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A study of pictorial perception among Bantu and White primary school children in South Africa

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whole of this study might concede that the responses of the groups to the pictures in Series A are of considerable interest -- if only psychologically. The difficulty is, as is apparent in Chapter 19, that the interpretation of the results is far from obvious. But, having accepted the form of the pictures for at least their psychological interest, we must attribute the difficulty of interpretation of the results to the testing procedure. Once again it can be said that the questions asked failed to produce answers which clearly revealed the children's true reactions to the pictures. Further questioning was obviously required.

The investigator would claim that other defects in the test material are minor. Thus, in the case of the pictures in Series F which deal with shadows on a man's face, there could be some point in using the picture of a Bantu face for the testing of the Bantu children. This is recommended for any future testing of this kind. Also, in the case of Series C, which deals with Picture Position Preferences, it could be argued that the two upper positions were rejected in many cases because the drawing involved objects (in particular, a man) and, for the upper positions, they might have been seen by some of the children as floating in the air. This could be avoided by using some abstract design instead of the drawing of a group of objects.

The view might be expressed that the study could have used other kinds of Western pictorial material. This would apply to any investigation of this kind. The investigator would contend that considerable thought was given to the selection of the pictorial material used in this research project and that the material

selected provided a very good coverage of the conventions basic to Western pictorial art.

APPENDICES

APPENDIX I

1. THE TEST QUESTIONNAIRE

(English Version)

NAME .....

STD. ..... SCHOOL .....

DATE .....

S E R I [illegible] A

Pict[illegible]

(a) [illegible] see? ..... (a) .....

(b) [illegible] nearest to you? (b)

3 4
1 2

(c) Why? ..... (c) .....

(d) Which is farthest from you? (d)

3 4
1 2

(e) Why? ..... (e) .....

Picture A-2

(a) What do you see? ..... (a) .....

(b) Which is the nearest to you? (b)

4
2 3
1

(c) Why? ..... (c) .....

(d) Which is farthest from you? (d)

4
2 3
1

(e) Why? ..... (e) .....

Picture A-3

(a) What do you see? ..... (a) .....

(b) Which is the nearest to you? (b)

4
3
2
1

(c) Why? ..... (c) .....

(d) Which is farthest from you? (d)

4
3
2
1

(e) Why? ..... (e) .....

Picture A-4

(a) What do you see? ..... (a) .....

(b) Which is the nearest to you? (b)



(c) Why? ..... (c) .....

(d) Which is farthest from you? (d)



(e) Why? ..... (e) .....

Picture A-5

(a) What do you see? ..... (a) .....

(b) Which is the nearest to you? (b)



(c) Why? ..... (c) .....

(d) Which is farthest from you? (d)



(e) Why? ..... (e) .....

Picture A-6

(a) Which is the nearest to you? (a) .....4.....



Picture A-7

(a) Which is the nearest to you? (a) .....1.....



Picture A-8

(a) Which is the nearest to you? (a) .....1.....



Picture A-9

(a) Which is the nearest to you? (a) .....4.....



S E R I E S B

Picture B-3

(a) What do you see? ..... (a) .....

(b) Which house is nearest to the man? ..... (b) L R

(c) Why? ..... (c) .....

(d) Can the man see the other house? ..... (d) Yes No

Why? .....

Why not? .....

(e) What is this? (horizon) .... (e) .....

(f) Which hill is nearest to the man? ..... (f) L R

(g) How do you know? ..... (g) .....

Picture B-5

(a) What do you see? ..... (a) .....

(b) Which house is nearest to the man? ..... (b) L R

(c) Why? ..... (c) .....

(d) Can the man see the other house? ..... (d) Yes No

Why? .....

Why not? .....

(e) What is this? (horizon) .... (e) .....

(f) Which hill is nearest to the man? ..... (f) L R

(g) How do you know? ..... (g) .....

Picture B-4

(a) What do you see? ..... (a) .....

(b) Which house is nearest to the man? ..... (b) L R

(c) Why? ..... (c) .....

(d) Can the man see the other house? ..... (d) Yes No

Why? .....

Why not? .....

(e) What is this? (horizon) .... (e) .....

(f) Which hill is nearest to the man? ..... (f) L R

(g) How do you know? ..... (g) .....

Picture B-1

(a) What do you see? ..... (a) .....

(b) Which house is nearest to the man? ..... (b) L R

(c) Why? ..... (c) .....

(d) Can the man see the other house? ..... (d) Yes No

Why? .....

Why not? .....

(e) What is this? (horizon) .... (e) .....

(f) Which hill is nearest to the man? ..... (f) L R

(g) How do you know? ..... (g) .....

Picture B-6

(a) What do you see? ..... (a) .....

(b) Which house is nearest to the man? ..... (b) L R

(c) Why? ..... (c) .....

(d) Can the man see the other house? ..... (d) Yes No

Why? .....

Why not? .....

(e) What is this? (horizon) .... (e) .....

(f) Which hill is nearest to the man? ..... (f) L R

(g) How do you know? ..... (g) .....

Picture B-2

(a) What do you see? ..... (a) .....

(b) Which house is nearest to the man? ..... (b) L R

(c) Why? ..... (c) .....

(d) Can the man see the other house? ..... (d) Yes No

Why? .....

Why not? .....

(e) What is this? (horizon) .... (e) ....

(f) Which hill is nearest to the man? ..... (f) L R

(g) How do you know? ..... (g) ....

SERIES C

Which picture do you like best?

	Picture	
1.	2 or 3	1. No. Why? .....
2.	3 or 5	2. No. Why? .....
3.	4 or 5	3. No. Why? .....
4.	3 or 4	4. No. Why? .....
5.	1 or 5	5. No. Why? .....
6.	1 or 2	6. No. Why? .....
7.	2 or 4	7. No. Why? .....
8.	1 or 4	8. No. Why? .....
9.	2 or 5	9. No. Why? .....
10.	1 or 3	10. No. Why? .....

S E R I E S D

Picture D-1

(a) What do you see? ..... (a) .....

(b) Does the child have hands? . (b) Yes No

Where are they? .....

Picture D-2

(a) What do you see? ..... (a) .....

(b) Does the dog have a body? .. (b) Yes No

Where is it? .....

Picture D-3

(a) What do you see? .... (a) .....

(b) What is this? (tail) ..... (b) .....

(c) What is this? (dog's foot) . (c) ....

(d) Why has the artist not drawn all the boy? (point to boy) (d) .....

Picture D-4

(a) What do you see? .... (a) .....

(b) What is this? (leaves) ..... (b) .....

(c) What is this? (house) ..... (c) .....

(d) Is it a finished house? .... (d) Yes No

(e) How do you know? ..... (e) .....

(f) Why has the artist not drawn all the house? ..... (f) .....

S E R I E S E

Picture E-1

(a) What do you see? ..... (a) .....

(b) What is this? (black shadow) (b) .....

(c) How do you know? ..... (c) .....

Picture E-2

(a) What do you see? ..... (a) .....

(b) What is this? (sun) ..... (b) .....

(c) What is this? (house) ..... (c) .....

(d) What is this? (shadow of house) ..... (d) .....

(e) What is this? (tree) ..... (e) .....

(f) What is this? (shadow of tree) (f) .....

(g) What is this? (shadow of man) (g) .....

Picture E-3

(a) What do you see? ..... (a) .....

(b) What is this? (shadow in fold of the hat) ..... (b) .....

(c) Why is it shown like that? . (c) .....

(d) What is this? (cheek) ..... (d) .....

(e) Why is it shown like that? . (e) .....

Picture E-4

(a) What do you see? ..... (a) .....

(b) What is this? (forehead area of man) ..... (b) .....

(c) Why is it shown like that? . (c) .....

(d) Does the man have eyebrows? (d) Yes No

(e) What is this? (chin mark) .. (e) .....

(f) What does it show? ..... (f) .....

S E R I E S F

Picture F-1

(a) What is this? (boy) ..... (a) .....

(b) What is the person doing? .. (b) .....

(c) How do you know? ..... (c) .....

Picture F-2

(a) What is this? (dog) ..... (a) .....

(b) How do you know? ..... (b) .....

(c) What is the animal (dog) doing? ..... (c) .....

Which picture do you like best?

	Picture:	
1.	2 or 4	1. No. Why? .....
2.	1 or 2	2. No. Why? .....
3.	3 or 4	3. No. Why? .....
4.	1 or 3	4. No. Why? .....
5.	1 or 4	5. No. Why? .....
6.	2 or 3	6. No. Why? .....

SERIES G

Picture G-1

(a) What do you see? ..... (a) .....

(b) If you were going to redraw this picture, would you draw it the same or differently? ..... (b) .....

(c) If differently, what changes would you make? ..... (c) .....

(d) What is this? (ankle) ..... (d) .....

