

https://dspace.org/

The effect of cultural variables on the Goodenough-Harris Drawing Test and the Standard Progressive Matrices

Freeman, Melvyn Colin

2011-02-23
http://hdl.handle.net/10539/9083

Downloaded from a DSpace repository. https://dspace.org/

TABLE II

B Significant T-Test Differences Found on the DAP

Between:-		
(i)	V and X	t = 2,35 P < .Ø5
(ii)	B and G	t = 5,43 P < .Ø5
(iii)	X,B and X,G	t = 4,74 P < .Ø5
(iv)	R,V,8 and R,X,8	t = 3,22 P < .Ø5
(v)	U,V,B and U,V,G	t = 2,99 P < .Ø5
(vi)	V,B,12 and V,G,12	t = 4,21 P < .Ø5
(vii)	X,B,8 and X,G,8	t = 3,51 P < .Ø5
(viii)	X,B,12 and X,G,12	t = 3,55 P < .Ø5
(ix)	R,V,B and R,V,G	t = 3,Ø5 P < .Ø5
(x)	U,X,B and U,X,G	t = 4,31 P < .Ø5
(xi)	R,X,B and R,X,G	t = 2,38 P < .Ø5
(xii)	R,V,B,8 and R,X,B,8	t = 2,72 P < .Ø5
(xiii)	U,V,B,8 and U,X,B,8	t = 2,38 P < .Ø5
(xiv)	R,V,B,12 and R,V,G,12	t = 2,92 P < .Ø5
(xv)	U,V,B,12 and U,V,G,12	t = 3,12 P < .Ø5
(xvi)	R,X,B,8 and R,X,G,8	t = 2,12 P < .Ø5
(xvii)	U,X,B,8 and U,X,G,8	t = 2,82 P < .Ø5
(xviii)	U,X,B,12 and U,X,G,12	t = 2,28 P < .Ø5

Key - as in table I.

The DAP ANOVA variance found between Venda and Xhosa is mirrored by the difference found

between Venda and Xhosa on the t-tests. But although there was no interaction effects between ethnic group and age on the ANOVA, t-tests indicate the differences between Xhosa and Venda all occur at eight and not at age twelve (iv, xii, xiii).

No rural/urban differences of significance were found.

All the other significant differences (ii, iii, v, vi, vii, viii, ix, x, xi, x, xiv, xv, xvi, xvii, xviii) occurred between boys and girls. Significant differences were found between Venda boys and Venda girls as well as Xhosa boys and Xhosa girls. Sex difference was a factor at age eight as well as at age twelve.

(iv) - As raw scores between the SPM and the DAP were not comparable (see footnote 11), percentile ranks corresponding to the raw score on both tests were calculated. On both tests the mean raw scores of the samples of this study were below the Standardization sample raw score corresponding to P 50. This was expected, and is of no particular relevance to this study. However, what is relevant is that the

mean percentile ranking overall on the DAP (when noted from the DAP standardization sample) was substantially higher than the mean percentile ranking on the SPM (when noted from the DAP standardization sample). On the DAP the 8 year old mean score was 92,25 - corresponding to P29 - while the SPM mean score was 14,45 corresponding to P10. For 12 year olds the mean DAP score was 85,4 - corresponding to P16 - while the mean SPM score was 20,45 corresponding to P3. Thus if an eight year old child performed at an average level of the children tested in this study, (for his age), he would be classified as falling into P29 if tested on the DAP while he would be classified as falling into P10 if the test used was the SPM. Similarly with twelve year olds - an average score falls into P16 if tested on the DAP, but into P3 if tested on the SPM.

The difference in percentile rank between average DAP scores and average SPM scores is substantial in both rural and urban populations as well as in Venda and in Xhosa people.

