

Original contribution

Adolescents' attachment style and early experiences: a gender difference

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Summary

We examined gender differences in perceived rearing and adult attachment style in adolescents. A total of 3,912 senior college students (1,149 men and 2,763 women) ages 18–23 (men's $M=20.1$ years, women's $M=20.0$ years) were administered a set of questionnaires including Relationship Questionnaire (to measure adult attachment), the Parental Bonding Instrument (perceived rearing), and a list of early life events. In the men, positive adult total attachment style was predicted by the scores of paternal care and low scores on maternal overprotection in a hierarchical regression analysis. On the other hand, in the women, positive adult total attachment style was predicted by the scores of paternal and maternal care, and low score on maternal overprotection. Adult attachment was also predicted by fewer Peer Victimization experience as a child in both men and women. However, while men's adult attachment was predicted by Self Disease experiences, women's adult attachment was predicted by Top Star experiences and fewer Relocation experiences. The adult attachment style was predictable from early experiences but there existed some gender differences.

Keywords: Adult attachment style; perceived rearing; life event.

Introduction

Bowlby (1973) developed the theory of attachment to explain the nature of a child's ties to his/her parents in regards to biological function and to account for the unstable behavioural responses observed in infants exposed to separations from significant attachment figures

such as the mother. According to Bowlby (1973, 1988), the imprinted style of attachment to the mother will remain throughout life and work as the 'standard' relating mode of adolescents and adults with their significant others, including romantic partners and spouses. Hence, the attachment styles among adults have become the focus of psychological and psychiatric investigations. In order to study the temporal continuity of the attachment style throughout life, it was necessary to develop instruments to measure adult attachment. Among measures of adult attachment styles (Collins & Read, 1990; George et al., 1985; Hazan & Shaver, 1987; Main et al., 1985; Pietromonaco & Jaffe, 1994), Bartholomew (1990) and Bartholomew & Horowitz (1991) proposed an expanded model of adult attachment that included two forms of avoidance and created a self-rating measure focused on peer relationships, including friendships and romantic relationships. They defined four prototypic attachment patterns using combinations of a person's self-image (positive or negative) and image of others (positive or negative), and developed a four-item scale. To this end they created the Relationship Questionnaire (Bartholomew & Horowitz, 1991), a four-item self-report measure.

The question of what determines the quality and extent of "here and now" adult attachment to others became the focus of empirical investigations. Using their measurement, Hazan & Shaver (1987), Collins & Read (1990), and Carnelley et al. (1994) reported that the

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adult attachment style could be predicted from the remembered parental attitudes towards the individual.

An independent line of research has investigated how individuals perceived their rearing in a retrospective way. The Parental Bonding Instrument (PBI; Parker et al., 1979) has been extensively used in psychiatric and psychological studies including its links with current interpersonal relationships such as social supports (Kitamura et al., 1999; Parker et al., 1992), network ties (Rodgers, 1996), and marital adjustment (Kitamura et al., 1995). Despite a richness of literature using the PBI as a retrospective measure of perceived parenting as a child, few researchers have investigated the possibility of a link between the PBI and the adult attachment style. Studying depression and anxiety in a large population of married people, Gittleman et al. (1998) reported that depression and anxiety could be predicted by the perceived parenting style and that the adult attachment style had a moderating effect on this relationship. However, this study did not examine the effects of perceived parenting on the adult attachment style. Consistently responsive caretaking in childhood is hypothesized to facilitate the development of both an internalized sense of self worth and a trust that others will generally be available and supportive. Inconsistent parenting, particularly if accompanied by messages of parental devotion, may lead children to conclude that they are to be blamed. Presumably due to a history of rejecting or unresponsive attachment figures, such people have learned not to turn to other people as a source of security.

Substantial as the influence of parenting may be on attachment style, it is limited to intrafamilial phenomena. Children may also be influenced by positive and negative events occurring outside of the home as they grow. Such events may include peer relationships, school life, accidents and diseases, romantic relationships, working conditions, and others. Peers are important people children relate to (Harris, 1995). For example, peer victimization (bullying) (Olweus, 1993) has a substantial immediate impact on the mental health of children and adolescents (Hawker & Boulton, 2000) including internalising behaviour (Hodges et al., 1997; Nansel et al., 2001), and depression (Seals & Young, 2003; Snyder et al., 2003). As suggested by theorists, representations of relationships with outside figures in the psyche are progressively formulated. Thus, we may speculate that adult attachment styles are linked to a variety of events that children have experienced throughout their lives.

