Early development of Negro and White babies

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Pollak, M., and Mitchell, S. (1974). *Archives of Disease in Childhood*, **49**, 40. **Early development of Negro and White babies.** Seventy-five babies, 25 English, 25 West Indian, and 25 Cypriot, all born in London, were examined at 1, 3, and 9 months of age on Gesell and Sheridan scales. The age of walking alone was measured. All the babies were term normal deliveries, weighing 2500 g or more. They were examined under identical conditions. A statistically significant acceleration in gross motor function was found in the West Indian infants at 1 month, compared with the English and Cypriot infants. The acceleration related to extension. At 3 months all three groups were at the same developmental level, and at 9 months both the English and Cypriot babies were ahead of the West Indian infants in adaptive, language, and personal-social development. No significant difference in mean age of walking between the three groups was found.

The development of the Negro infant has been the subject of a number of conflicting reports. An acceleration of gross motor function has been claimed by some studies (Curti, Marshall, and Steggerda, 1935; Bayley, 1965; Grantham-McGregor and Back, 1971); others (Geber and Dean, 1957, 1964) have claimed a global precocity; early walking has been noted (Geber and Dean, 1957, 1964; Hood *et al.*, 1970); yet others (McGraw, 1931; Pasamanick and Knobloch, 1953; Knobloch, 1958) have not confirmed these findings.

Methods

We report a study of the early development of 75 English, West Indian, and Cypriot (Turkish and Greek) children, born and living in London. All fathers were in social classes IV and V (Registrar General's classification). All were term normal deliveries, weighing 2500 g or over. Not all mothers were primipara. The sample was drawn from the practice population, being the first 25 babies in each category born on or after 1 January 1970. The sex distribution was English, 11 males 14 females; West Indian, 12 males 13 females; and Cypriot, 13 males 12 females.

Each baby was seen at 1, 3, and 9 calendar months of life (± 3 days) and later, at varying times, to estimate their age of walking. All were examined by one or the other of us, but the same baby was not necessarily examined by the same doctor at subsequent examinations. The infants were seen either in their own homes or at the practice premises. The examinations took a structured course, followed a prearranged schedule, and the results were recorded immediately after comple-

tion of the test. For the most part, the tests were those described by Illingworth (1960) and thus derive from Gesell and Amatruda (1947), but Sheridan (1958, 1969) tests of vision and hearing were included. The schedules and methods of scoring for the three age groups are given in Tables I-III.

Results

All the babies were examined during the prescribed time and all 225 examinations were completed. The results are shown in Tables IV-VII.

Discussion

A comparison of the English and Cypriot infants reveals only 2 significantly different scores. At 3 months fewer Cypriot babies are laughing aloud, while at 9 months more Cypriot babies can walk with only one hand held. When the West Indian and English babies are compared, the reported early gross motor precocity of the Negro baby is confirmed. At 1 month the West Indian baby is highly significantly in advance in his ability to open his hands and in control of head, neck, and back muscles. In the prone position, his gross motor control is found to be superior and he is more mature in both suspended prone and supine positions. This precocity has disappeared by 3 months and does not reappear at 9 months. In particular, this study found no evidence of early walking, and we are unable to confirm the precocity of the Negro baby in other areas of development. On the contrary, the social behaviour of English and Cypriot babies was found to be superior at 1 month and highly

TABLE I
Schedule of examination at 1 month

Test no.	Category	Description	Score
1	Position (supine)	Head on side Head sometimes midline Head midline	1 2 3
2	Hands	Closely fistcd Sometimes open Always open	1 2 3
3	Pull to sit	No head control, head and back in one curve Slight head control, back straightening Head erect before bobbing forward and back straightening	1 2 3
4	Walking reflex	Present Absent	1 2
5	Prone, hands under abdomen	Head droops Head and back in straight line Head above straight line	1 2 3
6	Prone	Head on side, buttocks humped, arms and legs flexed Head midline, buttocks extended Head off couch, buttocks flat, legs extended	1 2 3
7	Vision	Follows ring through 45° Follows ring through 90° Follows ring through 180°	1 2 3
8	Hearing	Quiets to bell Turns head to bell	1 2
9	Social	Regards mother when she talks Smiles at mother	1 2

Note: All the tests were scored from clinical observations. Test 9 was carried out by asking the mother, with the baby in her arms, to talk to the baby and then by asking her, 'Make him smile', by whatever method she had at her disposal.

significantly so at 9 months. At 3 months the English baby is in advance of the West Indian in language development, and by 9 months both English and Cypriot infants are superior in language and adaptive development. Compared with the English infant, the Cypriot baby shows almost no differences, yet when compared with the West Indian infant he is found to be in an intermediate position. Though the gross motor function of the West Indian is in advance, the precocity is less marked than between the West Indian and English. The Cypriot baby is in advance of both groups in ability to stand on his feet at 3 months, and he is auditorily more aware. He shares with the English baby a precocity in social behaviour at 1 and 9 months, and in language development at 9 months. Thus, this study presents evidence that early motor function of the Negro baby is advanced compared with that of his Caucasian brother, but that this advance has disappeared by the age of 3 months. This advanced development relates to extension and therefore is helpful in achieving the prone position. The absence of advanced flexion or hyperextension presumably accounts for the absence of early sitting or standing before sitting.