These differences are represented on the 'normal curve' as follows:-

FIGURE I

PERCENTILE RANKS OF RURAL EIGHT YEAR OLDS AND TWELVE YEAR OLDS ON THE DAP AND THE SPM

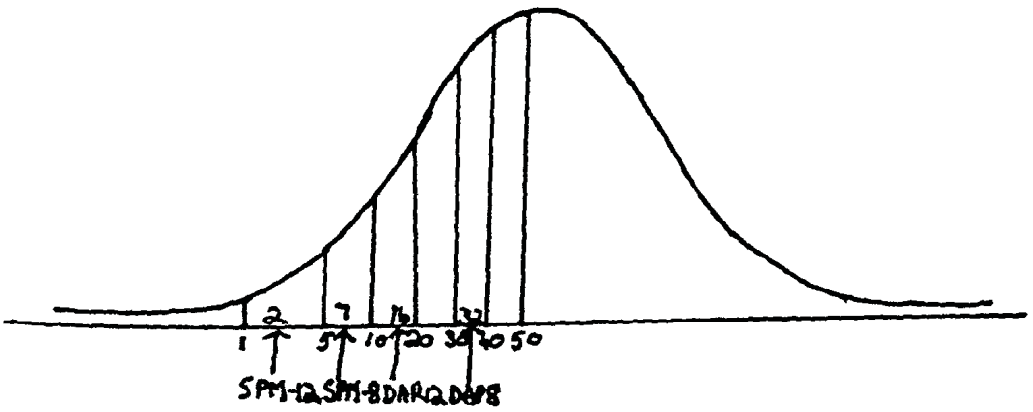


FIGURE II

PERCENTILE RANKS OF URBAN EIGHT YEAR OLDS AND TWELVE YEAR OLDS ON THE DAP AND THE SPM

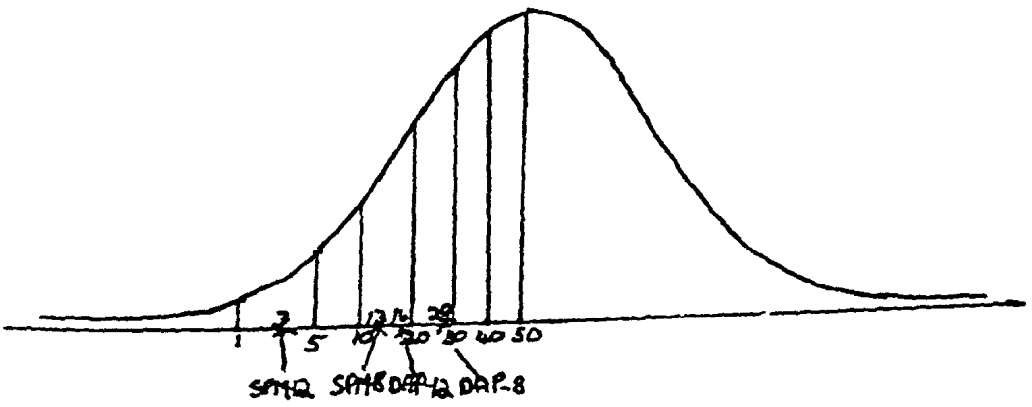


FIGURE III

PERCENTILE RANKS OF VENDA EIGHT YEAR OLDS AND TWELVE YEAR OLDS ON THE DAP AND THE SPM

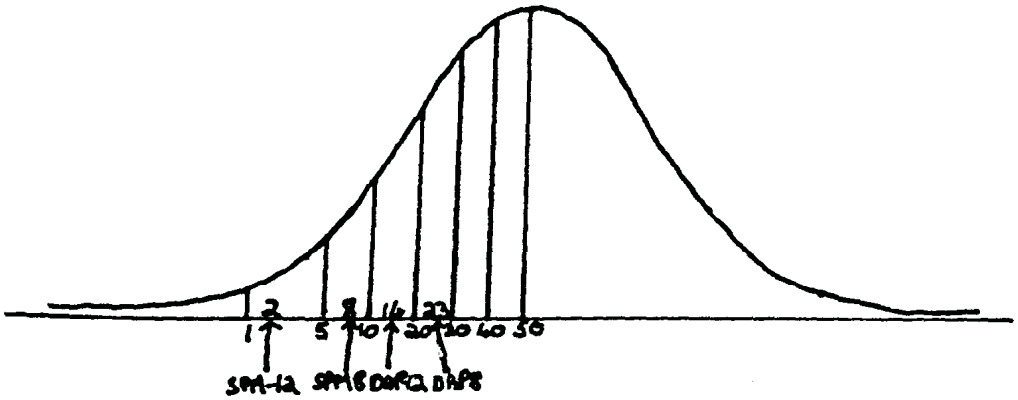
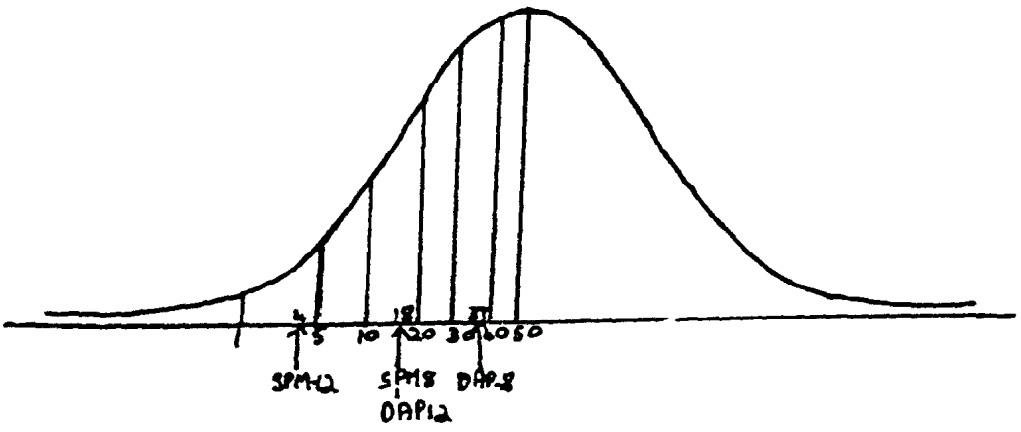


FIGURE IV

PERCENTILE RANKS OF XHOSA EIGHT YEAR OLDS AND TWELVE YEAR OLDS ON THE DAP AND THE SPM



(v) - From figures I - IV it is evident that not only are DAP scores relatively higher than SPM scores, but that <u>in each case</u> the eight year old mean percentiles were substantially higher than twelve year old mean percentiles on both the SPM and the DAP. This is true in urban (Fig. I) and rural (Fig. II) populations as well as in Venda (Fig. III) and Xhosa (Fig. IV) groups. Thus relative to the norms for each test, eight year olds fare better than twelve year olds.

****

CHAPTER VII

DISCUSSION

Some of the hypotheses of this study were born out by the results (hypotheses 1, 5, 6, 7, 10, 11, 12, 13, 14) while the others were not (2, 3, 4, 8, 9, 15, 16). In discussing these findings and proposing explanations for the results, deficiencies in the design of this study will be outlined. The final chapter will be left to draw conclusions.

7.1 Urban/Rural Differences

Significant variance was found between rural and urban populations on the SPM. This was not true of the DAP.

