ,  $p = .059$ ). No significant interaction was obtained and the effect of treatment on change in rigidity remained as before. However, when taking a closer look at the different components of the CCRT (W, RO, RS) the results of the ANOVA were close to significance, suggesting that girls were more responsive to treatment and became more flexible over time in the W and RS components (time  $\times$  group  $\times$  gender interaction for W:  $F_{(1,68)} = 2.95$ ,  $p = .09$ ; RS:  $F_{(1,68)} = 3.02$ ,  $p = .08$ ). Due to the unbalanced proportion of boys and girls in our sample, which is a common phenomenon in the field of psychotherapy research, it is beyond the scope of this research to address this trend properly. Further research on this issue is needed. No gender effects were detected in the analysis of the outcome measures. There were no significant differences between boys and girls in symptom level, presenting problems, or the pattern of change.

### Discussion

In this study we set out to explore processes of change in the psychodynamic treatment of adolescents, and we focused on rigidity as a central concept in psychoanalytic theory. Our results indicate that the treatment group showed significant changes in rigidity over the course of a year of psychotherapy, while no such changes were detected in the community group. Changes in rigidity in the treatment group were significant for the RO and RS components of the CCRT, and the changes in rigidity of the W component were close to significance. Similar to our results, other studies have found a decrease in rigidity of the CCRT components following psychodynamic treatment in adult samples (Luborsky & Crits-Christoph, 1998; Wilczek et al., 2004), and that these changes were greater in the RO and RS components (Luborsky and Crits-Christoph, 1998). Thus, in line with Luborsky and Crits-Christoph's conclusion regarding adults, adolescents' wishes, needs and intentions in relationships appear to be relatively intractable while the perceived responses of other and self are more open to change. One of the main goals of psychodynamic psychotherapy is to facilitate the patient's awareness of the range and richness of his/her experience, especially regarding interpersonal relationships (Mitchell, 1988). Thus an individual can remain with the same relational needs, but treatment can expand the range of perceiving and reacting to others.

Another central assumption in psychodynamic theory is that the therapeutic relationship is the arena where change begins to occur, and then gradually spreads out to other relationships. We thus further examined changes in rigidity within specific relationships towards the therapist, parents and peers. Our findings show that rigidity in the RS towards parents and peers changed more in the treatment group than in the community group, indicating the effects of therapy. When we examined

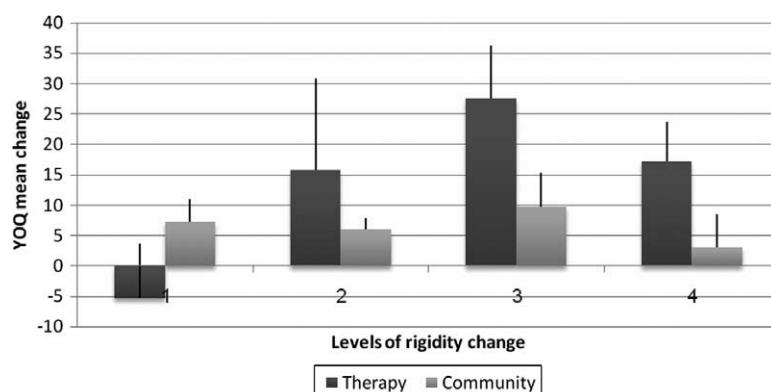


Figure 1. The relationship between levels of rigidity change and symptom change.

the interpersonal patterns of adolescents with their therapists, we found a significant decrease in rigidity of all three CCRT components over time. This decrease was larger than the decrease in the rigidity of interpersonal patterns towards parents and peers. These results support the centrality of the therapeutic relationship in the process of change (Harpaz-Rotem & Blatt, 2009; Safran & Muran, 2006). We believe that this pattern of change may indicate that while at the beginning of treatment patients perseveratively reenact their familiar organizations of experience in the therapeutic relationship, they gradually experience new possibilities inside and later outside the analytic encounter. It is also important to note that some changes in rigidity in the RS also occurred over time in the community group. Several studies have found that narratives about relationships grow more complex and elaborative naturally over time among adolescents and young adults (Lerner et al., 1996; Waldinger et al., 2002). The results of our study suggest that being in psychodynamic therapy propelled this developmental process much further.