The age at which the precocity disappears is earlier than has been noted in previous studies and perhaps the presence of comparable controls and a third group has proved helpful. No doubt the difficulty of finding suitable numbers of White babies in Uganda explains the absence of controls in the studies of Geber and Dean (1957, 1964). Both Curti *et al.* (1935) and Grantham-McGregor and Back (1971) had to rely upon Gesell's White norms as controls, while the White children in the studies of Pasamanick (1946) and Pasamanick and Knobloch (1953) were not examined under rigidly similar conditions to the Negro sample. It is interesting that the same authors, in a further study (Knobloch and Pasamanick, 1958) when only term White and Negro babies were compared under similar conditions, found no significant differences between the two groups. On the other hand, Bayley (1965) compared White and Negro groups (and a sub-sample of Puerto Ricans) under identical conditions and found higher Negro scores up to 12 months of age.

Various explanations have been offered for the precocity of Negro babies. For example, a more permissive attitude towards child rearing has been

TABLE II
Schedule of examination at 3 months

Test no.	Category	Description	Score
1	Position (supine)	Head half side	1
		Head midline	2
		Can lift head off couch	3
2	Hands	Grasp reflex absent	1
		Hands open	2
3	Pull to sit	Head lags	1
		No head lag	2
		Flexes neck muscles	3
4	Sitting	Head set forward, but bobs	1
		Head set forward but steady	2
		Head erect and steady	3
		Sits alone briefly or leans on hands	4
5	Prone	Chin and shoulders off couch	1
		Chin and shoulders off couch and weight on forearms	2
		Takes weight on extended arms	3
6	Standing	Stands with shoulders supported	1
		Stands with two hands held	2
		Stands with one hand held	3
7	Hearing	Turns to voice, either side	1
		Turns to rattle	1
		Turns to bell	1
8	Vision	Watches dangling ring through 180°	1
		Watches dangling ring upwards	2
		Tries to grasp ring	3
9	Rolling toy	Watches toy but not when falls	1
		Watches and follows when toy falls	2
10	Rattle	Holds rattle in hand	1
		Waves rattle	2
		Brings hands to midline to grasp rattle	3
11	Language	Making noises	1
		Laughs aloud	2
12	Social	Smiles at mother	1
		Smiles at doll's head	2

Note: With the exception of test 11, all were observed results. Test 11 relied upon the mother's observations which were, in some cases, confirmed by clinical observation.

suggested (Knobloch and Pasamanick, 1958; Williams and Scott, 1953); and Ainsworth (1967), commenting upon the findings of Geber and Dean (1964), suggested close physical contact between mother and child; lower socioeconomic class has been indicated (Williams and Scott, 1953; Pavenstedt 1965). We think that the evidence is against these explanations. For example, we found no evidence of closer physical contact or permissiveness in West Indian parents, nor was breast feeding more common. The class distribution of the three groups was similar. Following the prevailing mood, most writers have been at pains to explain the differences on any but racial grounds (Knobloch and Pasamanick, 1958; Williams and Scott, 1953; Davis

and Havighurst, 1946; Ferron, 1967). On the other hand, Illingworth (1960) suggested that there may be differences in certain races. Bayley (1965) attributes differences to both inherent and environmental differences. If differences in development are not due to ethnic variations, then differing child rearing practices must be considered. It seems reasonable to assume that the varying factors will include opportunity, experience, and parental expectation, and the effects will vary with age and aspect of development studied. It is difficult to imagine how—or why—a *laissez-faire* attitude by parents could result in early head control in a month-old baby. However, at a later date, cultural patterns might well be expected to affect adaptive

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TABLE III
Schedule of examination at 9 months