Before looking at possible explanations for this, it is imperative to examine whether what was taken as an 'urbanized' and a 'rural' person in this study can in fact be defined by such terms. In this research 'urbanized' children "had to have been born in the chosen urban area and to have lived there all their lives. Soweto, adjoining the most industrialized centre of South Africa (i.e. Johannesburg) and itself probably the most urbanized black area of South Africa was chosen" (pg 128). Anthropologists have suggested that to merely live in an urban area or even to have

been born there, is not enough to qualify for the classification of 'urbanized.' The debate concerning what is meant by 'urbanized' in South Africa began (at least) as early as 1948 when Hellman (in Hammond-Tooke 1974) laid down the following criteria.

A 'detribalized' (the term used at the time) person would have permanent residence in an area other than the chief to whom he would normally pay allegiance. He would have completely severed his relationship to the chief and would be independent of rural relatives for support during periods of unemployment, poor health or the performance of ceremonies connected with life crises.

This notion has been criticized in that though a person may have given up tribal, social, political and economic lands, he may still practice 'tribal customs' in the town. Further, a westernized person, like a doctor, who decided to live in the rural areas, would, by Hellman's definition, be classified as 'detribalized.' Since Hellman's writings, the term 'urbanization' has been preferred as it is less vague and more useful than 'detribalization.' It is seen as a sociological concept referring to change in behaviour upon coming to town. In a study of Xhosa in the Eastern Cape, Mayer (1962) divided townspeople into 'Red' and 'School' Xhosa. The 'Red' group,

