British Journal of Developmental Psychology (1984), **2**, 191–204 *Printed in Great Britain*

Long-term follow-up of women institutionalized in childhood: Factors promoting good functioning in adult life*

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The early adult functioning of 89 women from inner London who had been reared in residential Children's Homes was compared with that of 41 women sampled from the general population of the same area. The behaviour of both groups had previously been studied in middle childhood by means of standardized questionnaires. The adult assessment comprised detailed standardized interviews with the women and with their spouses, together with systematic observations of mother–child interaction in the home for those with 2–3½-year-old children. The adult outcome of the institution-reared women as a whole was substantially worse than that for the comparison group, but the course of their personality development had been greatly modified by positive school experiences in childhood and by the characteristics of their spouse and marriage in adult life. The institution-reared women in good psychosocial circumstances in adulthood functioned as well as the comparison group women. The findings are interpreted in terms of direct and indirect effects of experiences leading to both continuities and discontinuities in social development.

Introduction

A good deal is known about the various genetic and experiential factors that put children at risk for deviant personality development and for disorders of psychosocial functioning (see Rutter & Madge, 1976; Rutter, 1981; Rutter & Giller, 1983). However, with risk factors of all kinds and of all severities it has been a near-universal finding that many children do *not* succumb. Indeed, it is quite difficult to find any combination of risk factors that gives rise to significant disorder or dysfunction in more than half of the children exposed. For many years there was little interest in this well-demonstrated phenomenon. Often, there was the implicit assumption that the disorder was simply covert, present under the surface waiting to be revealed. Alternatively, it was supposed that the children at risk who failed to develop disorder had somehow received a lesser 'dose' of the risk factor or that temperamentally they were 'tougher' characters.

Then, during the 1970s, people began to appreciate that a resistance to stress, deprivation or disadvantage might constitute a matter of some theoretical and practical importance. At first, at least in the United States, the term 'invulnerable children' came to be applied to this subgroup of young people who seemed to develop normally in spite of prolonged exposure to serious psychosocial hazards and adversities (Anthony, 1974; Garmezy, 1974). However, the phrase was potentially misleading both in its exclusive focus on the children as individuals, and in its emphasis on a hypothesized lack of susceptibility. Werner & Smith's (1982) phrase 'vulnerable but invincible' seems nearer the mark but it, too, has an unfortunate connotation that the children cannot succumb. The concept of resilience in the face of adversity seems preferable—a notion of relative, rather than absolute, resistance. In addition, however, it is important to keep an open mind on the question of whether the factors promoting resilience lie primarily in the children or in their environment. There needs to be a search for 'protective' factors—influences that modify or ameliorate the impact of risk variables—whatever their nature or origin (Rutter, 1979).

*Based on a paper read at the Life History Research in Psychopathology Meeting, held in Cambridge, MA, 30 May–1 June 1983.

'Protective' factors do not mean simply positive influences that encourage an optimal psychosocial development. Rather, the idea concerns influences, positive or negative, that serve to increase resilience in children exposed to environmental hazards. In short, the focus is on factors that in some way *alter* the impact of risk variables—an interaction of some kind (Rutter, 1983) and not just a beneficial influence. Similarly, there is no implication of effects that permanently change the course of personality development; instead the concern is to identify the variety of influences that serve to create both continuities and discontinuities (Rutter, 1984). The present paper reports findings from a study designed for that purpose.

Study design

The data to be considered with respect to the possible operation of protective factors stem from a follow-up of institution-reared girls. The design and measures have been described in detail elsewhere (Rutter *et al.*, 1983; Quinton *et al.*, 1984); accordingly only the main features will be mentioned here.

The investigation comprised a follow-up into early adult life of 94 girls who in 1964, when aged 7 to 12 years, were then in one or other of two Children's Homes run on group cottage lines. The girls had been admitted to institutional care because their parents could not cope with child rearing, rather than because of any form of disturbed behaviour shown by the children themselves. The regimes in the cottages were studied systematically during the 1960s by Tizard and his colleagues (King *et al.*, 1971) and the children's behaviour at school was assessed by means of a standardized questionnaire (the Rutter 'B' scale, Rutter, 1967). Both sets of data were made available to us. The sample was restricted to 'white' girls and was defined in terms of those aged between 21 and 27 years on 1 January 1978. Of the 94 'ex-care' women (the term to be used for the institutional sample), five had died by the time of follow-up; of the remaining 89, 81 were interviewed.

