



Parental Bonding and Adult Attachment Style: The Relationship between Four Category Models

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Abstract

Purpose: Early relationships formed between parent and child are thought to guide the child's feelings, thoughts and expectations in subsequent adult relationships. We examined the relationship between two four category models of perceptions of parenting and adult attachment style among a nonclinical cohort. Parenting style was assessed using the Parental Bonding Instrument (PBI) and adult attachment, using the Relationship Questionnaire (RQ).

Methods: Cohort members (n = 133) provided responses to the PBI (in 1978) and RQ (35 years later) as part of a larger longitudinal study. PBI parental care and control scales were used to assign parents to one of four quadrants; 'optimal parenting' (high care/low control), 'affectionate constraint' (high care/high control), 'affectionless control' (low care/high control) and neglectful parenting (low care/low control). Analysis of variance was performed to assess the contribution of gender and PBI quadrant scores to four RQ attachment styles (secure, dismissing, fearful and preoccupied).

Results: There was a relationship between optimal parenting and secure attachment among women, and between neglectful parenting and preoccupied attachment among men. There was a relationship between affectionless control and preoccupied attachment for women, and an inverse relationship between affectionate constraint and dismissing attachment for men, both results which were not predicted.

Conclusion: Findings suggest that perceptions of parental care and control contribute to adult attachment style 35 years later but males and females differ in how their response to parental control. High parental control may lead women to develop a negative self-image of self while men may benefit from higher levels of parental control, particularly maternal control, in conjunction with high maternal care.

Keywords

Parental bonding instrument, Parenting style, Adult attachment, Gender differences

Introduction

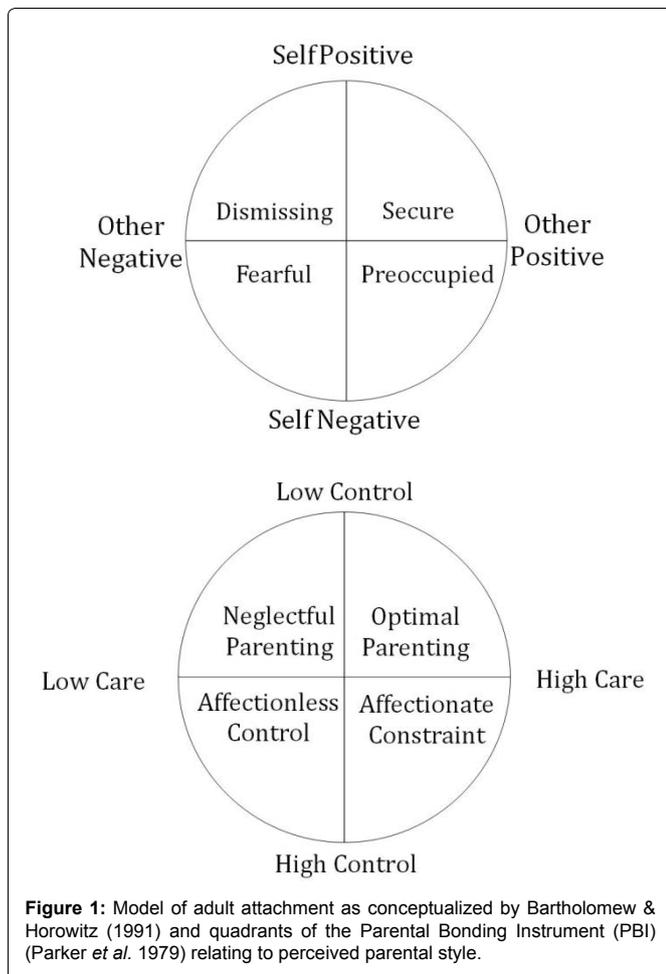
Application of attachment theory to adults

Attachment theory by the English psychiatrist John Bowlby [1,2]

who studied the patterns of interaction between infants and their primary caregivers. He proposed that infants have a biological drive to seek proximity to their caregivers and the extent of availability and attunement to signals for help and support by the caregiver in this interaction contributes to the infant's view of 'others'. Also, the extent to which the child considers him/herself worthy of such care and support from attachment figures contributes to the infant's 'internal working model' of themselves. 'Good enough' [3] parental attachment figures provide a 'safe base' from which to explore the world, an emotional template from which to fashion their own emotional regulation and ideas of 'self' and others' to be internalised.

