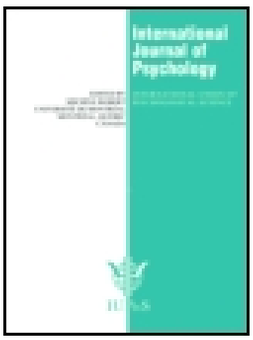

International Journal of Psychology

ISSN: 0020-7594 (Print) 1464-066X (Online) Journal homepage: http://www.tandfonline.com/loi/pijp20

The Influence of Contextual Factors on Afro-American and Euro-American Children's Performance: Effects of Movement Opportunity 2nd Music

Brenda A. Allen & A. Wade Boykin

To cite this article: Brenda A. Allen & A. Wade Boykin (1991) The Influence of Contextual Factors on Afro-American and Euro-American Children's Performance: Effects of Movement Opportunity 2nd Music, International Journal of Psychology, 26:3, 373-387, DOI: 10.1080/00207599108246860

To link to this article: http://dx.doi.org/10.1080/00207599108246860

INTERNATIONAL JOURNAL OF PSYCHOLOGY, 1991, *26* (3), 373–387

The Influence of Contextual Factors on Afro-American and Euro-American Children's Performance: Effects of Movement Opportunity and Music

Brenda A. Allen
Smith College, Northampton, MA, U.S.A.

A. Wade Boykin
Howard University, Washington D.C., U.S.A.

The present study sought to further establish that contextual factors informed by certain postulated cultural experiences could influence performance on a learning task. Towards this end, low income Afro-American and Euro-American children learned to pair pictures in an acquisition context that allowed for them to coordinate movement with music (High Movement Expressive [HME]) and in an acquisition context which allowed for little movement opportunity and no music (Low Movement Expressive [LME]). Children were subsequently tested for picture pair retention in a context where music was present or in a context where music was absent. The findings revealed that Afro-American children's tested performance was superior with the HME acquisition context, while Euro-American children's performance was superior with the LME context. In addition, music present at testing context seemed to have an independent enhancing effect only on Afro-American children's performance. The cultural and educational implications of these findings are discussed as are recommendations for future research.

Cette recherche étudie l'influence du contexte sur l'apprentissage de paires d'images et leur appariement lors d'une tâche de rappel. Les facteurs contextuels que nous avons considérés sont supposés être liés à certaines expériences culturelles. Ainsi, des enfants dont le statut social est bas, soit afro-américains,

Requests for reprints and examples of the testing materials should be sent to B. A. Allen, Dept. of Psychology, Smith College, Northampton, Massachusetts 01063 U.S.A.

The present study was extracted from a larger investigation which served as the first author's doctoral dissertation at Howard University. We would like to express our gratitude to Ms. Crystal C. Faison who worked as research assistant on the project.

soit euro-américains, ont appris à apparier des images, deux à deux, dans deux contextes différents. Le premier contexte permettait aux enfants de coordonner leurs mouvements avec de la musique (High Movement Expressive [HME]); dans le second contexte, aucune musique n'était présentée et peu de mouvements étaient permis (Low Movement Expressive [LME]). Ensuite, la mémoire de ces enfants pour les paires apprises était vérifiée, avec ou sans musique. Les résultats montrent que la performance des enfants afro-américains est supérieure lorsque l'apprentissage a eu lieu avec de la musique (HME), alors que la performance des enfants euro-américains est supérieure si l'apprentissage a eu lieu sans musique (LME). De plus, la présence de musique lors de la session de rappel, indépendamment des conditions d'apprentissage, semble bénéficier seulement aux enfants afro-américains. Les implications culturelles et éducatives de ces résultats, ainsi que les directions à prendre pour de futures recherches, sont considérées.

INTRODUCTION

Recently, the importance of socio-cultural contextual factors in cognitive functioning has emerged as an insistent theme in the social sciences (Cole, 1988; Simmons, 1985). Influential in this regard is the tradition emanating largely from the work of L. S. Vygotsky (1962). This tradition asserts that: (1) culture can dictate the fabric of contexts; and (2) such dictated contexts serve to elicit the use of cognitive skills (LCHC, 1982; Rogoff & Lave, 1984). Research consistent with this stance has shown that the demonstration of cognitive ability is often intricately linked to the contextual conditions under which such skills are most likely to manifest (Cole, 1988).

