

PREDICTORS OF OUTCOME IN CHILD PSYCHOANALYSIS: A RETROSPECTIVE STUDY OF 763 CASES AT THE ANNA FREUD CENTRE

Under Anna Freud's guidance, the Anna Freud Centre developed a rigorous approach to the collection of child psychoanalytic data. Material contained in detailed diagnostic assessments and weekly written reports of 763 cases treated in intensive and nonintensive therapy has now been subjected to systematic study. This is the first, retrospective stage of a major investigation of child psychoanalytic outcome, carried out in collaboration with Yale University Child Study Center, New Haven, CT. The main findings of the work are reviewed. The study showed child analysis to be particularly effective for seriously disturbed children under 12 years suffering from a variety of psychiatric disorders, particularly those which involve anxiety.

Psychoanalysts, beginning with Freud (1917, 1937), have maintained that the validity of psychoanalytic ideas is best supported or refuted by clinical material, in particular the patient's responses to interpretations. The child and adult psychoanalytic literature has consequently been dominated by the

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This study was established with the late George Moran, Ph.D., Director of the Anna Freud Centre; this paper is dedicated to him. Our work was conducted in consultation with Donald Cohen, M.D. and Alan Kazdin, Ph.D., of Yale University, and was facilitated throughout by Professor Al Solnit; we are extremely grateful for their advice and encouragement. We would like to thank all the staff of the Anna Freud Centre for giving us access to their archives, and for supporting this work in many ways. We also gratefully acknowledge the careful work of our research team, under the leadership of Mary Target, and the contributions of Drs. Linda Mayes, William Young, Alison Westman, and Anna Higgitt who provided independent verification of psychiatric diagnoses.

accumulation of case reports, intended to illustrate particular theoretical propositions. Grünbaum (1984, 1986) and other philosophers of science have pointed out the epistemological difficulties of this approach. From within psychoanalysis, many of the papers presented at the three *International Journal of Psycho-Analysis* (IJPA) Seventy-Fifth Anniversary Celebration Conferences also sounded notes of warning about this unique reliance on the case study approach to gathering data (see for example, Shapiro, 1994; Widlocher, 1994; Renik, 1994). However, at the moment clinical psychoanalysis has no other method of testing or choosing amongst differing theoretical positions, all supported by clinical material selected for the purpose.

What may look like rejection of a scientific approach probably reflects a lack of affinity between the ways of thinking required in clinical and research work. In holding onto clinical insights in the face of what may be fierce resistance from the patient, the analyst may need to leave to one side much material unintegrated with his current understanding of the patient. The analyst puts together an evolving picture of the patient's internal situation, based on material selected as relevant to the most recent version of this picture; he or she cannot hold actively in mind all the other material which might have suggested alternative formulations. We do not suggest that clinical thinking is arbitrary, or that it is impossible to evaluate the validity of different possible pictures of the same clinical material, and we are in fact working toward including the process and content of analytic work in studies of outcome. Nevertheless, clinical work involves following a thread through the minutiae of a highly charged relationship between two individuals. It is difficult to reconcile this experience with the attempt to stand back and discern patterns across large numbers of cases, which must for this purpose be described and analyzed quantitatively.

Thus, while the clinical work of psychologists and psychiatrists has been largely integrated with experimental research, so that the effectiveness of different treatments is investigated either in randomized controlled trials, or by single-case experimental designs (Fonagy and Moran, 1993), the outcome of psychodynamic work has very rarely been assessed in the same way. This is especially the case in relation to child psychoanalysis and psychotherapy, which have generally been evaluated only by those attempting to show the superior

value of an alternative approach, who compare cognitive-behavior therapy, for instance, with twelve sessions of group therapy, and then measure outcome by behavioral criteria. As has been shown convincingly (Shirk and Russell, 1992), this has allowed a strong and erroneous impression to develop in the wider scientific community that psychodynamic therapy has been shown to be less effective for children than the newer treatments.

There are major obstacles to correcting this impression. Psychoanalysts are rightly antagonistic to research methods which threaten essential elements of the psychoanalytic process. Certain features of experimental designs used in studies of other forms of treatment are unacceptably intrusive (these would include video recordings of analytic sessions, at least with adult patients). Waldron (unpublished) has sensitively explored the clinical difficulties with current research designs.

Many reviews of accumulated clinical experience have addressed the efficacy of psychoanalytic treatment for various forms of pathology (e.g., Freud, 1937; A. Freud, 1954; Stone, 1954; Waldron, 1967; Tyson and Sandler, 1971; Firestein, 1984; Schlessinger, 1984). A small number of systematic studies of analyzability have also been conducted with adult patients (Knapp, Levin, McCarter, Wermer, and Zetzel, 1960; Sashin, Eldred, and Van Amerowgen, 1975; Erle and Goldberg, 1984; Kantrowitz, 1987; Wallerstein, 1989; Weber, Bachrach, and Solomon, 1985a,b). These studies have been reviewed by Bachrach, Galatzer-Levy, Skolnikoff, and Waldron (1991) who are broadly pessimistic about the extent to which therapeutic benefit can be predicted at initial consultation for cases considered suitable for analysis. However, length of treatment, high pretreatment level of functioning, and patient-analyst match have repeatedly emerged as predictors of good outcome.

Waldron (unpublished) has provided a comprehensive review of the methodological and conceptual problems facing studies of the efficacy of psychoanalysis. He lists the absence of a substantial database of recorded psychoanalyses (Waldron, 1991), the heterogeneity of psychoanalytic and psychotherapeutic experiences (Wallerstein, 1986), the need for multiple measures of outcome (Horowitz, Marmer, Weiss, Kaltrider, and Wilner, 1986), for control and comparison groups, the need to take into consideration both

analytic and therapeutic criteria of outcome (Kantrowitz, Paolitto, Sashin, and Solomon, 1987a,b; Kantrowitz, Katz, and Paolitto, 1990a,b,c; Wallerstein, 1988), and the need to assess patient-analyst match (Kantrowitz, Katz, Greenman, Morris, Paolitto, Sashin, and Solomon, 1989; Kantrowitz, 1990c), as among the major challenges which have only been partly addressed by empirical research on the psychoanalytic treatment of adults. In summarizing his review, Waldron considers foremost among the questions to be addressed by such research: "what clinical conditions and life circumstances warrant the application of a full psychoanalysis, with what kinds of benefits to the patient, and which are significantly less likely to occur with less intensive treatment?" (p. 66). This is the question we have begun to address, in relation to children and adolescents, in the study to be described.

The literature includes very few empirical studies of the effectiveness of insight oriented treatments for children. Heinicke and Ramsey-Klee (1986) evaluated psychoanalytic treatment for latency children referred for emotional disturbances and reading retardation. In separate groups the frequency of treatment sessions were set at either one or four times per week for two years, or once a week in the first year followed by four times a week in the second. All treatments led to gains in self-esteem, adaptation, and the capacity for relationships, but the gains were significantly greater, and better sustained, for the groups treated four times per week for one or both years. Moran and his colleagues (Moran, Fonagy, Kurtz, Bolton, and Brook, 1991) assessed the impact of brief psychoanalytic work with children with dangerously uncontrolled diabetes. There were significant improvements in blood glucose control in a group of 12 patients treated in three to four times weekly psychoanalytic psychotherapy, relative to an untreated control group. Further studies by this group offered intriguing suggestions about the way in which the therapeutic process related to outcome.

There has, however, never been a major study which has attempted to identify predictors of success in child analytic treatment. Child analysts have a variety of views, based on clinical experience, on what makes a child a good analytic case, and the systematization of these characteristics for empirical research is a priority for ourselves and other workers in this field. Answers to these questions are

important, not only to help settle theoretical disagreements, but also for practical and ethical reasons. One has only to consider the demands (on child, family, and analyst) of treatment which takes place four or five times per week over the course of several years, and the justifiable tendency of parents, referrers, and funders to ask for evidence that this investment is likely to be worthwhile. Is there a group of children, for example, who are unlikely to be helped by other forms of treatment, but remain accessible to this intensive intervention?

A THEORY OF THERAPEUTIC CHANGE IN CHILD ANALYSIS

Before describing the outcome study which forms the main part of this paper, we would like to outline the theoretical thinking which formed the context in which it was carried out, and which we will refer to in discussing the findings. This is a theory of therapeutic change we have been developing at the Anna Freud Centre (rooted very much in Anna Freud's own thinking) introduced by Fonagy and Moran (1991) and described more fully by Fonagy, Edgumbe, Moran, Kennedy, and Target (1993).

Anna Freud (1965) assumed that emotional disorders of childhood generally arise as a consequence of the arrest or distortion of one or more lines of normal emotional, social, and cognitive development. Such developmental deviations create special difficulties for the child, for which he or she may find maladaptive solutions. Developmental anomalies are conceived of by Anna Freud as "risk factors" for neurotic disorders, and the analytic work must address both aspects of pathology. As Anna Freud wrote:

In our times, the analyst's therapeutic ambition goes beyond the realm of conflict and the improvement of inadequate conflict solutions. It now embraces the basic faults, failures, defects and deprivations, i.e., the whole range of adverse external and internal factors, and it aims at the correction of their consequences. Personally, I cannot help feeling that there are significant differences between the two therapeutic tasks and that every discussion of technique will need to take account of these [A. Freud, 1970, p. 203].

The model of psychic change we envisage assumes two mechanisms at work, corresponding to two facets of mental functioning accepted in cognitive science and philosophy of mind (Mandler, 1985): mental representations, and the psychological processes which create them and act upon them. Just as early experiences, drives, and conflicts may act to distort the conscious and unconscious internal representations which correspond to external reality (Jacobson, 1964; Sandler and Rosenblatt, 1962; Blatt and Behrends, 1987), so are psychic processes vulnerable to inhibition, disengagement, and compromise: the very act of thinking may come to be resisted (Segal, 1978), emotional experience may be drastically curtailed (McDougall, 1974; Sifneos, 1977), and specifically the capacity to mentalize, to think of one's own and others' mental states, may be inhibited (Fonagy, 1991; Fonagy, Steele, Moran, Steele, and Higgitt, 1993). For example, we have explored in previous publications the way in which aggression and violence (and in children disruptive behavioral disorders in general) may be understood as a recourse to action in the absence of a capacity to reflect upon interpersonal experience. Thus, aggression may be seen as the use of destructiveness to protect a vulnerable self-structure, and violence as an attack on ideas and feelings felt to be intolerable, either in others or in one's own mind (Fonagy, Moran, and Target, 1993; Fonagy and Target, 1995).