although living in town, have not severed their home ties and customs. They have been forced by economic causes into the town, but they have not adapted to town customs fully. The 'School' townsperson, on the other hand, has changed his way of life and patterns of social relations. "The truly urbanized person, in this definition, would be one who is fully confirmed in 'urban' modes of behaviour - private life included - and above all in valueing these positively" (Mayer 1962, pg 6). The 'Red' and 'School' idea would be equally true of Venda speaking people. Yet whatever definition one may take of what 'urbanization' is, there are very few blacks in S.A. who have given up traditional belief systems completely. For example, it would not be exceptional to find a suit and tied professional consulting a diviner when struck by misfortune. If he is ill he may consult a diviner and a doctor. What Pauw said in 1963 is still applicable at present "... it is impossible to give a complete picture of the culture of an urban Bantu" (in Hammond-Tooke, 1974 pg 454).

It was beyond the scope of this thesis to attain in-depth biographies of the subjects to ascertain to what extent each person still adhered to a more traditional way of life. Thus in real terms the 'degree' of urbanization was not controlled and it is probable that individuals within the urban sample

used in this study, varied in their 'degree' of 'urbanization.'

Conversely, the traditional way of life has been overwhelmed by western influences. Radios, textiles, tinned foods, powdered milk, etc. have become integral parts of many rural peoples' lives. And as individuals in the urbanized population differed in their degree of 'urbanization,' so too do rural people differ in their degree of adherence to traditional ways of life. Here again the degree to which individuals retained a 'tribal' way of life was not controlled. It is thus theoretically possible that individuals in, say, the rural sample used, were even more 'urbanized' than individuals from the urban setting, and visa versa. That such a likelihood did occur is highly improbable, though the lack of greater control over 'urbanized' and 'rural' is a possible deficiency of this study.

The significant variance found between urban and rural children (U > R) on the SPM suggests that at least in general this study was dealing with two distinct groups. This result also confirms various studies which have found IQ variances between these groups. (Klineberg, 1933), (Lee, 1951), (Kroegler, 1980), (Klingelhofer, 1967). This thesis proposes therefore that the 'cognitive style' needed to deal with the SPM

is developed more within an 'urbanized' setting than a rural one.

Probably the major difference in cognition between urban and rural groups involves the practical approach needed to function well in a rural setting as opposed to a more cerebral conceptual/abstract approach needed in the urban area. Whereas status and economic privilege is attained primarily through the use of 'higher' intellectual aspects (Jensen's Level 2 intelligence) in the urban areas, for the continued survival of traditional ways of life, this is not needed. Traditional economies have been able to reproduce themselves for centuries without using much 'level 2' thinking. In fact, if a money economy, sophisticated mining techniques, factories etc are a direct result of 'fluid' intelligence (and this seems to be true) then the introduction of this way of thinking has been detrimental to traditional ways of life. Far from being a necessary facility for successful adaptation, its development within the society leads to the destruction of the society.

The development of abstraction and conceptualization are enmeshed within a way of life which encourages uncovering and developing individual aptitudes and qualities. Traditional systems, on the other hand, educate children into conservatism and conformity, and

acceptance of the traditional way of life (Van der Vliet, 1974). Western socialization is aimed at development, creativity and change, while traditional societies are educated to endure. Besides the differences in cognitions which 'change' as opposed to 'endurance,' are likely to produce, merely the attitude of 'change' when being tested on the SPM would lead to flexibility of approach, i.e. trying alternate ways of pursuing the problem etc., as compared with a more rigid approach and attitude which 'endurance' would engender.

One may well argue, at this point, that the extent of abstraction/conceptualization in urban working class blacks is being exaggerated and that they are primarily socialized into becoming manual labourers and would thus be as unlikely to develop intellectual skills as the rural children. There is no doubt that this is partly correct, and compared with a child who is being socialized into using abstract intellectual skills almost exclusively, the working class child does indeed fall way behind. Nonetheless as Scribner (1974) showed, mere contact with westernization seems to increase the skills needed to operate effectively in an urban environment. And the urban sample certainly have more contact with westernization than the rural sample do.