An important corollary which follows from this line of reasoning is that increased cognitive competence can be facilitated for a given culturally delineating group if culturally appropriate contexts are provided. This has important, obvious implications for educational practice. For example, Tharp et al. (1984) were successful in facilitating the academic performance of ethnic Hawaiian children by adapting instructional contexts to the cultural predilections of the students. Elsewhere, assessment techniques used to gauge the intellectual functioning of Hispanic-American populations have been revised to consider certain cultural factors such as language and social interaction styles with successful results (Curtis & Meyers, 1985; Alessi & Kaye, 1983).

Work which addresses cultural issues in the education of Afro-American children exists in the form of a few isolated, yet important examples (Piestrup, 1973; Franklin & Fulani, 1979; Hall, Reder & Cole, 1979, Simmons, 1979). For instance, Hall, Reder and Cole (1979) found that the use of Black English Vernacular was successful in enhancing the reading performance of low income Afro-American children. While such research

endeavours are noteworthy, there remains little in the way of systematic empirical programmes designed around these concerns. Yet, such seem especially crucial given Afro-American children's preponderate rate of academic failure (Gordon & DeStefano, 1984).

Fueled by these issues, a recent programmatic effort has been launched towards delineating the adaptive and cultural experiences of Afro-American people which can be capitalised upon in academic/task settings to enhance Afro-American children's cognitive performance (Boykin, 1979; 1982; Tuck, 1985; Boykin & Allen, 1988). Boykin (1979; 1982) proposed that: (1) the immediate environments of extant Afro-American children, marked by high sensate stimulation affordance levels (Young, 1970; Wachs et al., 1971), lead to cultivation of an especial receptiveness to heightened variability and intensity of stimulation or high levels of "psychological verve"; and (2) incorporation of such sensate stimulation into task contexts will have a facilitating effect on these children's performance. Empirical tests support these claims (Boykin, 1979; 1982; Tuck, 1985).

To broaden the range of contextual conditions in which performance enhancement could be demonstrated, Boykin and Allen (1988) proposed that the relatively high levels of sensate stimulation afforded in many Afro-American home environments is often rooted in a movement expressive orientation; an orientation which, typically, is rhythmically joined to music and percussion, and is also cultivated in many such homes (Boykin, 1983). This position is supported by several lines of work. For instance, ethnographic research by Thompson (1984) and Abrahams and Szwed (1983) noted that many Afro-Americans place a premium on the interwoven mosaic of rhythmic movement, music and percussion, and the like is linked to traditional African ethos. Elsewhere, Gordon (1982) and Morgan (1980) observed that Afro-American children display high levels of movement expressiveness. Further, Guttentag (1972) empirically established that low income Afro-American children display a more expansive and varied movement repertoire than their low and middle income Euro-American counterparts. Thus, it was reasoned that devising a task context which allowed for the coordination of movement with music would extend the previous work by capitalising largely upon another factor presumed to be cultivated in extant Afro-American's life experiences, "movement expressiveness" (an expressiveness often fundamentally linked to rhythmic percussive music).

In the Boykin and Allen (1988) investigation 80 low income Afro-American children between the ages of five and nine years learned picture pairs either in an acquisition context where a percussive tune was played and movement and hand clapping were encouraged, or in an acquisition context which was essentially devoid of such factors. Retention of the picture pairs was measured by a matching task. There were two acquisition trials in all. The results showed that the children who learned the picture pairs when the

context extended the opportunity for relatively high levels of movement expressiveness performed significantly better than the children who learned the picture pairs when the context was relatively devoid of such opportunities. Thus, it was concluded that this movement expressive acquisition context can be used to facilitate low income Afro-American children's task performance.

Although this study was successful in demonstrating the beneficial effects of the movement expressive context on low income Afro-American children's task performance, several factors remain unexplored. First, while the cognitive demands occurred in two phases of the study, the initial acquisition phase and the subsequent testing phase, the paradigm employed only examined contextual manipulation in the acquisition phase. Second, the homogeneous nature of the sample employed in the Boykin and Allen (1988) study (i.e. low income Afro-American children) limited the generalisations that could be made about the cultural nature of this particular movement expressive patterning. Therefore, the present study attempted to examine the effect of contextual manipulation at acquisition and at testing and it offered a comparative group of low income Euro-American children.