Intensive clinical work at the Anna Freud Centre represents a combination of insight-oriented therapy and "developmental help," based on the model of psychopathology outlined by Anna Freud (1965, 1981). The latter form of therapy, we suggest, tackles the mental process aspects of psychological disturbance. We may conceive of this as a rehabilitative, as opposed to insight oriented, aspect of analysis, aiming gradually to remove the obstacles which have impeded the normal lines of emotional and cognitive development. This process is seen by us (Fonagy, Edgcumbe, et al., 1993) in terms analogous to those of Vygotsky (1978), as one in which the analyst creates a constantly challenging social framework, or "scaffolding," which encourages the normal evolution of the child's mental function. Psychoanalysis tackles the problem of inhibited mental processes by engaging the mental functioning of the patient, through certain types of interpretation of the transference and countertransference. Because this process of reversing an inhibition is laborious

and has to precede changes at the level of mental representation, rates of change in cases of mental process disturbance are usually slow.

It is important to distinguish between the inhibition of the development and function of a mental process, and an actual deficit which is likely to be at least partly organic in origin. In the latter case (for instance in children with profound mental retardation, neurological damage, or autistic conditions) much may be done to improve the emotional and cognitive state through psychotherapeutic work (see, for recent examples, Sinason, 1992; Alvarez, 1992), but we would argue that certain crucial mental processes may be stunted in these disorders which perhaps cannot be brought to life. The precursors which would act as building blocks are not available (Baron-Cohen, 1991).

Certain predictions can be made about therapeutic effectiveness, on the basis of this theoretical perspective.

First of all, we would expect that children whose pathology includes developmental dysfunction, or inhibition of mental processes, would require more intensive intervention, probably over longer periods, if they are to improve. These children would be likely to be seen as showing primarily nonneurotic pathology in the diagnostic profile, with atypical or borderline features or distorted self structure. In psychiatric terms, they would be likely to show serious and widespread disorders, often involving multiple symptomatology, such as a combination of emotional and disruptive disorders, perhaps with developmental delays. In particular, we suggest that disorders involving aggression and destructiveness will need intensive input if they are to change, and are likely to be difficult to engage in a reflective process. Children with more profound and pervasive developmental disorders, such as autism, would not be expected to respond in a lasting or generalizable way even to intensive therapy.

Second, we suggest that younger children will be more amenable to psychoanalytic intervention, for a number of reasons. We assume that mental processes are more vulnerable to conflict-related distortion and inhibition early on, at a formative stage which in the case of most processes would be under 5 years, and that such interference is easier to put right at this critical phase of development than later. We also assume that, as mental processes underpin mental

representations, a poorly functioning process is likely to give rise to more and more distorted mental representations as the child grows older, and may undermine the normal development of other mental processes. Thus, later interventions may encounter multiple mental process disturbances as well as an increasing number of distorted mental representations, which naturally serve to reduce the chances of successful intervention.

METHOD

Sample

Over the past four years, we have completed the first stage of a systematic program of research on the outcome of child psychoanalysis. The study reported here is based on over 750 cases of child psychoanalysis and psychotherapy completed at The Anna Freud Centre during the past forty years. The Centre has extensive documentation on the children and adolescents who have undergone analyses during this time. These cases include children from pre-school to adolescent phases of development, and the major domains of childhood psychopathology (emotional disorders, such as depression; disruptive disorders, such as conduct and attentional disorders; and developmental disorders).

The sample of closed treatment files available for study numbers 763 cases. This represents approximately 90 percent of cases treated at the Centre. Those excluded include children whose files have not been made available for study for reasons of confidentiality, and a very small number of cases (less than 5% of the total sample), where the documentation of the case was insufficient to allow useful analysis. The remaining sample is unique in several respects.

First, in contrast with the practice of most other institutions, the majority of patients (76%) received intensive treatment (4–5 times a week). These patients may be compared with the remaining 24 percent who were treated once or twice a week.

Second, the present database includes reports of a large number of treatments performed by qualified staff as well as by trainees (36% of the cases were treated by experienced analysts). This means that data have been collected on the most challenging groups of children,

including pervasive developmental disorders and childhood psychoses; it also means a fairer test of the method, in that it is not (as often happens in outcome research) being judged solely on the basis of training cases.

Third, all the case records contain detailed psychoanalytic observations on the initial consultations with the patient and his or her family. This material is not reported extensively in the present paper, but is being used in conjunction with the other clinical and factual information in ongoing studies. In 54 percent of cases (almost all assessed since the Profile was developed), these observations were systematized in the form of a diagnostic profile (A. Freud, 1965). Diagnostic profiles have been used consistently over the last three decades to summarize and describe the psychoanalytic formulations of psychopathology in a semistandardized manner. In many cases there also exists a terminal profile in which the original diagnostic summary is reviewed in the light of the treatment material.

Fourth, the progress of intensive treatments is described in two-page weekly process reports which were written by all those treating patients. These give an account of the therapeutic process. Although they do not follow a strict structure, each report contains information on the manifest behavior of the patient, including degree of cooperativeness, the analyst's understanding of this, the central themes worked on during that week, and the patient's response to the work. Frequently, events outside the analysis are also reported.

Finally, the database identifies those cases which were part of the Hampstead Psychoanalytic Index. The index is a well-established and valuable resource (Bolland and Sandler, 1965) which in many respects complements the database. Detailed information is recorded and cross-referenced on each child and broken down according to the major psychoanalytic constructs.

MEASURES

The method used to code information from these charts, the statistical analyses, and the major findings have all been presented in detail in more technical papers (Target, 1993; Fonagy and Target, 1994; Target and Fonagy, 1994a,b). The measures used, criteria of improvement, and methods of data analysis are likely to be of limited

interest to most psychoanalytic readers, but are described in Appendix 1. In outline, information was reliably coded on demographic, diagnostic, clinical, and treatment variables. Outcome was mainly evaluated in terms of clinically significant change in overall adaptation (comparable to the dimension of health–sickness; Luborsky, Diguier, Luborsky, McLellan, Woody, and Alexander, 1993) which was rated on a new measure which attempted to integrate concepts of developmental lines (A. Freud, 1963) and existing measures of child adaptation. This measure has been called the Hampstead Child Adaptation Measure (HCAM). Our focus was very much on positive adaptation and developmental appropriateness as well as symptomatology.

Based on the predictions listed in the introduction to this paper, certain analyses were planned in advance, while others were carried out subsequently. In line with our theoretical perspective, we expected that psychoanalytic treatment would work differently at different developmental stages, and that different surface disorders would be associated with different underlying pathologies (involving primarily neurotic [representational], or developmental [mental process] disorders). We therefore planned to examine the effect of age at referral (as the best approximation of developmental level which could be used with retrospective data), and of broad diagnostic grouping. We also planned to examine the impact of severity, pervasiveness, and type of disorder (as indicators of likely developmental pathology, at the level of “mental processes”) on outcome. We were particularly interested in the issue of whether (as in classical psychoanalytic thinking) four to five times per week psychoanalysis was primarily suitable for neurotic disorders, or whether there was evidence for our contrasting hypothesis that more severe and pervasive disorders could respond to this intensive, psychodynamically oriented therapy.

RESULTS

We began by examining patterns in the data collected across the full sample (Target, 1993). Overall, among those children whose

treatment continued for at least six months, 56 percent of those in psychoanalysis (4–5 times per week) moved from the clinical to the normal range on the HCAM measure, compared to 44 percent who received psychotherapy (1–3 times per week). This difference is statistically highly significant ($p < .005$). Clinically significant improvements (not necessarily sufficient to bring the child into the normal range, but substantial in clinical and statistical terms) were observed in 62 percent of the children treated intensively, and 49 percent who were offered nonintensive treatment (this difference is also highly significant: $p < 0.0005$). The average effect size² associated with four to five times weekly treatment of at least six months was 1.00, and 0.64 for nonintensive treatment. The size of the changes observed were, however, very variable across groups of children treated, so that these global figures only lead to further questions.

Examples of variables found to be related to greater improvement in the full sample were³: longer treatment ($p < 0.0001$), broad diagnostic group (emotional disorders did better, $p < 0.0001$), intact family ($p < 0.001$), psychoanalytic diagnostic category within Anna Freud's five-category scheme (atypical personalities or borderline children improved less, $p < 0.001$); mother having been in analysis ($p < 0.001$); age group of the child (younger children improved more, $p < 0.01$); parents receiving analytically informed guidance alongside the child's treatment ($p < 0.02$); higher social class ($p <$

²Effect size was here calculated as the mean HCAM score posttreatment minus mean HCAM score pretreatment, divided by the pooled standard deviation of scores on this measure. Treatment effectiveness is not reported in terms of effect size through the remainder of this paper, even though the effect size is a familiar statistic in outcome studies, because we are anxious to avoid false comparisons with other reports which have used this measure. It is usually used to compare treatment and control groups, not as a pre-post therapy comparison. Particularly with the relatively long period of analytic therapies, comparisons of adaptation before and after treatment cannot be set alongside comparisons between changes in treated and untreated cases over the same time period.

³Unless stated otherwise, all analyses henceforward apply only to children remaining in treatment for over six months, as our interest was in looking at which children benefited from the treatment, which required that they should have received enough therapy to make it worthwhile to consider effectiveness. Later, we examined the issue of those children who did not remain in psychoanalysis or therapy for this minimum time, and were therefore excluded from earlier analyses of the data.

