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## The Eidetic Image—An Undertone of Psychosis. Introduction to a Future Inquiry.

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THE orientation in psychiatry to-day is towards the establishment of the constitutional factors on the one hand, and the tracing of psychological processes involved on the other. Constitution is a distractingly wide term, and may become a cemetery in which dead entities are buried—and perhaps the patient too. But in so far as we attempt to trace the elements making up a constitution and the biological processes involved in the concatenation of these elements, we will be the better able to prognosticate and to assign therapeutic measures of the necessary kind suited to a particular type.

On the other hand, the tracing of psychological histories will, apart from throwing interest upon mechanisms of instinct and emotion, relieve those tensions and correct such errors of perspective as have given rise to maladaptation and psychological collapse.

The shortcomings of this approach lie in the difficulty experienced by clinicians with a theoretical bent in accepting the universality, on the one hand, of psychic mechanisms and complexes, and on the other, the only partial distribution of psychosis and the eventual classes into which these psychoses fall.

What determines psychosis at all? What are the predispositions to this psychosis or that? What makes for hallucinosis in some subjects, and yet not in others? A new department of psychiatry has grown up in which relation of the physique to the psychosis has received particular attention. While there is a growing admission that the Kretschmer classification is unusually suggestive, it is felt that the bifurcation into cyclothymia and schizothymia is too sharp, and that while polar opposites of physique can be methodologically subsumed, psychic patterns are more complicated, and the streams of process involved in any mental unfolding are more interpenetrating than a simple dichotomy allows. Yet we all feel that some common process underlies physical and mental events, and that the conditions of human variability are governed by forces which cover, to some extent at least, the mental and psychical fields.

There appears a need for some linking concepts which shall bind the two worlds together, yet allow them sufficient autonomy to pursue each their peculiar line governed by the character of the phenomenon. Concepts are bare, in the absence of concrete facts to give them covering. These concrete facts are not lacking. The hard facts of image psychology belong to both physiological and psychological worlds, and their careful experimental study supplies us with data for throwing light on the common factors involved in sense physiology and sense experience, and from sense experience we pass on to the specifically psychological world of image and mental constructs. The problem of imagery has engaged philosophers of the empirical type—a Locke, a Hume; while Hartley was one of the earliest to give physical explanation which might satisfy neurologists. It is a nuclear problem because we have, in sense experience, one foot in the physical sense organ and the other in mental process purely, which defies physical analysis. If, therefore, as thinkers accept *a priori*, and experimentors discover by observation, there is a transition from perception to mental construction, then we have a means of relating constitutional physical make-up with personal psychological history. The existence of intermediate imagery—eidetic imagery—seems to satisfy a need, yet its

demonstrable nature allows for the clearer relating of mental and physical structures.

The burden of this paper is largely to suggest that in the eidetic image we have a phenomenon widespread in late childhood and early adolescence which bears certain type marks and is related indirectly to constitution on the one hand. On the other hand, it bears relationship to certain abnormal activities in the extreme case, and in its persistence into adult life it contributes an undertone to hallucinosis, which in itself is the substance out of which the total fabric of psychosis may be woven.

The demonstration of the existence of eidetic phenomena in at least a reasonable percentage of children gives the ground for relating this intermediate form of experiencing with hallucinosis, itself sufficiently widespread in psychosis, and which in itself is closely related to the life of imagery in features which will be elucidated in what follows.

Urbantschitsch is regarded as the first to have isolated the type of image which has since been called the eidetic image. In addition to the visual image or memory image of visual character, we have the experience of actually "seeing" the original object; whereas, in the former, the original object is imagined only, i.e., it is seen with the inward eye. He says: "The true eidetic image, in distinction to the visual memory image, revives the earlier optic impression when the eyes are closed in a dark room, and sometimes when the eyes are normally opened, with hallucinatory clearness." In the first place, therefore, these spontaneously *seen* images of a former percept must be distinguished from the hallucination and the dream, but it will appear that the existence of the latter is dependent upon the former, if not vice versa.

To obtain eidetic phenomena from children, a dark grey screen is used of white 50, black 310 on the colour wheel. The subject is given clearly to understand that what is expected of him is to state merely what he sees on this screen after gazing for a period of thirty seconds on a given pattern or picture fragment. In order to bring home to him what is meant by seeing, he is made to experience an after-image produced by gazing at a red square and then projecting the complementary colour on the screen.