(e) Do you like the picture? ... (e) Yes No

(f) Why not? ..... (f) .....

Picture G-2

(a) What do you see? ..... (a) .....

(b) If you were going to redraw this picture, would you draw it the same or differently? ..... (b) .....

(c) If differently, what changes would you make? ..... (c) .....

(d) What is the man doing? ..... (d) .....

(e) Do you like the picture? ... (e) Yes No

(f) Why not? ..... (f) .....

SERIES H

Picture H-1

(a) What do you see? ..... (a) .....

(b) What is this? (fruit falling on left) ..... (b) .....

(c) Where is it? ..... (c) .....

(d) How do you know? ..... (d) .....

(e) What is this? (fruit falling on right of tree) . (e) .....

(f) Where is it? ..... (f) .....

(g) How do you know? ..... (g) .....

(h) What are these? (motion marks above fruit) ..... (h) .....

(i) Why are they there? ..... (i) .....

Picture H-2

(a) What do you see? ..... (a) .....

(b) What is this? (circular motion mark around tail).. (b) .....

(c) What is this? (dust and speed lines) ..... (c) .....

(d) What does it show? ..... (d) .....

(e) What are these? (motion lines behind front feet) . (e) .....

(f) What do they show? ..... (f) .....

Picture H-3

(a) What do you see? ..... (a) .....

(b) What is the bird doing? .... (b) .....

(c) What is this? (path of flight) ..... (c) .....

(d) What does it show? ..... (d) .....

Picture H-4

(a) What do you see? ..... (a) .....

(b) What is this? (motion lines around neck) ..... (b) .....

(c) How many heads does the boy have? ..... (c) .....

(d) What do these heads show? .. (d) .....

(e) Why do you say so? ..... (e) .....

Picture H-5

(a) What do you see? ..... (a) .....

(b) What are these? (marks around word) ..... (b) .....

(c) What do these lines show? (impact) ..... (c) .....

(d) What is this? (path of motion of hand) ..... (d) .....

(e) What do these lines show? (path of motion of hand) . (e) .....

(f) What is this? (man surrounded by vibration lines) .. (f) .....

(g) Why is he shown like this? (man surrounded by vibration lines) ..... (g) .....

(h) What do these lines show? (man surrounded by vibration lines) ..... (h) .....

(i) What is this? (the word "smack") ..... (i) ....

(j) Why do they put this word in this picture? ..... (j) ....

S E R I E S I

Picture I-1

(a) What do you see? ..... (a) .....

Pointing to picture one the tester says: "Her name is Mary". Pointing to picture two the tester asks:

(b) What is her name? ..... (b) .....

(c) How do you know? ..... (c) .....

Pointing to picture three, the tester asks:

(a) What is her name? ..... (a) .....

(b) How do you know? ..... (b) .....

Picture I-2

(a) What do you see? ..... (a) .....

Pointing to picture one, the tester says: "His name is Henry". Then pointing to picture three, the tester asks:

(b) What is his name? ..... (b) .....

(c) How do you know? ..... (c) .....

Pointing to picture five, the tester asks:

(a) What is his name? ..... (a) .....

(b) How do you know? ..... (b) .....

Picture I-3

(a) What do you see? ..... (a) .. ..

Pointing to picture one, the tester says: "His name is Bill". Pointing to picture two, the tester asks:

(b) What is his name? ..... (b) .....

(c) How do you know? ..... (c) .....

Pointing to picture four, the tester asks:

(d) What is his name? ..... (d) .....

(e) How do you know? ..... (e) .....

S E R I E S J

Picture J-1

(a) What do you see? ..... (a) .....

(b) What is this? (bicycle) .... (b) .....

(c) Why has the artist not drawn all of it (the bicycle)? . (c) .....

(d) Can this boy touch the bike? (boy in lower right hand corner) ..... (d) Yes No .

(e) How do you know? .... (e) .. ..

(f) What is this? (shadow under boy in centre) ..... (f) .....

(g) Why is the girl's face black? (girl in foreground) ..... (g) .....

(h) What is this? (reflection in window) ..... (h) .....

(i) What is this? (shadow of bicycle on house) ..... (i) .....

(j) Is the cart broken? ..... (j) Yes No

(k) Why yes? ..... (k) .....

(l) Is the man touching his wife's arm? ..... (l) Yes No

(m) How do you know? ..... (m) .....

(n) Where is the little boy's (left) hand? (small boy walking with girl) ..... (n) .....

2. THE BIOGRAPHICAL QUESTIONNAIRE

(English Version)

SAMPLE .....
SCHOOL .....
NO .....DATE.....
TESTER .....

BACKGROUND DATA

1. Name ....
2. Standard of Education .....
3. Age .....
4. Sex .....
5. No. in Class .....
6. Position in Class .....
7. Right Handed .....
8. Left Handed .....
9. Race/Tribe .....
10. Clan/Chief .....
11. Religion .....
12. Do you read books with pictures other than your school books? Yes No
13. If so, how many per month? .....
14. Does anyone in your home subscribe to a magazine or newspaper that has pictures? Yes No
15. Do you look at them? Yes No
16. Do you look at magazines and newspapers with pictures other than those subscribed to in your home? Yes No
17. If so, how many per week? .....
18. Do you see filmstrips? Yes No
19. If so, how many per year? .....
20. Do you attend bioscopes? Yes No
21. If so, how many monthly? ..... or yearly? .....

22. Who has explained pictures to you?

Teacher	Yes	No
Guardian/Parent	Yes	No
Classmates	Yes	No
Others - Who?	Yes	No
Missionaries	Yes	No

23. HOME BACKGROUND

Guardian in Household

(a) Male — (b) Female

Occupation ..... Occupation .....

Education ..... Education .....

24. MOBILITY OF HOUSEHOLD

Have you spent all your life in the city? Yes No

If not, now long in rural area? .....

25. Have you spent all your life in the rural area? Yes No

If not, how long in urban area? .....

3. THE EDUCATIONAL QUESTIONNAIRE

PART I. (To be filled in by the teacher)

VISUAL MEDIA EXPOSURE IN SCHOOL

Type	Used	How Often Used			
(a) Textbooks with pictures	Yes No	Daily..	Weekly..	Monthly..	During the year..
(b) Picture posters	Yes No	Daily..	Weekly..	Monthly..	During the year..
(c) Blackboard drawings	Yes No	Daily..	Weekly..	Monthly..	During the year..
(d) Flannel-graph	Yes No	Daily..	Weekly..	Monthly..	During the year..
(e) Maps	Yes No	Daily..	Weekly..	Monthly..	During the year..
(f) Diagrams	Yes No	Daily..	Weekly..	Monthly..	During the year..
(g) Slides	Yes No	Daily..	Weekly..	Monthly..	During the year..
(h) Films	Yes No	Daily..	Weekly..	Monthly..	During the year..

CHILD'S ART TRAINING IN SCHOOL

Type .....

Times per week .....

EDUCATION OF TEACHER/TEACHERS OF THIS PUPIL

Any art training?..... Yes No

How much? .....

What type? .....

Any course on use of visual aids in school? Yes No

How much? .....

What type? ....

(In order to obtain more detailed information on the pupils' art training and the education of the teachers, Part II of the Educational Questionnaire was submitted for completion by all teachers of the children tested.)

PART II.

1. What training have you had in the use of teaching aids? (Please mark with a tick.)

Lower Primary Course ____
Higher Primary Course ____
Other Teacher Training (Please list) _____
_____

2. Does your class do handwork and crafts? Yes ___
No ___

3. If yes, what does your handwork and crafts class do? (Please mark with a tick those things which your class does.)

	Boys	Girls
Drawing and/or painting pictures	_____	_____
Modelling in clay or other material	_____	_____
Basket work and/or weaving	_____	_____
Sewing	_____	_____
Paper cutting	_____	_____
Other (Please list)	_____	_____
	_____	_____

4. How often does your handwork and crafts class draw or paint pictures? (Please mark with a tick.)

Not at all ____
Daily ____
Twice a week ____
Once weekly ____
If other time, please list how often ____

How many weeks each year? ____

5. In one handwork and crafts class period, how much time is spent by your students in drawing and painting pictures? (Please mark with a tick.)

One hour ____
One and a half hours ____
Two hours ____
Other (Please list) _____

6. Have you had training in drawing or painting pictures?

Yes _____ No _____

7. If yes, how much training in drawing or painting pictures?

Total time: How many years _____

How many months _____

8. Where did you receive this training?

_____

_____

9. Does your class draw pictures in their exercise books as part of their lesson?

Yes _____ No _____

APPENDIX II

THE PORTABLE VIEW WINDOW*

Instructions on How to Make One

The stand consists of a square frame, the inside measurements of which are eight inches high by seven inches wide and the outside measurements are twelve inches high by eleven inches wide. The joints for the frame are square cut and nailed. A piece of clear transparent celluloid or plastic sheeting $\frac{1}{8}$" thick measuring eleven inches by twelve inches is screwed on the frame to make a window. The shortest side of the frame is nailed to a flat base board so as to be flush with the edge. This is done so as not to allow the base board to project in front of the view window and obstruct the view. The base board is fixed to the frame so that the frame will stand at a right angle.