Drawing on Bowlby's model, Main and colleagues [4] were among the first to assess continuity of attachment style across the lifespan. They applied attachment classifications developed for infants to adults, with the development of the Adult Attachment Interview (AAI). According to their model, 'autonomous' adult attachment is thought to reflect optimal early attachment experiences, whilst 'unresolved' adult attachment is considered the result of the least optimal attachment experiences. 'Dismissing' and 'preoccupied' styles are thought to result from rejecting and inconsistent childhood attachment experiences, respectively.

Bartholomew and colleagues [5-7] later proposed a model of adult attachment with two underlying dimensions, based on Bowlby's model of 'self' and 'others'. They dichotomised one's view of self (as either worthy or unworthy of love and attention) and one's view of others (as trustworthy, caring and available or rejecting and distant). Their Relationship Questionnaire (RQ) measures four attachment styles; 'secure' (self-positive/other positive) and 3 insecure attachment styles: 'preoccupied' (self-negative/other positive), 'fearful' (self-negative/other negative) and 'dismissing' (self-positive/other negative) (Figure 1). 'Secure' individuals are characterised by a sense of self-worth and an expectation that others are generally accepting and responsive, whilst 'preoccupied' individuals attempt to improve their low level of self-worth by gaining the approval of esteemed others. 'Fearful' individuals also have a low level of self-worth which, combined with the expectation that others will reject them, leads to avoidance of close relationships. Meanwhile, 'dismissing' individuals possess a positive image of themselves which, combined with an expectation that others will reject them, leads them to value their own independence while rejecting others.



There has been considerable attention to attachment style in clinical situations, where close contact with care-givers can provoke attachment behaviours [8,9]. These attachment styles have been found to be useful in predicting response to treatment response and health care utilisation of people of people with chronic medical problems [10,11], with diabetes [12], chronic pain [13] and in a hospital emergency department [14]. While Main's Adult Attachment Interview (AAI) has been used in research, it is lengthy and requires interviewer training and unsuitable for routine use in clinical settings. The Relationships Questionnaire has been used in research [15,16] and we are routinely use it in clinical settings [17].

Impact of social influences on attachment ratings

A comprehensive review of adult attachment assessments in nonclinical populations suggest that 40 percent of adults have an 'insecure' attachment style [18] but that 'insecurity of attachment is not in itself a pathology, but represents a vulnerability in terms of effective stress and distress management'. Childhood experiences of trauma, neglect and pathological family dynamics are strong predictors of adult attachment insecurity [19-24].

A study of adult attachment styles in adolescents and young adults considered effects of gender, culture and socioeconomic context [25]. They noted a tendency for females to report slightly less secure attachment but no gender differences in preoccupied and dismissive styles in relatively affluent social environments, while lower SES adolescent mothers showed higher rates of dismissive attachment.

Parental representation and adult attachment

A comprehensive review of adult attachment assessments in nonclinical populations suggest that 40 percent of adults have an 'insecure' attachment style. Associations between perceptions of parenting and adult attachment model have been demonstrated in young adults. For example, young adults who described themselves as securely attached described their mothers with significantly higher

benevolent ratings and fathers with significantly lower punitive ratings than those who were insecurely attached [26]. In a group of Swedish high school students, secure attachment was positively correlated with ratings of parental emotional warmth whilst insecure attachment was positively correlated with recollections of parental rejection and overprotection [27]. Secure attachment has been positively correlated with perceptions of parental care and negatively correlated with perceptions of parental overprotection among young Japanese adults [15,28].

Here, we focus on perceptions of parenting received in childhood (using the Parental Bonding Instrument; PBI, [29]) and adult attachment (using the RQ). The PBI yields a two-dimensional four-category model. The 'care' dimension has one pole defined by affection, emotional warmth, empathy and closeness and the other by emotional coldness, neglect and indifference. The 'control' dimension has one pole defined by overprotection, intrusion and prevention of independent behaviour and the other by allowance of independence and autonomy. The intersection of these dimensions allows four quadrants (Figure 1), whereby high care/low control, termed 'optimal parenting'; high care/high control, termed 'affectionate constraint'; low care/low control, termed 'neglectful parenting' and low care/high control, termed 'affectionless control' - the style found to be the most pathogenic [21,30].

