Behavioural Differences between Chinese–American and European–American Newborns

In the course of an investigation of newborn behaviour among widely distributed ethnic groups, some interesting preliminary results have appeared.

Twenty-four Chinese–American and twenty-four European–American newborns were examined while still in the nursery. The Orientals were largely of Cantonese background and the Caucasians largely of middle-European background. All families were middle class and the bulk were members of a pre-paid health plan (Kaiser Hospital, Table 1). Table 1 summarizes the potentially important co-variables other than ethnic group, and we see that none could have accounted for the ethnic differences presented here.

Table 1. COMPARISONS OF POTENTIAL CO-VARIABLES

	Chinese–American	European–American
Mean age and range in hours (N.S.)	32·75 (7–75)	33·27 (5–72)
Initial state (rated 1–6, from deep sleep to very alert) means (N.S.)	3·58	2·79
Distribution of sexes*	11 male, 13 female	11 male, 13 female
Mean birth weight in grams† ($P = 0·05$)	3,194·33	3,447·91
Mean Apgar‡ rating at 5 min after birth (N.S.)	8·86	9·00
Mean hours of labour (N.S.)	6·08	5·77
Medication during labour§	16 received systemic drugs 8 received only local anaesthetic or none	13 received systemic drugs 11 received only local anaesthetic or none
Mean age of mothers (N.S.)	26·70	26·66
Mean number of previous pregnancies (N.S.)	1·83	2·41
Hospital	16, Kaiser Hospital, San Francisco 5, Chinese Hospital, S.F. 3, U.C. Medical Center, S.F.	20, Kaiser Hospital, S.F. 4, Lying-in, Chicago

* There was no significant interaction between race and sex.
† When weight is treated as a co-variable it does not affect ethnic differences.
‡ A rating of viability; based on heart rate, colour, respiration, tonus, and crying. Optimal score is 10.
§ Although systemic drugs significantly lowered Apgar ($P = 0·02$), automatic walk ($P = 0·02$) and tonic deviation of the head ($P = 0·02$), statistical treatment indicates that these drug differences did not affect ethnic differences.

The behaviour scales we used were modifications of a procedure developed by Brazelton; a full description is available from the authors and will be published soon. Briefly, they consist of twenty-five general behavioural items rated 1–9, and fifteen standard neurological signs, usually used to screen for neural damage, rated 0–3. The twenty-five general items may be arranged into five categories as follows: (1) temperament—seven items; (2) sensory development—four items; (3) central nervous system maturity—six items; (4) motor development—five items; (5) social interest and response—three items.

All testing was done during September and October 1968. Each test session lasted between 30 and 40 min. Testing was performed in the newborn nursery by N. C. F. as D. G. F. watched, and scoring was done immediately afterwards in a room next to the nursery. Apart from a reliability sample of four infants, scoring depended on verbal agreement between the authors. Four arbitrarily selected infants formed the reliability sample and of the 160 items involved the authors were over 1 point apart in only three instances; all scales reported below yielded reliability coefficients of 0·912 or better, with an average reliability of 0·969.

A multivariate analysis of variance indicated that, on the basis of total performance, the two groups were decidedly different ($P = 0·008$). Further analysis indicated that the main loading came from the group of items measuring temperament and which seemed to tap excitability/imperturbability ($P = 0·001$). While the following discussion is based on mean ethnic differences on the distinguishing items, it should be emphasized that there was substantial overlap in range on all scales between the Chinese and Caucasian infants.

The European–American infants had a greater tendency to move back and forth between states of contentment and upset (lability of states) ($P = 0·01$), and they showed more facial and bodily reddening ($P = 0·005$), probably as a consequence. The Chinese–American infants were scored on the calmer and steadier side of these items. In an item called defensive movements, the tester placed a loosely woven cloth firmly over the supine baby's face for a few seconds. While the typical European–American infant immediately struggled to remove the cloth by swiping with his hands and turning his face, the typical Chinese–American infant lay impassively, exhibiting few overt motor responses ($P = 0·0001$). Similarly, when placed in the prone position, the Chinese infants frequently lay as placed, with face flat against the bedding, whereas the Caucasian infants either turned the face to one side or lifted the head ($P = 0·02$). Inasmuch as there was no difference between the groups in the ability to hold the head steady in the upright position ($P = 0·91$, pull to sit), this maintenance of the face in the bedding is taken as a further example of relative imperturbability or ready accommodation to external changes. In an apparently related item, rate of habituation, a pen light was repeatedly shone on the infants' eyes, and the number of blinks counted until the infant no longer reacted (shut-offs). The Chinese infants tended to habituate more readily ($P = 0·06$).

There were no significant differences in amount of crying, and when picked up and consoled both groups tended to stop crying. The Chinese infants were, however, often dramatically immediate in their cessation of crying when picked up and spoken to, and therefore drew extremely high ratings in consolability ($P = 0·007$). The Chinese infants also tended to stop crying sooner, without soothing (self-quieting ability, $P = 0·06$).

To summarize, the majority of items which differentiated the two groups fell into the category of temperament. The Chinese–American newborns tended to be less changeable, less perturbable, tended to habituate more readily, and tended to calm themselves or to be consoled more readily when upset. In other areas (sensory development, central nervous system maturity, motor development, social responsivity) the two groups were essentially equal.

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Cultivation of Haploid Plants from Tobacco Pollen

If sterile immature anthers of *Nicotiana tabacum* ($2n = 48$) are cultured in an appropriate nutrient medium, the pollen may develop into plantlets with the haploid number of chromosomes[1,2]. When the plantlets have developed an adequate root system in the culture medium, they can be transferred to soil and grown to maturity. Reports differ, however, about the developmental stage at which the anthers must be cultured to ensure success. Plantlets were thought[1] to be formed only if the pollen is