

## The Mosaic Test



By Dr Margaret Lowenfeld

During the war, in America, at the Metal Hygiene Clinic of Bellevue and Queens Hospitals, and at the Neuro-Psychiatric Institute Ann Arbor, two comprehensive investigations of the Mosaic Test have been made, the first on 1000 and the second on 160 subjects. These investigations and the reports on them made the choice of subject matter for this paper difficult. The conclusions drawn by the American observers and their relation to our own findings are so interesting that a discussion of them would be of real value for our further understanding of the test.

But this would not fill the gap of which I am only too sadly aware, that there is no authoritative description available of the fundamentals of the test.

I would like to take this opportunity to say to all those who have been struggling to use this test correctly how very sorry I am that no literature has appeared to date about it and to explain the reason for this omission. It has not been lack of willingness or that we have not ourselves taken the test seriously, but perhaps that we have taken it too seriously and not been willing to publish material concerning it which has the awful finality of a once published piece of work until we were sure of its implications and it is this very sureness that has been so difficult to achieve. There has also been the difficulty of reproduction of patterns made which has now been solved by the great kindness and most generous help of Mr Percy Harris Editor of the Miniature Photographic Magazine to whose cooperation it is due that I can today show you the first coloured lantern slides to be made of this test in Britain. In America owing to a grant from the Faculty Research Fund, Diamond and Shmale were able to record their designs in Kodachrome and to have the use of all the H technical means used in the Department, Electroencephalogram etc for the checking of clinical diagnoses.

It is this type of difficulty which has made publication hitherto impossible, Research requires more quiet and routine effort than is possible in the life of a practicing physician and the mass of material which must be assembled to allow for valid deductions is too great to be manageable in the small spaces of time which are all that has been available.

The one way out of this difficulty therefore has seemed to be the use of the test as routine clinical material in the process of training in child-psychotherapy which served the double end of testing out how far results obtained by myself with this material might be due to subjective causes and at the same time enabled us a formidable amount of material for further study.

For the past fifteen years therefore this test has been used as a routine measure in the Institute of Child Psychology and by the therapists trained there and what I am going to describe to you today is the result of study of patterns in connection with clinical work with children and adults and discussion among that group. I am particularly indebted also to Dr. Kerr for extensive help in the acquisition of patterns from normal subjects, children and adults and of many different varieties of cultural background.

As an hour is a short time, though a very generous slice of your attention at this meeting, for the presentation of a test of this kind essential details necessary for anyone who wishes themselves to experiment with the test but which clutter up unduly the time of exposition have been written out and made available on sheets of foolscap you will find in your seats. With these before you I think we can turn to the test itself.

The Mosaic test arose about '29 through an attempt to find something which would register the general differences between the total makeup of different human beings. The test we have at present are tests of individual qualities; tests in which the quality to be tested and the type of answer expected is first thought out by the investigator and the test designed to bring out the working of this factor or quality. They are therefore reaction tests testing the REACTION of the given subject to a defined stimulus situation of a specific type. Even the Rorschach test though free from the point of view of the individual subject is also reactive in that the patient is presented with an already prepared standard stimulus which is uniform for all subjects.

Increasing experience with testing and particularly that accumulated during the war has shown that a significant difference may lie between a test result of, say, basic intelligence and the standard of performance of the same individual in circumstances of ordinary life. That is we become slowly aware that an individual is not the arithmetic sum of his qualities and his total life cannot be predicted through assemblage of the results of tests of individual qualities. There is clearly something else at work which may be described as the USE to

which he is willing or able to put his inherent endowment of qualities and the energy which lies behind his personality.

Neurosis or psychosis, physical illness or vagaries of temperament may interfere with his use of himself and therefore the tests we already have need to be supplemented by tests which can present to us information about the personality as a whole and its reaction to stimulus situations. Such a test is the mosaic test. It aims to give a picture of the creative performance of the total personality when placed in a situation where there is no expected answer and where the qualities upon which the product made will be judged are unknown to the subject making the design. To quote Diamond and Shmale "The Mosaic Test is a controlled clinical observation.... Each mosaic pattern is an organised Gestalt and must be evaluated as such. The basic assumption is here made that the important defects in the achievement of a recognisable gestalt in the Mosaic Test situation correlates with and reflects significant defects in the basic personality structure of the subject."