He now knows what is meant by seeing as against imagining, and he also learns the habit of describing colour, intensity, outline, and size, when such features appear to him on the screen.

There is no doubt that when the child learns to realize the seen nature of the after-image, he has no difficulty in concentrating his attention upon the screen, and it is then that he sees things.

In my own observations, when eidetic images appear, they do so with a surprising spontaneity, whereas the after-image, because of its haziness and fluctuating quality, takes a little time before it is appreciated or worthy to be talked about. When eidetics are experienced the child will actually point to the screen and outline its characters as it describes them. In one or two cases it was described as actually swimming slightly above the paper, as if it were a definitely spatialized perceptual reality. Appreciation-detail too is a characteristic of the eidetic image, and totally unfamiliar objects such as foreign words unknown to the subject are spelt out with uncanny accuracy. In one case the emblems on a banner were seen in full detail and colour as part of a very complicated picture of crusaders before the walls of Jerusalem. To the boy, these objects were as real as an actual picture, partly, no doubt, because of the affective interest which had made the selection of the object possible.

In my own observations also I have noticed that in more than one example the seen complex was a mixture of both after-image and eidetic, that is to say, while part of the colours were described as complementary, other parts—and these more

interesting in a complex way—were seen with perceptual detail and intensity in their true colours. This dual experience is of great theoretic import because it illustrates that the eidetic image is more richly supplied with psychical elements, that is, interest and affectivity. It also shows that as a mental experience it makes of these optic events—of which the after-image is the most striking—merely a transparency, as if the mind had a direct contact with the external world as it does have in perceptual experience. But the fact remains that in all these experiences imagining cannot go on in the absence of some prior perceptual material.

In some children, however, the eidetic image does not appear at all, and the things seen are just the ordinarily detailed after-images. In others, again, the process of confabulation goes on apace, and immediately; and the subject sees many other things than those which appeared on the original design or picture. These seem to be immediately activated by the process of fixation, truly to hallucinate inner experience culled from memory and shaped by affective interest. Roughly speaking, it is the introverted child who immediately elaborates his perceptual experience and contaminates the eidetic experience with deeper subjective ingredients.

On the other hand, children of more ready rapport with externals had purer eidetic experiences, vivid in colour, clear in outline and more lasting in time. These, however, did not retain them after a repeated fixation, whereas the confabulation continued to have incorporated on the screen projective elements of the original percepts.

The subjects of purest eidetic experience were the younger of the series—that is, round about 10 and 11.

Dawes Hicks, quoting Taine's account of an English painter, says, "When a sitter came, I looked at him attentively for half an hour, sketching him from time to time on the canvas. I wanted him no more. I put away my canvas, and took on another sitter. When I wished to resume my first portrait, I took the man and sat him on a chair, when I saw him as distinctly as if he had been before me. I may say almost more vividly, when I looked at the chair I saw the man there."

Those who are accustomed to watch so-called imaginative children at play will have noticed how they will spatialize and move about their imaginary toys and persons, and will handle them not as make-believe things, but as eidetic experiences of things seen in the past but now in mental space, projected into the external world. Observation of patients with so-called lilliputian hallucinations brings home to us the kinship that these hallucinations bear to perceptual experience. Unlike some hallucinations which are vague and spatially poorly orientated, these can be highly coloured mannikins which are handled by the subject like real objects in the external world. One notices how psychotics will frequently remove imagined objects from the body indicating that they are seen things. Interestingly enough, like lilliputian hallucination, the eidetic image is also a reduced replica of its original as if the original percept were now seen through a reducing lens, clear in definition, and sometimes more vivid in colour than the percept from which it has sprung. I have myself experienced an eidetic image of a picture seen as a reduced but clear and vivid reproduction of the original, and a scene which I experienced vividly but for a short time, sprang back into present experience with such vividness of form and colour that I was able to reproduce it with sufficient accuracy to lead those who had shared my original experience to believe that I had sketched it at the time of experiencing it.

