HOW FAR IS THE ENVIRONMENT RESPONSIBLE FOR DELUSIONS?¹

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THE analysis of somatic delusions, that is, of false beliefs concerning the body or organs of the patient, shows (if our Danvers autopsy material yields a fair sampling) that there is a strong peripheral element therein.²

The correlations which we can make with more or less facility between somatic lesions and somatic delusions suggest that the process of somatic delusion-formation is rather one of elaboration than of manufacture. Even the somatic delusions of general paresis itself may often be shown to be correlated with lesions of the soma; and, where the soma is negative, still the damaged brains of these paretics are likely to show a spread of lesions back of the Rolandic fissure in various sensory-elaborative areas, or even in the optic thalamus at a still more external plane in the centripetal path of sensory impulses.³ The evidence from normal brain cases and from paretics, where careful correlations are ex-

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²E. E. Southard. On the Somatic Sources of Somatic Delusions. *Journal of Abnormal Psychology*. VII, 5, 1912-1913.

³E. E. Southard, assisted by A. S. Tepper. The Possible Correlation between Delusions and Cortex Lesions in General Paresis. To be published in the next number of *The Journal of Abnormal Psychology*, which is the August-September, 1913, issue.

ecuted between the particular delusions felt and the possible organic sources of these, leads one almost irresistibly to the conception of a strong, sensational, perceptual, or, in some cases, hallucinatory origin for the somatic delusions in question.

Can a parallel hypothesis be erected for those delusions which primarily concern or seemingly concern the environment, whether social or not social? If the soma and its parts are often found to provide significant material for delusions concerning the soma, can we suppose that the environment, and especially the social environment, will likewise be found to provide the significant features of those delusions termed, in Wernicke's nomenclature, *allopsychic*? Can we invoke the perversity of inanimate objects to explain the misfit of various persons in their environment? Can we admit that the interests of the *Alter* are so by nature opposed to those of the *Ego*, that granting a tendency to delusions or to what may be termed the *paranoid capacity*, one social environment is bound to show sufficient cause for delusions touching said environment?

It seemed proper so to entitle our former considerations (On the Somatic Sources of Somatic Delusions) that the reader might surmise a close parallelism between source and content of delusions. Was it proper to suppose that titles like "*the environmental (or social) sources of environmental (or social) delusions*" and "*the personal sources of delusions concerning the personality*" would adequately cover the results of investigation in the *allopsychic* and *autopsychic* fields respectively?

Simple as such a one-to-one correspondence of content and source might appear, there were several reasons why the proof could not be easy.

In the first place, it is obviously not so easy to draw the line accurately between the self and the environment. Although all might agree that the self and the environment could be theoretically and practically distinguished in broad strokes, it is clear that the concept of personality is still obscure to many theorists and that the delimitation of the self is practically a matter of doubt (witness James' celebrated chapter on the Consciousness of Self).

The practical doubt as to what constitutes an allopsychic as opposed to an autopsychic delusion early appeared in the present investigation. We started, as in the analysis of somatic delusions, by choosing "normal-brain" cases, *i.e.*, cases in which the anatomist at the autopsy table failed to discover lesions of consequence in the brain, in a series of one thousand cases.

Cases without gross destructive lesions	306
Cases <i>listed as</i> showing allopsychic delusions	117
Cases <i>listed as</i> showing allopsychic delusions <i>only</i>	58

But further investigation showed that among these fifty-eight cases listed as allopsychic only, fourteen cases had to be excluded because the beliefs expressed could not be safely stated to be delusional. That is to say, medical revision of a lay classification of recorded beliefs had to exclude almost nineteen per cent of these beliefs (or statements in the histories taken to mean beliefs) from the delusional group. This error of almost one in five is the more surprising when one considers that the lay workers occupied with the original classification resorted to physicians constantly in matters of doubt, to such an extent that no one doubted that the classification would be found fairly representative of the records.

We then excluded a further group of cases because the personal histories were absent or so meager as to forbid any sort of correlation between beliefs and the patient's environment, leaving us finally with a group of thirty-one cases of allopsychic delusions for analysis.

CLINICAL AND ANATOMICAL NOTES (CONDENSED)

CASE I (D.S.H., 6,497, Path. 477): "*Acute melancholia*," feared "*could never go home*," was "*going to be buried alive*." The patient was an unmarried Irish-Catholic rubber-worker, whose mother and sisters had died of tuberculosis and, as an incident apparently in her own attack of phthisis, became hyper-religious ("*a great sinner*"), called for the priest, and finally in the hospital became quite mute.