This study has focused on the following questions among Japanese adolescents:

- 1: Will the Adult Attachment Relationship Questionnaire (RQ) items be grouped into two factors representing the self and others as suggested by Bartholomew (1990)?
- 2: Does the adolescent attachment style differ between adolescent men and women?
- 3: Does perceived rearing as a child predict the adolescent attachment style? If so, do adolescent men and women present different patterns of correlation?
- 4: Do life events as a child predict the adolescent attachment style?

Methods

Participants

As a part of a study on the sex and contraceptive behaviours of Japanese adolescents, we sent a letter to the presidents of all 615 universities in Japan to solicit their co-operation in a questionnaire survey. A total of 110 presidents responded affirmatively. At this stage, the number of eligible students in these universities was 33,779. Because it was impractical to distribute the questionnaire to all of the students of a university, discretion was given to each university to decide on the best way to distribute the questionnaire. However, in order to avoid selection bias as much as possible, the questionnaires were distributed to all the students in a given setting. Thus, questionnaires were handed to students in classrooms, students' sections, or at annual medical check-ups or campus festivals. In some universities, questionnaires were handed to all the students who visited the university's health counselling centre in a given time period. distributed and collected surveys. Questionnaires were sent to each university and they were asked to be distributed to students as described above. They were completed anonymously and returned by mail directly from each participant to us. Because we were not directly involved in the distribution of the questionnaires we were unaware of the response rate of the questionnaire. Neither could we ensure no duplication of responses. A total of 4,226 (12.5%) usable questionnaires were returned by the end of January 2000.

Before starting the study, the present investigation was proved by the Ethical Committee of the National Institute of Mental Health, National Center of Neurology and Psychiatry, Kohnodai, Japan, where the chief investigator was affiliated at the time of conducting the study.

The respondents were 1,330 men (mean age and SD of 20.5 and 2.0) and 2,896 women (mean age and SD of 20.2 and 1.7). Of these, 24 reported that they were married. 1,998 (47.2%) reported that they were currently living with their family; 1,732 (41.0%) were living alone; 350 (8.3%) were living in a group accommodation; 72 (1.7%) were living with a roommate or relatives; and 65 (1.5%) had other accommodation conditions (12 did not report on this matter). The major courses of the students were medical/dental/pharmacy (368, 8.7%); health sciences/nursing (683, 16.2%); engineering (532, 12.6%); edu-

cation (570, 13.5%); humanities/social sciences (1,129, 26.7); arts (85, 2.0%), and other (31, 0.7%). Because the aim of this analysis was to determine the relationship between adolescents' and young adults' attachment styles and the quality of their early experiences, we selected students who were (1) single (unmarried) and (2) younger than 24. This procedure resulted in a total of 3,912 students (1,149 men and 2,763 women). Their mean ages were 20.1 (SD 1.40) for male students and 20.0 (SD 1.31) for female students.

Adult attachment style

The Adult Attachment Relationship Questionnaire (RQ) (Bartholomew & Horowitz, 1991) measures four categories of adult attachment (Secure, Fearful, Preoccupied, and Dismissing). The RQ is composed of four paragraphs, describing each attachment style. The participant was asked to rate the extent to which each description would correspond to his/her relationship with his/her partner. If he/she had no definite partner, he/she was requested to imagine a close opposite-sex person in answering the question. Its reliability (Bartholomew & Horowitz, 1991) and validity (Griffin & Bartholomew, 1994) were reported.

Participants replied using a 7-point scale ranging from "Does not apply to me at all" to "Applies to me very much". The possible range of scores on each item is 1 to 7. With the permission of Dr. Bartholomew, the RQ was translated into Japanese (T.K.).

However, as the Japanese version of the RQ was very short, it was not retranslated back into English to confirm that the translation was consistent with the original meaning.

Perceived rearing

The Parental Bonding Instrument (PBI; Parker et al., 1979) is a self-report questionnaire that contains 25 items, each of which describes a parental attitude toward the subject. There are 12 care items and 13 overprotection items. Subjects are required to rate each item on a 1 to 4 point scale ranging from very unlikely to very likely. Higher scores indicate higher care or higher protection experiences. Parker et al. (1979) reported good test-retest reliability and split-half reliability for this instrument. The Japanese version of the PBI was retranslated back into English to confirm that the translation was consistent with the original meaning (Kitamura et al., 1993). The validity of the instrument was confirmed by a high agreement between the PBI scores of each parent recorded independently by the student, and his/her father and mother. The internal reliability of the PBI subscales calculated by the Cronbach's (1951) alpha coefficients was good (maternal care, 0.89; maternal control, 0.86; paternal care, 0.90; and paternal control, 0.83).