A study comparing the PBI with Main's AII in disturbed adolescents found comparable attachment information in participants with optimal attachment histories, but not in those who reported idealisation or anger towards their mothers [31]. Additionally, we have previously reported gender differences in perceptions of 'care' and 'control' for each parent [32]. When asked to rate their parent's relationship on dimensions of 'care' and 'control', sons appeared to identify with their fathers in terms of reporting the amount of 'care' given to their fathers by their mothers while daughters were able to perceive the 'care' demonstrated by both parents to each other but they had greater identification with their mothers when scoring 'control' ratings.

There are studies suggesting these two models may correspond. Gittleman, et al. [33] conducted a longitudinal study of parenting amongst men and women recruited via family practice clinics in the U.S. Securely attached men and women recalled higher PBI maternal care than fearful individuals. Meanwhile, men classified as 'secure' or 'dismissing' recalled lower levels of maternal control than those classified as either 'fearful' or 'preoccupied', suggesting that, among the males in that sample, low levels of control (from mothers at least) lead to a positive image of the self. Recent survey of over 4,000 Japanese undergraduates indicated that low maternal control scores significantly predicted 'secure' attachment in both sexes, however paternal control scores failed to predict 'secure' attachment in either sex [15,28]. Meanwhile, paternal care predicted 'secure' attachment in both men and women whilst maternal care significantly predicted 'secure' attachment only among women.

Thus existing research suggests a relationship between perceptions of parental rearing as measured by the PBI, and Bartholomew's model of adult attachment. However, existing research has primarily utilised the two 'care' and 'control' dimensional scores derived from the PBI and no research has explicitly addressed the relationship between the four PBI quadrants and Bartholomew's four adult attachment categories. Here, we assess the ability of PBI care scores to discriminate attachment style along the 'self' and 'other' dimensions. Specifically, we predict that higher perceived parental control would increase the likelihood of developing an adult attachment with a negative view of the self (fearful or preoccupied) and that high care scores would increase the likelihood of developing an adult attachment style with a positive view of the other (secure or preoccupied). In doing so, we explored the relationship between 4 parenting quadrant and 4 adult attachment styles, with the prediction that optimal parenting would predict 'secure' attachment style, affectionate constraint would predict 'preoccupied' attachment, neglectful parenting would predict 'dismissing' attachment and affectionless control would predict

'fearful' attachment. Additionally, we assessed the effect of gender parent and adult offspring on the relationship between PBI and RQ scores.

Method

Sample

The cohort of 109 women and 56 men was recruited in 1978 (when their mean age was 23.4 SD 2.3 years) while undertaking a postgraduate teaching diploma. Participants were subsequently followed-up through semi-structured interviews and self-report questionnaires at five-yearly intervals (1983, 1988, 1993, 1998, 2003 and 2008). Initially aiming to identify risk factors contributing to the recognised female preponderance of depression, the research focus has evolved over time. One hundred and thirty three participants (87 women, 46 men) completed the RQ measure in 2008, comprising 81% of the original sample. Of those participating in the 2008 follow up, 67% were female with a mean age of 53 (50-65 years, SD 2.5), 73% were married or living with a partner while 27% were single, widowed, separated or divorced, 89% were currently working and 11% had retired. The cohort members were socially homogeneous in terms of educational and socio-economic status but also generally came from stable two-parent English-speaking, 'middle class' families, and reported low use of alcohol, tobacco and other substances and negligible forensic history. For further details of this cohort please refer to previous publications [34-36].

The parental bonding instrument

The Parental Bonding Instrument [29] is a brief and easily administered self-report instrument designed to measure perceptions of parenting to the age of 16 years comprising 25 items that contribute to two scales, parental care and parental control. Scores on parental care and control may also be used to assign the parent to one of four quadrants; optimal parenting affectionate constraint, affectionless control and neglectful parenting. The reliability of the PBI has been demonstrated in clinical and non-clinical samples over both brief intervals [29,37] and prolonged periods of up to two decades [38-40]. Responses to the PBI were collected at the 1978, 1983, 1988 and 2003 waves for this cohort. The 1978 PBI scores were used in this study as they are nearest in time to the first sixteen years of life and judged to be the most consistent with their recollections of their own parenting, before they had contact with children in their work or as parents.

