Differences in Behaviour and Temperament between Japanese and British Toddlers Living in London: A Pilot Study

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The aim of this postal survey was to highlight differences in temperament and behaviour between 32 toddlers in Japanese families living temporarily in London and 36 in British families, all in London. Mothers completed questionnaires about demography, perinatal events, and their child's temperament and behaviour. UK toddlers were described as exhibiting fewer behavioural symptoms than Japanese toddlers. Significantly more of the Japanese toddlers scored above the cutoff on the Behaviour Check List, indicating higher levels of behavioural disturbance. An interesting item is 'sleeping with parent', which occurs commonly in Japanese families and is considered to be normal for that culture. On the Toddler Temperament Scale the Japanese toddlers proved more distractable and more intense than the UK toddlers when age had been allowed for. It was of interest that Japanese girls proved more distractable than Japanese boys and UK girls. Possible explanations for the differences are advanced.

Keywords: Child temperament; child behaviour; cross-cultural differences; Japanese toddlers; British toddlers

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Introduction

A substantial amount of research has explored the theme of the differences (and similarities) in child temperament and behaviour that appear to exist across cultures. This work has contributed to the thinking about the interactive nature of the relationship between a child and its parents.

Influences upon temperament

Early workers considered temperament to be genetically and biologically determined (Thomas et al., 1963). Genetic factors are self-evident and research has supported their existence and continues to do so (Goldsmith, 1989). Individual differences do seem to reflect variability in the processing of emotional information and in attentional systems. Earlier studies, for example, reported that very light-for-dates infants showed significant degrees of over-activity (Neligan et al., 1976), although with modern obstetric and neonatal care such patterns may be less evident (Hawdon et al., 1990).

Infant temperament is also shaped by parental input, which itself is partly determined by the infant's contribution to the parent-child relationship (Bell, 1974; Osofsky, 1976). The way in which parents respond to their children is also affected by other factors, such as environmental stress (Crockenberg, 1986). Sensitive parenting and maternal responsiveness predict infant developmental outcome (Murray et al., 1993) and, in turn, the infant's responsiveness influences the nature of adult engagement with him or her (Murray & Trevarthen, 1986).

The nine temperament dimensions and the 'easy/difficult' continuum described by Thomas et al. (1963) and Chess and Thomas (1984) in the New York longitudinal study

have been widely used in research on temperament in childhood, enabling comparisons of temperament across different social and cultural groups and over time. Kyrios et al. (1989) used the Australian revision of the Revised Infant Temperament Questionnaire (Oberklaid et al., 1984) to compare an Anglo-Australian and three Greek infant cohorts (two in Australia and one in Greece). They found that infants from a Greek cultural background were generally rated as more 'difficult' than Anglo-Australian infants on four temperament dimensions. On the basis of their data they suggested that assimilation of the families within the prevailing social and cultural context lessens the stress of migration and may significantly influence the way parents describe their infant's temperament. The more socially assimilated a group, the less 'difficult' the temperamental profiles of its infants.

Mother-infant relationships and infant behaviour—Japanese/American studies

Caudill (1973) and Caudill and Weinstein (1969) made detailed observations of urban Japanese and American mothers and babies in their own homes. They described American infants as more happily vocal, active, and exploratory than Japanese infants. They found that American mothers chatted to and positioned their babies more than Japanese mothers, who were more likely to hold, lull, and rock theirs, appearing to assume that they knew what their offspring needed without verbal communication and regarding their babies more as extensions of themselves than as separate beings. Caudill and Weinstein concluded that 'a great deal of cultural learning has taken place by 3 to 4 months of age'. They argued that observed differences, which persisted over time, were almost entirely due to differing maternal styles and expectations, rather than to genetic or maturational factors.

Comparisons between Japanese dyads in Japan and third-generation 'Japanese-American' dyads in America appeared to support a 'cultural learning' hypothesis (Caudill & Frost, 1973). The Japanese-American mothers chatted more to their babies, who were more active and likely to vocalise happily and cry less than their Japanese counterparts in Japan.

