

## Regular Article

# Understanding personality traits from early life experiences

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### Abstract

The contribution of early experiences towards the onset of personality disorder has often been stressed. However, the contribution to trait personality has received less attention. To examine the impact of early experiences on the development of personality, two subscale scores of the Eysenck Personality Questionnaire (EPQ): neuroticism (N) and extroversion (E), were used to assess a total of 220 residents of a rural city of Japan (aged  $\geq 18$  years). After controlling for age and social desirability response bias, the N score of men could be predicted by the experience of relocation; the E score of men by high parental care and low parental overprotection; and the E score of women by the experience of death of a sibling. Personality traits in a non-patient population may be explained by early experiences.

### Key words

child abuse, early life events, Eysenck Personality Questionnaire, personality, rearing.

## INTRODUCTION

A great deal of research attention has been paid to the role of early environment on the development of personality disorders. To date, environmental factors examined have included child physical and sexual abuse, witnessing violence, loss of significant others, and perceived rearing. According to the *Diagnostic and Statistical Manual of Mental Disorders* (3rd edn; DSM-III)<sup>1</sup> or DSM-III revised (DSM-III-R),<sup>2</sup> personality disorder types, borderline personality disorder (review: Gunderson and Sabo<sup>3</sup>), antisocial personality disorder or violence,<sup>4–6</sup> avoidant personality disorder,<sup>7–8</sup> and clusters of personality disorders<sup>9</sup> have been studied extensively based on these early environmental factors. However, few investigators have studied individuals with different types of personality disorders while focusing simultaneously on a wide range of environmental factors.<sup>10</sup>

In contrast, except for early psychoanalytic reports,<sup>11,12</sup> very little attention has been paid to the

contribution of environments, particularly early environments, to the adult personality. Benjaminsen *et al.* studied male and female volunteers<sup>13</sup> using the Maudsley Personality Inventory (MPI)<sup>14</sup> and Egna Minnen av Barndoms Uppfostran (EMBU).<sup>15</sup> The EMBU is a self-report measure that retrospectively assesses parents' attitudes towards the subject. Although they found no correlations between MPI neuroticism (N) and extroversion (E) scores and EMBU items in men, they found that the guilt engendering behavior of a subject's father was linked to a high N score in women. In a study of female twins, Kendler *et al.* found a significant link between both childhood parental loss and low perceived parental warmth and a high N score.<sup>16</sup>

Although parents are typically the only people with whom children have a significant relationship, they soon expand their network of human contacts to include individuals outside the home: peers and teachers in particular. These relationships may exert influences on personality development.

Different types of life events in childhood are reportedly linked with the onset of affective disorders.<sup>17</sup> Thus, studies on links between early life events and adult personality traits may cast new light on the understanding of personality development.

In the present study we reanalyzed the data set of a mental health study in a community to identify the

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effects of early experiences (including those both in and outside of home environments) on the development of adult personality traits.

## METHODS

### Participants

Participants were 96 men and 124 women out of a total of 508 inhabitants aged  $\geq 18$  years in Kofu, the capital city of Yamanashi Prefecture, who responded to our request to participate between 1992 and 1993. The present study is one part of a series of studies on mental health and mental illness among a Japanese community population. Mean ages (SD) were  $56.2 \pm 16.8$  years and  $53.7 \pm 16.3$  years for men and women, respectively. The age range was between 18 and 91 years. No significant differences were observed between the two sexes in terms of mean age. Interviewed and non-interviewed participants did not differ significantly in terms of sex and age. No other information was available for participants who were not interviewed. Using the same data set, we previously reported on the prevalence of panic disorder,<sup>18</sup> marital adjustment,<sup>19</sup> epidemiology of child abuse,<sup>20</sup> mood and anxiety disorders in a working population,<sup>21</sup> psychometrics of hopelessness,<sup>22</sup> and social adjustment.<sup>23</sup>

### Measures and procedures

#### *Personality*

The participants were given the Japanese version of the Eysenck Personality Questionnaire (EPQ),<sup>24</sup> which was made available to us by Professor S. Iwawaki. The Japanese EPQ consists of 100 items organized into four subscales, with each item rated using a two-point scale (0, no; 1, yes; with some items being reversed). The N score (23 items) measures emotional instability; the E score (21 items) score measures extroversion as compared to introversion; the psychoticism (P; 25 items) score measures psychological isolation and aloofness; and the lie (L; 21 items) scale measures the individual's tendency to distort responses to adjust to what he/she thinks would be socially desirable. We used only the N and E scores for further analyses because the P score is a new entry to the questionnaire and L can be substituted by the Social Desirability Scale (SDS).<sup>25</sup> Cronbach's  $\alpha$  coefficients were 0.82 for the E score and 0.84 for the N score.