Relationship Questionnaire (RQ)

The RQ [6] comprises four separate paragraphs, each representing one of four attachment styles ('secure', 'preoccupied', 'dismissing' and 'fearful'). Participants were asked to rate the extent to which each paragraph description applied to them on a scale of 1 to 7 and then to select the one that best represented them (which then represented the categories used). The categories are not named and there are no pejorative descriptors that would bias choice of categories.

Statistical analyses

All analyses were performed using PASW Statistics version 18. A kappa measure of agreement was obtained to examine the relationship between RQ attachment style in 2008 and 1978 paternal and maternal quadrant separately. Two sets of sequential logistic regression were performed to assess whether continuous PBI care and control scores could discriminate RQ attachment style along the dimensions of 'self' and 'other'. For the first model, the dependent variable was RQ attachment style, dichotomised along the dimension of 'self', so that 0 = fearful/preoccupied (negative view of self) and 1 = dismissing/secure (positive view of self). The independent variable gender was entered in the first step (male = 1, female = 0). Continuous PBI scores (maternal control and paternal control) were entered in the second step. Maternal and paternal control scores were centred to enable creation of the interaction terms gender * maternal control and gender * paternal control, which were entered in the third step. For the second model, the dependent variable was RQ attachment style, dichotomised along the dimension of 'other' so that 0 = dismissing/

fearful (negative view of other) and 1 = preoccupied/secure (positive view of other). Gender was entered in the first step. Continuous PBI scores (maternal care and paternal care) were entered in the second step. Paternal and maternal care scores were centred to enable creation of the interaction terms gender * maternal care and gender * paternal care, which were entered in the third step. Analysis of variance (ANOVA) was performed to explore the effect of gender, maternal quadrant and paternal quadrant on continuous RQCV scores. A 2*(4)*(4) design was employed, with gender as the between-subjects factor and maternal and paternal quadrant as within-subjects factors. Four separate analyses were performed, each with one attachment style (secure, preoccupied, dismissing or fearful) as the dependent variable.

Results

The mean scores for PBI scales were maternal care 26.6 (SD 7.4) for women and 26.2 (SD 5.5) for men; paternal care 21.9 (SD 9.3) for women and 21.4 (SD 7.2) for men; maternal overprotection 15.2 (SD 8.2) for women and 14.8 (SD 7.6) for men. Participants were assigned to one of four PBI quadrants using the mean scores on each scale for each gender. Association between 1978 PBI quadrant and 2008 RQ categories are presented in Table 1 for maternal and paternal quadrants respectively. For maternal parenting style, the measure of agreement between RQ category and parenting style was significant, κ (N = 131) = 0.92, p = 0.048. For paternal parenting style, the measure of agreement was non-significant, κ (N = 131) = 0.90, p = 0.054.

Table 2 shows regression coefficients, Wald statistics, odds ratios and 95% confidence intervals for each step of the logistic regression models. For the first model ('self'), after step 1, the test of gender against a constant-only model was not statistically significant, χ^2 (1, N = 131) = 0.24, p = 0.62, indicating that gender did not distinguish between participants according to the 'self' dimension. After step 2, addition of maternal and paternal control scores to the model resulted in a statistically significant increment in prediction of attachment style, χ^2 (2, N = 131) = 8.29, p = 0.016, indicating that together, lower maternal and paternal control scores resulted in a greater likelihood that a participant would endorse an attachment style with a positive view of 'self' (either secure or dismissing). According to the Wald criterion, neither maternal nor paternal control score reliably predicted attachment style independently; for maternal control z = 1.18, p = 0.27; for paternal control, z = 3.8, p = 0.051. After step 3, addition of the interaction terms resulted in a statistically significant increment in prediction, χ^2 (2, N = 131) = 6.06, p = 0.048, indicating that for males, higher paternal and maternal control scores together resulted in greater likelihood that a participant would endorse an attachment style with a positive view of 'self'.