There are some caveats about the above findings: first, the studies were cross-sectional with no data on infant behaviour between birth and the monitoring point so that the processes upon which they were based were inferred. Second, the presence of an observer in the smaller Japanese homes might have distorted results.

Shand and Kosawa (1985) re-examined this question using larger samples in a replication study. They filmed maternal and infant behaviour at birth, 1 month, and 3 months. Japanese infants were more active but less exploratory than American infants at all monitoring points and slept more in total. American mothers in this study had greater physical contact with their infants than Japanese mothers, possibly reflecting cultural change since Caudill's study. Japanese babies still cried more and American babies still made more non-crying vocalisations. Shand and Kosawa suggested that the consistent differences in spontaneous motor activity from birth supported the existence of genetic or constitutional factors contributing to group differences in infant behaviour. However, they also found that both maternal and infant behaviour changed significantly between 1 and 3 months, supporting the notion of an interactive process.

Otaki et al. (1986) partially replicated Caudill and Weinstein's original study. They were struck by the similarities between the Japanese and American groups and the seeming convergence of cultures over time. Japanese mothers now held their babies less and American mothers more. Otaki et al. (1986) related this to the exposure of the Japanese to Western media and an increased interest in America in parent-infant relationships. They noted, however, that despite temporal changes Japanese and American infant caretakers retained their own distinctive characteristics in their interactions with their babies. American mothers still chatted more to their infants, although the difference was no longer statistically significant. They continued to position their babies significantly more than the Japanese. Japanese male infants cried more and exhibited more vocal behaviour in general than Japanese female infants, whereas American female infants vocalised more than American males, possibly reflecting later expectations for gender-related behaviour in the two cultures.

Trying to understand cross-cultural differences

Many attempts have been made to understand the above differences in parental and infant behaviour in the context of such cultural expectations. The Japanese culture has been characterised as one of inter-dependence, self-discipline, and perfectionism and as oriented to the group rather than the individual (Trommsdorff & Friedlmeier, 1993). Vogel (1967) and Vogel and Vogel (1961) described Japanese children and their mothers as spending little time apart, with an emphasis on nonverbal communications and affectionate physical contact. Mothers were said to encourage a fear of strangers and the outside world in their babies, whilst offering themselves as indulgent symbols of security to encourage closeness and dependency. In general, they emphasised the prompt satisfaction of the babies' needs rather than verbal expression, and avoided direct expressions of negative emotions or confrontation. As children become older, though, their parents place increasing importance on the child's compliance to adult authority (Lebra, 1976).

American mothers focus less on compliance and more on the child's verbal skills and the development of independence. Tamis-Lemonda et al. (1992) found that Japanese dyads in their study used toys to mediate their own interaction, whereas the comparison group of Americans engaged more in nonsymbolic, functionally oriented object play, encouraging independent activity in their toddlers.

Doi (1971) and Watanabe (1992), working within a psychoanalytic framework, have described '*amae*', a complex and uniquely Japanese concept encompassing attachment, acceptance, mutual dependence, and satisfaction in relationships. *Amae* initially refers to the feelings and behaviours of the infant and continues as a fundamental element in Japanese relationships throughout life.

Attachment patterns

Important differences have been demonstrated in attachment patterns between Japanese and Western infants. These are probably linked to different qualities of mothering and mother-infant relationships and are exemplified by responses to separation from mother. Attachment theory proposes that the quality of the attachment relationship is revealed by the infant's use of the mother as a secure base to whom proximity is sought under stress. The responses of children to separation from and reunion with their mothers are classically demonstrated in the Strange Situation paradigm (Ainsworth et al., 1978). Four major patterns of response have been identified and are known as 'B' (secure attachment), 'A' (insecure-avoidant), 'C' (insecure-ambivalent) and 'D' (insecure-disorganised). In the United States and the United Kingdom the B classification is assumed to reflect a secure attachment.