The contrast group of 51 women comprised a quasi-random general population sample of individuals of the same age, never admitted 'into care', living with their families in the same inner London area, and whose behaviour had been assessed at approximately the same age by means of the same questionnaire. Like the institution-reared group, most came from a working-class background; thus, 74 per cent of their fathers held skilled manual occupations and a further 13 per cent were in semi-skilled or unskilled jobs. The contrast sample was similarly followed to age 21–27 years using identical methods of assessment. Of the 51 women, 41 were interviewed.

Data were collected by interviews with subjects and with their spouses, lasting some 2½ to 4 hours, using a non-schedule standardized approach based on methods established and tested in earlier investigations (Brown & Rutter, 1966; Rutter & Brown, 1966; Graham & Rutter, 1968; Quinton *et al.*, 1976). Because it was not possible to obtain information on functioning during adolescence and early adult life without finding out whether the person had been in a Children's Home, the interviewing could not be undertaken blind to group. However, it was possible to obtain both direct observations in the home and official crime records blind to group; these confirmed the validity of the group differences reported here (see Quinton & Rutter, 1984).

Research findings

Circumstances in childhood

The great majority of the ex-care sample had experienced prolonged periods of institutional care from an early age. Over a third had been admitted before the age of 2 years and over two-thirds before 5 years. Nearly all had spent at least four years in institutional care and over half remained there until at least the age of 16 years. On the other hand, many

returned to their families for greater or lesser periods of time (over a third were with their families for at least one year between the ages of 5 and 11 years); three-quarters of these experienced persistent family discord. We may conclude that the ex-care group's experiences in childhood were a mixture of severe discord and disharmony with their own families and the more harmonious but less intense and less personal multiple caretaking of the institution.

In keeping with previous studies of children in long-stay institutions (Pringle & Bossio, 1960; Wolkind, 1974) we found a high rate of emotional and behavioural disturbance. As assessed on a teacher's questionnaire over a third (35 per cent) of the ex-care girls showed disturbed behaviour at school compared with only 6 per cent in the contrast group. Behavioural disturbance was also apparent on the houseparents' questionnaire and altogether over half the ex-care girls were rated as disturbed on one or both questionnaires.

Outcome in adult life

In planning the study we had assumed that institutional rearing, together with the family adversities with which it was associated, was likely to constitute a risk factor for psychosocial functioning in adult life. The first question, then, was whether the follow-up findings showed that this assumption had been correct. Table 1 provides some of the key comparisons between the two groups with respect to adult outcome. It is clear that the ex-care group had fared much worse in all aspects of their psychosocial functioning. In terms of psychiatric findings, it is striking that a quarter of the ex-care women, compared with none of the contrast group, showed a socially handicapping personality disorder (meaning persistently abnormal interpersonal relationships associated with definitely impaired social functioning). Criminality was present in a similar proportion of ex-care women (the figure includes juvenile as well as adult crime) and marked marital problems were more than four times as frequent as in the control group.

Table 1. Psychosocial outcome of women

	Ex-care women ($n=81$)	Comparison group ($n=41$)	χ^2	d.f.	P
Personality disorder	25	0	10·37	1	0·01
Criminality (self-report)	22	0	8·59	1	0·02
Criminality (official records)	25	2	8·21	1	0·01
One or more broken cohabitations	38	7	12·70	1	0·001
Marked marital problems (of those cohabiting)	28	6	4·59	1	0·05

An overall assessment of psychosocial outcome was obtained by combining these and other measures. A 'poor' outcome was rated if there was a personality disorder, or severe and longstanding difficulties in sex/love relationships, or if there were definite current problems in *at least* three of the six areas of marriage, broken cohabitation, social relationships, criminality, psychiatric disorder, and living in some form of institution. A 'good' outcome was rated if there were no problems on any of these measures. On these criteria, 30 per cent of the ex-care women but none of the controls had a poor outcome (Table 2). Conversely, three-fifths of the latter showed good functioning, a rating made for only a fifth of the institution-reared group. On the other hand, it was evident that there was substantial heterogeneity of outcome in the ex-care group. Some of the women showed normal social functioning and most showed only moderate difficulties.