For the second model ('other'), after step 1, gender reliably distinguished between participants according to attachment style, χ^2 (1, N = 131) = 4.17, p = 0.04, whereby there was greater likelihood that females would endorse an attachment style with a positive view of the 'other' (either the secure or preoccupied attachment style). After

Table 1: Frequencies of agreement between 1978 PBI maternal and paternal quadrants and 2008 RQCV attachment styles.

PBI Maternal Quadrant	RQCV Attachment style							
	Secure		Preoccupied		Dismissing		Fearful	
	n	%	n	%	n	%	n	%
Optimal parenting	39	69.6	1	1.8	16	28.6	0	0
Affectionate constraint	13	68.4	2	10.5	4	21.1	0	0
Neglectful parenting	9	47.4	1	5.3	7	36.8	2	10.5
Affectionless control	21	56.8	3	8.1	10	27.0	3	8.1
PBI Paternal Quadrant	RQCV Attachment style							
	Secure		Preoccupied		Dismissing		Fearful	
	n	%	n	%	n	%	n	%
Optimal parenting	34	70.8	1	2.1	11	22.9	2	4.2
Affectionate constraint	12	66.7	1	5.6	4	22.2	1	5.6
Neglectful parenting	13	50.0	2	7.7	11	42.3	0	0
Affectionless control	23	59.0	3	7.7	11	28.2	2	5.1

Table 2: Sequential logistic regression analyses of attachment style as a function of gender, parental care and parental control.

'Self' dimension: fearful/preoccupied vs dismissing / secure						
		B	Wald test (z-ratio)	Odds ratio	95% CI for Odds Ratio	
					Lower	Upper
Step 1	Gender	-0.31	0.25	0.74	0.22	2.46
Step 2	Gender	-0.58	0.77	0.56	0.15	2.05
	Maternal control	-0.05	1.18	0.95	0.87	1.04
Step 3	Paternal control	-0.09	3.8	0.92	0.84	1.00
	Gender	-1.33	2.10	0.27	0.04	1.60
	Maternal control	-0.27	3.02	0.76	0.56	1.04
	Paternal control	-0.25	3.08	0.78	0.59	1.03
	Maternal control* gender	0.16	2.33	1.18	0.95	1.46
	Paternal control * gender	0.13	1.57	1.13	0.93	1.38
'Other' dimension: dismissing/fearful vs preoccupied / secure						
		B	Wald test (z-ratio)	Odds ratio	95% CI for Odds Ratio	
					Lower	Upper
Step 1	Gender	-0.79	4.16	0.45	0.21	0.97
Step 2	Gender	-0.80	4.13	0.45	0.21	0.97
	Maternal care	0.03	1.08	1.03	0.97	1.10
Step 3	Paternal care	0.03	1.51	1.03	0.98	1.08
	Gender	-0.77	3.77	0.46	0.21	1.01
	Maternal care	0.04	0.18	1.04	0.87	1.25
	Paternal care	0.00	0.00	1.00	0.87	1.25
	Maternal care * gender	-0.01	0.01	1.00	0.87	1.14
	Paternal care * gender	0.02	0.14	1.02	0.92	1.13

step 2, addition of maternal and paternal care scores did not result in a statistically significant increment in prediction of the dependent variable, $\chi^2(2, N = 131) = 4.17, p = 0.12$. After step 3, addition of the interaction terms maternal care * sex and paternal care * sex did not result in a statistically significant increment in prediction, $\chi^2(2, N = 131) = 0.15, p = 0.93$.

Results of ANOVA for secure attachment style indicated that the main effects of gender, paternal quadrant and maternal quadrant were non-significant (Table 3). The interaction between maternal quadrant and gender was significant, $F(3, 104) = 3.48, p = .02$. Follow up tests with one-way ANOVA were conducted for males and females separately. For females, there was a significant effect of maternal quadrant on secure attachment $F(3, 83) = 3.73, p = 0.01$. Post hoc comparisons using the Tukey Honestly Significant Difference (HSD) test indicated that, for females, the mean 'secure' rating for those in the optimal maternal group ($M = 5.6, SD = 1.2$) was significantly higher than for those in the affectionate constraint maternal group ($M = 4.3, SD = 1.3$), ($F(3, 83) = 3.73, p = 0.01$). For males, the effect of maternal quadrant on 'secure' attachment was non-significant, $F(3,42) = 2.25, p = 0.1$. There was no significant interaction between gender, maternal quadrant and paternal quadrant.