There are significant cross-cultural differences in the proportions of children assigned to categories B, A, and C. In those countries where the Strange Situation 'test' has been explored and surveyed in Van Ijzendoorn and Kroonenberg's 1988 meta-analysis, classification in category B always proved the most common, with C classification usually the second most frequent classification. However, A is rarely represented in Japan as compared with Western countries, and C more commonly so. Campos et al. (1983) have suggested that the more distressing the separation situation for a child, the more likely that he or she will be classified in category C. These results seem to confirm the prediction that Japanese infants are likely to find separation more distressing, probably because they have so rarely been apart from their mothers. Previous neonatal irritability has also predicted this pattern of attachment behaviour in some babies (Waters, 1978). Some explain the difference in attachment responses in terms of the nonverbal communication style and extensive physical contact that have been described between Japanese mothers and babies. Takahashi (1990) has argued that some of the key assumptions underlying the 'strange situation' procedure are not directly applicable to Japanese dyads and that the particular cultural context must be taken into account when offering interpretation of results in terms of the security or otherwise of dyadic relationships. The study described below was designed to explore further some of the issues outlined above.

Aims of the study

The aim of this pilot study was to explore and compare cross-cultural patterns of behaviour and temperament of Japanese and UK toddlers living in London. As cultural influences are likely to continue, the differences described above between Japanese and Western infants in temperament, behaviour, and mother-child interaction might be expected to continue or even increase over time into toddlerhood and beyond. Japanese and UK toddlers have not previously been compared in this way. The general hypothesis was advanced that Japanese toddlers would be more compliant than UK toddlers, tending towards the 'easy' end of the temperament continuum described by Thomas et al. (1963).

Method

Sample

Japanese toddlers were recruited by the female Japanese researcher (RS) from a London-based support group for Japanese mothers. Forty-one interested mothers, all of whom met inclusion criteria, were sent a package of questionnaires with explanation. Thirty-two mothers (78%) completed questionnaires. UK toddlers were recruited by the female English researcher (EA) via General Practitioners, National Childbirth Trust group convenors, and local Child Health Clinics. Sixty-five mothers expressed an initial interest, of whom 49 met inclusion criteria. Thirty-six mothers (74%) completed questionnaires.

The subjects were 32 Japanese toddlers (16 boys, mean age 27.4 months, $SD = 5.07$; 16 girls, mean age 27.3 months, $SD = 4.04$) and 36 UK toddlers (19 boys, mean age 25.9 months, $SD = 7.62$; 17 girls, mean age 24.3 months, $SD = 6.47$) living in London, aged 1 to 3 years. The inclusion criteria specified that: (a) families had two united parents; (b) UK parents had to be born in the UK or reared there since early childhood; (c) Japanese parents had to be born or reared in Japan.

The Japanese cohort consisted of families living in North London, in all of which the breadwinner father was a graduate or a member of the business community, classified as 'white-collar', and had been so for at least 3 years prior to entering the study. A matched UK sample was identified which controlled for these socio-economic factors. In both samples, mothers (20–40 years) had been educated until at least the age of 19. The parental mean ages were as follows: Japanese mothers 31.28 years, $SD = 3.51$, Japanese fathers 33.7 years, $SD = 3.31$, UK mothers 33.7 years, $SD = 2.99$, UK fathers 36.4 years, $SD = 6.88$. The exclusion criteria were: (a) children born before 36 weeks gestation; (b) children who had needed neonatal special care; (c) children born from a multiple birth.

Procedures

The study was a postal survey mainly covering current functioning. Mothers completed all questionnaires in all

cases, the Japanese mothers in their own language. Where standardised Japanese versions were unavailable the classical translation technique was used (Carey et al., personal communication, 1992): first, translation into Japanese was undertaken by a bilingual researcher with subsequent retranslation of that version into English by a bilingual Japanese colleague unacquainted with the details of the research. This was then checked with the original in English. The differences proved to be more in the way of semantics and emphasis than conceptual. They were resolved by consensus. The structure of some of the items was changed. The translated scales have not been subject to restandardisation. A standard letter was sent to mothers who did not initially return their questionnaires, followed by a telephone call after 4 months if there was still no response.