Table 2. Overall psychosocial assessment

	Ex-care women ($n=81$) %	Comparison group ($n=41$) %
Good outcome	21	63
Some problems	49	37
Poor outcome	30	0
	$\chi^2=27{\cdot}04$, d.f. $=2$, $P<0{\cdot}001$	

Parental deviance, disrupted parents and psychosocial outcome

We may conclude that the ex-care group was indeed an at risk sample. However, before proceeding further, it is necessary to consider *which* factors constituted the risk situation. In that connection, the focus will be on two main outcome variables—personality disorder and overall psychosocial fuctioning. We may ask whether the worse outcome of the ex-care group was a function of their genetic background or their experiences in childhood. The study was not designed to differentiate between these two types of risk factors and obviously both were present. Nevertheless, it was possible to obtain some measure of possible hereditary influences through attention to overt deviance in the parents of the ex-care women. Because the children had been separated from their parents for much of their upbringing such deviance may be used as an indirect measure of possible genetic factors. Using contemporaneous social services records (available for only part of the sample) parental deviance was rated as present if either of the girls' parents had a criminal record in adult life, or had been treated for a psychiatric disorder, alcoholism or dependency on 'hard' drugs. Parental deviance was rated for two-thirds of the girls; this was then related to adult outcome. It was found (see Table 3) that parental deviance had a significant association with adult personality disorder and a non-significant association with poor psychosocial functioning, but no association with other outcome variables.

Table 3. Parental deviance and psychosocial outcome for ex-care women

	Parental deviance		
	Absent ($n=13$) %	Present ($n=27$) %	Exact probability (one-tailed)
Behavioural disorder (childhood)	54·5	58·3	n.s.
Delinquency (childhood)	23·1	14·8	n.s.
Criminality (adult and child)	23·1	29·6	n.s.
Personality disorder (adult)	7·6	40·7	0·03
Poor overall psychosocial functioning	23·0	40·7	n.s.
Poor parenting	42·9	41·7	n.s.

Disrupted parenting during the first four years of life was chosen as the key environmental measure. Disrupted parenting was rated as having occurred if there had been short-term admissions into care, multiple separations through parental discord or disorder, persistent family discord, or admission into long-term institutional care before the age of 2 years. The findings (see Table 4) showed that the adult outcome, in terms of both personality disorder and overall psychosocial functioning, was substantially worse for those women who experienced disrupted parenting in infancy.

Table 4. Disrupted parenting in infancy and psychosocial outcomes in adult life for ex-care women

	Personality disorder		Poor social functioning	
	%	*n*	%	*n*
Disrupted early parenting	32	59	39	59
Non-disrupted early parenting	5	21	5	21
Statistical significance (*P*; exact test)	0·01		0·01	

Not surprisingly, disrupted parenting occurred more frequently in the subgroup of girls with deviant parents. Hence, the next question was which variable had the greater effect on outcome—parental deviance or disrupted parenting. Tables 5*a* and *b* present the overall pattern of findings for the two adult outcomes being considered. Linear logistic modelling techniques, as used for both tables, constitute an appropriate multivariate method for the analysis of data in which the dependent variable is dichotomized or is on an ordinal scale (Dunn, 1981). These methods are closely similar to a traditional regression analysis but with cross-classified categorical data (Swafford, 1980). The procedure is to subtract the deviance (comparable to χ^2) and degrees of freedom for a particular model from an earlier one and to decide in terms of statistical significance whether the variables included in the new model significantly reduce the overall deviance, the aim being to fit the observed to the expected frequencies in the full table with the most parsimonious model. In Table 5*a*, for example, the overall deviance (constant: col. 2) is significantly different from chance at the 5 per cent level showing that the model of 'no association' does not fit the data well. Fitting 'disrupted parenting' (model B) gives a significant improvement in fit ($9{\cdot}13 - 0{\cdot}02 = 9{\cdot}11$, d.f. = 1) and reduces the deviance (col. 2) to a non-significant level. On the other hand, fitting 'parental deviance' on its own (model C) does not reduce the deviance to a non-significant level and does not provide a significant reduction from the original 'no association' model (model A). The improvement in fit of adding 'parental deviance' to the 'disrupted parenting' model can be determined by subtracting the fit of the additive model D from model B. As expected this addition provides no significant improvement, whereas the addition of 'disrupted parenting' to 'parental deviance' does so. Large and complete cross-classified data sets can be analysed using these techniques and models, including interaction terms evaluated either by forward or backward selection of models. The GLIM computer program (Baker & Nelder, 1978) was used for this analysis.

These analyses showed that there was a highly significant main effect for disrupted parenting but no main effect for parental deviance and no significant additional effect from their combination (Table 5*a*). Thus, in so far as our measures allowed a test of the matter, the findings indicated an important effect from early life experiences that was not explicable in terms of biological parentage.

The findings for personality disorder (Table 5*b*) were more complicated in that there were significant main effects for both parental deviance and disrupted parenting, with a further significant effect for their combination. We may conclude that, in so far as we can use parental deviance as a proxy measure for genetic background, the results suggest the influence of *both* genetic background and early life experiences—a finding consonant with the results of other research (Schulsinger, 1972). It seems that, in part, the genetic effect was direct but in part indirect: that is to say that, to a significant extent, parental deviance put the child at risk not because of any direct inheritance but rather because it predisposed to adverse experiences that themselves constituted a serious risk factor.