I have mentioned the fact that in intense eidetic experience the subject will point with deliberation at the screen image, outlining its contours, giving it what art critics call its tactile values, a matter of some moment in certain paintings, both

modern and early Florentine, in which colour and perspective are intimately related. I believe this to be a matter of importance in that it gives to eidetic experience its particular perceptual tang. In the process of mental analysis when infantile experiences are brought to mind, it seems as if an eidetic substratum of visual perception is again laid bare or activated. It seems as if the possibility of vivid recall of affect-loaded experience depends upon this type of retention. I believe it to be an irreducible condition of hallucinosis, certainly of visual hallucinosis. If we were equipped to deal with kinæsthetic experience in the same way as we can deal with experiences in the visual field, some such primitive experiencing as the eidetic would also be made manifest. In the auditory field one thinks of those untrained persons who will sit down to a piano and rap out a recently-heard melody with all its details and rhythmic quality. If this were a pure memory image, it would have become schematized and lack detailed accuracy; yet in this reproduction although whole passages may be forgotten, other passages, on the other hand, sometimes of complexity, are reproduced in all their detail. Charles Fox, of the Cambridge laboratory, experimenting with an incised maze, and blindfolded subjects, found that some succeeded in tracing through the maze almost at the second attempt. This suggests, at least, that in the kinæsthetic field, the same type of "Anschauungsbild" is present. In such cases, where the subject does not describe a visual image of the direction traced out, it appears that a kinæsthetic image has been registered with an immediacy which we cannot attribute to memory in the strict sense of that term.

As regards localization, the eidetic image is found to be either belonging to the plane of the paper, but unlike the after-image it not infrequently seems to float above or in front of the level of the screen. Some believe that it takes on, and becomes distorted by, the character of the screen, but I have not noticed any peculiarity in this, except that when the image is not vividly coloured, it tends to take on the grey colour of the ground, and in one case seemed to be a sort of intaglio carved in the ground. Unlike percepts, they follow the eye, but I have noticed an air of surprise on a child's face when experiencing them, unlike the vacant look of those who see with the inward eye alone, as in memory imaging or in day-dreaming.

As regards clearness, when a child is made to shut its eyes even in the midst of an eidetic experience, the details lapse and return when the eye is turned to the screen.

The reaction time of the appearance is extremely short in those whose eidetic imagery is sharp and clear, while there are others in whom at one and the same time both after-image and eidetic are struggling for dominance, or take up simultaneously different parts of the field. As regards clearness, there can be no doubt. Details of colour, form and outline are sometimes very acute indeed. As regards selectivity, there is always a tendency never to see the whole of complex pictures, but to see in detail a part, and at times the selected area has been found in one case to be surrounded by vague forms in complementary hues. Memory-images, however, are wider in extent, poorer in detail, and more schematic in general structure. Concentration, moreover, upon a memory-image—as in day-dreaming—will lead to their almost immediate disappearance. In this respect eidetic phenomena lack flexibility. For some time I was literally pursued by the eidetic image of a picture in the National Gallery. It appeared miniature in size and floated about in space, appearing and disappearing clearly and in all its hues with all the insistence of a hallucination.

Many have registered the flexibility that occurs. Additions are made to the picture; there is transposition of parts. Analysis of the association in one particular case brought out definite experiential facts which had an affective relationship to the subject of the eidetic experience. This introduces immediately the subjective ingredients in the eidetic experience. Some observers—Allport in particular—have

made the subject move parts from and about the picture illustrating the conative trends that enter into and fructify the fundamental eidetic experience. This element of suggestibility needs careful assessment.

The *plasticity* of eidetic imagery is influenced by previous experiences. I have noted how a series of after-images given before a complex pattern is displayed, will be the occasion of the latter appearing in detail but in complementary hues.

I have above noted how the size of the eidetic image tends to be a smaller reproduction of the original, but there are others who say it will vary in size in accordance with the subject's distance from the screen. Allport, however, has shown that if memory-images over long intervals are obtained of previous percepts they tend to become proportionately smaller in size. We have all noted how children will tend either to diminish in a most pronounced way the size of drawings or increase them enormously. The tendency to microptic hallucination has been noted by Dr. Kinnier Wilson in temporo-sphenoidal tumours, and the phenomena of lilliputian and brobdignatian hallucination in the insane is well known. I have noticed such experiences occurring in actually perceptual experience. The objects of the external world have become either very small, or sometimes very large—and these were not memory-images or eidetic, but subjective modifications of the external world. In a particular case recorded by me some years ago, memories of childhood returned obsessively with painful accuracy in form and colour, so much so that one is obliged to concede to an eidetic background plus affective tone the responsibility for their continued existence.