METHOD

Subjects

The sample consisted of 72 children, 40 Afro-American and 32 Euro-American, between the ages of six and eight years old. The children's mean ages were 7.01 and 7.18 years for the Afro-American and Euro-American groups, respectively. All of the children were from low income families as indicated by their participation in their school's free lunch plan. There were 31 males and 41 females. Thirty-four of the children were in first grade and 38 of them were in second grade. The children were drawn from two grade levels for availability reasons, rather than conceptual reasons. All of the children were recruited from a large north-eastern school system.

Materials

An audio cassette recording of a rhythmic tune (Narobi, *Funky Soul Makossa*, Streetwise Records, 1982) was used in certain experimental conditions and a standard portable cassette recorder was used to play the audio tape. The stimulus items to be recalled in the study were two sets of picture pairs. One set consisted of 12 different commonly known animals and 12 different commonly known food items; and the other set included pictures of 12 commonly known household items and 12 commonly known clothing articles. The animal and food items and the household items and clothing

articles were matched on a random basis, however, the pairs were reviewed to assure that none had a logical relationship such that prior learning could be controlled. The pairs remained unvaried throughout the experiment. Each pair was mounted on 11″ × 22″ posters. Examples of the animal-food pairs are: (1) a tiger and a lollipop; and (2) a kangaroo and a pear. Two examples of the household-clothing pairs are: (1) a teapot and a shoe; and (2) a television and a pair of mittens.

In addition to the posters, eight sets of 24 cards (5″ × 5″) were used as testing materials. Each card contained a reduced version of the same pictures of food items or animals used in the animal-food pairs previously discussed or pictures of household items or clothing articles used in the previously discussed household item-clothing pairs. There were four sets of testing materials for each of the two sets of pairs and each set contained only the pictures which appeared on the posters. Also a retention sheet was used to record each child's matched pairs.

Acquisition Context. Two acquisiton contexts were used and each child participated in both contexts which were constructed to differ in the amount of movement opportunity and music present.

In one acquisition context children were told to sit still while they rehearsed the 12 picture pairs by a recitation procedure. Here the Experimenter (E) recited the pairs while showing the children the corresponding posters. The children were instructed to repeat each pair after the E. For example, the E said "bear-cake" and the children repeated "bear-cake". This was done three times before moving on to the next pair. After all 12 pairs had been rehearsed three times each, accompanied by a poster, the children were instructed to recite each pair once while the E held up the appropriate poster. Thus, each individual item pair was orally presented seven times, three by the experimenter and four by the children. The setting for this acquisition procedure, essentially, did not provide the opportunity to be highly movement expressive and music was not present. Because it was constructed to allow relatively low levels along such dimensions and for convenience it will be referred to as the Low Movement Expressive (LME) acquisition context.

In the second acquisition context, rehearsal of the 12 picture pairs was accompanied by the beat of a rhythmic tune. During this trial, the children were told to stand around the E while they listened to the music and looked at the posters. Note that the tune was playing from the time the E began to give instructions until the rehearsal session was completed. The recitation sequence in this condition was the same as that in the first context; however, each pair was presented by the E to the beat of the rhythmic tune. In addition, movement and hand clapping were encouraged; however, they were not forced. In this acquisition context, the presence of the music and the encouragement of movement served to extend the opportunity for children to

coordinate the movement, hand clapping and rehearsal of the pairs with the musical accompaniment. This setting for the acquisition procedure was designed to provide the opportunity to be highly movement expressive and music was present allowing for the synchronisation of movement and music. Because it was constructed to provide relatively high levels along such dimensions and for convenience it will be referred to as the High Movement Expressive (HME) acquisition context.

Testing Context. Children were tested for the retention of the picture pairs either in a context where music was present or absent. Each child was tested under only one or the other testing context, regardless of the preceding acquisition context. Testing context was made a between group factor for reasons of feasibility and to avoid over complication of the research design.

The children were randomly assigned to a No Music (NMU) or Music (MU) testing context. In the MU context, the rhythmic tune used in the HME acquisition context was continuously played in the testing environment. However, in the NMU testing context, the music was not played.