Early life experiences

The students were questioned as to whether they had experienced each of the different events during their lifetime. If they reported having experienced any of the events, they were further asked how many times they experienced the event and their age at the time the event occurred.

Data analyses

Factor analysis with promax rotation was conducted to determine the attachment style. The number of factors was confirmed by the scree test. We composed the adult attachment score as a composite variable.

T-tests were used to compare mean values between the men's and women's groups. Hierarchical regression analysis was used to examine the relationship between the PBI and the RQ. The total adult attachment score was regressed on the group of all the four PBI subscale scores that were forced to enter the formulation. Then, the RQ scores were correlated with the score of each of the early life event subscales. All data analyses were performed using the SPSS-X programme (SPSS Inc., 1986).

Results

1. Factor analysis of attachment style

A factor analysis of the four RQ items with promax rotation revealed a single factor structure (Table 1). This is a single bipolar factor representing the secure and insecure attachment styles. Therefore, we generated a composite score of attachment style in this study:

$$\begin{aligned} \text{Total Attachment Style (TAS) score} \\ = (\text{secure score}) - (\text{fearful score}) \\ - (\text{preoccupied score}) - (\text{dismissing score}). \end{aligned}$$

A higher score indicates a more secure attachment style.

There was a difference between men and women in the TAS score. Female students ($M = -5.14$, $SD = 4.49$) were significantly ($t = 2.23$, $P < .05$) more secure than male students ($M = -5.50$, $SD = 4.64$). Thus, the following analyses were conducted separately for male and female students.

2. Factor analysis of early life events

The frequencies of these experiences were entered into factor analysis. An event was excluded from the factor analysis if less than 10% of the participants reported having experienced it at least once in their lifetime. The number of factors was determined by the scree test. The eigenvalues of all the factors were examined after each factor was extracted until a large jump of the eigenvalues was observed (Cattell, 1966; Zwick, 1982).

Table 1. Factor analysis of attachment style

RQ items	Factor loadings
Secure	-0.397
Fearful	0.694
Preoccupied	0.421
Dismissing	0.399

Table 2. Factor structure of early life events

Early life events	Factor				
	1	2	3	4	5
First prize in art, calligraphy, music etc	0.66	0.02	-0.03	-0.07	0.16
First prize in athletic games	0.62	0.02	-0.00	-0.05	-0.21
Elected as a class leader	0.58	-0.07	0.00	-0.02	0.02
The best academic achievement in the class	0.55	-0.08	-0.07	-0.06	0.19
Termination of romantic relationship	0.33	0.07	0.07	0.25	-0.10
Frequent rows of the parents	0.23	0.04	-0.06	0.10	-0.04
Changed school (other than leaving school)	-0.02	0.90	0.01	-0.06	0.05
Relocated	-0.02	0.89	-0.02	0.02	0.05
Was hospitalised	-0.06	-0.03	0.81	-0.04	0.02
Own serious disease (school non-attendance for 2 weeks +)	-0.04	0.04	0.79	-0.08	0.04
Own fracture/injury	0.11	-0.10	0.35	0.31	-0.00
Serious disease/injury of a family member	-0.07	-0.07	0.01	0.62	0.27
Major earthquake/fire	-0.02	0.05	-0.05	0.59	-0.35
Death of a relative	-0.04	-0.03	-0.13	0.56	0.24
Failed at an entrance examination	0.15	0.09	0.11	0.18	-0.13
Was bullied	-0.05	0.02	0.00	-0.01	0.75
Was betrayed by a close friend	0.14	0.14	0.09	0.17	0.52

The factor solution was sought after PROMAX rotation. This diagonal rotation was chosen because we thought that all of the events had the potential to be correlated with each other. This factor analysis yielded a five-factor structure (Table 2). Items such as “first prize in art, calligraphy, music etc.”, “first prize in athletic games”, and “elected as a class leader” showed high factor loading on the first factor. This factor was thus named Top Star. “Relocation” and “changed school” showed high factor loading on the second factor. This factor was thus named Relocation. Events that showed high factor loading on the third factor included serious disease affecting the participant (i.e. could not attend school for two weeks or more) and “hospitalisation”. This factor was named Self Disease. The fourth factor consisted of events of “serious disease or injury of a family member” and “death of a relative”. This factor was named Family Disease. The last factor consisted of the events “was bullied” and “was betrayed by a close friend”.

This factor was named Peer Victimization. The subscale of event frequencies was calculated by adding the frequencies of events with factor loadings of 0.4 or more on each factor divided by the number of items of the factor.

3. Attachment style and perceived rearing

The means and standard deviations of, and the correlation coefficients between the TAS and PBI scores are shown in Table 3. The TAS score was positively correlated with the paternal and maternal care scores and was negatively correlated with the paternal and maternal over-protection scores in both sexes.