#### *Early parental loss*

Early loss was defined as either death of or separation from a parent for 12 months or longer before the sub-

ject was 16 years old.<sup>26</sup> This information was collected during the face-to-face interview. Of 96 men, 30 (31.3%) reported either death of or separation from their father (paternal loss) and 23 (24.0%) reported either death of or separation from their mother (maternal loss). Of 124 women, 18 (14.5%) reported paternal loss and 15 (12.1%) reported maternal loss.

#### *Parental behavior*

Perceived parental rearing before the subject was 16 years old was assessed by the Parental Bonding Instrument (PBI).<sup>27</sup> The PBI is a self-rating measure consisting of 25 items based on a four-point scale (0, very unlikely; to 3, very likely). The PBI has two subscales: care and overprotection. The care score indicates the degree of warm and affectionate behavior of the parent towards the child. The overprotection score indicates the degree to which the parent's behavior influences the child's activities and decisions. The reliability and predictive validity of these scores have been reported.<sup>28,29</sup> The PBI was translated into Japanese and its validity was subsequently confirmed.<sup>30</sup> In this population of participants, Cronbach's  $\alpha$  coefficients were 0.86 for paternal care, 0.77 for paternal overprotection, 0.88 for maternal care, and 0.81 for maternal overprotection. Following the procedure of Carter *et al.*<sup>31</sup> we averaged the scores of the father and mother for each of the PBI subscales. When there was only one parent, the score of the scale from this parent was used.

#### *Child abuse*

Participants were asked in an interview for the frequencies of five categories of abusive behaviors: scolding; slapping; punching with a fist; hitting with an object; and burning (e.g. a lit cigarette). The frequencies were rated based on a five-point scale: 0, never; 1, several times a year; 2, several times a month; 3, several times a week; and 4, almost every day.<sup>20</sup> The abuse score was calculated by adding the scores of these five categories. Abusive behaviors by the father and mother were rated separately. For the present study, Cronbach's  $\alpha$  coefficients were 0.75 for the father's abuse score and 0.83 for the mother's abuse score. Because the abuse scores were positively skewed, they were log-transformed before further analyses. As in the PBI, here again we averaged the score for the father and mother.

It should be noted here that although we were aware of the importance of sexual abuse in addition to psychological and physical abuse, we deliberately avoided

asking about such experiences. We believed that asking questions about past sexual abuse would be too embarrassing for the Japanese participants (due to the stigma attached to it).

### *Early life events*

The interviewer asked the participant about 18 different life events including (i) school-related negative events (such as changing school); (ii) health-related negative events (such as one's own illness); (iii) family related negative events (such as being fostered); and (iv) positive events (such as winning the first prize in art). We asked the participant about the number of times each item was experienced. We did not categorize the events following a factor analysis because life events did not necessarily reflect underlying factors and we were more interested in the meaning that might have been assigned to them by the participants.<sup>32</sup>

### *Psychiatric diagnoses*

The participants were asked in the interview about any present or past episodes of DSM-III-R disorders. Mental disorders identified were generalized anxiety disorder, panic disorder, major depressive episode, dysthymic disorder, manic episode, phobic disorder, and obsessive-compulsive disorder. The diagnostic portion of the interview was structured with standard probe questions and item definitions. The wording of the interview was taken from the Japanese version of the Composite International Diagnostic Interview,<sup>33</sup> the Schedule for Affective Disorders and Schizophrenia,<sup>34</sup> and other interview guides. Sixteen (7.3%) participants reported having had at least one episode of a DSM-III-R disorder at the time of the interview. They included two reports (1%) of generalized anxiety disorder, 12 reports (5.5%) of major depressive disorder, one report (0.5%) of dysthymic disorder, one report (0.5%) of manic episode, 10 reports (4.5%) of phobic disorder and two reports (0.9%) of obsessive-compulsive disorder. The total number of all diagnosable cases exceeded 16 because of the multiple diagnoses policy of the DSM-III-R.