Measures

- Demographic questionnaire. This was based upon relevant sections of the Registrar General's census form (HMSO, 1991). It consists of 98 items relating to family composition, employment, and accommodation.

- Birth events questionnaire. Information concerning events surrounding the toddlers' births was gathered using a 17-item self-rating questionnaire covering relevant obstetric data. This was derived from a similar questionnaire previously used in a study of child development (George & Kolvin, 1979).

- The children's behaviour was assessed using the Behaviour Check List (Richman, Stevenson, & Graham, 1982). This is a 21-item self-rating instrument designed to screen preschool children for disturbed behaviour. Each item provides three choices ranging from no disturbance to much disturbance. Using the scoring scheme of Richman (1977), in which only the 17 items analogous to those on the Behaviour Screening Questionnaire (Richman et al., 1982) are scored, a score of 10 or over identifies significant behaviour disturbance. It is a quick, easily administered screening device that picks up most problems of clinical consequence. With regard to total scores the Behaviour Check List is reliable, with test-retest reliability of .81 (Richman, 1977).

- Aspects of the children's temperaments were assessed using the Toddler Temperament Scale (Fullard, McDevitt, & Carey, 1984). Developed as an upward extension of the Revised Infant Temperament Questionnaire (Carey & McDevitt, 1978), this is a 97-item questionnaire. Each item consists of six choices for completion by parents ('almost never' to 'almost always') to describe a toddler's response in a given everyday situation. Responses are collated into the nine dimensions of temperament described by Thomas et al. (1963). The instrument has satisfactory reliability and validity (Carey & McDevitt, 1989). The directionality of the dimensions is not consistent across them. Thus, high scores denote high activity, dysrhythmia, withdrawal, slow adaptability, high intensity, negative mood, low persistence, high distractability, and low threshold. The 'easy' child is temperamentally rhythmic, approachable, and adaptable, with low intensity and a positive mood. The 'difficult' child shows the inverse of this pattern. The 'slow-to-warm-up' child shows withdrawal, slow adaptability, low intensity, and negative mood.

Results

Key demographic characteristics of UK and Japanese samples

Demographic data for the two groups are presented in Table 1. It was more difficult to recruit a purely 'British' group of parents in cosmopolitan London than to find families with two Japanese-born parents. One-way analyses of variance identified no significant differences in the distributions of toddlers' ages between genders in the whole study or within each cohort. Likewise, the children's ages were not distributed differently between cultural groups as a whole or between cohorts when only the boys or only the girls were considered. There were no significant differences of gender distribution between the cohorts, nor of ordinal position of the toddlers. All the UK toddlers had been born in England, whereas only a few more Japanese toddlers had been born in Japan rather than the UK.

There were not significant differences between cohorts on parental occupational status and receipt of tertiary education. There were expected differences in parental birthplace. Japanese mothers were highly significantly younger [$F(1,66) = 9.14$, $p < .01$] than UK mothers. Japanese fathers were significantly [$F(1,66) = 4.08$, $p < .05$] younger than their UK counterparts.

Birth events

Whilst the Japanese toddlers had been significantly lighter at birth ($F(1,66) = 9.72$, $p < .01$) than the UK toddlers, significantly more UK mothers described 'perinatal complications' [$x^2(1) = 4.12$, $p < .05$] which mainly consisted of 'worries about the foetus' during labour (31% UK, 4% Japanese). Seventeen per cent of Japanese husbands had attended the birth of their children compared with 33% of the UK husbands [$x^2(1) = 5.59$, $p < .05$]. There were no significant differences between the two groups for length of gestation, antenatal or postnatal problems in mother or baby, duration of labour or method of delivery.