0.05); and mother being taken into simultaneous analysis or psychotherapy at the Centre ($p < .05$). These variables together in a multiple regression analysis accounted for 35 percent of the variance in change scores.⁴

In order to test our predictions, and to arrive at more specific estimates of the effectiveness of psychoanalytic treatment, we subdivided our sample according to two of the key variables, diagnostic group and age range, carefully matching on other important variables: broad diagnostic grouping (emotional/conduct/developmental disorder), if matching age groups, or age if matching diagnostic groups; gender; socioeconomic status; family structure; HCAM level (severity of impairment) at referral; and intensity of treatment (number of sessions per week). This matching was necessary to isolate the impact of a specific variable of interest. For instance, in comparing children in different age groups, we wished to control for other variables such as frequency of sessions, which varied with age (86% of preschool children were in five times per week analysis, as opposed to 60% of adolescents). In comparing diagnostic groups, we were particularly interested in whether it was the case, as predicted, that disruptive or aggressive children, and those with other forms of severe and pervasive disorder (short of autistic and similar conditions) had been more difficult to treat, and had required more intensive treatment. We hoped in this way to move toward some preliminary conclusions about the appropriate target groups for child psychoanalysis and psychotherapy, and the variables associated with better or worse outcome within subgroups of the full sample.

The Effect of Developmental Level

As we have explained, we were interested to see whether different rates and predictors of improvement would be found, depending on the age of the child or adolescent when referred. In examining the data for the full sample, it quickly became apparent that the age

⁴Multiple regression analysis is a technique for predicting the score on a particular variable (in this case, the amount of positive or negative change in adaptation, HCAM), on the basis of the best combination of other variables (here, demographic, clinical, diagnostic, and treatment information). The percentage of variance accounted for indicates the success of prediction: how much of the variability in change scores could be predicted from other variables.

Child Analysis: Predictors of Outcome

of the child when treated did indeed have a large effect on the likelihood of improvement (Target, 1993). For instance, 63 percent of children under 6, 53 percent of latency children, and 47 percent of adolescents showed reliable improvement in HCAM score ($p < .01$).

In order to establish the reasons for this difference, and to exclude the obvious possibility that younger children represented a less severe group of cases, we matched three groups of children as described above, dividing them into subgroups: preschool (under 6), latency (6–12), and adolescent (12 or over). The three subgroups each included 127 children, with no significant differences between groups on any of the matched variables.

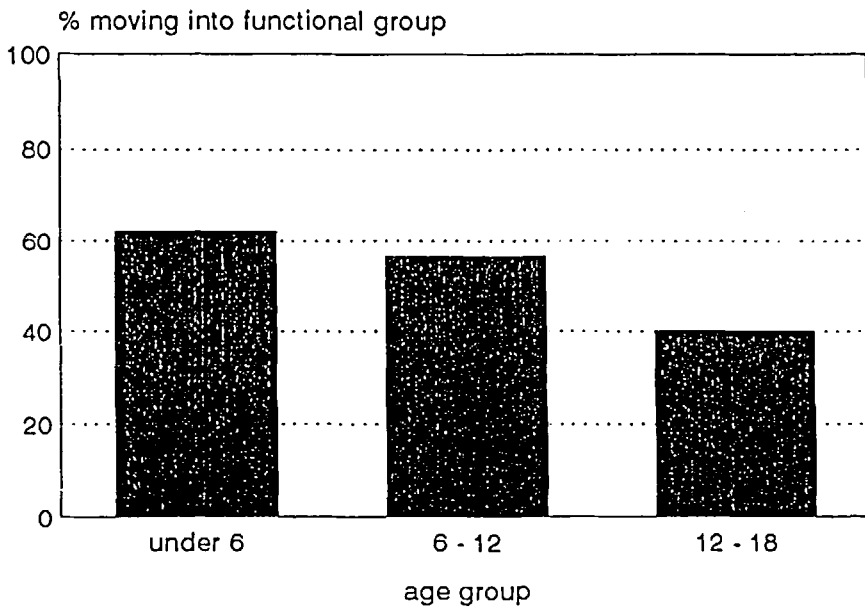
We found that on all outcome criteria, the probability of improvement during treatment decreased with age, regardless of severity and diagnosis (Target and Fonagy, 1994b). For instance, the percentage of children who moved into the normal range on the HCAM measure by the end of treatment ranged from 62 percent in the under 6 age group to only 40 percent of adolescents⁵ (see Figure 1). Although the differences on all outcome measures partly reflected the high attrition rate among adolescents (see Table 2, below), these differences between age groups remained statistically significant when dropouts were excluded.

It appeared that adolescents benefited as much or more from nonintensive treatment, one to three sessions per week, whereas younger children clearly did better in four to five times per week treatment. This difference emerged significantly⁶ when larger matched groups of adolescents and 6- to 12-year-olds were compared. Only 34 percent of latency children showed reliable improvement in nonintensive treatment, while 65.6 percent of the adolescents did. For those in intensive therapy, the rates of improvement were very similar in the two age groups (52 and 51% reliably improved, respectively).

The magnitude and direction of HCAM changes were investigated using a stepwise multiple regression procedure, initially for

⁵Cross-tabulation to assess the association between two categorical variables ($\chi^2 = 13.40$, $df = 2$, $p < 0.002$).

⁶The significance of this difference was confirmed by log-linear analysis, in which a three-way interaction was found between reliable change, age group and frequency of sessions (likelihood ratio $\chi^2 = 4.77$, $df = 1$, $p < 0.03$).



$\chi^2 = 13.40$, $df = 2$, $p < .002$

Figure 1. Percentage of children moving into normal range of adaptation during treatment in each matched age group.

the three matched subgroups combined. Thirty-seven percent of the variance in improvement could be accounted for. The strongest predictors were relatively poor adaptation (low HCAM) at assessment, staying in treatment until termination was mutually agreed upon, and relatively good psychological functioning in the father at the child's referral. Separate regression analyses were then performed on the matched samples from each age group, to find out whether there would be a significant increase in the accuracy of prediction of outcome. This was indeed the case; for those under 6, 55 percent of variance could then be predicted; for latency children, 43 percent; and for adolescents, 58 percent. Variables specific to each age group emerged; for example, for children under 6 a history of mental illness in the mother predicted worse outcome, while sleep disorder, phobias, or significant medical history were associated with good

outcome. Among latency children, in contrast, a history of maternal mental disorder was associated with *better* outcome. For adolescents, several variables related to parental mental health were significant predictors; for instance, an antisocial father or mother who had attempted suicide predicted worse outcome, but anxiety in the father was associated with improvement. Difficulties in peer relationships or disruptive behavior at school predicted poor outcome.

The Outcome of Treatment of Children with Disruptive Disorders

There were 135 children in the sample with disruptive disorders. These cases were individually matched, as described previously, with children suffering from emotional disorders without serious disruptive behavior (Fonagy and Target, 1994). Disruptive disorders included conduct disorder, oppositional defiant disorder, and attention deficit hyperactivity disorder, and a small number given a V code (DSM-III-R, APA, 1987) of antisocial behavior.

Results showed that although treatment was associated with a significant improvement in functioning in the two groups, there were considerable differences in improvement rates between the groups according to all the three outcome criteria—children with emotional disorders were more likely to improve than those in the disruptive group (see Figure 2). However, this difference narrowed to insignificance when we focused on children given long-term, intensive treatment; when treated five times per week for three years or more, disruptive children showed gains equivalent to those found in the emotionally disordered children. Within the disruptive group, improvement was greatest for children with oppositional defiant disorder, and lowest for those with conduct disorders.

Fifty-eight percent of the variance in treatment outcome for the disruptive group treated for more than one year could be accounted for in a multiple regression analysis. There were three especially powerful predictors: longer treatment, the presence of an additional emotional disorder (particularly anxiety), and the absence of other comorbidity (particularly specific developmental disorders). Children were likely to do less well in analysis if they had been in foster care, if the child's mother had a history of anxiety disorder, if the child was underachieving at school relative to his or her IQ, and if the school expressed serious concerns about the child. Children

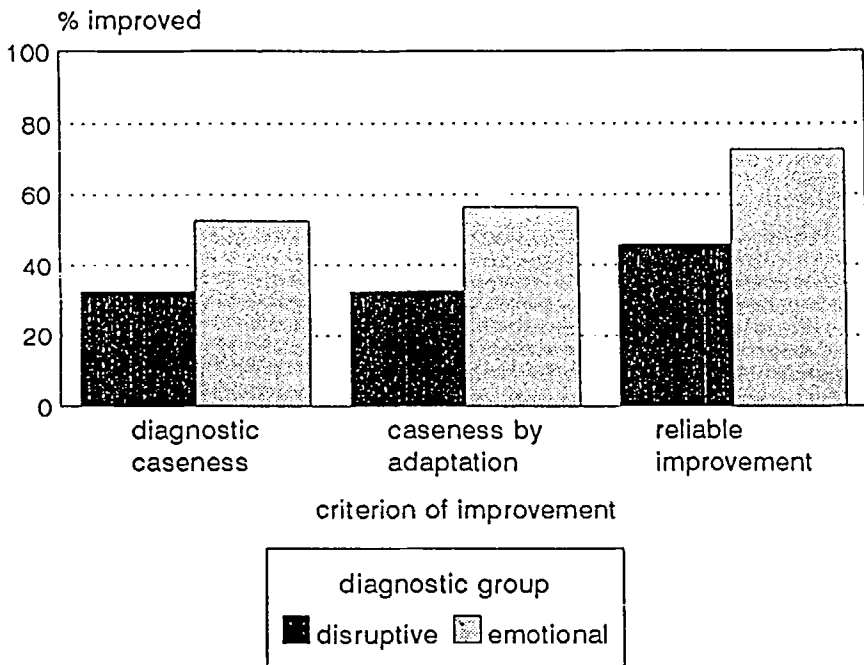


Figure 2. Rates of improvement among matched disruptive and emotionally disordered children, according to different criteria.

were likely to do better if their mother was also receiving treatment at the Centre, and if the child had been in the Centre's nursery school.

Although a similar proportion of the variance (52%) could be accounted for within the matched emotional group children, predictors differed considerably between the groups. The only predictor of good outcome found in both groups was length of treatment. Other significant, favorable predictors in the matched emotional group were a relatively low HCAM score (poor adaptation at referral), the absence of enuresis, good psychological functioning in the mother, and the provision of parental guidance during analysis.