At the front end of the base board is nailed a three inch board also at right angles but projecting downwards. This serves as a hook to secure the view window to the edge of the table so that it will not slide forward and remain in a vertical viewing position.

On each side of the book board are screwed blocks of wood which serve as adjustable locks to lock the view window to the table. On either side of both base board and frame are support brackets for extra strength.

The whole unit is made with a saw, screw driver and a hammer - no glue is used at all. $\frac{3}{4}$" thick fruit box and packing case wood is ideal.

This unit is of extremely simple construction and requires no skill in making.

See page 234 which shows the portable view window in use.

* A detailed drawing of the construction of the portable view window is found in the pocket on the inside back cover.

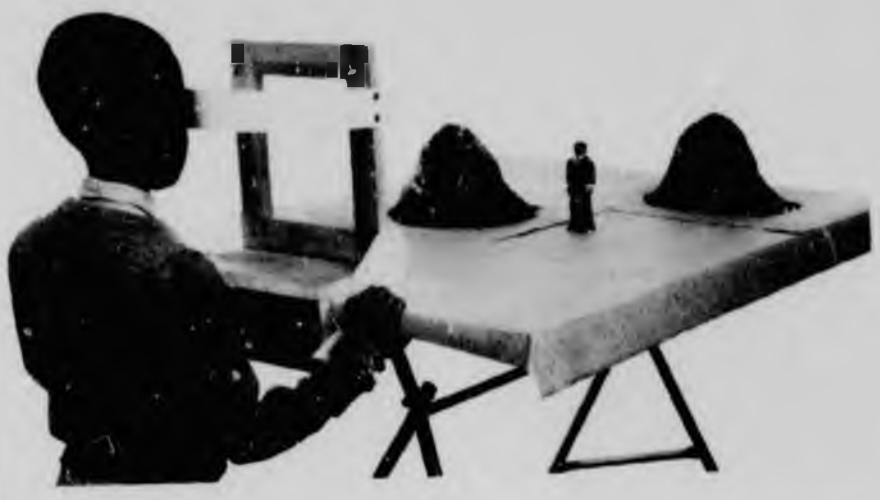


Fig. 15. Through the portable view window a Bantu child views the figure of a man overlapping a hill. Note that the hills are on squares of paper and can be shifted to various positions.

Fig. 16. A teacher explains to a pupil how three-dimensional objects appear on a two-dimensional plane.



Fig. 17. The drawing of the man overlapping the hill as it appeared on the portable view window.

APPENDIX III

THE CONSTRUCTION AND USE OF THE TESTING EQUIPMENT *

1. THE VIEW BOX (See page 241)

A. Data for Maintenance of the View Box

1. Wire used: for electrical wire - automobile wiring 0-15 amps
2. Total amount of wire per box - 10 feet
3. Globes: National 12 volt 15 candle power (CP)
4. Battery: Six volt - 120 amp HR
5. Light value: From each globe with 0 ASA 3
6. Light used: Diffused (all external light excluded)
7. To gain access to inside of testing device: loosen the two hold-down screws and remove the top by tilting it backwards and pulling it out. To replace the top, reverse the procedure.
8. During transport of the view box, clip the battery alligator clips to the sides of the battery stand platform, remove the battery and carry it separately.
9. In each testing area it is important to inform people of mechanical ability about the testing equipment so that immediate repairs can be made should any difficulty be encountered. Also, a wiring diagram should be affixed on the side of the view box to assist in the maintenance of the electrical system and a repair kit of parts and tools should be provided with each view box.

B. Operation Procedure of the View Box in Testing *

(a) Preparation of the View Box for Testing

The following steps should be carried out before the testing schedule begins.

---

* Detailed drawings of the construction of the testing equipment are found in the pocket on the inside back cover.

* The operation procedures of both the view box and view board are explained in the second person in order to facilitate the understanding and replication of the experiments by the reader. The procedures presented were those actually used in this research.

1. Position a <u>fully charged</u> battery in the holding frame provided at the base of the testing device.
2. Next, connect the two wires leading from the two interior light boxed shades to their respective battery poles. This is done by means of the alligator clips at the end of each wire.
3. Switch on the light using the switch provided on the right hand side of the view box stand.
4. Next, open the view slot by pulling up the lever located at the front and top of the view box. The view slot is completely open when the mark on the lever can be seen. Then look carefully through the view slot to the far left and far right to make certain that both lights are functioning.

   One other method of checking the lights is to remove the top of the view box by unscrewing the two holding screws, observe the lights, and then reposition the top into the holding slots provided and screw it back into place.
5. Make certain that all test pictures are clean, in good condition and arranged in the proper sequence for testing. They must be out of the child's sight but within easy reach to insert into the slot at the top of the view box. Some testers have preferred to arrange their test pictures on top of the view box.

(b) <u>Use of the View Box During Testing</u>

1. Before the child enters the testing room,
   (a) Place a tissue at the nose recess to keep the nose and mouth areas on the front surface free from contamination. A small piece of scotch tape will hold it in place.
   (b) Make certain that the view box lights are on and ...
   (c) that the view slot is completely closed. (The view slot is completely closed when the notch on the right side of the view slot lever is completely out of sight.)
2. Seat the child comfortably in front of the view box in such a way that the child can insert his nose into the nose recess and be able to view the test pictures through the view slot in a

straight forward manner. (See page 242). The child's face should be flat against the front surface of the view box.

3. Inform the child that he is helping you by telling you what he sees in each picture and giving his reasons for each response. Impress upon the child that every answer he gives is the right answer for him.
4. Next, insert the test picture into the slot provided at the back of the view box. Push the picture down as far as it will go. (The test pictures must be carefully constructed and mounted so as to ensure that the datum line (horizontal axis) of each picture coincides with the datum line (horizontal axis) of the picture frame.)
5. Open the view slot by pulling the lever up until the mark (notch) is visible. Make certain that the child has no difficulty in seeing the picture.
6. Administer the questionnaire as it applies to the picture tested and record answers.
7. Close the view slot.
8. The same procedure is then repeated in the testing of each of the remaining pictures of the series. Furthermore, if there is little delay between the testing of candidates, the view box lights should be left on as this conserves battery power.
9. When you have completed the testing of the child, kindly request him to return to his class but first to inform the next test candidate waiting outside to please enter the testing room.

II. THE VIEW BOARD (See page 243).

A. Additional Details of Construction

The base of the view board stand is a tripod which fastens on to the main supporting tube by means of a set screw.

The tripod base is made of three pieces of $1\frac{1}{8}$ inches (diameter) tubular steel welded to an $\frac{1}{8}$ inch thick

steel cylinder 2 inches high and 1⅝ inches in diameter. The centre of the tripod base stands 2 inches above the ground level.

The main supporting tube was made of 1½ inches (diameter) tubular steel 2 feet in height. A set screw is positioned at the top of the main supporting tube to regulate the length of the extension tube which telescopes into the main supporting tube. This makes it possible to fix the height of the view frame as required.

The extension tube which is inserted into the main supporting tube measures 2 feet in length and is 1⅜ inches in diameter.

At the top of this extension tube is an attachment with a set screw which regulates the tilt of the viewing board. This attachment is a small piece of flat steel at the end of which is welded a metal sleeve 1⅛ inches in diameter by 1¼ inches in length. This sleeve has another set screw which holds in position a steel rod which is affixed to the back of the viewing frame. This latter device allows the viewing frame to be moved closer to or further from the viewer without moving the base of the stand.

The steel rod fixed to the back of the view frame is a solid steel piece ¾ inch in diameter by 5½ inches in length. This steel rod is attached in a centre position by means of a metal disc 4 inches in diameter and ⅛ inch thick and secured to the board by four screws placed equidistantly in the four quadrants of the disc.

The view frame is made of ⅛ inch thick three-ply wood painted black so as to focus the attention of the child on the test pictures. The slot at the top of the frame is ⅛ inch wide by 11¾ inches long. Along the inside front top of the frame is a long strip of felt which is

secured by rubber cement. This ensures the protection of the surface of the test pictures as they are inserted into the slot for display in the view frame.

B. Operation Procedure of the View Board in Testing

(a) The following steps should be carried out before the actual testing begins.