Because all of the PBI scores were correlated with each other, regression analysis was performed to examine the relative contribution of the PBI (independent variable) to the TAS (dependent variable) score for men and women separately. We first entered demographic variables (age); these were followed by the PBI scores that were blocked

Table 3. Means, standard deviations, and correlation coefficients of the RQ and the PBI

Variables	1	2	3	4	5	6	M		SD	
							Men	Women	Men	Women
1. TAS	–	–0.00	0.19***	–0.16***	0.18***	–0.21***	–5.50	–5.14	4.64	4.49
2. Age	0.05*	–	–0.02	–0.03	–0.01	–0.02	20.05	20.04	1.40	1.31
3. Father’s care	0.20***	–0.00	–	–0.44***	0.50***	–0.33***	23.48	24.93	7.33	7.25
4. Father’s OP	–0.13***	–0.02	–0.35***	–	–0.31***	0.54***	10.90	11.28	6.34	6.37
5. Mother’s care	0.21***	–0.02	0.40***	–0.24***	–	–0.50***	28.07	29.52	5.94	5.95
6. Mother’s OP	–0.15***	–0.01	–0.21***	0.55***	–0.47***	–	11.52	11.59	7.01	7.23

* $p < 0.05$, *** $p < 0.001$. The correlations among men are above and those among women are under the diagonal. TAS Total Attachment Style; OP overprotection.

Table 4. Multiple regression analysis predicting the RQ with the PBI

Variables	Men				Women			
	R ²	R ² increase	beta	P	R ²	R ² increase	beta	P
1. Age	0.000	0.000	-0.006	0.840	0.002	0.002**	0.045*	0.019
2. PBI	0.066	0.066***			0.066	0.064***		
Father's care			0.112**	0.003			0.135***	0.000
Father's OP			-0.025	0.508			-0.024	0.318
Mother's care			0.057	0.135			0.123***	0.000
Mother's OP			-0.138***	0.000			-0.052*	0.043

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$; OP overprotection.

Table 5. Correlations of the attachment score with the early life events

Early life events	Correlation with TAS score (r)	
	Men	Women
Top star	0.056	0.057**
Relocation	-0.012	-0.055**
Self disease	0.067*	0.012
Family disease	-0.015	-0.025
Peer victimization	-0.114***	-0.080***

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

and were forced to enter. After controlling for demographic variables, the PBI scores significantly predicted the RQ among both men and women (men; $F = 18.04$, $P < 0.01$; women; $F = 43.72$, $P < 0.001$). The paternal care score significantly predicted the TAS score in both men and women. The maternal care score significantly predicted the TAS score only among women. Although the paternal over-protection score failed to predict the TAS score, low maternal over-protection scores significantly predicted the TAS scores in men and, to some extent, in women (Table 4).

4. Attachment style and early life events

The TAS score was negatively correlated with the Peer Victimization score among both the male and female students. However, the two sexes differed in that among the male students the TAS was positively correlated with the Self Disease score whereas among the female students it was positive correlated with the Top Star score and negatively with the Relocation score (Table 5).

Discussion

Ainsworth et al. (1978) originally proposed three attachment styles – secure, anxious-resistant, and avoidant. Bartholomew (1990) critically examined this notion and proposed that the group of avoidant individuals

actually consists of two groups – one with defensive maintenance of self-sufficiency and the other with conscious fear of anticipated rejection by others. She classified adult attachment styles into four groups based on this theory. She also postulated two models- self-image and image of others – that could be derived from the patterns of attachment styles. Therefore, we expected that factor analysis of the RQ items would yield either four factors that reflected attachment styles or two factors that reflected the self-image and image of others model. However, a single factor emerged from the factor analysis. This means that as we measure adult attachment styles using the RQ, the results will lie on a single spectrum ranging from a secure pole to an insecure pole. It may be possible to use the RQ as a single scale, but it will be necessary to expand the number of items, as proposed by Collins & Read (1990), in order to examine the factor structure of adult attachment.

This study of university students has demonstrated that women have more secure attachment than men. Women in general may be more securely attached to their significant others. Alternatively, this may be the case only in this age group. Indeed, it was only among the women in this study that the TAS score was slightly but significantly correlated with age. Studies on a more widely aged population will be needed to address this question.

As noted, Bowlby hypothesised that children's early ties with their primary care givers would become a basis of their adult attachment to a significant other. The results of this study may support this notion because the TAS scores were correlated with parental care and low parental over-protection. A few points merit further discussion.