For 'fearful' attachment style, the main effects of gender, paternal quadrant and maternal quadrant and the interaction terms were all non-significant (Table 3).

For 'preoccupied' attachment style, the main effects of gender, paternal quadrant and maternal quadrant were non-significant, as

were the two-way interactions between paternal quadrant and gender, maternal quadrant and gender, and paternal quadrant and maternal quadrant. The three-way interaction between paternal quadrant, maternal quadrant and gender was significant, $F(6, 104) = 2.26, p = 0.04$. Follow up tests with two way (4)*(4) within-subjects ANOVA with four levels of paternal quadrant and four levels of maternal quadrant as within subjects factors, were conducted for males and females separately. For females, the interaction between paternal and maternal quadrant was significant, $F(9, 71) = 2.17, p = 0.03$. Follow up tests with one-way ANOVA indicated that, for females in the maternal affectionless control group, the effect of paternal quadrant was significant, $F(3,21) = 5.4, p = 0.01$. Post hoc tests using the Tukey HSD test indicated that for females in the maternal affectionless control group, the mean preoccupied score for the paternal affectionless control group ($M = 3.2, SD = 1.6$) was significantly higher than the mean score for the paternal optimal group ($M = 1.0, SD = 0.0$), $F(3, 21) = 5.4, p = 0.01$. For males, the main effect of paternal quadrant was non-significant, $F(3, 33) = 1.05, p = 0.31$, whilst the main effect of maternal quadrant was significant, $F(3, 33) = 3.05, p = 0.04$. Post hoc tests using the Tukey HSD test indicated that, for males, the mean preoccupied score for the maternal neglectful group ($M = 3.8, SD = 2.2$) was significantly higher than the mean preoccupied score for the maternal optimal group ($M = 2.0, SD = 1.8$), $F(3, 33) = 3.0, p = 0.04$, and the maternal affectionate constraint group ($M = 1.6, SD = 0.5$), $F(3, 33) = 3.0, p = 0.04$.

For 'dismissing' attachment style, the main effects were all non-significant (Table 3), however the interaction of maternal quadrant and gender was significant, $F(3, 104) = 4.06, p = 0.01$. Follow up tests with one-way ANOVA were conducted for males and females separately. For females, the effect of maternal quadrant was non-significant, $F(3, 83) = 1.29, p = 0.29$. For males, the effect of maternal quadrant on dismissing attachment was significant, $F(3, 42) = 3.76, p = 0.02$. Post hoc tests using the Tukey HSD test indicated that for males, the mean score for the maternal affectionate constraint group ($M = 1.9, SD = 1.6$) was significantly lower than the mean score for the maternal optimal group ($M = 4.4, SD = 1.9$), $F(3, 42) = 3.76, p = 0.03$, the maternal affectionless control group ($M = 4.3, SD = 1.9$), $F(3, 42) = 3.76, p = 0.02$ and the maternal neglectful group ($M = 4.3, SD = 1.3$), $F(3, 42) = 3.76, p = 0.04$.

Discussion

Issues related to the measures and the study cohort

The PBI has been widely used over the past four decades and we assessed the ability of perceived parenting style measured by PBI parental quadrant to predict adult attachment style. All quadrants therefore had a range of scores but those nearer the cut offs were still taken as 'good enough' presentations of that quadrant. The use of quadrants to represent parenting style allowed us to make comparisons with four adult attachment styles measured by a simple self-report measure. We have previously reported that the PBI scores are relatively stable over time [39] but for most of the cohort who were initially postgraduate trainee teachers, the first few years of starting work as a teacher and family-related responsibilities were generally their greatest life stressors. We therefore used the PBI rating that was nearest to their childhood and prior to these events.

Table 3: Analysis of variance for the adult attachment styles.