1. Make certain that all adjustments of height of the view frame and its distance from the candidates eyes can be made quickly and easily. It is important to keep the supporting tube extension and all locking screws oiled.
2. Arrange the test pictures in the proper sequence for testing on a table within easy reach but out of sight of the child. The pictures can be placed face up but must be covered with a sheet of paper until the child is seated for testing. Some testers prefer to place the pictures face down having them numbered on the back in the proper sequence. However, make certain that the table surface is clean. It is best to cover the table surface with a clean sheet of paper or cloth.
3. Place your chair in such a position that the child cannot read your questionnaire.
4. Make certain there are no other pictorial or other distraction in view of the child.

(b) Use of the View Board During Testing

1. Seat the child in a comfortable position facing the view frame. Put the child at ease. Tell him that he is helping you by telling you what he sees in each picture and his reasons for his choices and identification of pictorial detail. Impress upon the child that every answer he gives is the right answer for him.
2. Have the child extend his arms and grasp the left and right sides of the view frame. Tell him to imagine he is looking at a book of pictures.

3. Next, adjust the height and reading angle of the view frame to suit the requirements of the child.
4. Insert the first test picture into the view frame slot at the top of the frame. Before questionning the child, make certain that the picture or pictures (if paired comparisons are being made) are in their proper position and in full view.
5. Next, administer the questionnaire as it applies to the picture tested and record answers.
6. Remove the test picture and continue with the next picture in the sequence.
7. When you have completed the testing of the child, kindly request him to return to his class but first to inform the next test candidate waiting outside to please enter the testing room.



Fig. 18. An inside view of the box with a picture inserted in the back frame. The top has been removed.



Fig. 19. Left—A rear view showing the light switch and installation of battery.



Fig. 20. Right—A front view showing the eye slot open. The triangular shape is the nose aperature.



Fig. 21. This photograph shows a Bantu child being tested with the use of the view box. A protective tissue is placed over the nose and mouth area for each child.



Fig. 22. This photograph shows a Bantu child being tested with the use of the view board.



Fig. 23. Front and rear views of the view board mounted on the adjustable stand. A picture has been inserted into the view frame.

Fig. 24.

CHEMICAL BLEACH-OUT PROCESS FOR MAKING LINE DRAWINGS FROM PHOTOGRAPHS [1]

This is a method for making drawings by going over a photographic image in ink or pencil and afterwards removing the image by chemical bleaching. The photograph should be a fairly pale print of a clearly outlined subject. The artist first draws over the outline of the subject in the photograph in either pencil or waterproof ink.

Two baths are used in the bleach-out process. The first is the bleacher. It onsists of flake-iodine dissolved in a solution of potassium-iodide about ½ oz. of each to 5 ozs. of water.

The second bath is a normal fixing bath for prints. It may be acid or plain hypo.

The print is first immersed in the bleacher until the photo image disappears. It is then rinsed in running water and transferred to the fixing bath. After some time the slight discolouration clears and leeves the drawing on a white background. The paper is then washed and dried.

1. Information on this chemical bleach-out process is supplied by Sam Kieser, Commercial Photographer, Johannesburg, South Africa.

APPENDIX V

COMPUTATIONS INVOLVED IN STATISTICAL PROCEDURES I AND III

(Vide Chap.5)

Procedure I: Analysis of Variance of Composite Scores - Testing of Group and Sex Differences

As stated in Chapter 5, this procedure will be illustrated by reproducing the computation involved in the analysis of variance of the composite scores for Series J.

The basic data are 50 school means - the mean composite scores for boys and girls in each of the five schools for each ethnic group sample. In order to simplify the arithmetic, we shall use not the actual means but 50 coded means where

$$\text{Coded Mean} = 10\,(\text{True Mean} - 4),$$

the true means being taken to one decimal place.

The coded means are as follows:-

Group	Schools	Boys	Girls
ZR	1	2	2
	2	9	7
	3	2	0
	4	4	7
	5	5	5
TR	6	12	5
	7	8	11
	8	15	7
	9	12	7
	10	24	3
ZU	11	19	14
	12	24	16
	13	20	15
	14	18	14
	15	22	13
TU	16	20	18
	17	16	12
	18	24	13
	19	17	4
	20	15	14
E	21	26	29
	22	23	26
	23	27	18
	24	26	24
	25	28	24

The required sums of squares are as follows (degrees of freedom are given in brackets):-

(1) Total sum of squares (49 d.f.)

$$= \sum X^2 - \frac{GT^2}{50}$$

where X represents any one mean and GT is the grand total of the 50 means.

$$= 13,832 - 10,541.52$$

$$= 3,290.48.$$

(2) Between schools (24 d.f.)

$$= \frac{\sum T^2_{Sch}}{2} - \frac{GT^2}{50}$$

where T_{Sch} is the sum of the means of boys and girls for any one of the 25 schools.

$$= \frac{26,418}{2} - 10,541.52$$

$$= 13,209 - 10,541.52$$

$$= 2,667.48$$

(3) Within schools (25 d.f.)

$$= (1) - (2)$$

$$= 3,290.48 - 2,667.48$$

$$= 623.00$$

(4) Sex - Groups (9 d.f.)

$$= \frac{\sum T^2_{SG}}{5} - \frac{GT^2}{50}$$

where T_{SG} represents the sum of means for boys or girls for each of the ethnic groups

$$= \frac{66,574}{5} - 10,541.52$$

$$= 2,773.28$$

(5) Sex (1 d.f.)

$$= \frac{T^2_{boys} + T^2_{girls}}{25} - \frac{GT^2}{50}$$

where T_{boys} and T_{girls} are the sum of means for boys and girls.

$$= 10,783.52 - 10,541.52$$

$$= 242.00$$

(6) Groups (4 d.f.)

$$= \frac{\sum T_G^2}{10} - \frac{GT^2}{50}$$

where T_G is the sum of means for any one group.

$$= 12,970 - 10,541.52$$

$$= 2,428.48$$

(7) Interaction, Sex x Groups (4 d.f.)

$$= (4) - (5) - (6)$$

$$= 102.80$$

(8) Residual between schools (20 d.f.)

$$= (2) - (6)$$

$$= 239.00$$

(9) Residual within schools (20 d.f.)

$$= (3) - (5) - (7)$$

$$= 278.20$$

Partitioning of sums of squares between groups:-

(10) European v Bantu (1 d.f.)

$$= \frac{T_E^2}{10} + \frac{T_B^2}{40} - \frac{GT^2}{50}$$

where T_E is the sum of means of the European group (10 means)

and T_B is the sum of means for the Bantu (40 means)

$$= \frac{251^2}{10} + \frac{475^2}{40} - \frac{GT^2}{50}$$

$$= 6,300.1 + 5,640.625 - 10,541.52$$

$$= 1,399.205$$

(11) Bantu groups (3 d.f.)

= (6) - (10)

= 2,428.48 - 1,399.205

= 1,029.275

(12) Urban v Rural

$$= \frac{T_R^2 + T_U^2}{20} - \frac{T_B^2}{40}$$

where T_R, T_U are the sums of means for Rural and Urban Bantu respectively.

= 6,459.65 - 5,640.625

= 819.025

(13) Zulu v Tsonga (1 d.f.)

$$\frac{T_Z^2}{20} - \frac{T_T^2}{40}$$

where T_Z, T_T are the sums of means for combined Zulu and Tsonga respectively.

= 5,678.65 - 5,640.625

= 38.025

(14) Interaction (12) x (13) (1 d.f.)

= (11) - (12) - (13)

= 172.225

Table giving complete analysis:-

Variance		d.f.	S.S.	Variance
Groups	(a) European v Bantu	1	1,399.21	1,399.21
	(b) Urban Bantu v Rural Bantu	1	819.02	819.02
	(c) Zulu v Tsonga	1	38.03	38.03
	(d) (b) x (c)	1	172.22	172.22
Sex		1	242.00	242.00
Sex x Groups		4	102.80	25.70
Residual	between schools	20	239.00	11.95
	within schools	20	278.20	13.91

Note:- In the text the variances given are the variances for the original means - not the coded means.

Procedure III: Analysis of Variance of Composite Scores for One Ethnic Group to Test Variation of Score with Standard.

As stated in Chapter 5, this procedure can also be described as a regression analysis in that it provides a test of the regression of score on standard. We shall illustrate the procedure by reproducing the computation involved in the regression analysis of the Preference Scores of the European group in respect of the Centre Position (Series C).

The basic data are 25 mean scores - the mean standard scores (boys and girls combined) for each of the 5 standards in each of the 5 schools for the group.