To come therefore to the test itself

### SLIDE 1.

You will find details concerning the pieces and the comparison with those used by the American workers on your papers. The question of why just these shapes and this number of examples of each shape brings us up against the basic problems of this type of test – you cannot test an unknown by an unknown. In the American papers this difficulty was obviated by the use of the test for the differentiation of pathological personalities whose diagnosis could be established by independent means and on types of case whose general configuration was already known. But my desire in designing the test was to use it to help in the understanding of subjects about whom nothing was as yet known and whose personality structure did not fit necessarily into any as yet known group.

Some basis of security was necessary therefore in the test itself and it was the search for that basis of security that led to the selection of exactly this material on the following grounds.

Geometric design is a fundamental factor of European culture. Its use is very wide spread among peasants, and the patterns made follow an old tradition. These basic shapes

seem to have some relation to the essential needs of people of this continent who desire to decorate. Just as Asia and Africa do different things with the basic fact of tonal possibilities so it is possible that other results might appear in the use of this material among people whose racial memories are filled with a different type of design.

Having settled on the simplest geometric shapes each with a direct relation to the others in size, I proceeded to get a large number of people of several European nationalities to make patterns with them and found that certain types of pattern continually recurred. That is to say that the individual pieces tended to appear time after time in the same combinations. I therefore decided to put up a standard box holding the number of pieces or stones necessary to make the simplest type of pattern with each shape and to repeat that in each of the colours represented.

#### SLIDE 2: Fundamental Patterns

We decided to call these FUNDAMENTAL PATTERNS. This choice has since been abundantly justified by the constant appearance of these patterns in the designs made by children, simple people, and subjects of low intelligence. So far therefore we seemed to be safe.

The next step taken was to submit this collection of pieces to very large numbers of people to record their patterns for analysis and study. Here I had the invaluable help of Dr. Ker. And after over a thousand had been collected it was found that on the whole patterns made by normal people separated in to clear groups.

#### SLIDE 3: Types of Pattern

The fact that different people made patterns which fell roughly into these groups did not however tell us anything about why they should do so or what relation the type of pattern had to the personality of the individual making it.

Patterns during this time had been recollected from small children normal and neurotic and children with educational difficulties. Comparison between the two groups threw light on the problem. The importance soon appeared of limitation to the tray and the presence of a rim. It became clear that patterns were altered by the presence of a firm edge or rim to the surface upon which the pattern was made. A standard tray was therefore designed the dimensions of which you will find in the notes.

One further question has to be met which is the answer to the query very often made: why are there no curves?

#### SLIDE 4: Circles

The set-up of the test is now complete. We have considered the selection of the pieces, their disposition in the box and the tray which is used with it. The dimensions of all these and the instructions used both with adults and children will be found in the notes. (Correction).

The next question which arises is how these patterns are to be evaluated. I would like to quote Diamond and Shmale "Each pattern", they write, "is an organised gestalt and must be evaluated as an entity. This evaluation must include the behaviour of the subject, his introspections, his attitude, and all other aspects of his behaviour. Any attempt to break down his performance into specific points of evaluation must necessarily depreciate differentiation becomes. Efforts were made to formulate fixed methods of evaluation and scoring by listing all defects, large and small, made by the subjects in our series. These efforts were fruitless. The impression gained from a perusal of all the parts simply did not add up to the impression gained from the whole. The mosaic is a controlled clinical observation. It must be evaluated as such and not picked upon on a pseudo-quantitative basis and then spuriously reunited into a meaningless score."

This opinion coincides with my own and I want now to show why this must be so.

To take first the question of a number of pieces used in a pattern. Wertham and Golden report that in their series psychotic patients tended to use fewer pieces than normal subjects. This statement might well lead to an attempt to find significance in the number of pieces used in patterns. Let us see how this works out.

#### SLIDE 5: Small Patterns

#### SLIDE 6: Large Patterns

Considered from a numerical stand-point all these would find their way into the same category. These slides are typical. Either by itself or in co-ordination with other factors numbers mean just nothing at all in the mosaic pattern.

To take colour. Both groups of American observers report that in their series schizophrenic subjects avoided the use of colour using only black and white. They conclude that the use of colour as well as form is essential for a normal mosaic pattern and that a black and white design is indicative of psychosis.