Outcome in Children with Emotional Disorders

We next examined the outcome of psychoanalytic treatment for the largest diagnostic group treated, 352 children and adolescents

with emotional disorders, such as anxiety or depression. Rates of improvement among those treated for at least six months were high in relation to those of children with other disorders: 53 percent were no longer diagnosable, 58 percent had moved into the normal range of overall adaptation, while 72 percent showed reliable improvement in functioning (Target and Fonagy, 1994a). The children with emotional disorders were divided into three diagnostic subgroupings.⁷ Group 1 contained 99 children with a depressive disorder, with or without comorbid anxiety; group 2 included 144 children with generalized anxiety, with or without focused anxiety symptoms; group 3 included 109 children with specific anxiety disorders. Children in the three groupings did not differ significantly on rates of improvement.

The strongest predictors of *good* outcome in a multiple regression analysis for the whole emotional group were low HCAM scores (poor adaptation) at assessment, longer treatment, and relatively good psychological functioning (GAF score) in the mother at the time of the child's referral. Using all significant predictors, 31 percent of variance could be accounted for. The most significant domains of variables with regard to outcome differed between the three diagnostic subgroups, and separating them improved our capacity to predict improvement in two of the subgroupings (55% of variance accounted for in the depressed subgroup, and 59% among those with specific anxiety disorders). For the group with specific anxiety disorders, presence of psychiatric history in the parents and female gender were the most important predictors. For the group with depressive disorders, poor outcome was associated with encopresis, conduct disorder, being an only child, and maternal personality disorder.

In view of our prediction about more severe or pervasive disorders (which we hypothesize to be based in disturbed development of mental processes), we examined the possibility of an interaction between severity (defined operationally in terms of three or more diagnoses, low functioning [HCAM], and/or atypical development in Anna Freud's terms) and treatment intensity. We found that, as

⁷This division, intended to produce coherent symptom clusters, was made on the basis of a hierarchical class analysis of a symptoms by cases matrix (de Boeck, Rosenberg, and van Mechelin, 1993), confirmed by discriminant function analysis.

TABLE 1. Percentage of Children Reliably Improved, and Unchanged or Worsened, in Nonintensive (NI) and Intensive (I) Psychodynamic Treatment, Grouped According to Severity of Initial Presentation

	Severe Cases		Moderate Cases		Interaction between Severity, Intensity and Outcome, in Log-Linear Analysis
	NI (n = 23)	I (n = 61)	NI (n = 47)	I (n = 221)	
% Reliably Improved	26.1	78.7	57.4	68.8	likelihood ratio $\chi^2 = 8.14$, df = 1, $p < .005$
% Same or Worse	56.5	15.0	25.5	16.7	likelihood ratio $\chi^2 = 5.08$, df = 1, $p < .03$

predicted, intensive treatment was especially beneficial when the disorder was severe. In general, the more severely disturbed group benefited much more from intensive treatment, and the majority of them showed no improvement in nonintensive therapy. The less severe group improved equally in nonintensive or intensive therapy. These contrasts are shown below, in Table 1.

The greater improvement in children with severe disorders when treated intensively cannot be attributed to the fact that they were more disturbed to start with (and so there was greater room for improvement). Not only was similar improvement not found in nonintensive therapy, but when extent of HCAM change was looked at, controlling for initial level of adaptation, the impact of treatment intensity was even more significant.⁸

A similar pattern applied to specific diagnostic categories within the emotional disorders⁹: depressed children were less likely to improve, children with specific anxiety disorders (especially phobias) showed greatest improvement. Those with depression, overanxious

⁸In an analysis of covariance, controlling for initial HCAM level, there was a significant interaction between initial severity, intensity of treatment, and improvement in HCAM ($F = 5.39$, $df = 1, 347$, $p < 0.02$).

⁹Analyses of covariance, examining the interaction of intensity and diagnostic group in relation to change in adaptation, controlling for the length of treatment.

Child Analysis: Predictors of Outcome

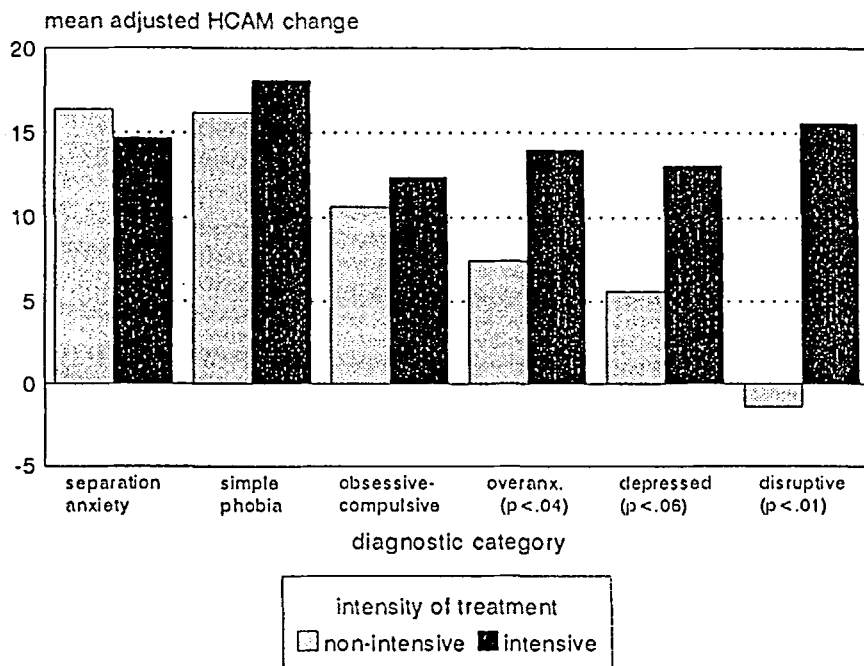


Figure 3. Mean HCAM change in intensive or nonintensive treatment, for children with different emotional disorders (those terminating within six months excluded).

disorder, or concurrent disruptive disorder required intensive intervention, other disorders apparently did not (Figure 3).

Groups Who Failed to Respond to Psychoanalysis

Eighteen percent of patients dropped out within the first six months of treatment and 26 percent within the first year. Attrition was highest amongst adolescents, and tended to be high among children with disruptive disorders. Children in nonintensive therapy were much more likely to drop out than those in intensive treatment. Table 2 shows attrition rates in different sections of the whole sample, for clarity using those subgroups and matched samples which we have reported on above.

We tried to distinguish between early dropouts and those children who continued in treatment.¹⁰ We were unable to predict with any accuracy which children within the whole sample were most likely to terminate treatment very prematurely (only 10% of those dropping out could be predicted). However, we found that looking at more homogeneous subgroups of children sometimes improved our capacity to predict attrition. For instance, significant predictors of remaining in treatment within the disruptive group were parental psychopathology (other than anxiety), being in intensive treatment, having specific learning difficulties at school, and continued support to parents by regular meetings with a social worker. These variables together could predict whether the child dropped out in 74 percent of cases, and the prediction became better still when younger and older children were looked at separately (81% for children over 9 years, among whom the majority of premature terminations occurred). Although these analyses of dropping out were too complex to give predictors for all subgroups here (see Fonagy and Target, 1994; Target and Fonagy, 1994a,b), we give the attrition rates for each subgroup in Table 2.

Having excluded those who left within the first six months, 28 percent of children in nonintensive treatment, and 18 percent of children in intensive treatment were either the same or worse, in terms of general adaptation, at the end of their treatment. A substantial proportion of this group can be accounted for by a relatively small group of diagnoses. Only 33 percent of mentally retarded children, 28 percent of children with pervasive developmental disorders (such as autism), 41 percent of those showing attention deficit hyperactivity disorder and 24 percent of conduct disordered children improved significantly, and these children usually continued to show diagnosable disorders, and remained in the clinical range on the HCAM measure. If these 70 children were excluded from the sample, 66 percent of children treated intensively, and 50 percent of children treated nonintensively showed significant improvements, and 61 and

¹⁰We used stepwise discriminant function analysis, which attempts to fit a model for predicting group membership for each case in terms of the other variables collected. The higher the proportion of cases which can be correctly classified, using the model, the stronger the relationship between predictor variables and the likelihood of dropping out, and therefore the greater the power of prediction of dropping out or persisting with treatment in future cases.

Child Analysis: Predictors of Outcome

TABLE 2. Percentages of Children Leaving Treatment within Six Months, across Whole Sample and within Matched Subgroupings

Group	% Dropping Out	Significance of Differences between Subgroupings
Full Sample	18.0	
Intensive Treatment	13.9	$\chi^2 = 25.44$, $df = 1, p < .0001$
Nonintensive Treatment	30.7	
Preschool Children	18.1	$\chi^2 = 8.60$, $df = 2, p < .02$
Latency Children	11.0	
Adolescents	25.2	
Disruptive Children	23.7	$\chi^2 = 3.43$, $df = 1, n.s.$
Emotionally Disordered Children	14.8	
Depressed Children	25.3	$\chi^2 = 11.31$, $df = 2, p < .005$
Overanxious Children	10.4	
Children with Specific Anxieties	11.9	

48 percent respectively moved into the functional group (both differences according to intensity remained significant, $p < 0.005$ and 0.02 respectively). It seems that children with certain disorders were unlikely to be helped even by intensive and lengthy psychoanalytic treatment, as provided at this center.

DISCUSSION

Summary of Findings

A number of themes run through the overview of our findings. (1) Overall, 18 percent of patients withdrew from treatment within six months, before we could envisage an analytic process having been established and resolved. (2) Children with pervasive developmental disorders (e.g., autism) or mental retardation did not do well, even with prolonged, intensive treatment. Children with serious disruptive disorders also had relatively poor outcomes. (3) Younger children appeared to improve more during psychodynamic treatment, and to gain additional benefit from four to five times weekly sessions. (4) Anxiety disorders, particularly specific rather than pervasive symptoms, were associated with a good prognosis, even if the primary diagnosis was of a different type; for example, disruptive disorder.

(5) Among children with emotional disorders, severe or pervasive symptomatology did respond well to intensive treatment, but did not show satisfactory rates of improvement in nonintensive psychotherapy. (6) Predictors of improvement varied considerably between subgroups of the full sample. One striking example was that of parental pathology, which appeared as an important factor in most analyses, but the particular forms of pathology which had an impact on treatment outcome differed, and the same aspect of the history could even have opposite effects depending on the age of the child.