First, although parental care is widely believed to be influential in children's psychological development, many clinicians and researchers have paid much more attention to maternal care than paternal care. This study demonstrates that paternal care is no less important than maternal care in terms of adult attachment development. Indeed, paternal care was even more important than

maternal care for men's adult attachment. Furthermore, maternal care showed no significant contribution in predicting men's secure attachment. Although maternal influence on child development has been extensively studied, fewer studies have been conducted on paternal influence on child development. However, the literature suggests that the father is not negligible in child development (Amato, 1994; Rohner, 1998; Dubowitz et al., 2001). The results of this study concur with these reports.

Second, low protection (i.e., respecting children's autonomy) was a significant predictor of adult attachment only among men if the respect was paid by the mother. Thus, low paternal protection showed virtually no contribution to adult attachment. Nor did low maternal protection predict women's adult attachment. This suggests that boys need confirmation of their decisions by their mothers in order to obtain self-esteem and attachment to their mothers. The male attachment figure in adult life is usually a female partner, so maternal reassurance during childhood may be a basis upon which to develop secure adult attachments. However, among women, it is not autonomous decision-making, but nurturing, particularly by the mother, that predicted secure adult attachment. Girls may interpret maternal affection as a representation of secure self-image.

This study demonstrates that paternal care predicts secure adult attachment in both men and women, but that paternal protection has little predictive power. In contrast, maternal care predicts secure adult attachment only in women, while low maternal protection predicts secure adult attachment only in men. Children may view parental rearing not only in terms of the style itself, but also with the perspective of parental gender. Yamamoto et al. (1999) studied the relationship between child physical and emotional abuse and mental disorders later in adolescence. Among male adolescents, Generalized Anxiety Disorder was associated with physical and emotional abuse by the mother, while Major Depression was associated with emotional abuse by either parent. Among female adolescents, Major Depression was associated with emotional and physical abuse by the father and physical abuse by the mother. These complex associations suggest that the link between perceived rearing in childhood and adult personality development is a function of both the gender of the child and the parent.

The TAS correlated positively with Top Star events and negatively with Peer Victimization and Relocation. These findings suggest that adult attachment in a university student population is, to some extent, influenced

by events occurring outside of the home. Here again we observed gender differences. Although the two sexes' adult attachments were influenced by Peer Victimization in the two sexes, women were more vulnerable to Relocation. Women's adult attachment was predicted by the Top Star experiences while men's adult attachment by the Self Disease experience.

The Top Star experiences include winning first prize in a variety of competitions and being elected as a class leader. These experiences may enhance self-esteem and the perceptions of other people. Improved images of self and others may result in better adult attachment style. On the other hand, people with Peer Victimization experiences may have negative images of others; this may result in poorer adult attachment style. Relocation as a child may be an extremely stressful event because of sudden changes in situation and abrupt discontinuation of peer relationships. Wood et al. (1993) reported that family relocation had a substantial impact on children's growth, development, school function, and behaviour. The link of the Self disease experiences to men's adult attachment is difficult to explain. However, the link is, though significant, very weak. This study has demonstrated that there remains much to be studied regarding the link between personality development and the out-of-home environments of children.

Clinical and educational implications also merit discussion. First, because this study has highlighted the importance of the father in child development, clinicians and educators should pay much more attention not only to the absence of the father but also to the relationship with the father. Fathers should be more involved in both the educational and clinical settings. Second, clinicians and educators should be more cautious in the care of children who have experienced peer victimization and relocation. Third, in clinical settings, the concept of adult attachment may be a useful tool for understanding the psychopathology of adolescents and young adults. Here, history taking in regard to the mode of rearing received as a child is of clinical importance.

Limitations of our study should also be noted. Firstly, as this is a cross-sectional study, we should be cautious when making conclusions about causal relationships. Although this study suggests an influence of parental styles on the development of adult attachment, better children's attachment with their parents (that may precede better adult attachment) may determine the parental style. It is also possible that there is a link between children's attachment with their peers and the occurrence of a variety of events. Furthermore, the link bet-

ween parental style and early life events and adult attachment may be mediated by many factors. Future studies should focus on these issues using a longitudinal design.

Secondly, we were not able to examine the difference in types of institutions that responded affirmatively to participating in the survey and those that did not in the research. For the questionnaires were filled in and returned anonymously. In addition to this, lack of statistical information about demographic features of all the university students in Japan made it difficult to examine whether our sample students would represent the Japanese student population.

Thirdly, the interpretation of the preset data should be cautious because we examined only the Japanese population. The possible cultural differences of the link of the RQ to the psychosocial variables may be a topic of future investigations.

In short, this study has highlighted the importance of early rearing, out-of-home events, and gender effects on the development of adult attachment.

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