Dependent Variable. Performance was measured during the testing context by a matching card task. The task consisted of the children matching the 12 picture pairs using cards containing the same pictures that appeared on the posters. The cards with the pictures of the animals used in the animal-food pairs or the cards with the pictures of the household items used in the household item-clothing pairs were laid out on the floor in one long vertical line. The sequence of the line was the same as the order in which the pairs were presented. For example, a tiger and a lollipop was the first animal-food pair presented and as such, the picture of the tiger headed the sequence of animal pictures laid on the floor. Similarly, a teapot and a shoe comprised the first of the household-clothing pairs and accordingly, the teapot headed the sequence of the household item pictures laid on the floor. A stack of cards containing pictures of the second items, food items or clothing articles, was given to each child. The stack of cards was arranged in a random fashion that varied from child to child. The children then placed a card from the stack next to each of the pictures laid out on the floor. Any pictures placed side by side were recorded as a matched pair. The children were given six minutes to match the pictures with the corresponding pair mate. Pilot testing showed that six minutes was a sufficient amount of time to complete the task. Retention was measured by the number of pairs correctly recalled, although all matched pairs were recorded.

PROCEDURE

The children were tested in groups of four by an Afro-American female experimenter. The E was trained to hold her demeanor constant across acquisition contexts. Each group tested was racially homogeneous. There were four acquisition trials, two under one acquisition context followed by two under the other context. Order of participation was counterbalanced so that each acquisition condition was presented first an equal number of times. In addition, order of pair sets was counterbalanced so that each set was used for each condition an equal number of times.

The children first participated in a rehearsal session which was immediately followed by a matching card task. It should be noted that rehearsal sessions under each acquisition context lasted the same amount of time and that the children were alerted to the impending matching card tasks prior to the onset of the first rehearsal session. During the matching card task, children were placed in opposite corners of the room and monitored to prevent interaction. The task was followed by a five minute interval during which time the children were taken to a room adjoining the training/testing room where they were asked to wait with the experimenter. A second experimenter took the five minutes to record all the matched pairs on a retention sheet. This person was unfamiliar with the research issues under test, as well as being unaware as to which acquisition context the children had just participated in. Once the matched pairs were recorded, the children then participated in a second rehearsal session and matching card task under the same conditions present during the first trial. After a five day interval, the children participated in the second set of acquisition trials under a different acquisition context followed in each instance by the testing condition.

RESULTS

Preliminary analyses were performed to discern whether significant effects on performance were produced by type of tasks used (animal/food pairs [AF] versus household/clothing pairs [HC]), the order of pair type presentation (AF/HC versus HC/AF), and the order of acquisition context presentation (LME/HME versus HME/LME). None of these factors was found to significantly affect performance. As such, these variables were not considered in the subsequent analyses of acquisition and testing context effects.

Further analyses were performed to determine whether gender and grade differences were related to performance by acquisition context, testing context and acquisition trials. These analyses yielded no significant main or

interaction effects. Thus, gender and grade were also excluded from the subsequent acquisition and testing context analyses.

A 2×2×2×2 ANOVA with repeated measures on the last two factors was conducted to analyse the relevant effect of ethnic group (Euro-American versus Afro-American), testing context (No Music [NMU] versus Music [MU]), acquisition context (Low Movement Expressiveness [LME] versus High Movement Expressiveness [HME]) and acquisition trials (one versus two). The Scheffe' test was used for all *post hoc* analyses.

There was a significant main effect for acquisition context ($F(1,68) = 4.44$, $P < 0.04$) revealing that performance was better when it was preceded by the LME context ($M = 5.82$) than when it was preceded by the HME context ($M = 5.13$). Acquisition trials also produced a significant main effect showing that performance after trial two ($M = 6.58$) was greater than performance after trial one ($M = 4.27$) ($F(1,68) = 121.07$, $P < 0.0001$).

A significant two-way interaction emerged between ethnic group and acquisition context ($F(1,68) = 20.15$, $P < 0.0001$). The interaction showed that while Afro-American children's performance was better with the HME than with the LME acquisition context ($M = 5.71$ and 5.07 for HME and LME acquisition contexts, respectively), Euro-American children's performance was markedly better with the LME context ($M = 6.33$) than with the HME context ($M = 4.56$).