#### SLIDE 7: Black & White

I think this conclusion arises from inadequate normal material, as among normal people of an intellectual type patterns made in black and white certainly arise where there is no possibility of either a neurotic or psychotic tendency. On the other hand when such occur in adolescents and particularly when associated with a strange type of form as in the lower one of these the probability is that there is a neurotic, possibly even a schizoid tendency present.

#### SLIDE 8: Colours

As regards the use of colour in patterns, it is most certainly of diagnostic significance and important but not numerically. Here are for example two patterns using the same colours and roughly in the same numerical relationship to one another. The significance of the two patterns is however entirely different though on a numerical assessment they would once again come into the same egg box.

There is no possibility therefore of arriving at any valid information about mosaic patterns through listing and assembling numerically the colours used in patterns. What results from such a procedure has as much relation to the significance of the patterns made as it would if used to differentiate a Hobbema picture from a Van Dyck. It is the disposition of the colours in the pattern that is significant not their numerical evaluation. Patterns therefore must be assessed as entities. One last difficulty arises. 'Is it not possible' is always asked at the beginning of study of this test 'for any one subject to make a number of different patterns' and how do you choose between them?

#### SLIDE 9: Identity of individual patterns

Does not mood, says the questioner or circumstances, alter the pattern? And is it not greatly influenced by the ability to design?

I would like her again to quote Diamond and Schmale 'From our evaluation of the degree of anxiety, cooperation, conflict, depression, resistance, and other factors in the test situation, in each case it is our conclusion that these factors do not significantly influence the mosaic pattern when the latter is evaluated on the basis of the above gestalt principles. Resistance, preoccupation or anxiety may influence the productivity of the subject; it may change the type of object selected for representation in some cases, it may affect the variety and brightness of the colours chosen, but it does not seriously influence the ability to achieve a 'normal' pattern. Upon retesting subjects under varied conditions, it was remarkable to observe the constancy of the behaviour and basic elements of the mosaic pattern.'

With the addition of one qualifying condition my experience is the same as illustrated in these three patterns. The qualifying condition however is important so long as no process is in force which is bringing about changes in the underlying structure of the personality. We will return to this point later in considering patterns made during psychotherapeutic treatment. One last point remains to be considered about the material of the test itself. Why no circles? The answer is that with the pieces supplied curves and circles, if desired CAN be constructed.

#### SLIDE 10: Normal Adults

While the standard use of circles in patterns is complicated and difficult to assess. Having considered the materials of the test we now come to the crucial point. How are patterns made with this material to be assessed? If the test is to be of any real value we must come to stand upon safe ground intrinsic to the test itself and not gathered from comparison with other forms of assessment. I suggest we start from the very beginning. Very small children and subjects in advanced stages of mental disease are unable to make any pattern at all. They finger the pieces, if they are normal small children, with pleasure in the individual piece, and place each piece after handling it upon the board as a resting place and without relation to the other pieces already there. This stage corresponds to the Function Play of Charlotte Buhler.

The next stage might be called Function Play B, is the discovery made by the subject that certain pieces fit on to other pieces to form simple patterns, the forming of these patterns seems to give the child so keen a sense of pleasure or accomplishment that the

tendency is for this to be repeated so that the board becomes the scene of a number of small discrete often repetitive patterns.

#### SLIDE 11: M.D

Such are the patterns made by small children and mental defectives we find that Wertham and Golden are in agreement with us here. Buhler states that after Function Play comes Fiction Play and this corresponds also to our experience. A little later than the making of Fundamental Patterns in some children (not all) and in some psychotics comes a stage of Fiction Play.

#### SLIDE 12: High Grade M.D.

Here the subject uses the pieces like small children do drawings to suggest, rather than to depict a subject of which they appear to have a mental picture. At this point our work corresponds to the results obtained by Vigotsky Hanfman and Kasanin in the use of the Vigotsky test material with schizo-phrenics. The subjects do not treat the pieces as geometrical shapes but either as people or elements in a picture of life or as paint.

#### SLIDE 13: Fiction

Here we have the link with the Rorschach test and my colleague Dr. Ida Saxby has developed a use of the test which combines the features of the Rorschach with that of the mosaic in that once the pattern is made the subject is asked to use it as if it were an ink blot saying what they see in it. In some cases valuable material results. At the next stage the question of the rim comes in. Patterns are made with the rim as base.