A genetic hypothesis for the differences between rural and urban populations on the SPM is rejected. The primary reason for this is that historical forces indiscriminately forced people into the cities (pg 109). It seems highly unlikely that movement to the cities was undertaken by the 'brighter' people due to the nature of the removal of the people from their land. In fact if one were to pursue the notion that 'brighter' people reacted differently to the colonizing situation, one may well argue that the 'brighter' people would have stayed on the land and the 'less bright' people moved to the cities. As the vast majority of people did not move through their own volition, it may be suggested that the 'brighter' people used their superior intellect to ensure that they did not have to move. It is not the intention to place much validity on this argument, but this idea seems at least as likely as the other unlikely suggestion above.

This study showed no overall significant variance between urban and rural children on the DAP. If, as Harris (1963), and Sattler (1983), suggest, the DAP measures concept formation ability in terms of perception, abstraction and generalization, then one must argue that rural and urban children have developed these capacities to more or less equal extents. However, it has just been stated (pg 151),

that rural and urban samples differed in terms of conceptual/abstract thought (that which was measured by the SPM). One is thus faced with a contradiction, the two tests are claiming to measure very similar entities - dealing with abstractions and conceptualizations - yet the SPM results show that rural and urban children differ significantly in this regard, while the DAP shows that they do not!

The solution to this contradiction must be that the tests measure different aspects of cognition. This was the hypothesis of Dennis (1966), who, as has been noted (pg 112), suggested that it was not perception, abstraction and generalization, but exposure to representational art, which was being measured by the DAP. Yet though the tests may indeed be measuring different aspects of cognition, it seems, from this study, that this 'thing' is not representational art. This will be discussed later (pg 161) and suggestions will be made as to what cognitions may be in use for the DAP as opposed to the SPM (pg 169, 170).

7.2 Differences between Venda and Xhosa

There were significant variances between ethnic groups on the SPM and on the DAP (Xhosa greater than Venda). Firstly the SPM variance. This finding is only relevant when it is seen that most of the differences

occur in the rural groups and it is primarily this difference which determines the overall variance found. This is a finding of major importance in that when environments are different, as in the two rural settings, the cognitions vis-a-vis the SPM vary, but when the environments are much more similar, as in the urban setting, then the differences largely disappear. This is in line with the hypothesis which suggests that there are not intrinsic differences between ethnic groups, but that socio-historical environment is mainly responsible for changed cognitions.

The higher Xhosa rural mean score on the SPM (as opposed to rural Venda) could be interpreted as traditional Xhosa culture having an element in it which gives a greater propensity towards the type of cognitions needed for the SPM. If this reasoning is correct, then an in-depth study needs to be carried out to establish exactly what these differences in traditional Venda and Xhosa culture, are.

However, a much more likely reason for the difference is a methodological problem of this study. In the 'design' it was mentioned that the Xhosa rural sample was taken from a school in a 'village', whereas the Venda school was situated in the 'bush' (pg 129). It was suggested that because the Lusikisiki school drew its pupils from the surrounding 'bush' area, the fact

that the school was in an isolated village would not be important. It seems, however, that even though the homes of the rural Xhosa and rural Venda are probably very similar with respect to their traditional systems, the greater contact with urbanization in coming to school every day by the Xhosa children, has probably led to a slightly more 'urbanized' cognitive style.

A further factor which may have favoured the rural Xhosa group, was the quality of teaching and stimulation received at school. This cannot be asserted with much certainty as the quality of teaching and stimulation was not measured between schools. The only evidence for this suggestion is observations made of the classrooms at the schools. On the walls of the rural Venda school were posters issued by the Education Department. Posters, for example, showing children how to brush teeth or cross roads. The rural Xhosa school also exhibited such posters, but in addition to this there were numerous 'structures' built (obviously by the pupils) from bottletops, icecream sticks, egg boxes and other items of discarded material which had been 'creatively' manipulated. It appears that this school may encourage the development of spatial relationships, logical thinking and creativity through such activities. Also present in the classroom were

painted tins, bottles and drawings.

It cannot be said that these activities did not take place in the Venda school, only that there was no evidence of it in the classrooms.

Thus the higher rural Xhosa scores, as opposed to rural Venda scores, are probably a result of greater contact with urbanization through the physical situation of the schools. But they are possibly also due to the greater development of the type of skills necessary for the SPM in the classroom.