A significant three-way interaction was revealed between ethnic group, acquisition context and acquisition trials ($F(1,68) = 4.31$, $P < 0.040$). The interaction revealed that while Afro-American children's performance was essentially the same with the LME and HME acquisition contexts at trial one, their trial two performance was markedly better with the HME than with the LME acquisition context. However, Euro-American children showed markedly greater performance with the LME than with the HME acquisition context at trial one and trial two. *Post hoc* tests substantiate these claims. The Scheffe' analyses showed that Afro-American children's performance with the LME context did not differ significantly from their performance with the HME acquisition context at trial one; however, their trial two performance was found to be significantly better with the HME than with the LME acquisition context. Euro-American children's performance with the LME acquisition context was found to be significantly greater than their performance with the HME context at both trials one and two. In addition, *post hoc* tests conducted between Afro-American and Euro-American children's performance under each of the two acquisition contexts revealed that in the LME context, the trial one means for the two ethnic groups did not differ. However, their trial two means were found to be significantly different showing that Euro-American children's performance was significantly better than that of Afro-American children. Comparisons of Afro-American and Euro-American children's performance under the

HME acquisition context revealed that, again, their trial one means did not differ significantly; however, their trial two means were found to be significantly different. Yet, in this instance, Afro-American children were found to have higher scores than Euro-American children.

The four-way interaction was also significant ($F(1,68) = 5.13$, $P < 0.027$). Table 1 shows the means and standard deviations for the four-way classification. Of particular note, Euro-American children's trial two performance was markedly greater with the LME than with the HME acquisition context regardless of factors present at testing. In contrast, in the NMU testing context Afro-American children's performance at trial two was markedly better with the HME than with the LME acquisition context; however, with the MU testing context Afro-American children's performance at trial two was essentially the same across acquisition contexts. Again the Scheffe' tests support these interpretations. Afro-American children's trial two performance with the HME acquisition context was found to be significantly better than their performance with the LME context, but only with the NMU testing context, for with the MU testing context Afro-American children's mean scores with the HME and LME acquisition contexts did not differ significantly. Euro-American children's trial two performance, however, was found to be significantly better with the LME than with the HME acquisition context under both testing contexts.

TABLE 1
Means and Standard Deviations for Ethnic Group by Testing Context by Acquisition Context by Acquisition Trials

		Acquisition Context				
		Low Movement Expressive		*High Movement Expressive*		
		Trial 1	*Trial 2*	*Trial 1*	*Trial 2*	
Ethnic Testing Group	Context					
	No	4.19	7.88	4.00	4.88	mean
	Music	2.61	2.92	2.09	3.09	sd
	n = 16					
Euro-American						
	Music	5.63	7.63	3.31	6.06	mean
	n = 16	3.09	2.66	2.12	2.08	sd
	No	3.50	5.15	4.25	6.55	mean
	Music	2.24	2.98	2.43	2.31	sd
	n = 20					
Afro-American						
	Music	4.70	6.95	4.60	7.45	mean
	n = 20	2.36	2.91	1.67	2.53	sd

DISCUSSION

This study sought to elaborate further Boykin and Allen's (1988) finding that Afro-American children's learning could be enhanced by the incorporation of movement opportunity and music into learning contexts. Further, the study sought to expand the paradigm in which the expected facilitating effects were examined and to discern ethnic group differences in performance under differing acquisition and testing contexts.

While the main effect which emerged for acquisition context could lead one to assume that children perform better overall with a low movement expressive rehearsal context, other obtained findings revealed that the main effect of the acquisition context was occluding interacting ethnic group, acquisition trials, and testing context effects.

To begin with, the obtained ethnic group by acquisition context interaction revealed that although Euro-American children unequivocally performed better when the acquisition context provided a smaller rather than a greater opportunity for movement expression, Afro-American children tended to display a superiority of performance when the opportunity for movement expression in the acquisition context was great rather than small. However, in looking at the obtained enhancement trend for the Afro-American children, it was revealed that enhanced performance with the high over the low movement expressive acquisition context did not clearly emerge until the second trial. The delayed performance enhancement effect displayed by the Afro-American children replicates the findings for the five to six year olds in the Boykin and Allen (1988) study. While the authors attributed the delayed enhancement effect to the initial situational wariness of the children, further research is needed to more clearly discern the locus of this finding. At any rate, further examination of the present interaction also revealed that when the opportunity for movement expression was amply provided, Afro-American children were found to significantly outperform Euro-American children. By contrast, the reverse was found to occur when the acquisition context did not provide such opportunities.