Table 5. Parental deviance, disrupted parenting and adult outcome for ex-care women

(a) Poor social functioning

	No parental deviance		Parental deviance	
Early parenting	% Poor	*n*	% Poor	*n*
Non-disrupted	0	6	0	3
Disrupted	43	7	46	24

Linear logistic analysis

	Model fitted			Comparison of models			
Model fitted	Deviance	d.f.	*P*	Term added	Improvement in fit	d.f.	*P*
(A) Constant	9·13	3	0·05				
(B) Disrupted parenting	0·02	2	n.s.	B to A	9·11	1	0·01
(C) Parental deviance	7·88	2	0·02	C to A	2·25	1	n.s.
(D) Disruption and deviance	0·0007	1	n.s.	C to B	0·01	1	n.s.
				B to C	7·87	1	0·01

(b) Personality disorder

	No parental deviance		Parental deviance	
Early parenting	% Poor	*n*	% Poor	*n*
Non-disrupted	0	6	0	3
Disrupted	14	7	46	24

Linear logistic analysis

	Model fitted			Comparison of models			
Model fitted	Deviance	d.f.	*P*	Term added	Improvement in fit	d.f.	*P*
(A) Constant	10·02	3	0·02				
(B) Disrupted parenting	2·54	2	n.s.	B to A	7·48	1	0·01
(C) Parental deviance	4·70	2	n.s.	C to A	5·32	1	0·05
(D) Disruption and deviance	0·0007	1	n.s.	C to B	2·53	1	n.s.
				B to C	4·69	1	0·05

Table 6. Behaviour in childhood and adult outcome for ex-care women

			Overall psychosocial functioning		Personality disorder
		(*n*)	Poor (%)	Good (%)	Disorder (%)
Behavioural deviance and/or Delinquency	Absent	(30)	27	50	17
	Present	(40)	38	23	33
Statistical significance (*P*; exact test)			n.s.	0·02	0·13

Behavioural precursors of adult functioning

The next issue concerns the extent to which the girls' behaviour in middle childhood predicted adult outcome. Over half the girls showed behavioural disturbance and/or delinquency in childhood and, as might be expected, these girls were somewhat (but not significantly) more likely to have a personality disorder and to show poor social functioning in adult life. Thus there was a modest, but only modest, degree of behavioural continuity between childhood and adult life. The best predictor of good social functioning was provided by the houseparents' questionnaire (27 per cent among the non-deviant vs. 5 per cent among the deviant; $P=0{\cdot}02$, exact test); and of personality disorder by a combination of the teachers' questionnaire and delinquency (17 vs. 33 per cent).

Characteristics of the spouse

With respect to the operation of possible protective factors, the results showed a variety of mediating and ameliorating factors (see Quinton *et al.*, 1984; Rutter *et al.*, 1983; Quinton & Rutter, 1984) but by far and away the most powerful concerned the characteristics of the women's spouses and their current marital situation at the time of follow-up. Table 7 shows that the ex-care women were much less likely to show good psychosocial functioning if they were without a marital partner (legal or otherwise) at follow-up, or if their spouse showed significant psychosocial problems (defined in terms of psychiatric disorder, criminality, a drink or drug problem, or long-standing difficulties in personal relationships). The effect was most marked in women who did not show behavioural abnormalities in childhood but it applied to some extent in those who did. The association is particularly striking because (for the most part) the two measures came from different informants

Table 7. Women's social functioning, own childhood deviance and problems of spouse for ex-care women

	Childhood deviance					
	No (%)			Yes (%)		
	n	Good functioning	Residuals	*n*	Good functioning	Residuals
No spouse	11	9	−2·14	14	7	−0·25
Deviant spouse	10	30	−0·27	12	0	−1·31
Non-deviant spouse	9	67	2·54	9	22	1·70
	$\chi^2=7{\cdot}46$, d.f. $=2$, $P<0{\cdot}025$			$\chi^2=3{\cdot}301$, d.f. $=2$, n.s.		

(overall psychosocial functioning from the women and problems in the spouse from the men).

Table 8 shows that there was a similar association between spouse characteristics and personality disorder. Only 4 per cent of the women with non-deviant spouses showed a personality disorder compared with 31 per cent of those without a spouse and 39 per cent of those with a deviant spouse ($\chi^2 = 9{\cdot}90$, d.f. $= 2$, $P < 0{\cdot}01$). Other analyses showed that there were similar associations between marital support and good adult functioning in the women. It seemed that part of the benefits of a non-deviant spouse stemmed from the increased likelihood of a harmonious marriage but this did not constitute the whole explanation.