Source	df	E			
		Secure	Preoccupied	Dismissing	Fearful
1978 Paternal quadrant	3	0.33	0.11	0.38	0.89
1978 Maternal quadrant	3	0.26	2.24	1.48	0.87
Gender	1	2.67	0.29	0.28	0.36
Maternal quadrant x paternal quadrant	9	0.84	1.6	0.58	1.68
Paternal quadrant x gender	3	0.25	1.84	0.07	0.12
Maternal quadrant x gender	3	3.48*	2.31	4.06**	1.68
Gender x maternal quadrant x paternal quadrant	6	0.37	2.26*	0.78	1.70
S within-group error	104	(2.24)	(1.89)	(3.93)	(2.3)

Note. Values enclosed in parentheses represent mean square errors.

* $p < 0.05$ ** $p < 0.01$

The small sample size resulted in limited statistical power and represents a limitation of the study. Further research using quadrants in larger samples would help substantiate our results. The homogeneity in the sample is both a limitation and a strength. All group members were tertiary educated, with similar age and socio-economic status, with very low rates of cigarette and alcohol consumption, negligible forensic history, with high rates of help-seeking [35,36,41,42], and without potential confounders as poverty, disruptive schooling, chaotic parental environment were negligible. This means that some the group does not represent the general adult population and it is necessary to explore the relationship between parental bonding and adult attachment in more socially disadvantaged groups.

Relationship of parental style and adult attachment

We assessed the ability of perceived parental control and care to discriminate between adult attachment styles, when divided along dimensions of perceived valence (positive or negative) of 'self' and 'other' respectively. We also assessed the ability of perceived parenting style measured by PBI quadrant to predict self-rated adult attachment style categories 35 years later.

Results were partially consistent with our hypotheses. Lower maternal and paternal control scores together resulted in greater likelihood of adult attachment style with a positive view of 'self' (secure or dismissing). However, when gender was added to the model, gender differences emerged. While higher perceived parental care resulted in greater likelihood of 'positive self' adult attachment style, for women, this had greater association with the secure style, but for men, with the dismissing style. There was a positive relationship between affectionless control and preoccupied attachment for women and an inverse relationship between affectionate constraint and dismissing attachment for men, neither of which were predicted. Findings are discussed separately for men and women respectively.

Findings pertinent to boys and men

The finding that maternal 'optimal' parenting was associated with significantly higher scores on 'dismissing' attachment compared to the other maternal quadrants suggests that high care associated with low control did not necessarily lead to a positive image of the other, as expected. Research suggests that boys benefit from clear communication, parental involvement and consistent boundaries. Indeed, the association between high parental monitoring and low risk-taking behaviour in adolescence is well-established [43]. These authors note that parent-child connectedness and authoritative parenting style are protective for teens and the affectionate constraint construct is consistent with this. Our findings suggest that this may be more pertinent for boys, and even detrimental to girls, at least girls raised in a more 'middle class' environment.

A report on gender differences in impact of parental monitoring found that among high-risk adolescents, parental monitoring was associated with less drinking for boys but more drinking for girls. However, they reported the association of parental monitoring with lower levels of delinquency was independent of gender [44]. We speculate that among males, optimal parenting, with its low control, contributed to the negative image of the other seen in dismissing attachment. Indeed, a tendency for a parent to score highly on some of the reverse-scored PBI control items (for example 'let me do those things I liked doing', 'gave me as much freedom as I wanted' and 'let me go out as often as I wanted) may reflect a tendency towards permissiveness, which may benefit children with a high level of responsibility or self-control, but not children with a tendency towards risk-taking. Perhaps high care is of greater benefit for males when in the presence of high control and suggests that boys or young men may be more likely to view the other as responsive to their needs if the other also provides consistent boundaries.

We predicted that 'affectionate constraint' (high care/high control) would predict high scores on preoccupied attachment and found it predicted significantly lower scores on 'dismissing' attachment for males. Dismissing attachment is diametrically opposed to preoccupied

attachment on Bartholomew's model (Figure 1), so the finding that this finding is consistent with our hypotheses. The finding that the high control in 'affectionate constraint' may have contributed to lower negative perceptions of others seen in 'dismissing' attachment again suggests the importance of the maternal control dimension in shaping male attachment style.

