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A STUDY OF ENDOGENOUS PSYCHOSES FROM THE GENETIC ANGLE

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Abstract: A humanitarian motivation of social psychiatry is indispensable f or reaching the rehabilitative purposes. But, the assumption of aetiological role of the socio-psychiatrically decisive factors seems to be an abuse in cases of endogenous psychoses. Of primary importance is — a possibly exact, nosologically grounded — clinical diagnosis. Despite this, great difficulties are being encountered in demonstrating the genetic determination. As an example, the author sum up the results of family studies. Using strict diagnostical criteria, the interpretation of the somatometric data of 274 female patients suffering from endogenous psychoses became possible. The estimation of the distance measured between the clinical groups separates the cyclic clinical pictures from the schizophrenic ones, and also casts light upon clinically well interpretable differences even among the forms of schizophrenia. Among the causes of these differences, genetic determination has a part, and upon this the examination of the parents' ages at conception serves with confirmative data.

Key words: social psychiatry, endogenous psychoses, schizophrenics, somatometry, size and shape, population genetics.

Introduction

Psychiatric illnesses can be traced back in part to biological factors and in part to disturbing environmental factors, the latter particularly in the area of human relations. The aetiology of the so-called *endogenous* psychoses is debated. The concept of "endon" refers to the emergence of these illnesses from a disorder rooted in the basic biological structure (TELLENBACH 1961). The overall picture gained from aetiological research is that in this case the social psychiatric approach is of decisive importance not in determining the origin of the illness, but mainly as an important basic approach to the therapy. This is because the symptoms of a patient suffering from an endogenous psychosis are such that they restrict the ability to adapt and provoke an attitude of rejection in the patient's environment. Therapy is based on biological treatment, particularly pharmacotherapy. With the biological therapy available, the patient's symptoms of great psychomotor agitation, acute anxiety, extreme fluctuations of mood and aggressive behaviour can be greatly reduced within a short time. For this reason rehabilitation and the methodology of reintegration into society and the immediate environment — sociotherapy — have greatly increased in importance. At the same time, the method of treatment prevents the emergence of secondary hospitalization syndromes aggravating the illness.

The diametrically opposed biological and dynamic approaches clash most spectacularly in the questions of aetiology. The situation is simpler if we consider the endogenous psychoses among the psychiatric illnesses. It is quite widely known that the major social upheavals and catastrophes have not had any influence on morbidity due to schizophrenia or on the prevalence of this illness in the most varied geographic and cultural environments. In this way the accumulation of schizophrenia in certain sub-cultures can rather be attributed to social selection trends, that is, to certain manifestations of social mobility.

Despite this, great difficulties are being encountered in demonstrating the genetic determination (this is what maintains the psychogenic and sociogenic theories). As one of the best examples of this, we sum up the results of family studies:

Table 1

The risk of schizophrenia in the relatives of index patients examined

Relationship	% risk	
	$\bar{x}$	v
Parent	6.3	0.3—13
Half-sibs	9.0	3.2—10.8
Sibs	10.3	3.3—14.7
Children	13.7	7.0—17.0
Uncles or aunts	3.6	0.9— 6.9
Nephews and nieces	3.5	0.5— 5.5
Cousins	1.4	0.8— 2.9
Grandchildren	3.0	1.3— 4.4

It is clear that mathematical demonstration is impossible in view of the great deviation in the findings of the different studies. For example SLATER (1972), assuming the influence of a partially dominant gene, considered that in theory the probability of occurrence of schizophrenia in the sibling of the person studied would be 9.9%, this figure would be 8.4% for the child and 4.6% in the cousin; while KARLSSON (1972), postulating the influence of two-locus recessive genes, calculated a probability of 14%, 16% and 3% for the same degrees of relationship. If we accept the 0.85% morbidity for schizophrenia and assume a polygene origin for the disease, on the basis of the modified Edwards formula (CZEIZEL and TUSNÁDY 1972), the observational risk of schizophrenia in the first, second and third degree relatives is 11.7%, 3.9% and 2% respectively. As Table 1 shows, the scattering of the data from studies is so wide that they are able to include the figures for each of these hypotheses.