Although I have not been able to investigate the character of *fusion* of eidetic imagery, one can see in the experiments of Jaensch and Kroh of superimposed eidetic images of allied forms, the birth of genetic images, and thence of imaginal schemata. This point, however, is of no direct psychopathological importance.

I feel that the study of epileptic visual auræ will throw a light upon imagery on the one hand and epileptic auræ on the other. In the case of an epileptic aura, which consisted of a pattern very reminiscent of the emergence of the blood-vessels from dark discs in complementary colours, we have obviously an after-image aura with no subjective component. But in the case of a young man who merely saw the white letters—I E L D S—on a blue ground clear and invariable, we have something suspiciously like the eidetic image. These letters proved on psychological investigation to be a pre-epileptic recurrence of an actual experience. The subject, when 7 years old, was travelling on the Great Eastern Railway when a homosexual attack was attempted by a man in the same carriage. The train was passing London Fields station at the time and the window frame obstructed all but the letters I E L D S as the frightening experience took place. Affectively charged, this experience was repressed, and nothing but the fragment remained to be the prelude to a convulsive attack. It is difficult to accept this visual experience as a neural fragment. So circumscribed and vivid a visual experience cannot be regarded as the result of a hypersensitive neural area in the cortex. There is not the slightest evidence for supposing that history is stored in the cortex in this way. We know from the study of aphasia how words are restored to language under the stress of emotion. Aphasics, otherwise inarticulate, can swear very satisfactorily, and whereas words alone appear to be lost, they are spoken when part of a whole sentence. Such occurrences seem to me to show the necessity for a psychological and not a neurological explanation of at least certain aspects of aphasia.

The phenomena of eidetic imagery yield a type of experience that lies midway between percept, after-image and subjective recall or memory-image. They yield a substratum or undertone which supports all subsequent subjective modification, affectively charged. One might even venture so far as to suppose that the image-making function of mind is what gives meaning to percepts, if it does not actually

manufacture them. Imaging and conation seem to go hand in hand in the establishment of rapport with the external world, perceptual process being the means of bringing to the organism those specific objects of the external world which supply its basic needs. The integrated organism is one in which this rapport between the inner world of mental forms and the outer world of things is made possible by the synthetic process of active experiencing. Without this conformity, normal psycho-neural life is impossible. The eidetic image is a biological process which links external physical reality to the neural mechanisms and the world of mental forms. In children the differentiation of inner and outer have not yet become marked off and the rich fantasy satisfaction of child and artist and insane is a manifestation of this process, it makes empathy possible. The eidetic image is the appearance of an event in the process of introjection, in that it retains the qualities of perception, yet makes a way for the elaboration of memory imagery, which bear more distinctly the marks of subjectivity.

That eidetic imagery is not invariably distributed may be a weak point apparent in this argument. But while the eidetic occurs only in 60% of investigated children, it may appear, as Jaensch has shown, in different types. As he alleges to have discovered, there are types of children—the *basedowian* and the *tetanoid*—who show differences in eidetic experience, and that feeding with calcium will modify eidetic intensity. We have, therefore, grounds for supposing that in some persons the passage from perception to memory-image is imperceptible, and no eidetic stage is detected. This may indicate a difference of imaginal type which, as our illustrations above suggest, may prove of value in psychiatry. That is to say, there exists an imaginal type of experience which in some persons has a vivid existence in childhood, and in others may persist through life. In such persons the growth of experience must suffer some sort of modification.

The patient actually re-enacts infantile scenes and experiences, and even when these are fantastically elaborated they retain a factual core. That their retention is affectively determined is no light contention, for we find that these associated images are strung very persistently upon conative threads stretched to breaking-point, or transposed (as eidetic images are) by cross-currents set up by mental conflicts.

We are aware from the study of the insane in the light of affective psychology that hallucinosis is the compulsive appearance of image systems under the stress of emotion. But little time elapses between the sensory experiences of the night arising from the inner organs and the organs of sense, and the production of complicated dream structures. We have to suppose that, as Bergson has pointed out, the retinal designs of hypnogogic illusions are woven into dream fabrics in accordance with the conative trends of the dreamer. We have to suppose that in the continued dream life of the insane, the inner world of sub-perceptual experience, the eidetic image, is fabricated into the structure of hallucinosis.