Table 8. Personality disorder and problems of spouse for ex-care women

	Personality disorder		
	%	*n*	Residuals
Non-deviant spouse	4	27	3·09
Deviant spouse	39	23	−1·97
No spouse	32	28	−1·20
	$\chi^2 = 9{\cdot}90$, d.f. $= 2$, $P < 0{\cdot}01$		

Protective effect or artifact?

The findings, then, suggested that the spouses' good qualities exerted a powerful ameliorating effect leading to an increased likelihood of good psychosocial functioning and a decreased likelihood of personality disorder. However, before concluding that this was a true protective or ameliorating effect, it is necessary to consider the possibility that the association represented some type of statistical artifact.

Assortative mating. The first possibility to consider is that the choice of marriage partner merely reflected the women's own characteristics—namely that the association was simply a consequence of assortative mating within the ex-care sample. Perhaps the girls who were non-deviant themselves during childhood were the ones to choose better functioning men to marry. In fact, as Table 9 shows, that was not the case. The ex-care women were subdivided into 'deviant' and 'non-deviant' subgroups according to their parent and teacher questionnaire scores in childhood. As already noted, the women with behavioural disturbance in childhood were more likely to have a worse outcome in adult life, but the presence of behavioural deviance did *not* predict the women's spouses' characteristics. We may rule out the possibility of an artifact due to assortative mating.

On the other hand, it is important to recognize that, although there was no indication that the ex-care women's behaviour matched that of their male spouses, there was a marked tendency for the group of institution-reared women as a whole to be more likely than the comparison group to marry men with problems (51 vs. 13 per cent; $P < 0{\cdot}001$) and more likely to be without a spouse at follow-up (22 vs. 0 per cent). That tendency in no way accounts for the protective effect of a non-deviant spouse *within* the ex-care group but any overall explanation of the difference in outcome *between* the two groups must take it into account.

A second possibility to consider is that the choice of spouse was influenced, not by the women's own behaviour, but by their own genetic background. However, in terms of our

Table 9. Childhood deviance of female subjects and spouse characteristics for ex-care women

	Deviant on questionnaire	
Deviance in current spouse	No ($n=30$) %	Yes ($n=35$) %
Non-deviant	33	26
Deviant	30	34
No spouse	37	40
	$\chi^2=0{\cdot}459$, d.f. $=2$, n.s.	

measure of parental deviance, we found no evidence that this was the case. Indeed, if anything, the trend went in the opposite direction—the women with deviant parents were *more* likely to have a supportive spouse (see Quinton & Rutter, 1984).

Effect of the women on their spouses. The second type of possible artifact to consider is of a rather different kind—namely, that the direction of causal influence went in the opposite direction. Perhaps the association between the women's social functioning in adult life and the characteristics of the men they married reflected the effect of the women on their husbands, rather than the other way round. In order to examine that possibility, it was necessary to determine the association between the women's social functioning in adult life and the adverse characteristics of their spouses that could not have been subject to influence from the women (namely those present before they knew one another). For this purpose, we used criminal, drink, drug or psychiatric problems in the spouses' teens before meeting their wives. Both current and most recent spouses were included in this analysis, summarized in Table 10. The findings show that there was still a substantial association between the spouses' *teenage* deviance and the ex-care women's social functioning at follow-up. Obviously the effects are likely to have been two-way (i.e. both from and to the husbands) but it is clear that any effects from the women to their husbands could not account for the protective effect of spouses with respect to the women's overall social functioning and to the presence of personality disorder.

Other methodological checks (see Quinton *et al.*, 1984) confirmed that there was indeed a true protective effect stemming from the presence of a non-deviant spouse—an effect not explicable in terms of any type of artifact. Moreover, the effect was of sufficient strength to reduce very markedly the sequelae of influences in childhood. The findings are striking both in terms of the power of the protective effect but also with respect to the fact that

Table 10. Spouse's teenage deviance and woman's current social functioning for ex-care women

	Poor social functioning	
Current or most recent spouse	%	*n*
Non-deviant teens	15	40
Deviant teens	46	26
	$\chi^2=6{\cdot}22$, d.f. $=1$, $P<0{\cdot}025$	

experiences in early adult life could do much to ameliorate the impact of adversities in childhood.