The one anomaly between Venda and Xhosa not explicable in terms of different rural environments, was that urban Xhosa girls scored significantly higher than urban Venda girls. A possible explanation for these findings is the fact that in general urban Venda people tend to be more 'subservient' than urban Xhosa people.*11 This subservience is likely to be exaggerated in woman (see pg 118) and it may be the cumulative effect of firstly being Venda and secondly being a woman which is responsible for the difference. Venda girls may fear to do well as this may alter their position of subservience and are thus 'holding back' due to what has become an unconscious reticence.

There was a significant variance between Venda and

Xhosa on the DAP (X > V). The hypothesis of this study was that rural Venda who were traditionally more exposed to representational art than the Xhosa, would score higher on the DAP, but that when environments were 'stabilized' and therefore art exposure more or less equalized, there would be no differences. The first aspect of this hypothesis was not confirmed by the results of this study. However, it would be incorrect [at this stage] to claim that this study contradicts Dennis' [1966] hypothesis.

Though traditionally Venda culture had more representational art than Xhosa culture, it appears that this is an aspect of the traditional cultures where colonization has made differences irrelevant. Firstly Venda representational art was traditionally primarily carried out by skilled craftsmen who were supported, economically and socially, by the culture in their role as 'artist' or 'sculptor.' (Slayt, 1931). With the pressures of colonization these artists could no longer maintain their subsistence, and so they were drawn with the rest of their community into the migrant labour system. Traditional art thus became less and less available and 'used' less and less. Until, it seems, it has disappeared as a part of life. When teachers at the Nthabatala school were interviewed about traditional Venda art, there was no recollection of the art being available

in the area.

In the second place, western 'art' in the form of media, educational posters, and being encouraged to draw at school has become common place in rural areas. This is true of both Venda and Xhosa rural areas.

Yet even though Dennis' hypothesis is thus not challenged in terms of rural Venda and rural Xhosa, results of another aspect of this study do bring his proposal into question. If western art, as opposed to traditional art, is the major representational art exposure in rural communities (as is suggested above) then one would have expected a difference between urban and rural groups due to the greater western art exposure in urban areas. This was not found. From this study it would seem that exposure to representational art is probably not the primary influence on DAP score.

It is important that differences between ethnic groups all occur at age eight and not at age twelve. It is extremely difficult to find a suitable explanation for these differences which - occurred in <u>both the urban areas and the rural areas</u> , (V, R, 8 and X, R, 8 [$t = 2,35$; $P < .05$]), (V, U, B, 8 and X, U, B, 8 [$t = 2,38$; $P < .05$]). It is also difficult to explain why this occurred amongst the boys but not the girls in

the urban area. Certainly a genetic hypothesis does not explain this situation.

A possible, though not satisfactory explanation, is that the teacher at the Lusikisiki school, who was teaching most of the eight year old testees, placed major emphasis on drawing, and this input increased DAP score. That this did in fact occur is suggested only by the drawings on the wall of her classroom and not from thorough investigation. The difference between Xhosa urban eight year old boys and Venda, urban, eight year old boys may simply be a result of the sample size (the samples when all four variables are considered is only fifteen).

This result seems to be a 'grey' area of this study. It is suggested that this section of the study should be replicated with a bigger sample taken from the same schools used in this study, but also other schools should be used and compared to these schools in order to investigate what role a specific school or teacher's input has on DAP score.

7.3 Sex Differences

There were found to be no sex differences on the SPM. This confirms the hypothesis (H7). However, on the DAP boys scored significantly higher than girls in

Venda and Xhosa samples. This was true of eight year olds and twelve year olds. As the test was standardized so that while western subjects of both sexes would score equally well, it follows that the differences found were due to cultural factors.

Two possibilities present themselves. Firstly, socialization of girls in these cultures inhibits the acquisition of the cognitions needed for the DAP more than in boys. For example that girls are less competitive than boys, or that girls pursue domestic rather than intellectual avenues, or that girls are less involved in tasks of abstraction than boys, could be possible reasons for the difference. However, if any of these was true one would have expected a corresponding difference on SPM scores. This did not occur.

The second alternative is that the test itself is biased against one sex if used on a cultural group very different from that constituting the standardized sample. In the Venda and Xhosa cultures the test seems to discriminate against girls. In the scoring of the 'Draw-A-Woman' Test, which most girls chose to do, there are points awarded for many 'western' items which neither the rural nor the urban blacks are likely to identify with. For example points are given for 'cosmetic lips', for hair styled in a caucasian

manner, for a necklace or earrings, for a shoe styled in a 'feminine' way, for skirt pleats etc. This is not to say that the 'Draw-A'Man' test does not score in terms of a western standard of appearance and dress, but that the D-A-W is more concerned with western stylization than the D-A-M.