#### SLIDE 14: Edge Design

The reason was expressed by a boy as follows 'I would feel frightened if I made one out in the centre' These patterns are anxiety patterns and while always of similar general shape may vary a good deal in detail. They may be continuous around the rim or exist only in a corner they may be narrow as this one or nearly meet in the centre.

A less marked form of the same type of pattern has a design in the centre and a rim pattern around Wertham and Golden found as we do that such a pattern is always accompanied by clinical symptoms of anxiety in the subject. Allied with this type is the pattern which extends all over the board. (slide of large designs)



Wertham and Golden point out that there is a well known stage of early pottery design allied to this. It appears that the covering of space is the main drive in the subject and the prearrangement of the pieces may be incoherent as here or meticulously accurate in an obsessional type of patient. From putting the pieces down without order in very simple designs two ways seem to lead either towards straightforward 'successful' patterns of recognisable gestalt or to what we have called incoherent C but Diamond and Shmale call an 'agglutination' of pieces in a shapeless form.

#### SLIDE 15: Types of Design

So far we have considered only the abstract type of pattern – in any collection concrete patterns form only a small proportion of the total. With Dr. Kerr's help I investigated many hundreds of patterns made by normal people of all ages and types and found that there appeared a sex difference in this respect in children and a culture difference in adults. It has been suggested that the content of the concrete design influences its interpretation. Let us therefore consider these two.

#### SLIDE 16: Concretes

According to this suggestion the maker of the rhinoceros might have been a zoo attendant, a zoologist, a big game hunter, an illustrator of travel books or zoology text books or a natural history museum attendant. Actually he is an agricultural specialist who, except for visits to Switzerland for winter sport has not been out of England.

The second design on this rule could have been made by any citizen in a bombarded area in this war, a fire service employee, possibly a fire insurance agent, or a painter. Actually the subject was a preparatory school boy of average intelligence and the pattern was made four years before this war. It is clear that this type of judgement does not work and in fact the occasions where content of concrete design gives any hint to the investigator as to the nature of the subjects occupation are so few that I would not expect them to exceed the expected ratio for chance.

If, however, the design be studied in the same way as the abstract pattern quite different qualities are patent for example, the use of these particular stones to produce so good a rhinoceros indicates considerable ingenuity of a practical kind, excellent visual observation and visual memory, capacity to adapt means to ends and a sense of humour.

In the same way the main impression of the house on fire is one of an emotional urgency and a fear creating situation. Etc. Concrete patterns then are judged on the same criteria as abstract that is has the subject achieved them he appears to have set before himself.

#### SLIDE 17: Unsuccessful

If an individual sets out to make a pattern and gives the pattern in with obvious faults in its execution a situation has arisen which needs investigation. He may not have noticed the discrepancy, he may have noticed it and been unable to remedy it, or he may have found it impossible to think out a clear pattern and while knowing in a vague way that his version was confused be unable to see or explain what he set out to do. The third slide shows 4 unsuccessful concrete designs.

If the emotional state be very severe a subject may use the pieces almost as if they were colour washes and produce an agglomeration of pieces with so strongly marked an emotional tone that the significance is obvious.

#### SLIDE 18: Suicidal

This is the pattern of a twelve year old boy brought in for attempted suicide and murderous attacks on his mother. A pattern may well be planned as far as symmetry of form and colour are concerned and completely successful and yet in its form show a fundamental defect

#### SLIDE 19: Dissociation

This pattern is in two halves with a bar down the middle and if the fundamental rule be taken that the pattern is a real reflection of the basic personality structure of the subject one would expect the maker of this to show evidence of dissociation which in this case was markedly true. Such a division of the personality into two halves can be expressed in another way.

#### SLIDE 20: Ideational

As here where a young man with marked schizo-phrenic tendencies made this as described it as lines of force... the value of this type of pattern that I have been showing is diagnostic as all these subjects appeared average individuals on the surface and were not

able to give any coherent account spontaneously of their interior experiences. The same type of help can be given for physical or educational disorders. Time allows only of one example

SLIDE 21: Edwards

I think you will realise that in this selection I have touched only on the fringe of the variety that any collection will show and have purposely omitted all reference to the psychotic patterns as this is a vast field in itself. The final check on interpretation of significance is whether the patterns made change as one would logically expect with a change in the integration of the subject making them.

I will finish therefore with extracts from two series a child and an adult undergoing direct projection psycho-therapy

SLIDES 22. Eve, Mrs D.