### *Social desirability*

The Japanese version<sup>35</sup> of the SDS<sup>25</sup> was used to measure the subject's tendency to have a socially accepted bias when responding to the questionnaire items. This version consists of 10 items with a two-point scale (0 or 1). Higher SDS scores reflect a greater tendency to respond in a more socially desirable manner. The mean

(SD) SDS score was 5.6 (2.6) with a range of between 0 and 10.

### *Procedure*

The questionnaires were mailed to the participants and were returned prior to the interview. The interview was conducted by trained interviewers who were unaware of the results of the questionnaires. The interview took place either at the participant's home or in the Yamanashi Prefectural Mental Health and Welfare Center according to the participant's preference. All the participants gave written informed consent prior to the interview. The Ethical Committee of the National Center of Neurology and Psychiatry approved this project.

### **Statistical analysis**

No N and E scores were obtained for six and five participants, respectively. These participants were excluded from further analyses. We initially examined whether sex and age were associated with personality traits. It is well recognized that coexisting mental disorders may distort self-reports of personality.<sup>36-40</sup> In light of this, we took into account any and all current and past mental disorders according to DSM-III-R. When comparing the EPQ subscale scores we divided the participants into those people ( $n=176$ , 80%) who had no history of mental disorders other than phobic disorders and those ( $n=74$ ) with at least one DSM-III-R disorder other than phobic disorder. We excluded phobic disorder from the current and past diagnosis because it is often difficult to set the threshold between normal fear and pathological phobia and so phobic disorder tends to be overestimated. All statistical analyses were performed for the two sexes combined and then for men and women separately because we expected that the two sexes would have different patterns of links between personality traits and early experiences.<sup>41</sup> Statistical analyses were performed by using SPSS-X.<sup>42</sup>

## **RESULTS**

### **Demographic and clinical variables and response bias**

Men and women did not differ in terms of the two EPQ scores (Table 1). Age was negatively correlated with the N score and positively with the E score in women (Table 2). Participants who reported or did not report having had any DSM-III-R disorders at the time of the interview were not different in terms of the

**Table 1.** Scores for EPQ by demographic and clinical variables

	Neuroticism Mean (SD)	Extroversion Mean (SD)
Total ( $n=220$ )	7.9 (4.9)	10.7 (4.6)
Sex		
Men ( $n=96$ )	7.0 (4.3)	10.2 (4.5)
Women ( $n=124$ )	8.3 (5.0)	10.6 (4.8)
t	1.9	0.8
Diagnosis		
With current/past DSM-III-R diagnoses <sup>†</sup>	9.0 (4.8)	10.3 (5.0)
Without current/past DSM-III-R diagnoses	7.4 (4.7)	11.0 (4.5)
t	1.8	0.9

<sup>†</sup>DSM-III-R diagnoses exclude phobic disorder.

EPQ, Eysenck Personality Questionnaire; DSM-III-R, *Diagnostic and Statistical Manual of Mental Disorders*, 3rd edn, revised.

**Table 2.** Correlations between the EPQ scores and age and response bias

Items	Men		Women	
	N	E	N	E
Demographics				
Age	-0.17	-0.03	-0.23*	0.31**
Response bias				
Social desirability	-0.23*	0.06	-0.43***	-0.12

\* $P < 0.05$ ; \*\*  $P < 0.01$ ; \*\*\*  $P < 0.001$ .

EPQ, Eysenck Personality Questionnaire; N, neuroticism; E, extroversion.

N and E scores (Table 1). The SDS was negatively correlated with the N score both in men and women (Table 2).

### Rearing environment

Loss of a father was not correlated with the N or E score among either men or women. Loss of a mother was not correlated with the N score among either men or women. However, loss of a mother was significantly negatively correlated with the E score only among men (Table 3).

High parental care score and low parental overprotection score were correlated with the N score among women, but these correlations were not found in men. As regards the E score, only the parental care score was correlated with it among men. The parental abuse score was correlated only with the E score of men.

**Table 3.** Correlations between the EPQ scores and rearing environment

Items	Men		Women	
	N	E	N	E
Rearing environment				
Loss of father	0.12	-0.15	-0.03	0.02
Loss of mother	0.15	-0.27*	0.00	-0.00
Parental care	-0.05	0.28*	-0.38***	0.03
Parental overprotection	0.21	0.03	0.32**	-0.03
Parental abuse	0.08	0.25*	0.15	-0.01

\* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ .

EPQ, Eysenck Personality Questionnaire; N, neuroticism; E, extroversion.