For this reason, I consider that clinical diagnosis on a sound nosological basis and as precise as possible is a fundamental requirement in research on the endogenous psychoses. This will make it possible in the first place to screen out non-endogenous (somatogenic and psychoreactive) psychoses; it will also contribute to a better knowledge of the sub-classes of the endogenous psychoses. A conclusion which begins by stating that the researcher examined a specified number of schizophrenic patients without more precise sub-classification is not acceptable.

A nosologically acceptable classification must be based on clinical entities in which the course of the disease is taken into account and the conceptual system describing the syndromes reveals the contours of the clinical picture, its saturation and coherence (PETHŐ 1972). Distinction of the cyclical psychoses and the schizophrenias among the endogenous psychoses is as yet the most accepted but even in these two cases a conceptual blurring also occurs, for example, in the concept of the so-called "mixed psychoses" (where a "combination" of schizophrenia and manic-depressive psychosis is postulated) Even the cyclical psychoses are not entirely uniform (e.g. there may be unipolar or bipolar disturbances of mood); however in the case of schizophrenia the picture is much more heterogeneous. This is the reason for distinction such as essential and process schizophrenia (SULLIVAN 1953) or typical and atypical schizophrenia (PAULEIKHOFF 1975). Leonhard has attempted a highly detailed classification of the endogenous psychoses. In our experience his main disease entities provide a good foundation for the separation of clinical disease entities (LEONHARD 1957).

Leonhard's *systemic* forms of schizophrenia are characterized by a steady progression. This group includes the systemic paraphrenias (characterized chiefly by symptoms of experience), the systemic catatonias (characterized by behavioural aberrations) and the hebephrenias (where emotional blunting is the central symptom). The *nonsystemic* schizophrenias take the form of remittent attacks, with the course of the illness fluctuating between deterioration and improvement. In the case of *cycloid psychoses or cyclophrenias* the patient may be free of symptoms for considerable periods of time between two stages of the illness.

Material and Methods

Using these diagnostic categories, the author examined 274 endogenous female patients from the inner area of Budapest. The distribution was as follows:

Diagnosis	*number of cases*
(H) hebephrenia	49
(P) systemic paraphrenia	29
(K) systemic catatonia	28
(p) affective paraphrenia	30
(k) periodic catatonia	28
(C) cyclophrenia	51
(M) maniac-depression	35
(D) monopolar depression	24

The psychiatric study was supplemented with 59 body measurements. The chief concern in processing this data was to attempt to ascertain whether there is any difference in body measurements between the different clinical groups of endogenous psychotic patients indicating the study of differences in physique as a promising approach. For this reason the author selected the Penrose method for estimation of the Mahalanobis D^2 procedure (PENROSE 1954).

Results

Comparing the results obtained for each group with every other group gave the interrelationships shown on the following dendrograms (Figures 1 and 2).

The results can be summed up as follows:

1. The main groups (particularly the systemic and non-systemic schizophrenias) do not act as entities. This can be given an adequate clinical interpretation since catatonia, paraphrenia and hebephrenia, for example, differ markedly in their symptoms.

2. The distance between the catatonic patients (especially the systemic catatonias) and the other patients is significant.