Enns et al. [45] found that high maternal control represented an increased risk, and high paternal control represented a decreased risk, for externalizing disorders in males. Our findings suggest that this negative effect of high maternal control may be tempered by the presence of high maternal care. However, it would be reasonable to assume that the type of control exerted by a caring parent would differ from the type of control exerted by an uncaring parent. An uncaring parent may be more likely to score highly on controlling items that are considered intrusive (for example 'invaded my privacy', 'tried to make me feel dependent on her/him' and 'did not want me to grow up') whilst a caring parent may score more highly on the reversed scored items that suggest consistent boundary settings listed above and suggests the value in assessing parenting style by quadrant in addition to dimensional care and control scores.

'Neglectful' parenting from the mother was associated with higher scores on 'dismissing' attachment style for males, compared to the other three parenting quadrants, as predicted. Like optimal parenting, neglectful parenting is characterised by low control. Certainly, among the results for males, the common factor is the control dimension on the maternal side. Gittelman et al. [33] reported that men classified as 'secure' or 'dismissing' recalled lower levels of maternal control than those classified as either 'fearful' or 'preoccupied', suggesting that, among the males in that sample, low levels of maternal control may have led to a positive image of the self. Direct comparison to our study is difficult because they assessed parenting style by dimensional care and control scores rather than quadrant. Further research in other samples using a four category model of parenting may help to explain these discrepancies.

Findings pertinent to girls and women

For women, maternal 'optimal' (high care/low control) parenting resulted in higher attachment security than maternal 'affectionate constraint' (high care/high control), which is consistent with our hypothesis. However, women were more likely to endorse secure and preoccupied styles (which have a positive view of the 'other' but 'affectionate constraint' did not directly predict 'preoccupied' attachment style, as expected.

'Neglectful' parenting did not emerge as an important factor for women, but 'affectionless control' emerged as a significant predictor of 'preoccupied' attachment, if both parents were perceived to parent in this style. We had predicted a relationship between 'affectionless control' and 'fearful' attachment. Instead, while the high control component of affectionless control appeared to lead to the negative self-image of 'preoccupied' attachment as expected, the low care component did not lead to a negative other-image. Taken together with the above suggestion that high control may have contributed to low attachment security in women, this suggests that high control parenting contributes to formation of attachment styles with a negative self-image in women.

While previous findings [15,28,33] have not reported an effect of perceived parental control on female attachment style, it is possible that high control implies a lack of trust or respect, low expectations of the child and a lack of confidence in their abilities, which the child (particularly girls!) may internalise into a negative representation of the self. These findings fit with the general tendency for girls to internalise and boys the externalise attributions. It is possible that with lower base rates of behavioural problems in this cohort, there is less expectation that parents need to control girls. Girls may share this expectation and so when controlling behaviour does occur, it occupies greater salience in the mental representation of the parent. Alternatively, the controlling behaviour from the 'affectionless control' parent may be more intrusive than the controlling behaviour from

the 'affectionate constraint' parent, thereby contributing to a more negative image of self.

Conclusions

The findings suggest that parenting style, measured by the PBI, contributes to development of adult attachment style but not all parenting styles are of equal importance. For both genders, maternal parenting style appeared more important than paternal parenting in predicting adult attachment style, using a simple self-report instrument. Moreover, gender appears to be a moderating factor in the relationship between parenting style and adult attachment whereby high levels of control may be detrimental to female attachment style, but beneficial to male attachment style, if in combination with high care.

An earlier review of the relationship between perceptions of parenting received in childhood and social bonds in adulthood [46] concluded that while the effects were stable, they were potentially readily modifiable in all but the most extreme vulnerabilities. It is important that clinicians can discuss evidence for parenting practices with families, noting approaches appropriate for different genders and socio-economic circumstances. In Australia, a leading author, Steve Biddulph first wrote the highly successful 'The Secret of Raising Happy Children', and later wrote 'Raising Boys' and 'Raising Girls', acknowledging that different approaches are needed. Also, the use of a simple attachment such as RQ enables these attachment-informed principles to be applied in a range of settings [9,17].

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