7.4 Age

On both the SPM and the DAP raw scores increased with age. However, relative to the norms obtained from the standardization sample, eight year olds fared substantially better than twelve year olds. Whereas on the DAP eight year olds (overall) fell at the 29th percentile relative to the standardized sample, the twelve year olds fell at the 16th percentile. On the SPM the mean of the eight year olds fell at the 10th percentile, while the mean of the twelve year olds fell only at the 3rd percentile. These differences, taking place in, or just above, the bottom quarter reflect substantial differences between the ages (Anastasi 1982, Kerlinger 1973). As all the groups studied can be considered as coming from 'poor environments' (as regards the acquisition of intelligence) the 'cumulative deficit hypothesis' (Sattler 1982) is confirmed. Further, as the differences between eight year olds and twelve year olds on the SPM is greater in the urban area (P 13 in

eight year olds and P 3 in twelve year olds) than in the rural area (P 7 in eight year olds and P 2 in twelve year olds) it would suggest that the rural areas are 'more impoverished' as regards the type of cognition needed to do well on the SPM. This may be explained in terms of 'lags' in the development of 'formal operations' type thinking (see pg 123) in the rural areas.

It is hypothesized as this stage (and expanded on on pg 169) that the DAP does not rely on abstract type thinking at any age. This would explain why there are comparatively major differences between urban eight year olds and twelve year olds relative to their rural counterparts on the SPM but not on the DAP. On the DAP both rural and urban groups fell in the 16th percentile at age eight, while the difference between the 32nd percentile (where urban twelve year olds fall) and the 29th percentile (where the rural twelve year olds fell) is minor. This compared with P7 in rural eight year olds and P13 in urban eight year olds and P2 in rural twelve year olds and P3 in urban 12 year olds.

7.5 Interaction Effect

The only interaction effect which produced significance on the ANOVA was that between ethnic

group, rural/urban dwelling and age ($F = 5,54$; $P < .01$) on the DAP. There were no interaction effects on the SPM.

Why there has been just this one significant interaction effect and only on the one test is extremely difficult to account for. It would appear that only if this study was replicated and the same one interaction was found, would it be worth attempting to explain this result. At the moment, only one interaction effect out of a possible twenty-two seems to make no sense.

7.6 Performance on the DAP compared with Performance on the SPM

It has been acknowledged (pg 139) that percentile ranks between tests should not strictly speaking be compared as not only are the units unequal (especially at the extremes) when using the same test (Anastasi 1982), but different tests have been standardized on different samples. Nonetheless it was felt that even using this method results could be enlightening.

In this study there were vast differences between how well the subjects did in relation to the standardization of the SPM compared with how well they did in relation to the DAP standardization. Mean

performance of groups fell into different ranges of intelligence (i.e. average, below average, retarded etc.) when categorized in terms of the two tests. For example the mean of all eight year olds tested falls into the average range of functioning on the DAP while it falls into the dull-average range on the SPM. When scored on the DAP the eight year old mean falls into the dull-average range while these same children fall into the borderline category on the SPM. Thus the test that one uses has very important implications. One may well intervene differently if a child is regarded as 'dull-average or as 'borderline!'

On every subgroup measured, relative to the standardized norms of each test, the subjects scored higher on the DAP than on the SPM. These differences reach dire proportions when it is seen that rural twelve year olds actually fall into the 'mildly retarded' level of functioning on the SPM but only into the 'borderline' category on the DAP.

7.7 Conclusion

Using the theory proposed in this thesis, one may conclude from these results that the cognitions needed to do well on the DAP have been more developed in the populations used (in rural and urban, in Venda and in

Xhosa, in boys and in girls, in eight year olds and in twelve year olds) than the cognitions needed to do well on the SPM. But why should this be the case?