Once again we shall use coded means where

Coded Mean = 100 (True Mean - 1.81)

The coded means are as follows:-

	Standards				
	I	II	III	IV	V
1	32	81	144	69	109
2	25	50	62	114	149
Schools 3	69	81	119	84	109
4	63	88	107	144	150
5	69	0	57	175	157
Total	258	300	489	586	674

The required sums of squares are as follows:-

(1) Total sum of squares (24 d.f.)

$$= \sum X^2 - \frac{GT^2}{25}$$

$$= 261,231 - 212,889.96$$

$$= 48,341.04$$

(2) Sum of squares between Standards (4 d.f.)

$$= \frac{\sum T_{St}^2}{5} - \frac{GT^2}{25}$$

where T_{St} is the total for any one of the five standards.

$$= 238,671.4 - 212,889.96$$

$$= 25,781.44$$

(3) Sum of squares between Schools (4 d.f.)

$$= \frac{\sum T_{Sch}^2}{5} - \frac{GT^2}{25}$$

$$= 215,427.4 - 212,889.96$$

$$= 2,537.44$$

(4) Standards x Schools (16 d.f.)

$$= (1) - (2) - (3)$$

$$= 20,022.16$$

(5) Sum of squares due to regression on standards (1 d.f.)

$$= \frac{(\sum xy)^2}{\sum x^2} \quad \text{(usual notation)}$$

$$= \frac{\left\{\sum (x\ T_{st})\right\}^2}{50}$$

where x is taken to have the values -2, -1, 0, 1, 2 for standards I to V respectively, and in the summation of products $\sum xT_{st}$, each x is taken with its corresponding Standard total

$$= \frac{\left\{258(-2) + 300(-1) + 586(1) + 674(2)\right\}^2}{50}$$

$$= \frac{(1,118)^2}{50}$$

$$= 24,998.48$$

(6) Residual between Standards (3 d.f.)

$$= (2) - (5)$$

$$= 25,781.44 - 24,998.48$$

$$= 782.96$$

Table giving complete analysis:-

Variance		d.f.	S.S.	Variance
Standards	regression	1	24,998.48	24,998.48
	residual	3	782.96	260.99
Schools		4	2,537.44	634.36
Schools x Standards (error variance)		16	20,022.16	1,251.38

Note:- In the text the variances given are the variances for the original means - not the coded means.

Increase in Score per Standard

$$= \frac{\sum xy}{\sum x^2} \quad \text{(Usual notation)}$$

$$= \frac{1,118}{50}$$

$$= 22.36$$

With reversion to the original means, this becomes 0.22 (approx.) per standard.

B I B L I O G R A P H Y

Afamal Advertising Agency, Unpublished market research, Johannesburg, South Africa, 1956.

ALLPORT, GORDON W. and PETTIGREW, Cultural influence on the perception of movement: the trapezoidal illusion among the Zulus, J. abnorm. soc. Psychol., 1957, 55, 104-113.

BERRY, J.W., A study of Temne and Eskimo visual perception, Int. J. of Psychol., 1966, 1(3) 207-229.

BRANDT, H.F., The Psychology of Seeing, part III, Basic eye movement laws and tendencies, New York, The Philosophical Library inc., 1945, 27-167.

COWLEY, J.J., and M. MURRAY, Some aspects of the development of spatial concepts in Zulu children, Journal of social Research, 1962, 13, 1-18.

DAWSON, JOHN L.M., Cultural and physiological influences upon spatial-perceptual processes in West Africa - part I, Int. J. of Psychol., 1967a, 2(2), 115-128.

DAWSON, JOHN L.M., Cultural and physiological influences upon spatial-perceptual processes in West Africa - part II, Int. J. of Psychol., 1967b, 2(3), 181-182.

DEREGOWSKI, JAN B., The horizontal-vertical illusion and the ecological hypothesis, Int. J. of Psychol., 1967, 2(4), 269-273.

DEREGOWSKI, JAN B., On perception of depicted orientation, Int. J. Psychol.. 1968a, 3(3), 149-156.

DEREGOWSKI, JAN B., Difficulties in pictorial depth perception in Africa, Br. J. Psychol., 1968b, 59(3), 195-204

DEREGOWSKI, JAN B., Pictorial recognition in subjects from a relatively pictureless environment, African Social Research, 5, June, 1968c.

DOOB, L.W., An introduction to the psychology of acculturation, J. of Soc. Psychol., 1957, 45, 143-160.

DUNCAN, H., How Africans See Pictures, Syracuse, N.Y., New Readers Press, 1962, 22.

DUNCAN, H., African interpretation of Western religious art, Cameroun and South Africa, 1965. Not published.

DUNCAN, H., Training aids in the promotion of Bantu efficiency, Paper delivered at the Second National Industrial Safety Convention, Pretoria, 1966.

DU TOIT, B.M., Pictorial depth perception and linguistic relativity, Psychol. Afr., 1966, 11, 51-63.

FONSECA, L. and B. KEARL, Comprehension of Pictorial Symbols; an experiment in rural Brazil, Wisconsin, Department of agricultural journalism, College of Agriculture, University of Wisconsin, 1960, Bulletin 30.

FONSECA, L. and W.R. LASSEY, Preliminary Report on Comprehension and Meaning in Visual Communication Among Illiterate, Low Literate and Higher Literate Individuals, San Jose, Costa Rica, Interamerican program of information and scientific communication service of the Institute of Interamerican Social Sciences of the OAS, 1964.

GREGOR, J.A. and D.A. McPHERSON, A Study of susceptibility to geometric illusion among cultural subgroups of Australian aborigines, Psychol. Afr. 1965, 11, 1-13.

HARRISON, R., Research in visual communication, East Lansing, Mich., Department of communication, Michigan State University, 1962, 17.

HOLMES, A.C., A Study of understanding of visual symbols in Kenya, London, Oversea Visual Aids Centre, 1963, Publication 10.

HOLMES, A.C., Health education in developing countries. Edinburgh, Thomas Nelson Ltd., 1964.

HUDSON, W., Pictorial depth perception in sub-cultural groups in Africa, J. soc. Psychol., 1960, 52, 183-208.

HUDSON, W., Cultural problems in pictorial perception, S. Afr. J. Sci., 1962, 58, 189-195.

HUDSON, W., Pictorial perception and educational adaptation in Africa, Psychol. Afr., 1962, 9, 226-239.

HUDSON, W., The study of the problem of pictorial perception among unacculturated groups, Int. J. of Psychol., 1967, 2(2), 89-107.

JAHODA, G., Geometric illusions and environment; a study in Ghana., Br. J. Psychol., 1966, 57 (1 and 2), 193-199.

KILBRIDE, PHILIP L. & ROBBINS, MICHAEL C., Linear perspective, pictorial depth perception and education among the Baganda, Percept. Mot. Skills, 1968, 27, 601-602.

KILBRIDE, PHILIP L., ROBBINS, MICHAEL C. and FREEMAN, ROBERT B. JR., Pictorial depth perception and education among Baganda school children, Percept. Mot. Skills, 1968, 26, 1116-1118.

MARKET research Africa (pty.)ltd., An African day: a Second study of life in the townships. (Johannesburg), Market research Africa (pty.)ltd., (1968), 63.

MUNDY-CASTLE, ALASTAIR C., Pictorial depth perception in Ghanian children, Int. J. Psychol., 1966, 1(4), 289-300.

ROBBINS, MICHAEL C., Material culture and cognition, 1966, Amer. Anthrop., 68(3), 745-748.

RIVERS, W.H.R., Vision, In Haddon, A.C. Reports of the Cambridge anthropological expedition to the Torres Straits, 1901, Vol. II, part 1, Cambridge, Cambridge University Press. 117-132.

SCHWITZGEBEL, R., The performance of Dutch and Zulu adults on selected perceptual tasks, J. soc. Psychol., 1962, 57, 73-77.

SEGALL, M.H. and others, Cultural differences in the perception of geometric illusion, Science, 1963, 139, 3556, 769-771.

South African council of churches, Ravemcco, African perception of symbolism in Western religious art: a report, Johannesburg, 1958, Not published.

UNESCO, East African regional workshop on book production-1962: a report, Unesco, Paris, 1963.

WINTER, WENDY, The perception of safety posters by Bantu industrial workers, Psychol. Afr., 1963, 10, 127-135.

WITKIN, H.A. and others, Psychological differentiation; studies of development, New York, John Wiley and Sons, inc., 1962.

WOBER, MALLORY, Notes on administering psychological tests in Africa, Bull. Br. psychol. Soc., 1967, 20, 68, 31.

ADDITIONAL BIBLIOGRAPHY

(Not Referred to in the Thesis)

ARNHEIM, R., Art and Visual Perception: a Psychology of the Creative Eye, Second Edition, Berkeley, University of California press, 1957, 231, 234.

BARTLETT, M.M., How to teach with pictures, Grand Rapids, Michigan, Informative Classroom Picture Publishers, 1947, 12-14.

BEIER, U., Art in Nigeria, London Cambridge University Press, 1960, 4.

BIESHEUVEL, S., The study of African ability, part II. A survey of some research problems, Afr. Stud., 1952, II, 105-117.

BIESHEUVEL, S., Some African acculturation problems with special reference to perceptual and psychomotor skills, Unpublished paper, 1966.