Behaviour Check List

Using Richman's cutoff score of 10 or more as indicating significant behaviour problems, 11.1% of the UK sample ($N = 4$) and 68.8% ($N = 22$) of the Japanese sample fell into this category. This difference was highly significant [$x^2(1) = 21.5$, $p < .001$]. In order to understand the basis of this difference an analysis of individual items was undertaken. On each item, mothers' scores were grouped

Table 1. Demographic characteristics

		UK		Japan	
		%	*N*	%	*N*
Children					
Birthplace:					
UK		100	36	43.8	14
USA		0	0	3.1	1
Japan		0	0	53.1	17
Birth order:					
Only child		69.5	25	71.9	23
Eldest of two		5.6	2	6.3	2
Youngest of two		11.1	4	18.8	6
Middle/Youngest of three		13.9	5	3.1	1
Parents					
Birthplace:					
UK	Mothers	80.6	29	0	0
	Fathers	88.8	32	0	0
Eire or EC (non UK)	Mothers	8.3	3	0	0
	Fathers	5.6	2	0	0
USA	Mothers	2.8	1	0	0
	Fathers	0	0	0	0
Australia	Mothers	8.3	3	0	0
	Fathers	5.6	2	0	0
Japan	Mothers	0	0	100	32
	Fathers	0	0	100	32
Occcupation:					
Top/intermediate professional					
	Mothers	62.1	22	3.2	1
	Fathers	85.7	31	100	32
Non-manual skilled					
	Mothers	3.4	1	12.9	4
	Fathers	5.7	2	0	0
Not classifiable					
	Mothers	10.3	4	0	0
	Fathers	8.6	3	0	0
No paid work					
	Mothers	24.1	9	83.9	27
	Fathers	0	0	0	0
Tertiary education					
	Mothers	76.5	28	77.4	25
	Fathers	84.4	30	86.7	28

to reflect 'no disturbance' (scores of 0) and 'some disturbance' (scores of 1 or 2). Categorical analyses on the presence or absence of behavioural problems in each group were then undertaken. UK mothers were more likely than Japanese mothers to rate their toddlers as '0' (as opposed to '1' and '2') on items relating to appetite, settling at bedtime, sleeping with parent, clinginess, demands for attention, ease of management, frequency and length of temper tantrums, fears, and relationships with peers. Japanese mothers were more likely than UK mothers to give their toddlers scores of '1' or '2' rather than '0' on items relating to sleeping with parent and fears. This was particularly evident for the item 'sleeping with parent', for which none of the UK sample but 72% of the Japanese sample reported scores of '2'. The distribution of scores on all points of the scale is provided in Table 2. When the initial analysis to look at numbers of children scoring above 10 was repeated after omitting the item 'sleeping with parent', 11.1% ($N = 4$) of the UK sample and 43.8% ($N = 14$) of the Japanese sample scored above this cutoff. This was still a highly significant difference [$x^2(1) = 9.27$, $p < .01$].

There was no evidence, from analyses of variance, that age or gender affected scores, or that gender and culture had interactional effects.

Toddler Temperament Scale

Comparison with USA norms. In comparison with USA norms shown in Table 3 (Fullard et al., 1984), the UK toddlers were more rhythmic with lesser degrees of intensity and lower distractability. Only the latter was likely to be significant. The Japanese toddlers showed lower levels of activity and persistence, and a higher degree of intensity.

Comparing UK and Japanese cohorts. Mean scores for the Toddler Temperament Scale for the UK and Japanese groups are presented in Table 3. Initially, comparing the groups on each dimension via one-way analyses of