For the elaboration of psychical life from its very inception, perceptual experience is necessary: for our continued existence, imaginal construction is essential, but the passage must be smooth from percept to memory before healthy integration can take place. Persistence of mind residue will afford regression points for the construction of an assimilated experience. The more there exists within the mind an assimilated residuum, the greater will be the difficulties of mental integration. In the psychotic, this lack of psychic synthesis is a function of constitutional anomalies on the one hand, and of deep psychic conflicts on the other. The proportion of these ætiological factors can only be determined by the close examination of the particular case. While the persistence of primitive imaginal process is no proof in itself of psychotic tendency, we are led to the speculative conclusion that it interferes with integration, although, as in the artist and the otherwise normal person, the eidetic experience can be, by specialized synthesis, the source of productive activities.

The biological import of the eidetic image has been well stated by Allport :—

“The function of the E.I. seems to be to preserve and to elaborate a concrete stimulus situation in such a way as to intensify for him the sensory aspects of experience. By so doing it enhances further for him the meaning of the stimulus situation and enables him to repeat and to perfect his adapted responses.”

But the persistence of these concrete images at the expense of schema formation interferes with integration of the world of general notions upon which intellect and the eduction of relations rests. Their persistence is usually compulsive in nature and allows for the formation of psychical concretions affectively laden yet isolated from the stream of mental processes and therefore subject to complex formation, projected as visual imagery, thus becoming the mother substance of hallucination.

Particularly in schizophrenia are we witness to the hold which archaic forms have upon the mind, and these are largely imaginal in quality. We cannot, as Bergson suggests, believe that memory images are always as real as percepts. This is prone to occur in some artists, who use not only the canvas for their projections but the written word. In others, the sowing of early eidetic experiences may provide a seed from which hallucination may grow.

Those who are at all acquainted with analytical procedure will have been struck by the broadly established two types of subjects who associate upon indirect verbal restatements of experiences, and those who fall into a stream of infantile imagery, though much of this imagery is fantastic in structure. This fantastic stream of association is sometimes very vivid in its content, and there are times when the imagery cannot be regarded as other than imaginal with a definite perceptual objective basis in fact. Events, as we say, are re-lived with extraordinary memory of the past and can be as vivid as actual perceptual experience. As Stout points out, the lightning stroke and the shriek of a steam whistle can never be reproduced in imagination. But in the eidetic experience, perceptual quality is in part retained, and should such a propensity persist, we have the basis of a subsequent hallucinatory experience which can be as intense and even more disturbing than the events of the external world. True, the affective accompaniment is what gives such hallucinatory experiences their terrifying, or sometimes gratifying quality. But in so far as they almost invariably refer back to some perceptual experience, we are obliged to postulate the existence of an image function which acts as a reality core for them. Regression invariably is a recoil to infantile mental function. Fixation at various phases of pregenital life is the favoured psychoanalytic explanation of the varieties of psychosis. But we are obliged to ask why regression takes place at all, and why at these stages, seeing that we all pass through the same psychological vicissitudes. Some constitutional factors must exist to account for the stereotyped forms of psychosis. Kretschmer has given us psycho-morphological moulds into which the types of insanity fall. We seem, however, to be in need of certain link-conceptions which bind morphology to the psychical life—links which depend upon psychological as well as physiological factors, and which will, in addition, explain the occurrence of the outstanding psychical manifestations. Jaensch has shown how the eidetic functions according to type, and according to metabolism, as calcium feeding makes clear. Hallucinosity is an outstanding feature of psychotic life, yet occurs intermittently in normal persons.

In the eidetic image function we appear to have a process which supplies at least one of the undertones of psychosis.

The aim of these notes is to see what further can be known of the structure as well as of the dynamics of psychosis, but in order to substantiate on scientific lines the value, if any, of suggestions brought forward, a comparative inquiry is suggested. Thus it is desirable: (1) To standardize the test methods under psychological and

biologically varied conditions ; (2) to establish the relation of eidetic experience to perseveration ; (3) to study the frequency, in satisfying numbers, of eidetic experience in psychopathic and non-psychopathic children ; (4) to establish the frequency and kind of eidetic images in cases of chronic and intermittent hallucinosis ; (5) to determine the differentia of eidetic phenomena in persons of recognized schizothymic and cyclothymic make-up respectively, and the extent to which richness of verbal imagery tends to destroy or to be poorly correlated with the appearance of the eidetic phenomena.