CENTNER, T.H., L'Enfant African et ses jeux dans le cadre de la vie traditionelle au Katanga, Elisabethville, Ka nga, Centre d'étude des problémes sociaux indigènes, 19 , Collection de memoires, CESPI, no 17, 25.

DIACK, H., Reading and the psychology of perception, Nottingham, Peter Skimmer Publishing Ltd., 1960, Chapter 11.

DUNCAN, H., African interpretation of Western Sunday School pictures - lower primary school boys - Cameroun and South Africa - a preliminary report, 1965, Unpublished paper.

DUNCAN, H., A guide for the construction of didactic art for the pre-literate child in Africa, Paper delivered at the All Africa Conference of Churches, Broadcasting and Audio-Visual Services, Nairobi, Kenya, 1966.

DU SAUTOY, P., Problems of communication in extension and community development campaigns, London, Oversea Visual Aids Centre, 1964, Publication 12.

GHENT, L., Perception of overlapping and embedded figures by children of different ages, Am. J. Psychol., 1956, 69, 575.

GROSSERT, J.W., Art and crafts for Africans, Pietermaritzburg, Shuter and Shooter, 1953, 21.

HERSKOVITS, J.M., Dahomey; an ancient West African Kingdom, vol. I., New York, J.J. Augustin, 1938, 60.

HOCHBERG, J.E. and E. Mc ALLISTER, Relative size vs. familiar size in the perception of represented depth, Am. J. Psychol., 1955, 68(1), 294.

HALBERT, M.G., An experimental study of children's understanding of instructional materials, Lexington, University of Kentucky, Bulletin of school Service, 1943, 15(4), 59.

HUMPHRISS, D., The relation of binocular vision to psychological rigidity, Department of Psychology, Unpublished Ph. D. thesis, University of the Witwatersrand, 1965, 95.

Illinois, University Division of communications, How pictures and graphs aid learning from print, Illinois, University Division of communications, 1952, Technical memorandum 4.

KINGDON, J., The effective use of pictorial material, Kampala, Uganda, Bulletin of the Nutritional rehabilitation unit of the Freedom from hunger campaign, 1965, 1-4.

LAUBACH, F.C. and R.S. LAUBACH, Toward World Literacy, Syracuse, New York, Syracuse University Press, 288-292.

MAHONEY, B.E. and others, Illustrators of Children's books, 1744-1945, Boston, Horn Book Co., 1947.

MALTER, M., The ability of children to read cross-sections, J. educ. Psychol., 1947, 38, 157.

NADEL, S.F., A field experiment in racial psychology, Br. J. Psychol., 1937, 28, 195.

OSGOOD, C.E. and others, The measurement of meaning, Urbana, University of Illinois Press, 1957, 295.

RICHARDS, C.G., editor, The provision of popular reading materials, Holland, UNESCO, 1959.

SATTERTHWAITE, L., A consideration of various categories of perceived motion; a further consideration of implied motion and implied motion cues, Ph. D. thesis, Bloomington, University of Indiana, 1965, Chapters 1 and 2.

SNIDER, R.C., Selection and use of visual media, Chapter 12, In: Ball, J. and F.C. Byrne, editors, Research Principles and Practices in visual communication, Washington, D.C., Department of Audiovisual Instruction of the National Education Association, 1960.

SPAULDING, S., An investigation of factors influencing the communication of pictorial illustrations, Audio vs. Commun. Rev., 1956, 4(1), 31-36.

Transvaal Education department, The global reading Method, Pretoria, Government Printer, 1955, 2.

TROWELL, M., African arts and crafts, their development in the school, London, Longmans, Green and Co., Ltd., 1937, 7.

United Nations Educational, scientific and cultural organization, Offices of adult education, How to produce reading materials for new literates, working paper for East Africa regional workshop on book production - Kenya-Uganda, Paris, 12 June, 1962.

VERNON, M.D., The psychology of perception, (second edition), Harmondsworth, Middlesex, Penguin Books, 1963.

WILLIAMS, C.M., Learning from pictures, Washington National Education Association, 1963.

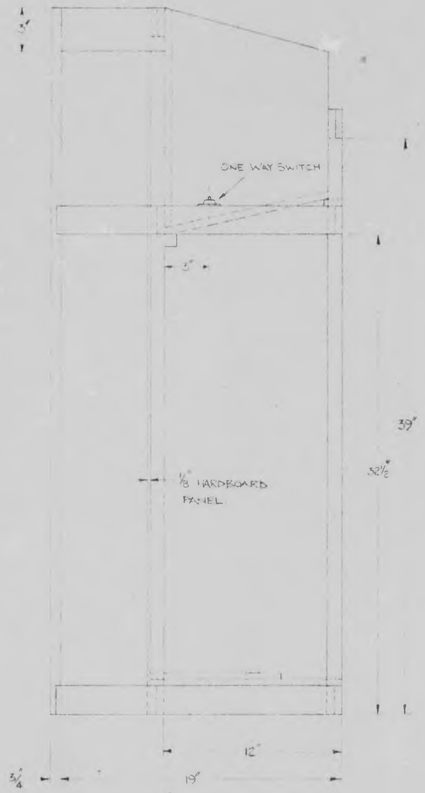
WINTER, W., Recent findings from the application of psychological tests to Bushmen, Psygram, 1964, 6(1), 42-55.

World illiteracy at mid-century. Paris, UNESCO, 1957.

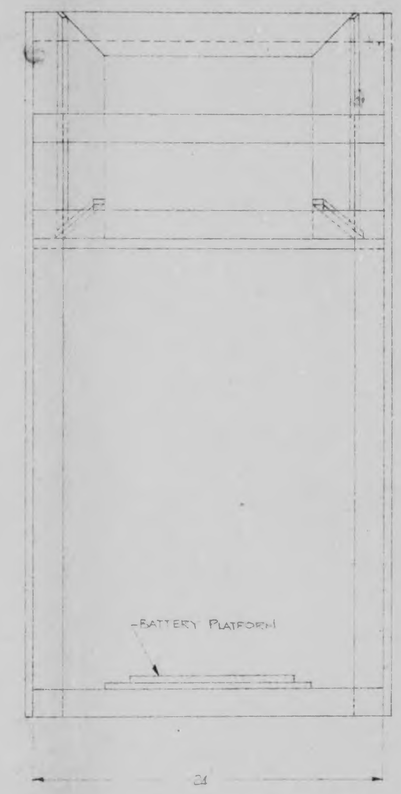
ZEIGLER, H.P. and H. LEIBOWITZ, Apparent visual size as a function of distance for children and adults, Am. J. Psychol, 1957, 70, 106-109.



FRONT ELEVATION



SIDE ELEVATION



REAR ELEVATION

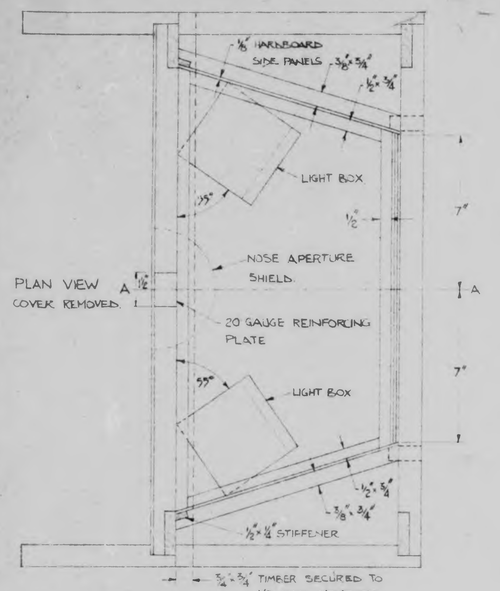
NOTES.

1. ALL FRAMEWORK TO BE OF 2"×1" TIMBER UNLESS OTHERWISE SPECIFIED.
2. ALL JOINTS ON MAIN FRAMEWORK TO BE OF THE LAP TYPE.

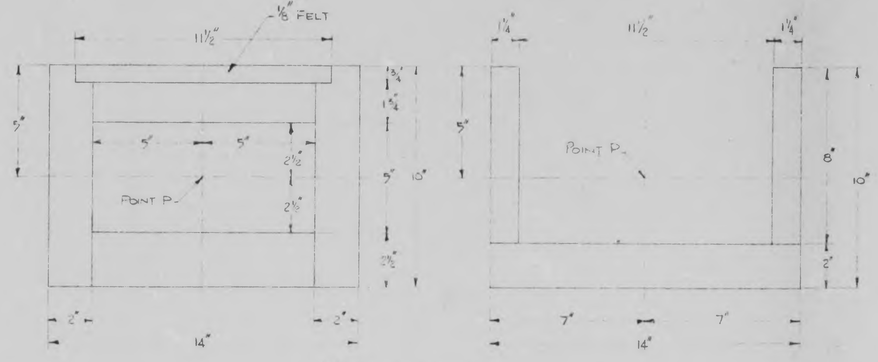
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VIEW BOX

SHT. 1 OF 2 SHTS.