### Early life events

Only a few life events in childhood were correlated significantly with either of the EPQ scores. Thus, the N score of men was correlated with 'relocated'; the E score of men (negatively) with 'foster care for a short time'; the N score of women with none of the events; and the E score of women with 'was hospitalized', and (negatively) with 'death of a sibling' (Table 4).

### Regression of the EPQ scores on early experiences

Because early life experiences that showed significant links with either of the EPQ scores in bivariate correlations may have been spurious due to the moderate correlations found between some of the variables studied (Table 5), we performed a series of separate regres-

**Table 4.** Correlations between the EPQ scores and early life experience variables

Early life events	Men		Women	
	N	E	N	E
Changed school (other than leaving school)	0.16	0.14	0.06	0.02
Was elected as a class leader	0.17	0.14	0.02	0.09
Best academic achievement in the class	0.05	-0.02	0.06	-0.10
First prize in athletic games	0.15	0.14	0.05	0.08
First prize in art, calligraphy, music etc	-0.13	0.10	0.07	0.13
Was bullied	-0.02	0.04	0.07	0.10
Was betrayed by a close friend	-	-	0.07	0.09
Death of a close friend	-0.10	-0.05	0.06	-0.01
Own serious disease (school non-attendance for 2 weeks <sup>+</sup> )	-0.00	-0.03	0.15	-0.10
Was hospitalized	-0.00	-0.05	0.05	0.21*
Own fracture/injury	0.06	-0.03	0.14	0.07
Relocated	0.23*	0.13	0.02	0.09
Frequent rows of the parents	-0.02	0.08	0.19	-0.11
Divorce of a parent	-	-	-	-
Foster care for a short time	0.12	-0.25*	0.04	0.14
Foster care or adoption	0.05	-0.13	0.14	-
Death of a sibling	-0.04	-0.20	0.08	-0.29**
Other	-0.01	-0.13	0.01	-0.02

\* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ .

EPQ, Eysenck Personality Questionnaire; N, neuroticism; E, extroversion.

sion analyses for men and women. Here, either the N or E score was used as the dependent variable. The SDS score and age were entered first and then the variables showing significance in the bivariate correlations (which differ in N and E and among men and women).

Among men, after controlling for age and SDS score, the N score could be predicted by the frequency of relocation, whereas the E score could be predicted weakly by (lack of) maternal loss and parental care (Table 6).

Among women, after controlling for age and SDS score, the N score could be predicted by none of the early life experiences, whereas the E score could be predicted weakly by the (lack of) death of a sibling (Table 7).

## DISCUSSION

Early loss of a father was linked to none of the personality traits. Early loss of a mother was associated with a lower E score (i.e. greater introversion) in men. Loss of an attachment figure may exert a substantial negative impact on boys and make them more reluctant and careful in initiating new interpersonal relationships. Alternatively, the absence of the mother at home and the subsequent disruption of the home environment

may exert a lasting influence on the development of personality.

Perceived rearing of the parents (care and overprotection) had little association with personality traits of women. In contrast, in men a significant contribution of the early parenting towards the prediction of the E score was observed. Poor early care has been reported to be associated with poor relating, lower age at marriage, poor-quality marriage and divorce from first marriage among a community population of women.<sup>43</sup> These characteristics may be mediated by lack of introversion or socialization. Low care has been reported to be associated with depression,<sup>44,45</sup> anxiety,<sup>28</sup> poor social support,<sup>46</sup> and poor marital adjustment.<sup>19</sup> These links of perceived rearing with diverse aspects of mental health may be explained by introverted personality traits mediating the two. Studying a population of young Japanese women, Kitamura *et al.* reported that self-directedness, a character subscale of the Temperament and Character Inventory of Cloninger *et al.*,<sup>47</sup> was higher if women reported more care of parents.<sup>48</sup> This finding and our results suggest that different dimensions of personality in men and women are influenced differently by perceived parenting.