Test no.	Category	Description	Score
1	Sitting	Sits steady	1
		Sits steady, reaches forward for rattle and re-erects	2
		Sits steady and can turn 60° back to get rattle from ground level and re-erect	3
2	Standing	Holds rail, full weight on feet	1
		Can pull to feet at rail	2
		Can pull to feet, stand at rail, and reach for toy with one hand	3
		Can cruise at rail	4
3	Progression	Crawls	1
		Creeps	2
		Walks, two hands held	3
		Walks, one hand held	4
		Walks alone	5
4	Cube	Shuffles	1
		Accepts one cube	1
		Accepts two cubes, transfers	2
5	Cube and cup	Accepts third cube, drops one	3
		Brings cube near to cup	1
		Cube into cup, no release	2
6	Pellet	Cube into cup and release	3
		Rakes at pellet	1
		Intermediate grasp	2
7	Language	'Pincer' pellet	3
		Making sounds, no words	0
		Says one word	1
		Says two words	2
8	Social	Says three words	3
		Drinks from a cup	1
		Waves 'bye-bye'	1
9	Vision	Eats proffered biscuit	1
		Watches rolling balls 1½"-1" diameter	0
10	Hearing	Responds to all Sheridan (1958) hearing tests	0

Note: All were observed results with the exception of test 7 which sometimes relied upon the mother's word.

and language development. Mead's (1930) description of the upbringing of the Manus children is a graphic account of cultural patterns and parental expectations affecting future adults. Pollak (1973)

showed that West Indian immigrant children lack stimulation and close mother-child contact. This may be the explanation of the lower achievement of the West Indian babies in language and adaptive

TABLE IV
Actual mean scores at 1 month

Test no.	Category	English	West Indian	Cypriot	English vs West Indian	West Indian vs Cypriot	Cypriot vs English
1	Position	1.52	1.96	2.04	P < 0.05	NS	NS
2	Hands	1.60	2.36	1.44	P < 0.001	P < 0.01	NS
3	Pull to sit	1.60	2.36	1.64	P < 0.001	P < 0.01	NS
4	Walking reflex	1.24	1.52	1.40	NS	NS	NS
5	Prone hands under	1.72	2.24	1.60	P < 0.05	P < 0.01	NS
6	Prone	1.48	2.08	1.68	P < 0.01	P < 0.05	NS
7	Vision	2.76	2.08	2.84	P < 0.05	NS	NS
8	Hearing	0.88	1.00	1.00	NS	NS	NS
9	Social	1.16	0.84	1.16	P < 0.05	P < 0.05	NS

NS, not significant.

TABLE V
Actual mean scores at 3 months

Test no.	Category	English	West Indian	Cypriot	English vs West Indian	West Indian vs Cypriot	Cypriot vs English
1	Position	1.84	2.12	1.96	NS	NS	NS
2	Hands	1.80	1.72	1.80	NS	NS	NS
3	Pull to sit	2.12	2.12	2.00	NS	NS	NS
4	Sitting	2.00	2.40	2.28	NS	NS	NS
5	Prone	1.32	1.64	1.60	NS	NS	NS
6	Standing	1.28	0.64	1.40	NS	P < 0.05	NS
7	Hearing	1.28	0.68	1.40	NS	P < 0.05	NS
8	Vision	1.04	1.12	1.00	NS	NS	NS
9	Rolling toy	1.04	1.00	1.00	NS	NS	NS
10	Rattle	1.20	1.20	1.16	NS	NS	NS
11	Language	1.80	1.32	1.56	P < 0.01	NS	P < 0.05
12	Social	1.44	1.32	1.56	NS	NS	NS

NS, not significant.

TABLE VI
Actual mean scores at 9 months

Test no.	Category	English	West Indian	Cypriot	English vs West Indian	West Indian vs Cypriot	Cypriot vs English
1	Sitting	2.96	2.92	2.96	NS	NS	NS
2	Standing	2.24	2.68	2.56	NS	NS	NS
3	Progression	0.68	0.84	0.92	NS	NS	P < 0.05
4	Cube	2.00	1.56	2.36	NS	P < 0.001	NS
5	Cube and cup	1.44	0.84	1.28	P < 0.01	P < 0.05	NS
6	Pellet	2.24	2.12	2.24	NS	NS	NS
7	Language	1.56	0.60	1.24	P < 0.01	P < 0.05	NS
8	Social	0.96	0.32	0.92	P < 0.001	P < 0.001	NS

NS, not significant.

Note: All 25 babies in each group focused on all sizes of rolling balls. All but 2 Cypriot babies responded to all the hearing tests, and these 2 responded to 4 out of 5 tests.

TABLE VII
Walking alone

	English	West Indian	Cypriot
No. of children seen to be walking alone at 12 mth (± 7 dy)	12	13	11
Actual mean age of walking alone (mth)	12.8	12.7	12.9

Note: There are no significant differences between the mean age of walking in the three groups.

development. Geber and Dean (1964) put forward this postulate to explain the later regression of the Ugandan children. Yet these explanations only serve to show that development as a whole can never be equated with the sum of the mean achievement in the various types of development; they do not explain the motor advancement in the early life of the Negro baby. Perhaps we should agree that

Illingworth (1960) is right, and there are marginal differences between some ethnic groups at birth.

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