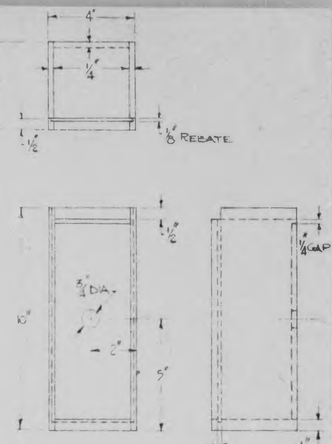
PLAN VIEW A
COVER REMOVED.



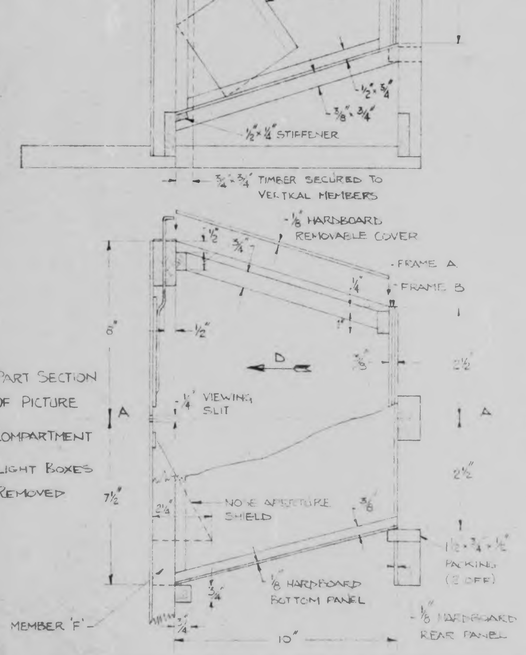
P TO BE CONCENTRIC WITH AXIS AA.

FRAME A
⅛" HARDBOARD

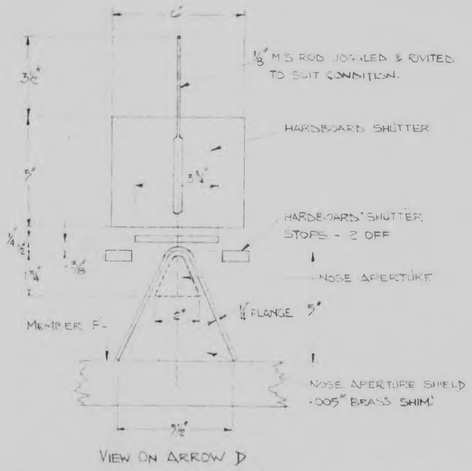
FRAME B
⅛" HARDBOARD



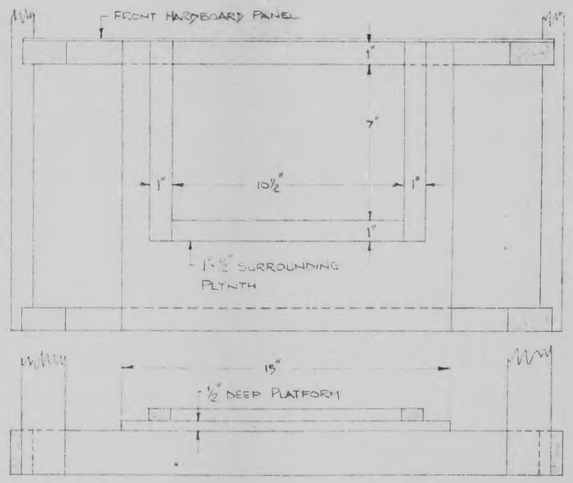
LIGHT BOX DETAIL
MOUNTED ON MEMBER 'F'



PART SECTION OF PICTURE COMPARTMENT LIGHT BOXES REMOVED

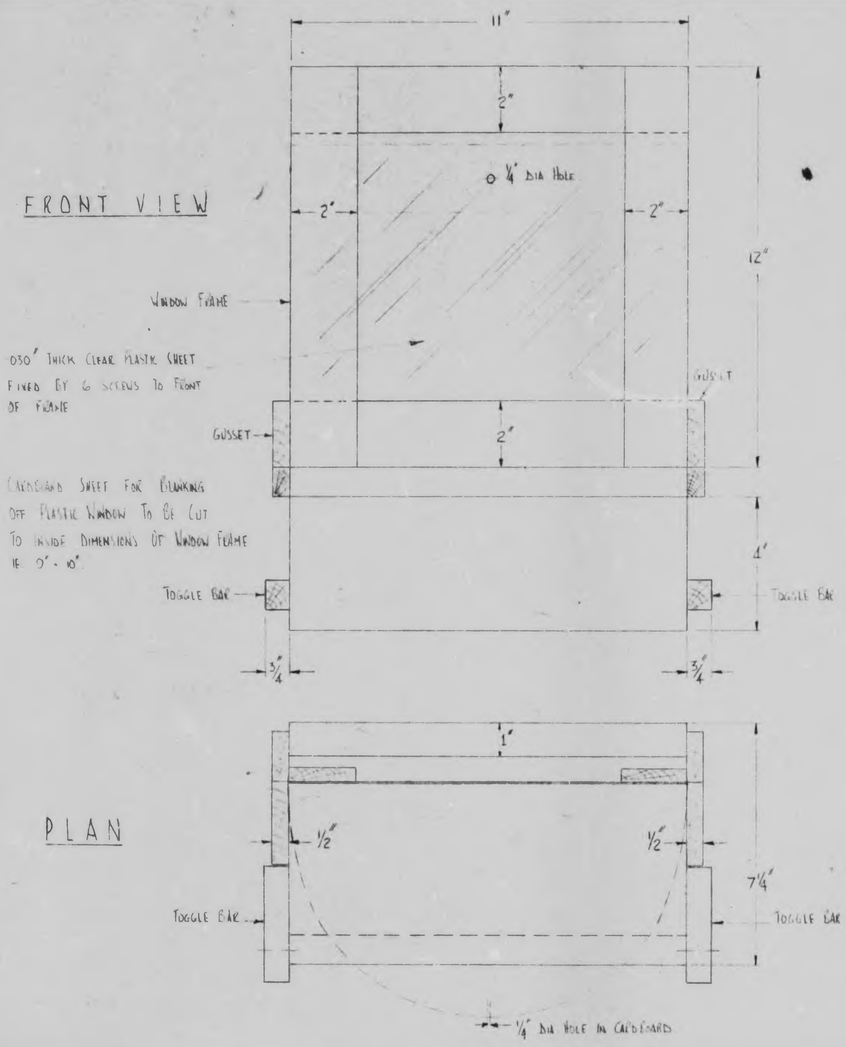


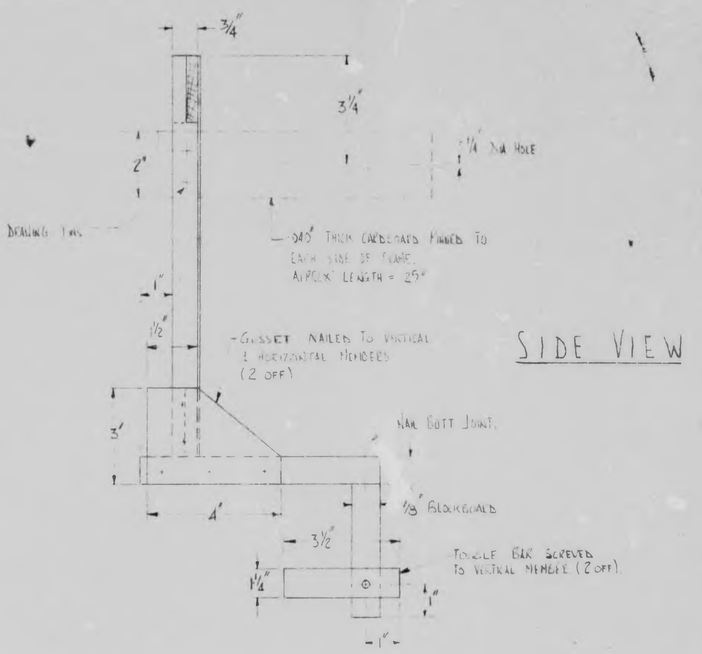
VIEW ON ARROW D

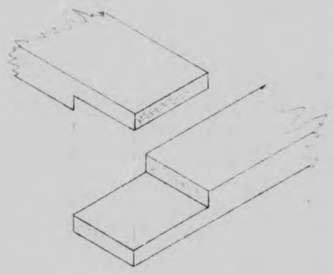


PART SECTIONAL PLAN & REAR ELEVATION
DETAILS OF BATTERY PLATFORM

SHT 2 OF 2 SHTS
SCALE: ½" = 1"





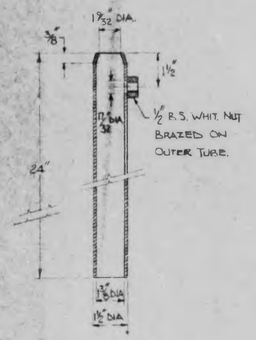


TYPICAL JOINT

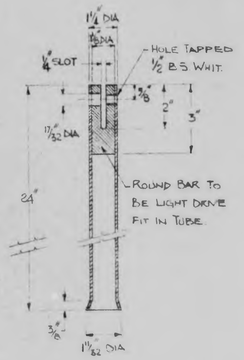
NOTE A DEVICE TO SHOW HOW THREE DIMENSIONAL OBJECTS ARE REPRESENTED BY LINES ON A TWO DIMENSIONAL PLANE.