In order to examine the relationship between changes in rigidity and symptom change, we first looked at changes in symptoms and presenting problems. The results of the outcome measures (Y-OQ, TCS) indicate that the treatment group improved significantly more than the community group from time 1 to time 2 both in symptoms and in presenting problems. The changes in symptoms in the treatment group were clinically significant whereas the symptom changes in the community group were not. Although this study did not aim to test the effectiveness of psychodynamic therapy for adolescents and its results are limited by a floor effect of the community group, these findings still lend further support to the effectiveness of psychodynamic therapy for adolescents, as has also been reported by a few recent studies (Baruch & Fearon, 2002; Sinha & Kapur, 1999; Tonge et al., 2009). While this study was not designed as an RCT and therefore its internal validity is limited, our results contribute to the growing interest in naturalistic studies that are likely to have better external validity and reflect more accurately the reality of clinical work with adolescents in public clinics (Bamberg et al., 2007; Morrison, Bradley & Westen, 2003).

In this study we did not find a relationship between symptoms and rigidity at intake; moreover, there were no significant differences in rigidity between the two groups at time 1, suggesting that rigidity is not an indicator of psychopathology. However, the decrease in rigidity in the three CCRT components was significantly correlated

with a decrease in symptoms within the treatment group, offering some support for a curvilinear relationship. Luborsky and Crits-Christoph (1998), who reported similar results in their adult sample, concluded that rigidity as represented by consistency of interpersonal patterns was a dimension of psychopathology separate from symptoms but that changes in rigidity may result in (or be a result of) symptom change. Our results suggest that while there is no clear cause and effect relationship, changes in rigidity may operate as a vehicle of change in therapy that facilitates symptom reduction. In the process of psychodynamic psychotherapy the adolescents increased their repertoire of perceiving and reacting to others, which in turn may have contributed to the changes in symptoms. Nevertheless, too much change in rigidity was associated with low symptom reduction. This result supports the McCarthy et al. (2008) notion regarding a potential curvilinear relation between rigidity and symptoms. This pattern of change fits with the relational approach, which emphasizes the dialectical interplay between multiplicity and singularity of the self. In the psychoanalytic process patients' emotional development entails on the one hand the ability to experience multiple versions of oneself (corresponding to decrease in rigidity). On the other hand patients also need to find continuity across various experiences in order to have a clear sense of self which is not too diffuse (Mitchell, 1993). The patients in our sample who demonstrated the highest and lowest rigidity change apparently were not able to maintain this dialectic.

Contrary to our findings and those reported by Luborsky and Crits-Christoph (1998), Wilczek et al. (2004) did not find a relationship between symptom change and changes in rigidity. In our study, the relationship between rigidity change and symptom change was found only for the Y-OQ and not for the TCS. Since the three studies differed in operationalization and measure of rigidity, outcome measures, populations and treatment length, there is no simple explanation for the different results and additional studies on this issue are recommended.

The limitations of this study should be noted. First, in this study we used a community group rather than a formal "control group." Although the two groups were similar in local variables (schools, age, socio-economic status) they differed in the focal ones (Shadish & Cook, 2009). Creating a control group in this study posed an ethical dilemma which would have involved putting adolescents "on hold" for a year before providing psychotherapy. It is thus impossible to conclusively infer that the differences between the treatment and no-treatment group were

caused by the treatment, only that they were associated with the treatment. In order to exclude as many alternative explanations of the results as possible under these circumstances, we controlled for demographic variables in our analysis and randomly chose the control group. This design offers a balance between external and internal validity and as such it presents a theoretical development that should be replicated and elaborated in further studies. An overview of the empirical work that has been conducted in the field suggests that there is a clear need for research designs with large samples that will allow for a more powerful analysis that can differentiate the different variables intervening in the therapy process. Second, the results are based on adolescents who remained in therapy, and excluded those who dropped out in the early stages of therapy. Even though no significant differences were found between those who stayed and those who dropped out as regards initial levels of symptoms and rigidity, the individuals who dropped out may have been different in terms of some other personality characteristics that we did not assess. Alternatively, psychodynamic therapy may not have been their treatment of choice. Therefore, our results can only indicate the effect of therapy for those who stayed in treatment. Third, the findings in this study are based on a relatively small sample of adolescents in treatment ( $n = 30$ ).

This naturalistic study lends weight to several other studies that have attempted to demonstrate a relationship between changes in internal processes and changes in symptoms in the course of psychodynamic therapy (Bond & Perry, 2004; Perry & Bond, 2000). In the field of psychodynamic psychotherapy with adolescents, such studies have only recently begun to appear in the literature (e.g., Harpaz-Rotem & Blatt, 2009; Harrison, 2003). Clearly additional studies that are based on psychodynamic theory and take into account the complexity of the process are needed in order to enhance our understanding of how and why change occurs through psychotherapy with adolescents.

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### Notes

- <sup>1</sup> The most dominant significant others chosen by adolescents in the community group were teachers and scout leaders.
- <sup>2</sup> According to the Y-OQ manual a decrease of 13 points or more is a significant amount of symptom reduction (Y-OQ, Burlingame et al., 1996).

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