Factors leading to choice of spouse

'Planning' for marriage. At first sight, this finding seems to suggest a marked discontinuity between childhood and adult life. However, as we shall see, the impression is misleading. It is necessary to explore further the possible factors underlying the women's choice of spouses. Was choice merely a matter of chance and circumstances, or did the women play a more active role in determining or 'planning' their own futures? Of course, no direct measures of intentions in mate selection were available but the matter could be approached by considering the length of time the women knew their spouses before they began to live with them, together with the reasons for their cohabitation. In this context, 'planning' was rated if they knew their future spouse for six months or more before cohabitation *and* if the reasons for living together were positive—that is, they involved a clear positive decision without outside pressures (such as pregnancy or a severely discordant home) affecting their choice or timing. 'Non-planners' included all those who had known their spouses for less than six months and/or who had married under pressure or to escape an intolerable situation.

The first question is whether 'planners' chose less deviant spouses. The findings showed that they did: 76 per cent of them had non-deviant first spouses compared with only 35 per cent of non-planners ($P < 0{\cdot}001$). Nor was planning merely a reflection of earlier adjustment: 47 per cent of planners had been rated as deviant in childhood compared with 64 per cent of non-planners, a non-significant difference.

The second question is whether the ex-care group were less likely than women in the contrast group to 'plan' for marriage. The results showed that they were: 44 per cent of the ex-care group were non-planners compared with 19 per cent of controls (a significant difference; $P < 0{\cdot}02$ exact test). It seems that the lack of planning among the institution-reared women was one of the main reasons for their increased likelihood of marrying a man with marked psychosocial problems.

The third question with respect to planning concerns the adult outcome in terms of the characteristics of their spouses. The issue here is whether 'planning' simply stood for a generally better level of adjustment and whether that accounted for the protective effect of a non-deviant spouse. A linear logistic analysis (Table 11) showed that it did not. Spouse characteristics still had a significant effect after planning had been taken into account. Moreover, the protective effect applied to *both* planners and non-planners. Non-planners were substantially less likely to land up with a non-deviant spouse but, if by good fortune they happened to do so, the protective effect still applied (0 vs. 59 per cent poor social functioning). We may conclude once again that the protective effect of a non-deviant spouse is a real phenomenon. Nevertheless, it seems that the choice of a non-deviant spouse, and hence the chance of a better outcome, is in part a function of positive planning by the women.

Positive school experiences and planning for marriage. However, that conclusion raises a fourth question on planning—namely, what was it that enabled some ex-care women to plan their lives whereas others seemed just to drift from adversity to adversity without any systematic attempt to alter their life situations? The data discussed already showed that this was not simply a function of a lack of behavioural deviance. Accordingly, we need to consider the possibility that it arose as a result of some type of ameliorating *positive* experience. In that connection we examined the effect of positive school experiences.

School experiences were rated as positive if the girls had two or more of the following:

Table 11. Planning for marriage, deviance in current spouse, and overall social functioning for ex-care women

	Spouse characteristics			
	Non-deviant		Deviant	
	% Poor functioning	Total *n*	% Poor functioning	Total *n*
Non-planners	14	7	50	12
Planners	0	20	27	11

Linear logistic analysis

	Model fitted			Comparison of models			
Model fitted	Deviance	d.f.	*P*	Term added	Improvement in fit	d.f.	*P*
(A) Constant	14·77	3	0·01				
(B) Planning only	9·45	2	0·01	B to A	5·32	1	0·05
(C) Spouse deviance only	4·08	2	n.s.	C to A	9·69	1	0·01
(D) Planning plus spouse	1·37	1	n.s.	B to C	2·71	1	n.s.
				C to B	8·08	1	0·01

exam success, a markedly positive assessment of school work and/or relationships with peers, and a clearly positive recall of three or more areas of school life (such as sport, drama, arts and crafts or academic work). The ex-care women were only slightly less likely than controls to have had positive school experiences, but such experiences were much less likely to have arisen as a result of exam success (24 vs. 67 per cent of those with positive experiences). Strikingly, the association between positive school experiences and outcome was quite different in the ex-care and comparison groups. Within the ex-care group, a third of those without positive experiences showed a personality disorder in adult life compared with only 12 per cent of those with positive experiences ($P=0·047$).

Although behavioural deviance was strongly related to the presence of positive school experiences, these experiences appeared to have a protective or ameliorating effect even when such deviance had been taken into account, as shown in the linear logistic analysis (Table 13) for overall social functioning. In the control group, however, no such protective effect was evident; there was no association between positive school experiences and adult outcome—not even a trend.