Premature Termination of Treatment and Negative Outcome

A limitation to this study's contribution to predicting psychotherapy outcome is the general difficulty in accounting for attrition. Regardless of the fact that around half of the variance in outcome could be predicted in the children who continued with treatment, if the 18 percent who withdrew within six months could not be accurately identified, then the power of prediction from this database is reduced. It has proved very difficult to account for premature termination in most other studies of treatment outcome (Weisz and Weiss, 1993).

Certain variables did, however, emerge as significantly associated with attrition, across the sample as a whole. Being in nonintensive treatment consistently predicted premature withdrawal. This seems a somewhat surprising finding, as parents often say they would find bringing the child for nonintensive treatment easier to manage. It is possible that there were already signs of poor motivation (or of poor prognosis) associated with assignment to nonintensive therapy, although a study designed to explore this possibility in the current set of charts found no evidence for this possibility (Schneider, 1994). We suspect that intensive treatment was more successful in engaging the child in productive work, and therefore seemed worth continuing for both parents and child. Regular parent guidance was also associated with a lower attrition rate, presumably because of its impact on parents' motivation (highlighting the importance of contact with parents during the course of individual therapy for children). The absence of paternal psychiatric history (except for antisocial behavior) was also related to dropping out. This may point to the common clinical observation that fathers who have not themselves

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experienced emotional distress, or who are inclined to be aggressive or impulsive, are less likely to support an intensive, long-term psychotherapeutic approach. In a similar way, children whose own difficulties were triggered by a specific stress or who had impulse control problems, and who did not suffer from anxiety symptoms, may have been insufficiently psychologically minded to see the point of long-term psychotherapy, and to establish an effective therapeutic alliance.

Among the subgroup where prediction of premature termination was most successful, the disruptive group, the attrition rate was lower than the 45 to 65 percent reported in other studies (Pekarik and Stephenson, 1988), in spite of the long-term nature of this treatment. It emerged quite consistently that parental psychopathology (with the exception of maternal anxiety) was *negatively* related to attrition; that is, those with more disturbed parents were more likely to persist, and other variables found elsewhere to predict dropping out of treatment, such as comorbidity and lower IQ, appeared to make no difference within this group of disruptive children. A number of factors which might be expected to be relevant, such as whether the child was treated by a staff or student therapist, family size, the presence of multiple symptomatology in the child, verbal intelligence, and so on, showed no differences. An additional diagnosis of specific developmental disorder was, in fact, associated with *remaining* in therapy among children over 9 years old (the group most likely to drop out). It may be that associated pathology in both parent and child is more effectively managed within a setting using a psychodynamic approach, where the intervention (for both child and parent) intentionally addresses all areas of personalities and relationships, rather than being focused primarily on the disruptive behavior.

Early terminations occurred less often in the emotionally disordered group than was the case with disruptive disorders treated at this Centre. As might be expected from the negative and conflicting findings on attrition shown in meta-analyses (Weisz and Weiss, 1993), it proved difficult to predict which children were likely to withdraw from treatment. Depressed children were more likely to terminate before six months, which is in line with Kazdin's findings that depression in the child was associated with early termination. Adolescents

were also relatively likely to withdraw within the first six months of treatment, although the selection of matched subgroups in this analysis demonstrated that some of this difference in the full sample (where 40% rather than 25% of adolescents dropped out) was due to other factors associated with older age, which disappeared after matching (possible examples are level of impairment, social class, frequency of sessions). Other differences which persisted between the matched groups, because they were not controlled for, may have contributed to remaining differences, such as the higher proportion of broken families among older children.

Further research is being done to clarify ways in which the problem of attrition may be better anticipated and perhaps preempted. The present findings may be helpful in guiding prospective studies which could measure side by side the likely internal influences (such as parents' attitudes to psychological distress and treatment; what the recommendation of analysis means to the parents and child: criticism, failure, or an opportunity for support and understanding; the relationship formed between the therapist and parents and child; the relationship between parents and social worker, etc.) and external factors (such as transport difficulties, or number of other children in the family).

Diagnostic Groups Which Showed Very Poor Response to Therapy

The imperviousness of pervasive developmental disorders, such as autism, to psychoanalytic treatment was in line with our theoretical suggestion that these children may suffer from an irreversible stunting of mental processes (frequently through organic damage). If our thinking is correct, these processes cannot then be made to function through treatment, even though very valuable work can and should be done to improve the quality of life and adaptation of these patients.

There were other groups which did not respond well to psychoanalytic treatment; for example, conduct disorders, mental retardation, and to a lesser extent ADHD. With these disorders nonintensive treatment was singularly ineffective, while intensive (psychoanalytic) intervention was more successful given sufficient length of treatment. Rates of attrition were particularly high for the disruptive disorder group. Thus, the principal problem seems to be finding ways of

keeping such patients in therapy long enough for the mental process aspects of their disturbance to be adequately addressed. We suggest that the traditional methods of providing psychoanalytic help may not be the most appropriate for such children. Since the pioneering work in Aichhorn (1925) it has been well recognized that delinquent children and adolescents need substantial modifications of traditional technique in order to make them accessible to psychoanalytic intervention. Innovative, psychoanalytically informed treatment approaches will have to be tried and tested if our success rate with these groups is to improve. This is one of the clinical priorities which we are pursuing as a result of this conjunction of theoretical development and empirical findings.

The Effect of Age on Outcome

The age of 12 marked a threshold beyond which children were somewhat less responsive to treatment, particularly on an intensive basis. The findings suggested not only that the accessibility of pathology to treatment differed according to age, but also that predictors of the outcome of child therapy must be considered within a developmental framework. It appears that adolescents do equally well or better in nonintensive treatment, while younger children improve much more with frequent sessions. This difference in younger children is not accounted for by length of treatment, which is comparable for intensive and nonintensive treatment, or in the assignment of cases to the two models of treatment. Psychoanalytic literature assumes that intensive treatment has more impact in all age groups. However, some authors (A. Freud, 1958) have cautioned against intensive therapy in adolescence, because the regression and dependence involved runs counter to the usual strong developmental push in adolescence toward independence, action, and separation from parental figures. As Sandler, Kennedy, and Tyson (1980) expressed it, "A special technical problem arises in the treatment of adolescents in that the therapist has to 'fight for the past' because of the adolescent's enormous fear of regression" (p. 87). The present findings seem to support this view. Nevertheless, it should be emphasized that these results apply only to past practice at one center, and may reflect factors specific to this setting or technique.

The findings are also consistent with our predictions, based on the supposition that age marks the evolution of increasingly elaborate mental processes. Our model suggests that mental processes are

particularly vulnerable to conflict-related distortion and inhibition at early stages of their development. Once firmly established, mental processes, like most skills, are unlikely to be impaired by psychic conflict. Conversely, distortions of mental processes are increasingly difficult to restore psychotherapeutically once the critical phase of their development has passed. With early and intensive intervention, mental processes may receive the interactional input necessary for their normal evolution. Once profound inhibitions have been established, therapeutic work must undo them, in order to free up the developmental process.

The Influence of Anxiety on Treatment Outcome

One of the results of the present project which was not predicted was the apparent advantage of a diagnosis of comorbid anxiety to treatment outcome for children with disruptive disorders. Children who experienced anxiety in association with their disruptive behavior, or other psychological problems, were more likely to respond positively to psychotherapeutic help. Within the model we have outlined, we suggest that anxiety is an indicator of the quality of organization of the “representational world” (Sandler and Rosenblatt, 1962), and, as Freud (1926) taught us, an internal signal of incompatible mental representations. The child is motivated by this anxiety to distort representations in a defensive way, and ultimately to inhibit mental processes in order to reconcile incompatible experiences.

In this model, the absence of anxiety may then be an indication of a pervasive distortion of representations, or more likely a substantial inhibition of mental processes, to a point where incompatibility is no longer experienced. For example, a profound inhibition of reflective capacity may avoid recognition of distorted representations and ensure relative freedom from anxiety, but at the cost of causing substantial developmental handicap. A pervasive reorganization of the representational world may be the cognitive process underlying the primitive defense of splitting, where appropriate connections between mental representations are apparently severed. Thus, the absence of anxiety in most instances could be expected to be associated with greater inaccessibility to therapeutic help based on a reflective process. If the child has inhibited reflective function, he will not consider the implications of therapeutic interpretations. This

model relates to Bion's observation (Bion, 1959) concerning patients' propensity to "attack" the linking of ideas.

The Impact of Intensity on Treatment Outcome, and the Importance of Severity and Pervasiveness of Emotional Disorder

More intensive treatment was associated with a significantly greater likelihood of improvement in adaptation, over a comparable period of treatment (an average of two to three years in each case). This seems to have been partly because children were more likely to withdraw from nonintensive treatment, or to be withdrawn from it by their parents. However, the difference in outcome remains marked, and statistically significant, even after early drop-outs have been excluded.

The contrast between insight and rehabilitative aspects of treatment may account for the greater impact of intensive treatment on patients whose primary disturbance is thought to be at the level of distortions in mental processes, rather than mental representations. Of particular relevance here are two aspects of the results of the present study. First, the interaction between treatment intensity and severity of disturbance for the emotionally disordered group, and second, the relationship of treatment length (and intensity) to the difference in outcome between emotional and disruptive disordered children.

With regard to the first of these issues, we suggest that process disturbance is more likely to play a part in more severe pathologies. In connection with borderline disorders, we (Fonagy and Higgitt, 1990; Fonagy, 1991; Fonagy, Leigh, Kennedy, Mattoon, Steele, Target, Steele, and Higgitt, 1995) have argued that inhibitions and distortions of mental processes, particularly the capacity to think about the mind of the other, make the individual vulnerable to further symptomatic disturbance. Multiple disorders, one way in which severity was operationalized in our analysis of emotionally disordered children, would therefore suggest process disturbance. It is likely that intensive treatment, in the context of a relatively safe therapeutic milieu, is required if the development of arrested emotional and cognitive development is to resume. We also speculate that the intensive treatment offered to these individuals was the minimum necessary to permit other aspects of the therapeutic process, addressing distorted mental representations, to take effect.