Further, the Afro-American children's enhancement effect needs to be examined in light of testing context factors. More specifically, among other things, the four-way data showed that the Afro-American children's superior performance with the high over the low movement expressive acquisition context occurred only when the testing context was devoid of music, for when music was present at testing, Afro-American children's performance was essentially equal with both acquisition contexts. Such an interaction pattern refutes Tulving's (1983) matched context hypothesis which states that the best learning effects are obtained when the contextual conditions for acquisition and testing are similar. The Euro-Amercian children's findings do not support the Tulving (1983) assertion as well since their performance is

superior in the LME over the HME acquisition context, regardless of testing context factors.

Some insight into the context-induced ethnic differences in performance can be gleaned via informal observations made during the present study. It was noted that while Euro-American children in the LME acquisition context generally remained on task, Afro-American children in the LME context often became restless and bored. After acquisition with the LME context, Euro-American children's involvement carried over into the matching task and persisted through the testing phase regardless of contextual factors present. Afro-American children in the LME context, however, did not show much interest in the matching task, unless the testing context provided music.

In the HME acquisition context, many Euro-American children seemed to like the music and movement; but they appeared unable to coordinate the two with rehearsal. Yet, when music was present at testing, many of these children hummed the tune and called random pairs until one sounded correct. Other Euro-American children seemed distracted by the attempts to move and by the presence of music at both acquisition and testing. The preponderance of Afro-American children in the HME context, however, engaged the task with interest and readily coordinated movement and music with the rehearsal activity. Moreover, Afro-American children, following the HME acquisition, remained task engaged throughout the matching task regardless of whether music was present at testing. Thus, the differential enhancement effects obtained for Afro-American and Euro-American children seem to be associated with the differential responsiveness of these children to contextual factors extended in acquisition and at testing.

When interpreting the ethnic group differences obtained in the present study, it is important to recall that the high movement expressive acquisition context and the music testing context were generated from a presumed understanding of the proactive life experiences of extant Afro-American people. Accordingly, we would not infer that the obtained ethnic group differences in this study are a function of race, but instead, resulted from differential factors cultivated in the life experiences of these racially distinct, yet socioeconomically similar groups.

In all, the present work adds to the growing body of empirical evidence showing that cognitive functioning is fundamentally linked to cultural contexts—in this instance with an American domestic cultural group. Moreover, this study contributes specifically to a line of research (Boykin, 1979; 1982; Tuck, 1985; Boykin & Allen, 1988) aimed at demonstrating that potentially unrecognised cognitive competencies of Afro-American children may be fostered in appropriately eliciting contexts. Another lesson to be learned from the pattern of the present findings is that one should be wary of pursuing main effect research on general cognitive processing without regard

for issues of culture and context. If the present study had focused only on gleaning main effects, a very different view of pertinent cognitive functioning would have emerged. However, in pursuing this type of research, one should be prepared to grapple with involved higher-order interactions which mirror the complexity of the phenomenon under scrutiny. Surely, a case in point is the systematically meaningful four-way interaction obtained in this study.