Table 12. Positive school experiences and personality disorder for ex-care women

	Positive school experiences	
	No	Yes
Personality disorder		
No	38	22
Yes	18 (32%)	3 (12%)
	exact test $P=0·047$	

Table 13. Teacher questionnaire, positive school experiences, and social functioning for ex-care women

	Positive school experiences			
	No		Yes	
Teacher questionnaire	% Poor functioning	Total *n*	% Poor functioning	Total *n*
Non-deviant	35	31	8	13
Deviant	55	20	0	4

Linear logistic analysis

	Model fitted			Comparison of models			
Model fitted	Deviance	d.f.	*P*	Term added	Improvement in fit	d.f.	*P*
(A) Constant	12·12	3	0·01				
(B) B score	9·77	2	0·01	B to A	3·35	1	n.s.
(C) School	2·44	2	n.s.	C to A	9·68	1	0·01
(D) School + B	1·00	1	n.s.	C to B	7·33	1	0·01
				B to C	1·44	1	n.s.

The findings suggest the operation of another type of protective effect—positive school experiences as well as the marital support of a non-deviant spouse. Two points warrant particular mention. First, it is not likely that the effect merely reflects a better outcome for women of high intelligence. This is unlikely both because most positive school experiences in the ex-care group did *not* involve exam success and because such experiences were unrelated to outcome in the comparison group. Second, the protective effect seems to represent some kind of 'buffering' influence that reduces the impact of adverse experiences rather than an effect directly leading to a good outcome in its own right. This inference stems from the *lack* of effect of positive experiences in the control group. In other words, there appears to be an interaction whereby positive experiences at school can ameliorate the effect of bad experiences elsewhere, but they have little impact on development among girls from a more favoured background.

That raises the crucial issue of how that effect operates. A clue is provided by the linkage between positive school experiences and 'planning' for marriage. As shown in Table 14, the ex-care girls who reported having had positive experiences at school were significantly more likely to have 'planned' their marriage (as operationally defined) and hence more likely to have made a harmonious relationship with a non-deviant spouse. Again, this effect was not found in the control group. Obviously, we cannot know precisely how this came about, but other research has suggested the importance of feelings of self-esteem and self-efficacy (Bandura, 1977; Harter, 1983). It may be that the girls acquired a sense of their own worth and of their ability to control their destinies as a result of their pleasure, success, and accomplishments in a few specific areas of their lives. Certainly it is a common observation that many people with multiple psychosocial problems feel at the mercy of fate and hence do not act in any decisive way to resolve their difficulties. The findings suggest that the experience of some form of success, accomplishment, or even just pleasure in activities may be important, not because it dilutes the impact of unpleasant or stressful happenings, but

Table 14. Positive school experiences and planning for marriage for ex-care women

	Positive school experiences	
	No	Yes
Non-planners	26	5
Planners	23 (47%)	17 (37%)
	$\chi^2 = 4{\cdot}50$, d.f. = 1, $P < 0{\cdot}05$	

because it serves to enhance confidence and competence to deal with the hazards and with the dilemmas of life.

Conclusions

The result of this follow-up study into early adult life of institution-reared women, together with a similar follow-up study of a general population control group, clearly indicated the much worse adult outcome of the former, both in terms of an increased rate of personality disorder and a higher proportion with poor overall social functioning. The risks with respect to personality disorder appeared to stem from a combination of genetic and experiential adversities, but those for poor social functioning seemed largely environmental in origin. However, on all measures the adult outcome of the institution-reared women was heterogeneous with a sizable minority functioning well in spite of their experiences of family discord, disrupted early parenting and an institutional rearing.

The pattern of findings provided some indicators of the ways in which this heterogeneity in outcome arose. To some extent there were continuities in psychosocial functioning: the girls already showing behavioural disturbance in childhood were the ones most likely to be socially impaired in adult life. Nevertheless, changes in functioning were equally striking, with a harmonious marriage to a non-deviant spouse doing much to reduce the ill-effects of childhood adversities. On the other hand, it was apparent that the change in behaviour did not represent a discontinuity in the developmental process. Positive school experiences predisposed the girls to adopt a more 'planning' approach to their life in general and to marriage in particular. Such planning made it more likely that they would make a successful marriage to a non-deviant spouse which in turn increased the likelihood that they would be functioning well in other aspects of their lives and be free of personality disorder. In this chain of indirect linkages, positive experiences exerted a most important protective effect that made it more probable that there would be good functioning in adult life. It did not seem that positive experiences simply served to counterbalance negative ones; rather the effect of good relationships and of personal 'success' was to encourage the women to cope adaptively with major life decisions. The implications are that if we are to understand the processes by which people maintain resilience in the face of adversity we must focus on protective, as well as risk factors; on indirect as well as direct effects; and, most especially, we should look for the variety of interactions and interactive effects that provide for continuities, as well as discontinuities, in psychosocial development.