Table 2. Distribution of scores on the Behaviour Check List

Checklist item	% rating 0		% rating 1		% rating 2	
	UK	Japanese	UK	Japanese	UK	Japanese
Eating: appetite	69.4	34.4	22.3	59.3	8.3	6.3**
Eating: fads	41.7	21.9	50.0	8.3	8.3	0.0
Night wetting	11.1	13.3	13.9	13.4	75.0	73.3
Day wetting	22.2	16.7	8.4	16.7	69.4	66.7
Soiling	25.0	26.7	11.1	4.6	63.9	66.7
Settling at night	66.7	31.3	26.3	50.3	5.6	9.4**
Waking at night	44.4	40.6	50.0	59.4	5.6	0.0
Sleeping with parent	61.1	9.4	38.9	18.7	0.0	71.9***
Activity	16.7	21.9	81.5	72.5	2.8	15.6
Concentration	50.0	53.1	39.9	40.6	11.1	6.3
Clingness	69.4	37.5	25.0	50.0	5.6	12.5*
Demands for attention	54.3	28.1	40.1	62.5	5.6	9.4*
Ease of management	63.9	6.3	30.5	87.4	5.6	6.3***
Temper tantrums	30.6	0.0	63.8	93.7	5.6	6.3**
Mood	88.9	84.2	8.3	15.8	2.8	0.0
Worries	76.5	65.6	23.5	25.0	0.0	9.4
Fears	58.8	21.9	41.2	65.6	0.0	12.5**
Relations with siblings	86.4	81.8	13.6	18.2	0.0	0.0
Relations with peers	86.1	53.1	10.9	43.8	0.0	3.1**
Numbers of words	58.3	59.4	36.1	21.8	5.6	18.8
Clarity of speech	44.4	40.6	39.9	40.6	16.7	18.8

Significance level of Chi square with corrections for continuity, 1*df*: **p*<.05, ***p*<.01, ****p*<.001.

variance, there were significant differences on five dimensions. The Japanese toddlers overall proved to be significantly less rhythmic [$F(1,66) = 4.07$, $p < .05$] and to have lower levels of activity [$F(1,66) = 4.08$, $p < .05$] than the UK sample. They had higher levels of intensity [$F(1,66) = 11.36$, $p < .01$], distractability ($F(1,66) = 8.70$, $p < .01$] and persistence [$F(1,66) = 4.39$, $p < .05$) than the UK sample. For distractability it was the differences between the Japanese and UK girls that largely accounted for the whole group differences. Japanese girls were significantly more distractable than Japanese boys [$t(30) = -2.32, p < .05$], but also highly significantly more distractable than UK girls [$t(31) = -2.79$, $p < .01$]. Japanese boys were not significantly more distractable than UK boys.

The effects of age and sex

In order to make allowance for the different ages of the children, one- and two-way analyses of covariance were undertaken for culture and gender, with the child's age as a covariate. One-way analysis of covariance by culture revealed significant effects for only two dimensions—intensity [$F(1,65) = 11.52$, $p < .001$] and distractability [$F(1,65) = 8.61$, $p < .01$]. Age effects were significant or very highly significant for four dimensions: activity [$F(1,65) = 4.25$, $p < .05$], adaptability [$F(1,65) = 4.39$, $p < .05$), persistence [$F(1,65) = 22.41$, $p < .001$] and threshold [$F(1,65) = 21.79$, $p < .001$].

One-way analysis of covariance by gender gave rise to only one significant main effect—on the distractability dimension [$F(1,65) = 5.81$, $p < .05$]. Two-way analyses of covariance by culture and gender with the child's age as a covariate confirmed this pattern of differences, and showed no significant interaction effects between the main effects of gender and culture.

Discussion

Design issues and prevalence of disturbance

The data collected in this pilot study are based upon maternal report. The cross-sectional design allows only speculation as to the origins of reported differences. The two samples were not representative of the general population in terms of sociodemographic and parental education characteristics and urban location. The composition of the UK sample was the result of an attempt to match for potential confounding factors with the London Japanese sample. The results are not, therefore, widely generalisable. It is encouraging to note, however, that in a community sample of 1170 3-year-olds from in and around Bath (UK) described by Stallard (1993), whose parents completed the Behaviour Check List, 10% were identified as having a score of 10 or more, a proportion similar to that found in this small UK study.

Why do Japanese mothers describe more behavioural disturbance in their toddlers?