The less frequent sessions in nonintensive therapy generally mean that the therapeutic relationship is less of a focus of the treatment, and the patient's perception of the analyst's and his or her own mental states are rarely monitored with the same degree of accuracy and consistency. Nonintensive treatment is therefore less likely to tackle developmental anomalies which underpin the child's vulnerability. Less severe disturbance, not requiring such anomalies to be addressed, does not require intensive treatment, and this pattern was observed in the case of emotional disorders.

One striking finding of the present study was that, of the emotional disorders, depression seemed relatively resistant to psychotherapeutic or psychoanalytic help. This is in marked contrast to the adult psychotherapy outcome literature, where depression has been shown to respond well to interpersonal dynamic psychotherapy (Shea, Elkin, Imber, Sotsky, Watkins, Collins, Pilkonis, Beckham, Glass, Dolan, and Parloff, 1992). There have been no previous studies of the psychodynamic treatment of childhood depression; indeed the very diagnosis of childhood depression has been controversial until relatively recently (Rutter, 1988).

We suggest that, within the mental process model described, childhood depression may represent a pathology of a qualitatively different nature to adult depression, and indicate a deeper, more widespread disturbance. We see childhood depression as a disturbance of mental processes related to the development of the self. As we know, the key symptoms of depression in childhood are very low mood and depressed appearance, low self-esteem, feelings of hopelessness or aggression, withdrawal from contact with others, anorexia and other biological symptoms, suicidal thinking or behavior (American Psychiatric Association, 1987; Weissman, Wickramaratne, Warner, John, Prusoff, Merikangas, and Gammon, 1987). The psychoanalytic understanding of this pattern of reaction in adults is most commonly couched in terms of the discrepancy between the ego-ideal and the self-representation and/or an unusually severe sense of self-criticism and blame (Freud, 1912; Jacobson, 1964).

It seems likely that whereas depression in adults may indeed reflect distortions of either self representations or representation of the ego-ideal, in children suffering from depression, neither of these structures has been sufficiently well developed for direct expression.

in subjective states. We would argue that childhood depression may in some instances reflect a dysfunction of mental processes associated with the creation of self representation, particularly those associated with self-monitoring and self-evaluation. In this model, whereas depressed adults experience self-devaluation, depressed children experience a deficient sense of self. The same overly critical attitude toward the self, which in adults may manifest as hopelessness, undermines and threatens to destroy the growth of the child's as yet fragile sense of self. Epidemiological studies offer data consistent with the above formulation. There is evidence from studies of clinically depressed children and adolescents (e.g., Weissman et al., 1987) that the younger the child, the more severe and disabling the symptomatology, and, in particular, that younger children had more negative views of themselves than did depressed adolescents. In adults, this form of disturbance could be more akin to profound narcissistic states or borderline personality disorder. It should be noted that disorders involving a precarious or vulnerable sense of self are notoriously difficult to treat in adults (Shea et al., 1992), and on the basis of the present evidence also in children.

With regard to length of treatment, we would also argue that brief treatments may correct disturbances at the level of mental representations, but are unlikely to provide the child with adequate input for the "rehabilitative" function of therapy to take place at the level of mental processes. The lack of a significant difference between emotional and disruptive disorders following long-term intensive treatment may be understood in these terms. As we have suggested, disruptive behavior is probably more likely to involve disturbances of mental processes. For example, aggression may in many instances involve a malfunctioning defensive strategy to protect a fragile and vulnerable self representation (i.e., sense of self) and the consequent fusion of self-structure with aggressive impulses (Fonagy, Moran, and Target, 1993). Thus, in aggressive children, short-term or nonintensive psychotherapeutic treatment would not be likely to lead to substantial improvements.

Within this model, we would also expect that a primarily self-reflective psychotherapeutic approach would be a source of confusion and frustration for many individuals with disruptive disorders. The high rate of premature termination in this group may be linked

to analysts' failure to take the child's inadequate capacity for mentalization into account. We speculate that this is a greater danger in nonintensive therapy, where there is pressure toward reflectiveness, with insufficient opportunity for the specific and intensive examination of the relationship with the analyst which can allow this capacity to be developed.

Prediction of Outcome in Different Subgroups of the Sample

Prediction of outcome was considerably more accurate when relatively homogeneous subgroups were drawn from the sample. The importance of different types of variable could then frequently be seen to differ, for instance, when three domains of information (demographic and family, child and clinical, treatment) were used in separate multiple regression procedures for the three matched age groups, clinical variables (such as diagnoses) were by far the most important in predicting outcome for the youngest children, whereas family and treatment variables were of much greater importance for children between 6 and 12 years. All three domains contributed substantial information in the adolescent group. This pattern of results underscores the increased number of issues that come to be entangled with the child's pathology, with development, and the consequent increase in the complexity of prediction.

A consistent finding across all groups was the significant contribution of parental pathology to the likely success of the child's treatment. This contribution was not equally important or even in the same direction in different subgroups, and again the developmental context emerged as crucial. For example, severe mental illness in the mother was found to predict outcome in opposite ways in the two younger age groups: it was associated with poorer outcome in children under 6 years, but *positive* treatment response in the matched group of 6- to 12-year-olds. A history of serious psychiatric illness in the mother has been found in many studies to be associated with mental ill-health in children (e.g., Quinton, Rutter, and Gulliver, 1990). One may imagine that, while a history of mild neurotic symptoms might make a parent more understanding toward a young child's distress, major mental illness in a parent probably has the reverse effect. It may be, however, that while such a history increases the risk of childhood disorder at all ages, the impact on *treatment response* varies with the developmental level of the child.

The treatment of a preschool child is probably particularly affected by distortion of the mother–child relationship, as, at least in the decades during which these treatments were carried out, children of this age usually spent most of their time with the mother, had less access to alternative environments, and may still have been too involved in the parental pathology to use fully the opportunity for a new therapeutic relationship. In contrast, children in middle childhood are generally very receptive to new relationships with peers and adults, and may particularly seek alternative close relationships where the mother–child experience has been very limited or disturbing. The analytic relationship may offer something sufficiently intense and prolonged to amount to a different experience of parenting, enhancing the child's commitment and likelihood of improvement.

While exposure to a disturbed environment, reduced reliability of attendance, and other realities associated with parental psychiatric illness are undoubtedly important, the model discussed earlier suggests a further dimension. Studies by ourselves and others have shown that the parents' capacity to reflect on the child's mental state may be critical for both the development of normal patterns of attachment between the child and the caregiver, and the normal growth of mentalizing function in the child (Fonagy, Steele, Moran, Steele, and Higgitt, 1991; Main, 1991). Parental psychiatric disturbance, particularly at early developmental stages, may be one of a number of reasons why a mismatch between parental and infant mental state can repeatedly occur. We would speculate that many children with psychiatrically ill parents develop disturbed attachment relationships for this reason (e.g., Belsky and Rovine, 1987; Shaw and Vondra, 1993). It is likely that insecure internal working models of relationships may make the child more resistant to an interpersonal relationship with a benevolent adult, including a psychotherapeutic relationship (Dozier, 1990; Dozier, Stevenson, Lee, and Velligan, 1991; Shirk and Saiz, 1992). It is also likely that children whose early experience has tended to inhibit the growth of a reflective self (i.e., of the capacity to think about mental states in oneself and in others) will have particular difficulty in using dynamic psychotherapy, which uses this capacity more than most forms of treatment. Although this form of intervention—the development of a long-term, intimate relationship with a reliable, sensitive adult—may offer

a vital opportunity for change to such a child, he or she will find it much harder to understand and to use than a child whose “mentalizing” capacity is already well developed.

Modifications of Technique to Improve Outcome

What does this work involve in practice, with such developmentally impaired children? We have referred in the introductory section to the technique of “developmental help,” based on the model of psychopathology outlined by Anna Freud. It is not easy to separate out what is analysis in the classical sense and what is developmental help as practiced by psychoanalysts at the Anna Freud Centre, but study of past and current cases leads to a preliminary characterization of this approach. A single example from the work of G.S. Moran may help to illustrate this issue.¹¹

David was a 10-year-old diabetic, with long-term problems of noncompliance with self-management of the disease, and aggressive behavior toward family members, children at school, and himself. David often tried to tear his mother’s hair out; he would swear, refuse to eat, or squirt his Insulin into the sink. David’s mother had a long-standing affective illness. An unwanted, aggressive, and abused child, she had been in institutional care from the age of 5. She had a severe puerperal depression following David’s birth, and their relationship was always stormy and often violent. David’s relationship with the analyst was correspondingly fraught. David found his analyst frightening and menacing. David was hostile, most often reading comics or making a mess. Interpretations of David’s projection of his aggressive wishes onto the analyst rarely had any impact, and he often had to be restrained. He felt persecuted by the analyst’s comments, and became abusive. The analyst talked to David of his difficulty in understanding or expressing what was going on in his mind and the helplessness this caused him to feel. David simply shrugged his shoulders, said his head was empty, and buried himself in his comic. David was showing an unusual form of intense resistance: he could not tolerate his analyst thinking about him. He tried to protect his mental self from his analyst’s thoughts, as he may have tried to blot out his

¹¹This child and his treatment have been described more fully in a previous paper (Fonagy, Moran, and Target, 1993). This case is chosen because of this fuller description for those who may wish for more detail, and because this child provides a case comparable to the other described afterwards.

mother's rejection of him, through her years of depression and later her active hostility. There was no indication of any period of attunement with either parent, which would have helped David to recognize his own or others' states of mind, and to experience mutual feelings other than of aggression. His constant attacks on his analyst and the analytic process seemed to be attempts to avoid awareness of the analyst's interest and insight, and to maintain an impression of mutual lack of concern.

As we have said, interpreting this state of affairs did not help David. The analyst invented a game in which he and David made notes on "What I think you think I am thinking about you today." David wished to repeat this game day after day for months, often calling for it at times of intense anxiety, when previously he would simply have reacted destructively or withdrawn from all contact. Following David's lead, the analyst reflected on David's mental state, principally in relation to himself, both conscious and preconscious, rather than interpreting repudiated feelings about past and present relationships.

Gradually, David became able to talk about thoughts and feelings in himself and in his analyst. Eventually, his terror of being seen as "bad" began to surface. His unprovoked, excessively aggressive acts could now be seen and interpreted as aimed at objects whom he experienced as seeing him in a negative way. It seemed as if through attacking these individuals, he could temporarily rid himself of bad reflections which threatened to overwhelm him.