References

Anthony, E. J. (1974). Epilogue: The syndrome of the psychologically invulnerable child. In E. J. Anthony & C. Koupernik (eds), *The Child in his Family: Children at Psychiatric Risk*, pp. 529–544. New York: Wiley.

Baker, R. S. & Nelder, S. A. (1978). *The GLIM System, Release 3: Generalized Linear Interactive Modelling*. London: Royal Statistics Society.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, **84**, 191–215.

Brown, G. W. & Rutter, M. (1966). The measurement of family activities and relationships: A methodological study. *Human Relations*, **19**, 241–263.
Dunn, G. (1981). The role of linear models in psychiatric epidemiology. *Psychological Medicine*, **11**, 179–184.
Garmezy, N. (1974). The study of competence in children at risk for severe psychopathology. In E. J. Anthony & C. Koupernik (eds), *The Child in his Family: Children at Psychiatric Risk*, pp. 77–97. New York: Wiley.
Graham, P. & Rutter, M. (1968). The reliability and validity of the psychiatric assessment of the child: II. Interview with the parent. *British Journal of Psychiatry*, **114**, 581–592.
Harter, S. (1983). Developmental perspectives on the self-esteem. In E. M. Hetherington (ed.), *Socialization, Personality and Social Development*, vol. 4, *Handbook of Child Psychology*, 4th ed. New York: Wiley.
King, R. D., Raynes, N. V. & Tizard, J. (1971). *Patterns of Residential Care: Sociological Studies in Institutions for Handicapped Children*. London: Routledge & Kegan Paul.
Pringle, M. L. K. & Bossio, V. (1960). Early prolonged separations and emotional adjustment. *Journal of Child Psychology and Psychiatry*, **1**, 37–48.
Quinton, D. & Rutter, M. (1984). Parenting behaviour of mothers raised 'in care'. In A. R. Nicol (ed.), *Longitudinal Studies in Child Psychology and Psychiatry: Practical Lessons from Research Experience*. Chichester: Wiley.
Quinton, D., Rutter, M. & Liddle, C. (1984). Institutional rearing, parenting difficulties, and marital support. *Psychological Medicine* **14**, 107–124.
Quinton, D., Rutter, M. & Rowlands, O. (1976). An evaluation of an interview assessment of marriage. *Psychological Medicine*, **6**, 577–586.
Rutter, M. (1967). A children's behaviour questionnaire for completion by teachers: Preliminary findings. *Journal of Child Psychology and Psychiatry*, **8**, 1–11.
Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M. W. Kent & J. E. Rolf (eds), *Primary Prevention of Psychopathology*, vol. 3, *Social Competence in Children*. Hanover, NH: University Press of New England.
Rutter, M. (1981). *Maternal Deprivation Reassessed*, 2nd ed. London: Penguin.
Rutter, M. (1983). Statistical and personal interactions: Facets and perspectives. In D. Magnusson & V. Allen (eds), *Human Development: An Interactional Perspective*. New York: Academic Press.
Rutter, M. (1984). Continuities and discontinuities in socio-emotional development: Empirical and conceptual perspectives. In R. Emde & R. Harmon (eds), *Continuities and Discontinuities in Development*. New York: Plenum (in press).
Rutter, M. & Brown, G. W. (1966). The reliability and validity of measures of family life and relationships in families containing a psychiatric patient. *Social Psychiatry*, **1**, 38–53.
Rutter, M. & Giller, H. (1983). *Juvenile Delinquency: Trends and Perspectives*. London: Penguin.
Rutter, M. & Madge, N. (1976). *Cycles of Disadvantage: A Review of Research*. London: Heinemann Educational.
Rutter, M., Quinton, D. & Liddle, C. (1983). Parenting in two generations: Looking backwards and looking forwards. In N. Madge (ed.), *Families at Risk*, pp. 60–98. London: Heinemann Educational.
Schulsinger, F. (1972). Psychopathy: Heredity and environment. *International Journal of Mental Health*, **1**, 190–206.
Swafford, M. (1980). Three parametric techniques for contingency table analysis: A nontechnical commentary. *American Sociological Review*, **45**, 664–690.
Werner, E. E. & Smith, R. S. (1982). *Vulnerable but Invincible: A Study of Resilient Children*. New York: McGraw-Hill.
Wolkind, S. N. (1974). The components of 'affectionless psychopathy' in institutionalized children. *Journal of Child Psychology and Psychiatry*, **15**, 215–220.

Received 30 September 1983; revised version received 7 November 1983

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