Firstly it must be said that the two tests cannot be measuring the same thing. 'g' cannot be the factor in both tests. A possible explanation is that though the SPM is measuring 'g', the DAP is measuring exposure to representational art. This seems unlikely in that this thesis has not confirmed the 'representational art' theory (pg 160). The hypothesis proposed by this thesis for the difference is that the SPM is measuring 'something' which involves nothing or very little which derives from 'practical activity' while the DAP involves much more related to 'practical cognitive style.'

'Practical' activity and thought has primarily been associated with 'rural' populations in this thesis; however, as has been mentioned (pg 153 a) the activity of 'working class' people in the urban areas is largely practical even though it may be 'less' practical than the rural population. Even though the DAP claims to measure cognitively conceptual abilities in terms of perception, abstraction and generalization, when children are doing the test, it is not uncommon for them to look at and then draw the people around them (often the tester), count their own

fingers or engage in other such practical, as opposed to purely conceptual, modalities. This does not imply that no abstraction or conceptualization takes place, but rather a combination of conceptual and practical thought may be used as opposed to the purely conceptual SPM.

If DAP scores indeed rely on (or at least can rely on) more 'practical' cognitions than is suggested in the manual, then this could explain the discrepancy in favour of the DAP over the SPM in all the groups. This explanation also accounts for the greater variance between rural and urban groups on the SPM than on the DAP. (The SPM reaching significance [F = 7,26; P < .Ø1] while the DAP did not [F = Ø,Ø9; P < Ø1]). The greater conceptual ability afforded by greater contact with urbanization has been used to explain urban/rural variance on the SPM and this still holds. But if 'conceptual/abstract' type of cognition is needed, but is not crucial to DAP performance, then this would explain the fact that there is some variance between rural and urban children on the DAP although the difference does not reach significance.

****

CHAPTER VIII

CONCLUSION

Lawler (1978) has suggested that

> a scientific study of 'intelligence' would not only examine differences in the execution of a certain skill, but would attempt to explain the genesis of that skill itself. By investigating its causes, its historical origins, internal mechanism and later development, a scientific study would examine an historical, changing and developing phenomena
> (Lawler 1978, pg 34).

This study has aimed to get away from a static positivist conception of intelligence and the measurement of variables contributing to a capacity, by adhering to Lawler's call to explain its genesis. This genesis has been explained in terms of a dialectical process of cognitive acquisition which takes place within a socio-historical framework.

The two broad aims of this study i.e. "to investigate whether differences in socio-historical conditions, and thus differences in activities, affects performance on 'culture-fair' intelligence tests" and "to investigate whether different so-called 'culture-fair' tests are affected to different extents within the same socio-historical framework" were both affirmed by the results of this study. The cognitive

'style' which develops through the necessity of cultural activity is sufficiently different to affect performance on IQ tests. And secondly, the cognitive 'style' to do well on one IQ tests does not necessarily equip one to do well on another IQ test, even though this is true of a white western population.

These two findings have important consequences for the continued use of the IQ test in South Africa. In the first place any hope that a 'culture-fair' test could ever be possible is dismissed. Certainly results of this research show that neither the DAP nor the SPM are culture-fair. They are not only culture laden between whites and blacks but between different groups of blacks.

Secondly if one is satisfied with accepting a 'culture-reduced' test, then one must accept that some groups of people will always be 'deficient' in their performance. Though various ways around this have been suggested, none is possible. For example it has been suggested that norms should be devised for different groups. There are two main drawbacks for this. Firstly, if one wants to use test scores for comparisons between people, for example for admission into a school, two scores from different standardizations become meaningless. And secondly

test designers would have the impossible task of deciding how 'groups' would be chosen for standardization. In South Africa, as ethnic groups appear to differ in IQ performance, there would have to be separate standardizations for <u>each</u> ethnic group. Furthermore, there would have to be standardization between rural and urban for each group, until the whole idea becomes totally unwieldly. And then the question may arise as to what norms to use when a person's mother is a Swazi and father a Tswana?

A second attempt to get minority groups away from the lower reaches of a white standardization sample would be to have norms which cover the population as a whole, not just a white western sample. This however, would either change the test items to such an extent that predictive validity (e.g. in terms of scholastic achievement) would fall drastically. Or, if one kept test items, but changed the 'average' scores and standard deviations, then one would still have the same privileged minority gaining advantage not from having an 'average' IQ, but from having a 'superior' or 'very superior' IQ. There is no way around the problem.