To draw policy statements from the present work is surely premature, but the potential pedagogical implications of the present paradigm warrant some mention. Seemingly this line of work underscores that more creative judicious deployment of pedagogical contexts, informed by proactive life experiences of Afro-Americans, may facilitate academic performance for many Afro-American children. We believe that the goal of the schooling process should be to maximise the intellectual potential of all students through whatever pedagogical devices available. Moreover, that better cognitive production can be obtained via Afro-American culturally based facilitating contexts casts doubt on any simplistic deficit explanation for Afro-American children's cognitive functioning (Deutsch, 1967) and at least challenges the notion that simply moulding all children to fit "standard" contexts may not be the ultimate or only educational panacea. Of course none of this does imply that Afro-American children cannot learn in the absence of such culturally informed contexts. On the contrary, there are many Afro-American academic success stories. Indeed, there is an important legacy of Afro-Americans valuing achievement through traditional channels (Clark, 1983; Scanzoni, 1985). But the academic failure of Afro-American children remains much too high in spite of the achievement of some (Shade, 1982). The use, for example, of movement expressive contexts across the expanse of educational settings for Afro-American children is perhaps unrealistic. Yet, the prudent utilisation of such contexts may help prepare young Afro-American children for basic skill development in the crucial early school years and when the possibility of largely irreversible patterns of alienation from school can set in. An expanding body of literature indicates that children in the early grades are less flexible in their responses across situations (Dunn, Beaudry, & Klavas, 1988). In contrast, older children tend to be more capable of adapting to different even unfamiliar contexts (Dunn, Beaudry, & Klavas, 1988). Hence, amending pedagogical contexts to be, at times, more continuous with the social cultural experiences of Afro-American students (at least in the early school years) may prove beneficial. It may increase the potential for achievement in later years at a time when such children develop more situational flexibility. Thus, functioning successfully in more "traditional" academic contexts, surely a requisite skill for success in mainstream American society, is perhaps more likely to be obtained.

Recommendations for future research can be offered. Primarily, it seems imperative that the present study be replicated, expanding the design to

include varying ethnic group-socioeconomic class combinations. If children's responsiveness to movement opportunity and music varies by socioeconomic class as it does by ethnic group, then it is important to discern the direction of these differences so that overgeneralisations based upon ethnic group differences are avoided (McAdoo, 1981; Ogbu, 1981, 1990). Also, future work should focus on developmental differences in performance as a function of varying contextual conditions. Further, subsequent work may focus on unpacking the contextual manipulations in an effort to discern more precisely the locus of the obtained effects. In addition, future research should attempt to expand upon the theoretical issues inherent in the obtained enhancement effect. More specifically, it seems imperative to discern the nature of the psychological underpinnings implicated in the performance trends. In this instance, future endeavours may focus upon understanding whether the enhancement effects are the result of, for example, increased motivation at encoding, increased attention at encoding, and/or increased time on task. It also seems important to apply the present paradigm to more educationally meaningful material such as maths and reading concepts. This particular endeavour is necessary if we want to link the present work more closely to actual pedagogical situations.

Manuscript first received June 1990
Revised manuscript accepted January 1991

REFERENCES

Abrahams, R.D., & Szwed, J.F. (Eds.). (1983). *After Africa.* New Haven: Yale University Press.

Alessi, G.J., & Kaye, J.H. (1983). *Behavior assessment for school psychologists.* Kent, OH: National Association of School Psychologists.

Boykin, A.W. (1979). Psychological/behavioral verve: Some theoretical explorations and empirical manifestations. In A.W. Boykin, A.J. Franklin, & J.F. Yates (Eds.), *Research directions of Black psychologists* (pp. 351–367). New York: Russell Sage Press.

Boykin, A.W. (1982). Task variability and the performance of black and white schoolchildren. *Journal of Black Studies, 12,* 469–485.

Boykin, A.W. (1983). The academic performance of Afro-American children. In J. Spence (Ed.), *Achievement and achievement motives* (pp. 321–371). San Francisco: W. Freeman.

Boykin, A.W., & Allen, B.A. (1988). Rhythmic movement facilitation of learning in working class Afro-American children. *Journal of Genetic Psychology, 149,* 335–348.

Clark, R. (1983). *Family life and school achievement: Why poor black children succeed or fail.* Chicago: University of Chicago Press.

Cole, M. (1988). Cross-cultural research in the sociohistorical tradition. *Human Development, 31,* 137–157.

Curtis, M., & Meyers, J. (1985). Best practices in school based consultation. In A. Thomas, & J. Grines (Eds.), *Best practices in school psychology* (pp. 79–94). Kent, OH: National Association of School Psychologists.

Deutsch, M. (1967). The disadvantaged child and the learning process. In M. Deutsch et al. (Eds.), *The disadvantaged child* (pp. 39–58). New York: Basic Books.

Dunn, R., Beaudry, J.S., & Klavas, A. (1988, November). *Are schools responsible for students' failure: A synthesis of research on learning styles.* Paper prepared for the New York State Board of Regents' Panel on Learning Styles.