In a sense what is striking about the vignette is not any remarkable insight of the analyst, but on the contrary the very ordinariness and humanity of the intervention. This has to be seen in contrast to some other cases, where an insistence on classical interventions appears to dominate the reports, at times perhaps to the point of dogmatism. Again a simple, this time anonymous example.

Mark was, like David, 10 years old and the son of a woman who had developed a manic-depressive disorder soon after his birth. He was impulsive, and difficult to manage at home and at school; he also regularly wet his bed and had many somatic symptoms. In the analysis with a junior woman analyst he often climbed, fought, and threw wet tennis balls around the room. At other times, he would arrive early for sessions and watch the analyst secretly, intently studying her face. In sessions also, she sometimes felt he was absorbed in trying to read her expression.

Interpretations along classical lines, as with David, had little effect. For example, in one session when, in constructing a model battleship, he glued little guns in place of big ones, his analyst commented: "You feel awful when you want to behave like a big man already when you still look and feel like a small boy." He responded by getting into a confused state, argued at length that the analyst was wrong and stupid and a clot (idiot), and that girls knew nothing about these things. The analyst then attempted to show him the reversal of his castrated feelings and his conflict about the size and place of holes in the ship's body and where the guns of each size fit as the expression of his confusion about the bodies of men and women. She went on to talk to him about his wish already to do what father and grown-up men (the big guns) do and explained about holes in women's bodies. He responded by scribbling on the model's assembly instruction sheet, said the analyst was crazy and that he would have to be her therapist.

We suggest that the analyst, in following the classical model of analytic work, missed transference aspects of Mark's communication. He could be seen as feeling like the small gun, inappropriately placed into the big, frightening battleship of the analysis, experiencing his position as in a psychological vacuum, where he felt too small to understand the alarming ideas of his big analyst. The analyst then, arguably, compounded the problem by forcing even more big and complex ideas into Mark's mind, to which he could only reply by attacking her and the formulaic approach which she was taking. We think it likely that Mark, like David, was engaged in a desperate search to find the adult mind which would help him understand and contain the confusion in his own mind. His mother's unpredictability had for a long time denied him this opportunity at home. We suggest that, sadly, the analyst in this case was too often concerned with a somewhat stereotyped theoretical understanding of the case to provide the safe interpersonal context for Mark to begin to find a consistent picture of himself in the mind of another person.

Mark became more and more unmanageable, in the analysis, at home and at school. As his behavior deteriorated it became clear that he would have to be sent to a special residential school for maladjusted children. His outcome was rated as negative and his diagnosis at termination had changed from enuresis and separation anxiety to conduct disorder.

The inappropriateness of classical technique in this case may strike us now, but at the time, it very likely seemed entirely appropriate and in fact there was little alternative within psychoanalysis. Classical analysis was rarely used with children with pervasive developmental disorders but was routinely used with children such as Mark who had milder forms of developmental disorder. In fact, it was the treatment of these children as well as the autistic cases, very disappointing clinically, which created the impetus for the modification of technique which we now call developmental help and its extension to children previously considered to be in the neurotic spectrum.

Developmental intervention pertains to the pathologies traditionally defined as residing in the ego, labeled as developmental disturbances, and thought to relate to ego functions and self and object representations. Developmental help includes those aspects of the analyst's interaction with the child which address: (1) ego functions (mental processes) via self and object representations; (2) the verbalization of internal states and differentiation of affects; (3) the breaking down of unmanageable affects (anxiety) into smaller manageable entities which the child can master; (4) the development of internal representations of affects so that the child can master his own feelings; (5) the facilitation of thinking by reducing anxiety and making links between different aspects of thought processes; (6) facilitation of thinking about cause and effect, particularly within relationships; (7) helping the child separate internal from external, real from unreal, fantasy from reality; (8) setting limits and offering explanations for the limits provided; (9) facilitating the creation of internal representations of self and other; (10) establishing reciprocity (e.g., giving and taking); (11) developing the capacity to delay gratification; (12) helping the child to develop an "as if" attitude, and the encouragement of fantasy; (13) gradually confronting the child with opposing ideas, for example, the possibility of hatred and dependence on the same person.

While these elements enter into any analysis, especially with children, we suggest that they need to be much more intensively and repeatedly focused on with children whose primary disturbance is at the level of mental processes, rather than of the representations they generate. The claim that educational and supportive aspects

of analysis may be particularly important for children with serious developmental problems chimes with the findings concerning more seriously disturbed adults in the Menninger study of psychotherapy reported by Wallerstein (1986). A number of alternative theoretical formulations could accommodate such findings, most especially those rooted in self-psychology (Kohut, 1977). It may be important to clarify the distinction between our theoretical approach at the Anna Freud Centre and that of self-psychologists (e.g., Stolorow, Brandchaft, and Atwood, 1987). The clinical interventions subsumed under the concept of developmental help may be very similar to the psychoanalytic techniques which are assumed by self-psychologists to provide the soothing and mirroring function that leads to the restoration of the self, achieved through mastery or a move beyond omnipotence. However, our understanding of the origin of the disorder is rooted in notions of conflict rather than of deficit. We assume that intense intrapsychic conflict, particularly at early stages of development, may have as one of its consequences the inhibition or “decoupling” of certain mental functions critical for normal development, resulting in apparent deficits which nevertheless may be possible to overcome through appropriately modified psychoanalytic work. This must take into consideration the patient’s limited capacity genuinely to comprehend the nature of complex mental states, including the possibility of psychic conflict. Therapeutic work must therefore initially focus on assisting the child to lift the inhibitions on his mental functioning which in turn may make access to his mental world easier and, in extreme cases, possible for the first time.

Limitations of the Present Study

This study, like all retrospective investigations, has limitations. First of all, it obviously was not possible to assign children randomly to treatment or control groups. One therefore cannot *conclusively* show child analysis to be effective in the treatment of children, relative to other modes of treatment, or even to no treatment. The main grounds for comparison are studies of the natural history of the disorders under scrutiny. Information is gradually accumulating from epidemiological studies (most recently the work of Cohen and her colleagues [Cohen, Cohen, and Brook, 1993]) that psychiatric disorders in children tend to persist for years in about half of all

cases. There appears to be little difference in this persistence according to the age of the child, but certain disorders are particularly likely to continue (especially pervasive developmental disorders, but also conduct disorders). Various strategies could be used to strengthen the retrospective information, for instance by matching these children with others who were referred but not treated, and following up both groups. Although we are currently doing this, attempting to identify ways in which children treated analytically may have greater long-term resilience, the issue can only be really convincingly addressed in a prospective design, incorporating a carefully chosen control group from the same population.

It is also, of course, an important consideration that even where the rate of improvement during treatment is clearly superior to that expected from the natural history, the effective elements in treatment remain to be identified. With an intensive and complex treatment over some years, involving considerable attention to both parents and children, and occasionally wider social intervention (e.g., transfer to a more appropriate school), it is by no means clear that the analytic work has been the crucial ingredient. This is largely unavoidable in a retrospective study, although some confirmation did emerge, in multivariate analyses of treatment outcome, that additional aspects of the Centre's work (parent guidance, psychotherapeutic treatment of parents, attendance at the Centre's nursery school) did have an impact on the extent of change in the child's functioning. It also seems clear that intensity of treatment can have a strong impact in certain types of disorder, and in children rather than adolescents. To what extent this is a result of more thorough analytic work being done in more intensive therapy, and to what extent it means that nonspecific factors (attention) have a different impact on different groups, remains to be clarified.

Other clear limitations of this study were that the measures of outcome were in terms of surface adaptation (including social and emotional adjustment, not just symptomatology) rather than specifically assessing intrapsychic functioning, and there was no examination of the relationship between analytic process and outcome. While enormously increasing the accessibility and value of this work for clinicians and outcome researchers in other areas of child treatment, this obviously reduces its interest to analysts. The first point,

that intrapsychic functioning was not recorded as the primary outcome measure, was, we think, inevitable given that our material was confined to records of past cases. It would have been foolhardy to claim to record change at this level with accuracy. However, we are currently working on ways of coding the children's adjustment in analytic terms for use in prospective outcome studies (using a method of assessment based on the Diagnostic Profile, A. Freud, 1965), and of recording extensive details of the process of analysis for each child. We will be very interested to discover whether there are relationships between "good" analytic work and positive analytic outcomes (e.g., establishment and resolution of transference neurosis) or improvement in external adjustment (as we have assessed this). Previous studies of adult psychoanalyses have generally failed to show such a relationship (see Kernberg, Burstein, Coyne, Appelbaum, Horwitz, and Voth, 1972; Wallerstein, 1989; Kantrowitz et al., 1987a, 1990a,b,c). Nevertheless, we regard these questions as central in analytic outcome research and have written a very detailed manual of technique in child psychoanalysis to enable us to evaluate whether, and in which respects, an analysis was "good," i.e., followed the principles and technical procedures regarded as fundamental by experienced child analysts (Fonagy, Edgumbe, Target, Moran, and Miller, in press).

A limitation which has already been mentioned, and was of course unavoidable, is that these findings apply specifically to psychoanalytic work as carried out at one center, within Anna Freud's tradition. The results suggesting, for instance, that adolescents did not gain extra benefit from more intensive treatment, or that clinical depression tended to be a negative indicator, would need to be replicated at other centers before taken to be generally the case. For instance, as we have described earlier, Anna Freud herself was pessimistic about using intensive treatment with adolescents, and although many of her students (whose work is included here) have disagreed with this, her attitude may have shaped expectations and technique so that we are seeing a self-fulfilling prophecy.

A further important drawback of the present study is that it was only possible to take measures of improvement at the beginning and end of therapy, rather than at regular intervals throughout the course of the treatment. This means that the likelihood of improvement may be confounded by length of treatment, particularly for

disorders which have a high rate of spontaneous remission. However, it is important to note here that improvement was generally related to treatment intensity as well as length of treatment.