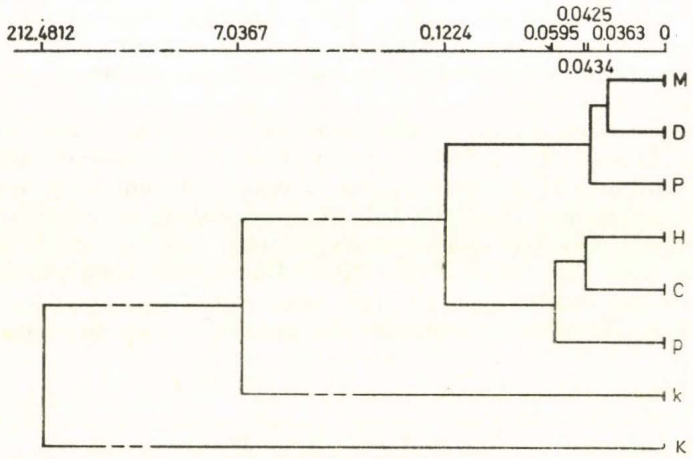

Fig. 1. Distances between the individual clinical groups according to shape

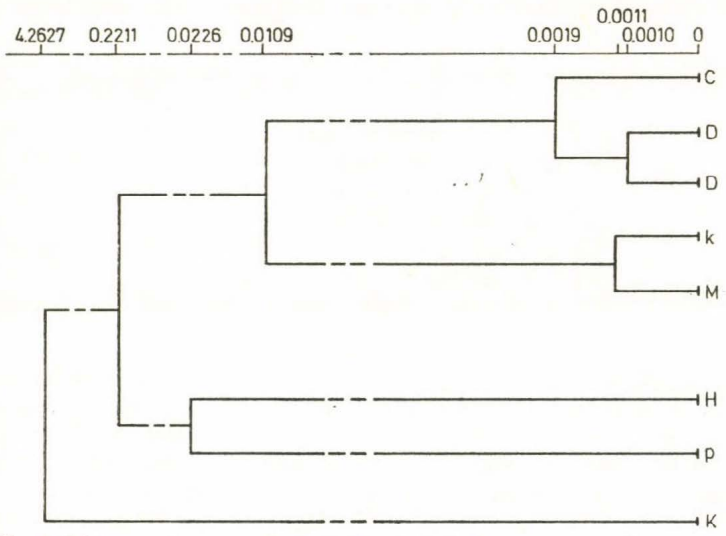

Fig. 2. Distances between the individual clinical groups according to size

3. The overwhelming majority of endogenous psychotics form two large groups. Partly in conformity with KRETSCHMER (1931) the picture presented by the body measurements for manic-depressive psychotics differs markedy from that for the majority of schizophrenics (especially as regards "shape"). At the same time, among the schizophrenics the smallest body measurement values were obtained for the hebephrenics, although together with the affective paraphrenics. The group of cyclophrenics falls into this category on the basis of "shape" but not on the basis of "size".

Studies the author has carried out in another direction tend to confirm the genetic soundness of the conclusions that can be drawn from these body measurement data. He shall only refer briefly here to these studies. Assuming the role of new mutations in maintaining the incidence of schizophrenia, he recorded the age at the time of conception of the patient, for the parents of patients isolated from the family angle (that is, the first occurrence in the family of endogenous psychosis). The data for female patients is not yet complete. The author has reported elsewhere on the data for male patients and shall only sum up the findings here (KELEMEN 1977). For 130 male patients the age of the mother at the time of conception proved to be higher than that for the control group of 383 normal subjects. After excluding the influence of social factors and the influence of parental age differences, by fixing the maternal and then the paternal ages, χ^2 statistics were made for the normal and pathological values of altering paternal age groups. Then determining the partial correlation coefficients weighted by the number of elements from the previous contingency tables, the author reached the conclusion that the probability of incidence of the illness only rises with the increase in maternal age ($p < 0.01$). There are significantly more elder mothers in the case of systemic schizophrenics ($p_{syst} < 0.001$) and in particular among the paraphrenics. However, the maternal age for cyclophrenics did not differ from that for the normal control group. Another indication of the important role of new mutations is the fact regularly found in family studies that there are more mentally ill persons among the children of patients than among their parents. The same explanation can be given for the fact that although schizophrenics have a reduced level of fertility — and excessive fertility of a compensatory nature cannot be found among their siblings either — the prevalence of schizophrenia nevertheless remains constant. If we compare these data with the fact that Lindelius found a higher than average level of fertility in the parents of patients (LINDELIUS 1970) it would seem that it is often children born late who become schizophrenics; that is, the incidence of schizophrenia is in correlation not with the number of children but with the more advanced age of the parents.

The data given here point to the need for a genetic study of the endogenous psychoses and to the possibility of explaining the differences in the clinical condition and physique of the various disease entities on the basis of the differing genetical backgrounds.

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