Franklin, A.J., & Fulani, L. (1979). The cultural content of materials and ethnic group performance in categorized recall. In A.W. Boykin, A.J. Franklin & J.F. Yates (Eds.), *Research directions of Black psychologists* (pp. 368–379). New York: Russell Sage Press.

Gordon, B. (1982). Towards a theory of knowledge acquisition for Black children. *Journal of Education, 164,* 90–108.

Gordon, E.W., & DeStefano, L. (1984). Differences in development and learning. In J. E. Ysseldyke (Ed.), *School psychology: The state of the art.* Minneapolis: National School Psychology Inservice Training Network.

Guttentag, M. (1972). Negro-white differences in children's movement. *Perceptual and Motor Skills, 35,* 435–436.

Hall, W., Reder, S., & Cole, M. (1979). Story recall in young black and white children: Effects of racial group membership, race of experimenter and dialect. In A.W. Boykin, A.J. Franklin, & J.F. Yates (Eds.), *Research directions of Black psychologists* (pp. 380–399). New York: Russell Sage Press.

Laboratory of Comparative Human Cognition (LCHC). (1982). Culture and cognitive development. In W. Kessen (Ed.), *Mussen's handbook on child development (Vol. 1).* New York: Wiley.

McAdoo, H. (1981). Patterns of upward mobility in black families. In H.P. McAdoo (Ed.), *Black families* (pp. 155–169). Beverly Hills: Sage Publications.

Morgan, H. (1980). How schools fail black children. *Social Policy, 11,* 49–54.

Ogbu, J. (1981, February). *Schooling in the ghetto: An ecological perspective on community and home influences.* Prepared for NIE Conference on Follow Through, Philadelphia.

Ogbu, J. (1990). Minority status and literacy in comparative perspective. *Daedalus, 119,* 141–168.

Piestrup, A. (1973). Black dialect interference and accommodation of reading instruction in first grade. *Language Behavior Research Laboratory Monographs, 4,* Berkeley: University of California.

Rogoff, B., & Lave, J. (Eds.), (1984). *Everyday cognition: Its development in social context.* Cambridge: Harvard University Press.

Shade, B. (1982). Afro-American cognitive style: A variable in school success? *Review of Educational Research, 52,* 219–244.

Scanzoni, J. (1985). Black parental values and expectations of children's occupational and educational success: Theoretical implications. In H.P. McAdoo & J.L. McAdoo (Eds.), *Black children: Social, educational and parental environments* (pp. 113–122). Beverly Hills: Sage Publications.

Simmons, W. (1979, July). The effects of the cultural salience of test materials on social class and ethnic differences in cognitive performance. *The Quarterly Newsletter of the Laboratory of Comparative Human Cognition, 1,* 43–47.

Simmons, W. (1985). Social class and ethnic differences in cognition: A cultural practice perspective. In S.F. Chipman, J.W. Segal, & R. Glaser (Eds.), *Thinking and learning skills: Research and Open Questions* (pp. 519–536). Hillsdale, NJ: Lawrence Erlbaum Associates Inc.

Tharp, R., Jordan, C., Speidel, G., Au, K., Klein, T., Calkins, R., Sloat, K., & Gallimore, R. (1984). Product and process in applied developmental research: Education and children of a minority. In A. Brown & B. Rogoff (Eds.), *Advances in developmental psychology, Vol. 3.* (pp. 91–141). Hillsdale, NJ: Lawrence Erlbaum Associates Inc.

Thompson, R.F. (1984). *Flash of the spirit: African and Afro-American art and philosophy*. New York: Vintage Books.

Tuck, K. (1985). *Verve inducement effects: The relationship of task performance to stimulus variability and preference in working class black and white schoolchildren*. Unpublished doctoral dissertation, Howard University.

Tulving, E. (1983). *Elements of episodic memory*. New York: Oxford University Press.

Vygotsky, L.S. (1962). *Thought and language*. Cambridge: MIT Press.

Wachs, T.D., Uzgiris, I.C., & Hunt, J.M. (1971). Cognitive development in infants of different age levels and from different environmental backgrounds: An exploratory investigation. *Merrill Palmer Quarterly, 17*, 283–316.

Young, V. (1970). Family and childhood in a southern Negro community. *American Anthropologist, 72*, 269–288.