Japanese mothers were more likely than UK mothers to describe their children's behaviour as showing disturbance on the Behaviour Check List and the differences proved significant on nine features: appetite problems, settling at

Table 3. Toddler Temperament Scale[a]

Temperament dimension	Boys Mean	Boys (*SD*)	Girls Mean	Girls (*SD*)	Overall Mean	Overall (*SD*)
UK						
Global activity (high)	4.11	(.59)	4.18	(.82)	4.15	(.70)
Rhythmicity (irregular)	2.63	(.54)	2.74	(.63)	2.69	(.58)
Approach/Withdrawal (withdrawing)	2.95	(.80)	3.14	(1.04)	3.04	(.91)
Adaptability (low)	3.21	(.81)	3.35	(.69)	3.27	(.75)
Intensity (intense)	3.76	(.65)	3.81	(.57)	3.78	(.60)
Mood (negative)	2.86	(.58)	2.89	(.47)	2.87	(.52)
Persistence (low)	3.26	(.79)	3.81	(1.03)	3.52	(.94)
Distractability (high)	3.75	(.54)	3.97	(.69)	3.85	(.61)
Threshold (low)	3.86	(.88)	3.72	(.75)	3.79	(.81)
Japan						
Global activity (high)	3.82	(.68)	3.79	(.74)	3.81*	(.70)
Rhythmicity (irregular)	2.94	(.54)	2.97	(.52)	2.96*	(.52)
Approach/Withdrawal (withdrawing)	2.88	(.76)	3.34	(1.02)	3.11	(.91)
Adaptability (low)	3.19	(.44)	3.34	(.72)	3.26	(.59)
Intensity (intense)	4.29	(.77)	4.28	(.46)	4.28**	(.62)
Mood (negative)	2.94	(.36)	2.96	(.50)	2.95	(.43)
Persistence (low)	3.10	(.43)	3.15	(.61)	3.13*	(.52)
Distractability (high)	4.05	(.75)	4.66	(.74)	4.36**	(.80)
Threshold (low)	3.67	(.44)	3.81	(.79)	3.74	(.63)
USA						
Global activity (high)					3.99	(.86)
Rhythmicity (irregular)					2.78	(.77)
Approach/Withdrawal (withdrawing)					2.91	(1.04)
Adaptability (low)					3.04	(.79)
Intensity (intense)					4.06	(.82)
Mood (negative)					2.90	(.65)
Persistence (low)					2.82	(.75)
Distractability (high)					4.20	(.73)
Threshold (low)					4.43	(.87)

Significance level of one-way analysis of variance for overall means for UK and Japanese samples only: **p<.01, *p<.05

[a]Higher numerical mean scores denote the characteristics in parentheses.

night, sleeping with parent, clinginess, demanding attention, ease of management, temper tantrums, fears and relationships with peers. Japanese mothers were significantly more likely than UK mothers to describe their children's behaviour as much disturbed on the items to do with fears and sleeping with a parent 'because upset or doesn't want to sleep alone'. These differences may reflect patterns of behaviour that are normative for each culture. Alternatively, they may be a consequence of recent life stresses of family mobility specific to the Japanese children and families.

In the discussion that follows, the differences are considered in a cultural context. For example, normal expectations about, say, clinginess or the expression of fears in toddlers might be different for the Japanese and UK cultures, in which case the data reflect merely cultural differences rather than any form of psychological disturbance.

The less settled bedtime behaviour described for Japanese toddlers should be considered in the context of different cultural meanings of 'bedtime' as discussed by Morelli et al. (1992). Similarly, it must be acknowledged that co-sleeping is still normal practice in Japanese culture as it was when Caudill and Plath (1966) described the traditional co-sleeping arrangements in urban Japanese families as reflecting an emphasis upon 'the interdependence more than the separateness of individuals' and the underplay of '... intimacy between husband and wife ... in favour of a more general familial cohesion'. In total, 71.9% of the Japanese mothers rated their toddlers '2' on the item relating to sleeping with parent, compared with 0% of the UK mothers. It is unlikely that these mothers would have regarded this as a behavioural problem as intended by the Behaviour Check List, but the item score will have contributed 2 points to the total, which has then been related to a cut-off score indicating disturbance. However, even when this item was left out of the analysis,

more of the Japanese toddlers scored a total above the cut-off score than did the UK toddlers and the difference between the groups remained highly significant.