The present study may be unique in that several early life events remained as predictors of the EPQ scores after controlling for the demographic response

**Table 5.** Inter-correlations between the EPQ scores and the variables with significant correlations with them

	1	2	3	4	5	6	7	8	9	10	11	12
1 EPQ N	-											
2 EPQ E	-0.03	-										
3 Social desirability	-0.43***	-0.12	-									
4 Age	-0.23*	-0.31**	0.31***	-								
5 Loss of mother	0.00	-0.00	-0.00	0.20*	-							
6 Parental care	-0.38***	0.03	0.32***	0.13	0.01	-						
7 Parental protection	0.32**	-0.03	-0.19	-0.09	0.04	-0.53***	-					
8 Parental abuse	0.15	-0.01	-0.09	-0.16	-0.10	-0.35***	0.22*	-				
9 Was hospitalized	0.05	0.21*	-0.11	-0.32***	-0.11	-0.08	-0.12	0.00	-			
10 Relocated	0.02	-0.09	-0.07	-0.03	0.20*	-0.10	-0.02	-0.05	0.03	-		
11 Foster care for a short time	0.04	0.14	-0.02	0.16	0.44***	-0.20*	0.12	-0.06	-0.05	0.11	-	
12 Death of a sibling	0.08	-0.29**	-0.07	0.09	-0.01	-0.14	0.25*	0.03	-0.06	-0.03	-0.04	-

\* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ . Male participants are above the diagonal and female participants under the diagonal. EPQ, Eysenck Personality Questionnaire; N, neuroticism; E, extroversion.

bias variables and rearing environment variables. Thus, in men, relocation was linked with a high N score and in women the death of a sibling with a low E score. Relocation during childhood has been little studied as a subject of mental health. Wood *et al.*, however, reported that in some 9000 community children, frequent family relocation was associated with an increased risk of children failing a grade in school and behavioral problems.<sup>49</sup> If replicated, the present findings may explain the possible mediation by the increased N score from the relocation to behavioral problems. The death of a sibling was associated with a lower E score. When studying childhood bereavement, many researchers have focussed on the death of a parent. However, recent investigations have suggested the significance of the loss of a brother or sister on the mental health of children.<sup>50</sup> Our study echoes the importance of studies on sibling loss in childhood.

A major limitation of the present investigation is that we examined early life experiences retrospectively while relying solely on the subjective reports of the participants. Nevertheless, longitudinal studies are time consuming, although they are methodologically sound. The results are subject to recall bias, and this limitation should be addressed in a future study.

Parental behavior is not stable temporally<sup>51</sup> and may be influenced by parental personality, psychopathology and marital quality.<sup>52</sup> These predictors of parental behavior may confound any association between parental behavior and the subsequent personality of the child.

The relationship between parenting and a child's behavior pattern is not unilateral. The temperament of a child may influence the parenting behavior directly or through influencing maternal distress, discomfort in the role of a parent, or a poor spousal relationship.<sup>53</sup> For example, children high in extroversion and low in neuroticism may be more likely to fare better at school and thus parents feel more comfortable in parenting. A long-term prospective observation may shed more light on the causality of this relationship.

In conclusion, this preliminary report has suggested some links between early experiences and adult personality. These experiences have been reported to be associated with adult onset of different types of psychopathology. Future studies should be conducted on the hypothesis that both early experiences and personality interactively influence the development of psychopathology in the face of adversity.

**Table 6.** Hierarchical regression analysis predicting the N score from early life experiences in men

Predictors	N			E		
	R <sup>2</sup>	R <sup>2</sup> increase	β <sup>†</sup>	R <sup>2</sup>	R <sup>2</sup> increase	β <sup>†</sup>
Step 1: demographics and response style	0.060	0.060+		0.006	0.006	
Age			-0.13			-0.06
SDS			-0.18			0.01
Step 2: early life experiences	0.122	0.061*		0.167	0.161**	
Maternal loss			-			-0.19+
Parental care			-			0.22+
Relocation			0.25*			-
Foster care for a short time			-			-0.18

†β is for final model (step 2).

N, neuroticism; E, extroversion; SDS, Social Desirability Scale.

\*P < 0.05; \*\*P < 0.01; \*\*\*P < 0.001.

**Table 7.** Hierarchical regression analysis predicting the N score from early life experiences in women

Predictors	N			E		
	R <sup>2</sup>	R <sup>2</sup> increase	β <sup>†</sup>	R <sup>2</sup>	R <sup>2</sup> increase	β <sup>†</sup>
Step 1: demographics and response style	0.216	0.216***		0.093	0.093**	
Age			-0.07			-0.22*
SDS			-0.33**			-0.06+
Step 2: early life experiences	0.287	0.072		0.173	0.079*	
Parental care			-0.19			-
Parental protection			0.14			-
Was hospitalized			-			0.12
Death of a sibling			-			-0.26**

†β is for final model (step 2).

N, neuroticism; E, extroversion; SDS, Social Desirability Scale.

\*P < 0.05; \*\*P < 0.01; \*\*\*P < 0.001.

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