Notwithstanding the above limitations, the integrity of the material reported in this study is relatively high. The original clinical records were systematic and constantly monitored (by Anna Freud and her senior colleagues), and the extraction of information was reliable and guided by clearly defined criteria. The powerful and consistent prediction of outcomes from the variables coded also supports the soundness of the data. The strength of the prediction is considerably better than that reported in most psychotherapy studies with either children or adults. In other studies, variables recorded before the start of treatment have rarely accounted for more than 10 to 20 percent of the variance in outcome (Casey and Berman, 1985; Weisz, Weiss, Alicke, and Klotz, 1987; Weisz, Weiss, Morton, Granger, and Han, 1992). Excluding treatment variables, it proved possible to specify 30 to 60 percent of this variability, applying predictors similar to those used in other studies.

Several factors may account for this. The most important is the length and relative uniformity of the treatment offered. Most psychotherapy studies examine brief interventions and therefore identify individuals who benefit from treatment in the short term. There may have been other children in those samples, with similar demographic and clinical features, who would have benefited from the treatment had it continued. A further advantage, in terms of prediction, was the diversity of the Hampstead sample, as it was a clinical population rather than one specially drawn up for experimental purposes. This gave us the great advantage of being able to examine differences in outcome between a wide range of subgroups of this population, in clinical presentation and developmental stage, which allowed us to improve the power of prediction considerably.

It is also possible that the superior quality of the clinical records and our definitions of variables gave a firmer basis from which to predict. One distinction between the present study and others is that the Anna Freud Centre database is based on the sophisticated and systematic observations of skilled analysts. In the past, the generally poor reliability of clinical judgments has gradually shifted clinical data collection away from interview data toward far more reliable

psychometric instruments. More recently, researchers have become increasingly aware of the grave limitations, alongside the advantages, of this approach. It is possible that the predictive power of this clinically based database, subjected to rigorous and clinically sensitive description across hundreds of cases, may support a paradigmatic shift in research on psychosocial interventions, from a uniquely questionnaire oriented tradition to one where such information is supplemented with data collected using traditional clinical skills.

CONCLUSIONS

Psychoanalysis has a tradition of sharing clinical material and experience. We are trying to find ways of extending this tradition, so that it can benefit from advances in scientific methodology. This should ultimately allow us to test and compare cherished theoretical ideas more rigorously within the world of psychoanalysis, and bring much readier acknowledgment of its findings and effectiveness in the wider community.

The study reported here represents the first stage of a program of research to investigate the short- and long-term outcomes of child psychoanalysis and psychotherapy. Although one must be cautious about generalizing these findings to other settings and clinical approaches, we hope to have shown that it is possible to assess the outcome of this treatment systematically across a large number of cases and analysts, using measures and methodology which meet current standards of outcome research and can thus be communicated to a wide audience. At this stage, it has been possible to investigate outcome without intruding on the privacy of the consulting room or burdening the analysts with unfamiliar assessments. We have found that, at least in this setting, there are important differences in outcome according to diagnostic group and developmental level, and further that the factors affecting outcome are considerably different between these groups. When subdivided, a large proportion of the variability in outcome can be accounted for using the information recorded retrospectively. Most of this variability was predictable before the analysis began, and thus may have important implications for assessment. Of course, it may be that the variability is largely

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accounted for by the different kind of analytic processes which may be set in motion by particular kinds of psychoanalytic patients. Ultimately, what may be most informative to know is what ways analysts may have found to address different types of pathology, and to what extent these are able to bring about results better than those which might be expected with development alone.

We are currently undertaking this kind of study, trying to examine reasons for different outcomes within fairly homogeneous groups of cases. What may explain the successful versus unsuccessful therapy of a child with OCD (Target and King, in preparation)? What modification of techniques are necessary to engage a child with conduct disorders, and achieve reasonable outcome with children in the borderline spectrum (Target and Storm, in preparation)?

Further stages of our program involve increasing the psychoanalytic interest of our measures, particularly of the process of analysis, carrying out prospective research, and following up a large subgroup of the patients whose analyses have been included here. We hope in this way, building on advances in the measurement of aspects of personality, attachment, internal object relations, somatization, and cognition, to discover whether there are aspects of adaptation and resilience which can be shown to be enhanced into adulthood by the experience of psychoanalytic treatment early in life.

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APPENDIX I. SUMMARY OF MEASURES USED, CRITERIA FOR IMPROVEMENT, AND TECHNIQUES OF STATISTICAL ANALYSIS

Measures and Criteria for Improvement

We have collected information on over 200 parameters on each of the 763 cases meeting selection criteria for the study. The measures fall into three categories.

A. *Demographic*

The extensive biographical and social information includes, for example, the child's age, sex, siblings, and other aspects of family structure. There is also information about the family's cultural background, a breakdown of socioeconomic status, and information on the accessibility of the clinic. Wherever possible, we recorded the current and past mental health of each parent, their overall level of adaptation, their symptoms, diagnoses, and treatment where applicable.

B. *Diagnostic*

Diagnostic conclusions arrived at in psychoanalytic charts are largely unrelated to diagnoses using standard psychiatric criteria, although information required for reliable psychiatric diagnosis is readily extractable from charts (e.g., McGlashan, 1984). In our study, as well as Anna Freud's psychoanalytic diagnostic categories, we used European (ICD-10) and North American (DSM-III-R) standard psychiatric classification systems. We made a concerted effort to extract information concerning symptomatology from the charts and establish probable DSM-III-R diagnoses on Axis I and Axis II on all cases. The reliability of these judgments was checked by independent assignments of diagnoses by three senior child psychiatrists independent of the chart review, working in the United States and the United Kingdom. The overall intraclass reliability was consistently high, Cohen's Kappas ranged between 0.8 and 0.9. In addition, individual symptoms were recorded following Achenbach and Edelbrock's (1983) Child Behaviour Check List.

Finally, level of functioning was rated on a new measure designed to assess the general adjustment of a child. We have

called this the Hampstead Child Adaptation Measure (HCAM). This is a 100-point rating scale conceptually based on Luborsky's Health-Sickness Rating Scale (Luborsky, 1962). Its psychometric structure owes much to the CGAS instrument developed by Shaffer and colleagues (Shaffer, Gould, Brasie, Ambrosini, Fisher, Bird, and Aluwahlia, 1983) in conjunction with the DSM-III-R system. A manual has been compiled to guide this rating procedure and we have successfully demonstrated that the scale can be used with a high degree of reliability (0.75–0.85). The Hampstead Child Adaptation Measure is loosely based on Anna Freud's notion of developmental lines, with raters required to make judgments on the child's adaptational achievements relative to their age and physical and social circumstances. Change scores (between the start and end of treatment) on the CGAS and HCAM scales are highly correlated, but, at least in this context, HCAM turns out to be a far more reliable indicator of general level of adaptation (interrater reliability coefficient 0.85 for HCAM vs. 0.75 for CGAS).

C. *Clinical*

Relevant clinical information on each case includes a limited number of potentially significant etiological factors; amongst these losses of important figures, separations from the caregivers and significant disturbances in family relationships in early childhood were regarded by us as the most important. In addition, information was gathered concerning the analyst (e.g., gender, years of experience), the critical characteristics of the treatment (frequency, duration, interruption, etc.). Care was also taken to classify reasons for termination, in particular to distinguish treatments terminated following agreement between the therapist and the patient or parent as opposed to those ended at the request of the parent or the child against the advice of the therapist.

Three measures of outcome at the end of treatment were used in this report.

1. a child was considered to be still a "case" on *diagnostic grounds* if at the end of treatment he or she still met criteria for any psychiatric disorder, and had an adaptation level rating below 70.

2. *Statistically reliable change.* We categorized cases according to the presence of statistically reliable change in adaptation level. Level of functioning was rated at the beginning and end of treatment on the HCAM. In our data, a difference of 8 to 10 points (depending on the subgroup) between ratings at the beginning and end of treatment meant that a child could be considered to show real and definite improvement, even though he or she might still be psychiatrically diagnosable and maladjusted. Unlike the previous two measures, this looks for clinically important change rather than “cure.”
3. We used the Jacobson and Truax criteria (1991) for determining cut-off points between clinical impairment and normal functioning. These authors propose a statistical method for *distinguishing sick and well* groups, based on the distribution of scores within the two groups. The authors propose three methods for determining cut-off points, which in our case all yielded similar results. We used the Jacobson and Truax formula for calculating the relative likelihood of being in the functional or dysfunctional population, based on the point of equal distance between the means of these two populations, weighted by the distributional properties of each population. The formula for calculating this cut-off is given by Jacobson and Truax

$$\text{weighted relative likelihood index} = \frac{S_0 \times M_1 + S_1 \times M_0}{S_0 + S_1}$$

where S_0 is the standard deviation (s.d.) of the normal group, and M_1 is the central point of the dysfunctional group. We used data from Bird, Canino, Rubio-Stipec, and Ribera (1987) using the CGAS scale to estimate the s.d. and mean of the nondysfunctional population. We used our own sample to estimate population means and s.d.s for a dysfunctional group. HCAM ratings at termination of less than 68 were found to identify cases who still belonged to the dysfunctional group. The two distributions were clearly discrete.

Finally, we also used the change in HCAM ratings as a continuous variable in predictions of the extent of improvement.

Statistical Analysis

For statistical analysis, we used the BMDP suite of statistical programs (Dixon, 1988). To reduce shared variance between predictor variables, we performed a principal components analysis with varimax rotation on 80 variables, and arrived at 58 relatively independent predictors. We contrasted groups using analysis of variance and covariance to examine a continuous dependent variable (e.g., change in HCAM) in relation to one or more categorical variables (e.g., diagnostic group and intensity of treatment), sometimes adjusted for a covariate (e.g., length of treatment); cross-tabulation procedures were employed for looking at the relationship between two categorical variables. We used stepwise multiple regression and discriminant function analysis to predict favorable outcome from the 58 independent variables. In all ANOVA and regression analyses we tested that the assumptions of the general linear model were justified, by examining the distribution of residuals plotted against predicted values. The interaction of three or more categorical variables (for example severity of disorder, intensity of treatment and improvement) was modeled using hierarchical log-linear analysis (Fienberg, 1977) which, in a manner analogous to the ANOVA, breaks down multi-way associations, and attempts to fit models to the observed frequency distributions using the lowest order of interactions required. Wherever significance tests were used to examine the separate impact of many predictors, appropriate statistical corrections were made to avoid obtaining spuriously significant associations between predictors and outcome variables.