The reportedly higher demands for attention, clinginess, and expression of fears in the Japanese group may link with different patterns of attachment in Japanese children described in the literature (Van Ijzendoorn & Kroonenberg, 1988) and with differences in dyadic communication and intimacy as well as goals of child-rearing. The development of questionnaire items to explore areas reflecting dyadic communication and intimacy as 'positive' aspects of behaviour might yield lower Behaviour Check List scores for the Japanese toddlers as compared to the UK toddlers. On the whole, the constructs underlying the Behaviour Check List place a more adaptive value upon behaviour, reflecting greater independence and less expression of negative feelings.

Japanese mothers, particularly those in this study who may feel under scrutiny by the host country, may have generally higher expectations of compliance for their children, adding to the stresses that they and the children experience. Finally, their toddlers may have experienced problems with language and communication in social and nursery settings. Thus, it is hypothesised that some of these reported phenomena reflect the particular experiences of parents and children away from their own language and culture and would not necessarily occur amongst toddlers living in Japan.

Does culture influence temperament?

The greater distractability reported for Japanese children largely originates from the Japanese girls in the sample. This is interesting in the light of Otaki et al.'s (1986) finding that Japanese boy babies cried more than girl babies since distractability is linked with consolability. The items to do with distractability often make reference to distraction by contact with another person (e.g. 'the child looks up from play as mother enters the room') or to behaviour that may be influenced by compliance (e.g. 'the child ignores parent's first call when mother enters the room'). Different parental expectations of behaviour in the areas of sociability and compliance for daughters and sons might lead to differing ratings. Thresholds of Japanese parental response to the crying of boy and girl babies may differ. There may be underlying constitutional factors contributing to such reported gender differences.

There are whole group differences for intensity, which may again be linked to constitutional and cultural factors. Scores for intensity on the Toddler Temperament Scale are also linked with compliance (e.g. 'the child responds intensely to frustration'). One can only speculate as to the origins of these differences at this stage but they will be further explored in future research.

This very small study, and others (Axia, Prior, & Carelli, 1992), have found significant effects of age upon temperament dimension scores, reflecting developmental changes. The numbers in this study made it difficult to subdivide the groups further according to age but more accurate norms would result from this process. This will be considered further during the design stage of the larger prospective study to be undertaken as described briefly below.

Consequences of the increasingly cosmopolitan nature of society

Increasingly, in large metropolitan conurbations, society is composed of people from different ethnic and cultural groups with varying customs, expectations, lifestyles, and needs. This has important implications for relationships within and between generations and for the provision of adequate healthcare and support of different groups.

Differences in behaviour and temperament between children from different cultures do not necessarily imply deviance. This theme merits further exploration. Cross-cultural research can provide a body of essential data if clinical work and service planning are to be based on valid assumptions. The data yielded by this pilot study have been helpful in contributing to the generation of hypotheses for a current multi-centre, prospective, observational study exploring infant temperament and mother-infant relationships in Israel, Finland, the USA, and Germany, as well as Japan and the UK.

A central hypothesis is that a significant contribution is made by culture to the mother-child relationship throughout childhood. The prospective study will look in detail at changes in infant behaviour, temperament, and mother-infant interaction during the second half of the first year of life, a period previously not extensively explored. The expectation is for such changes to differ across cultures. The patterns noted in toddlers, and the contributions of age and gender to differences both within and between cultures, have theoretical and clinical implications. The hypothesis that dislocation of the Japanese families may have played a part in the reported differences will be explored, looking at Japanese families living in Japan, and also at the possible roles played by maternal mood state and social support.

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