PORTABLE VIEW WINDOW

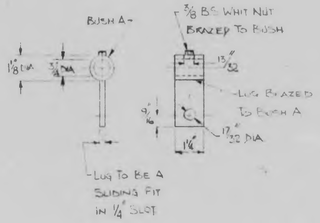
SCALE ⅜" TO 1"

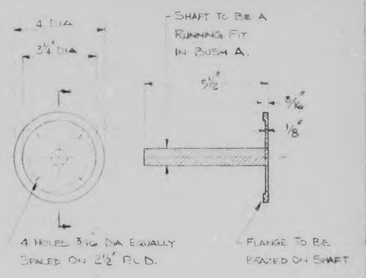


OUTER TUBE SECTION

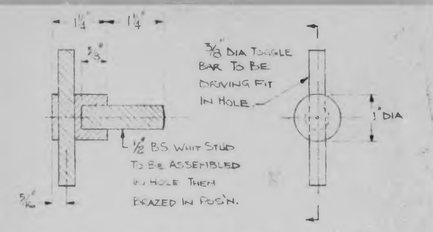


INNER TUBE SECTION

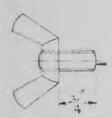




DETAIL C

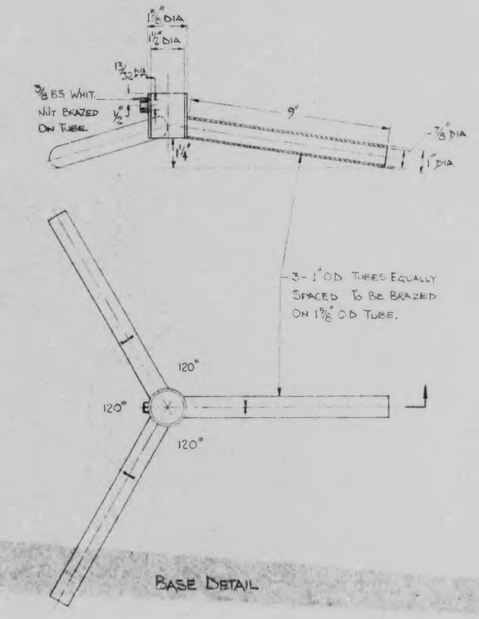


MAIN CLAMPING SCREW [SCALE 1/2" = 1"]

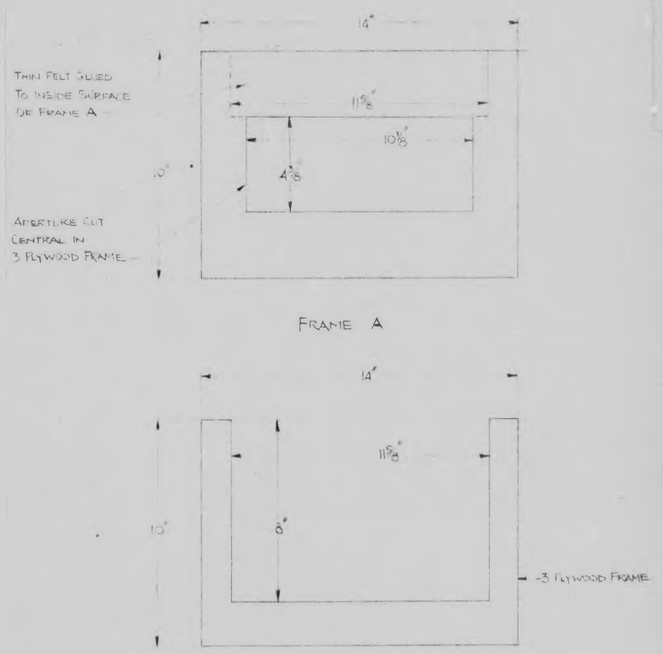


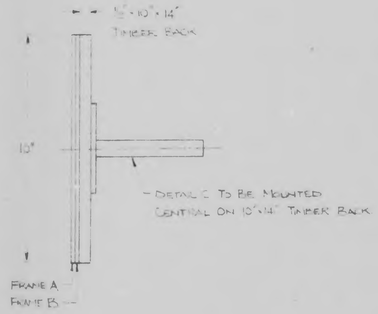
REQ'D AS SHOWN WITH 1/2" B.S.W. STUD [ONE OFF]
AS SHOWN WITH 3/8" B.S.W. STUD [TWO OFF]

CLAMPING SCREW [NOT TO SCALE]



BASE DETAIL





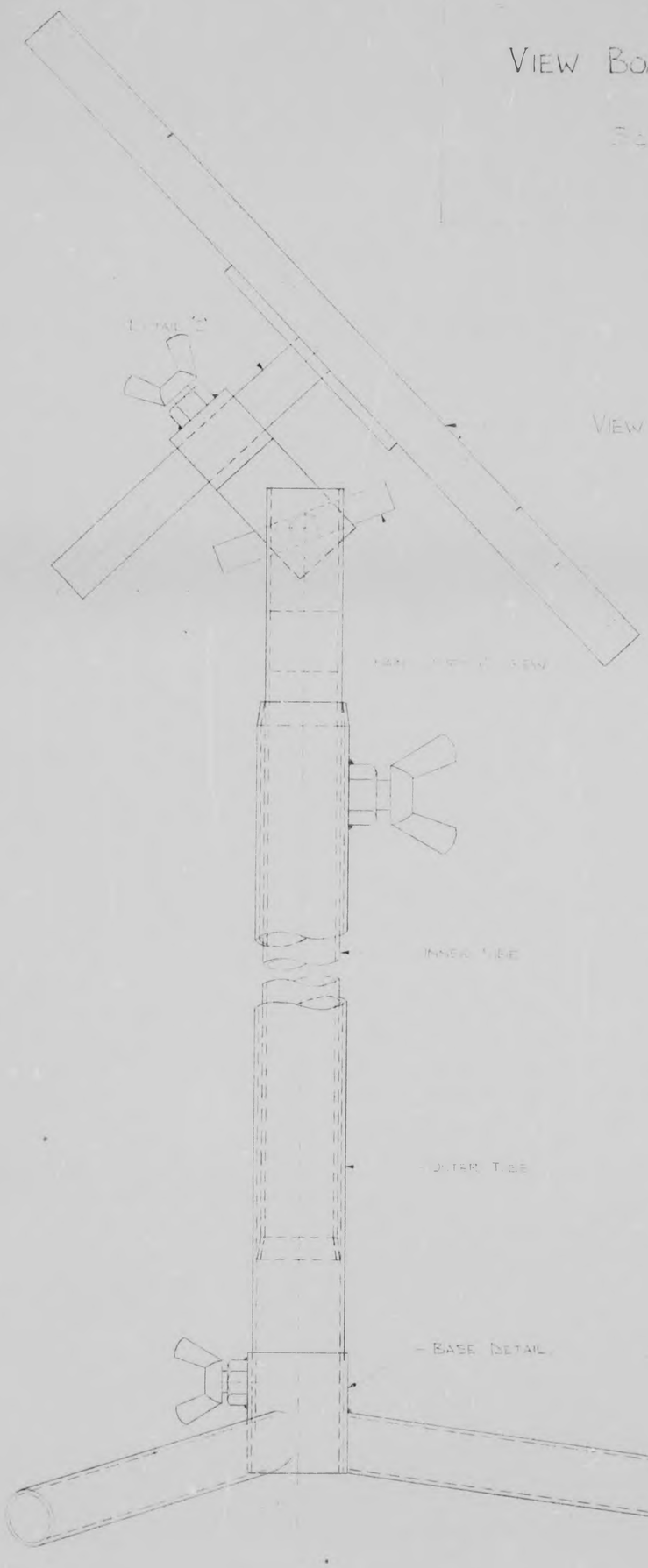
VIEW FRAME ASSEMBLY

VIEW BOARD

SCALE - 1/4" = 1"

VIEW BOARD ASSEMBLY

SCALE - 3/4" = 1'



Author Duncan H F
Name of thesis A study of pictorial perception among Bantu and White primary school children in South Africa 1969

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