Death from extensive bilateral tuberculosis of lungs

(chronic and acute), ulcerative tuberculous enteritis with ascites, emaciation and anasarca, and ovarian atrophy.

CASE II, (D.S.H. 7,095, Path. 503): "*Acute melancholia*," was "*to be punished for something she had done*," and had a "*sister who told lies about her*." Patient was an unmarried Catholic house-maid of ordinary mental capacity who turned from a cheerful person into a melancholic one for a period of three months, recovered, and became depressed again. Much headache. In hospital, much *praying with beads*.

Like Case I, Case II died of extensive bilateral tuberculosis of lungs (including right pyopneumothorax) and showed some abdominal lesions (ascites, cholelithiasis). Subperitoneal fibromyoma of uterus.

If not so essentially autopsychic as Case I, it would seem that Case II would hardly fit a strictly allopsychic group.

CASE III (D.S.H., 9,678, Path. 653): A catatonic dementia præcox patient, a married Baptist woman, born in New Brunswick, although she appeared to move in a world of spirits. "*Everybody is a spirit but our body is dead*", had a well-developed autopsychic center ("*bad girl*").

This case likewise had extensive bilateral tuberculosis of lungs as well as abdominal and pelvic lesions (tubercles of ileum and cecum, eroded cervix uteri).

CASE IV (D.S.H., 4,588, Path. 272): A lumber dealer in business difficulties. "*Afraid something dreadful is to happen to family*," "*folks have died*."

Lesions: Enlarged prostate, diverticulum of bladder, pyelonephritis. Aortic and aortic valvular sclerosis.

CASE V (D.S.H., 1,434, Path. 280): Alcoholic Irish gardener of sixty-six years. "*Everyone trying to injure him*"; "*annoyed by witches*" (swore at witches for years); "*large property in China*." Cardiac (aortic insufficiency, mitral stenosis, hypertrophy); large chronic gastric ulcer; chronic peritonitis with adhesions. There is some doubt whether the brain was normal in this old case (granular ependymitis of fourth ventricle, chronic leptomeningitis).

CASE VI (D.S.H., 5,933, Path. 331): Woolen manufacturer, seventy years, occasionally blue, occasionally alcoholic,

slight shock a year before admission. "*People plotting and trying to rob him,*" "*officers after him,*" "*moved money from bank to bank,*" "*may be burned up,*" "*family all dead.*" Emaciation, abscess of leg, aortic sclerosis, basal cerebral arteriosclerosis, chronic leptomeningitis.

CASE VII (D.S.H., 12,340, Path. 978): Unmarried school-teacher, manic-depressive, developed delusions ("*people hypnotizing her,*" "*other people filthy*"; patient "*had cancer,*" made "*poor investments*" in western lands (delusion?).

Patient's brother drunkard. Previous attacks showed alternately depression and excitement. The delusion "*had cancer*" was thought to be not a genuine somatic delusion.

Chronic lesion: chronic diffuse nephritis.

Death from septic mitral endocarditis and pneumococcus meningitis.

CASE VIII (D.S.H., 11,538, Path. 993): Housewife of a worrying and hypochondriacal type, amnesic at fifty-seven, had delusions. "*People trying to poison her,*" "*to be killed and cut up in pieces,*" "*other patients telling immoral stories*" (delusion?).

Lesions: Fatty liver, fatty heart, hemorrhages in skin, emaciation.

CASE IX (D.S.H., 13,364, Path. 1,115): An unmarried shoemaker; given to worry and to dislike of children, home life unpleasant, hypomaniac at fourteen (patient at Danvers), again at twenty-eight. *Delusions:* "*People trying to injure her,*" "*people talking to hurt reputation,*" "*to be poisoned.*"

Lesions: Malnutrition and chronic dermatitis. Slight mitral and parietal endocarditis, Scars of apices. Chronic gastritis, chronic adhesive cholecystitis, chronic periappendicitis, hydrosalpinx. Dilatation of thoracic aorta. Granular ependymitis of fourth ventricle.

CASE X (D.S.H., 3,252, Path. 151): Diagnosed "*acute maniacal chorea,*" was a waitress of somewhat alcoholic and irregular life ("*fear of pregnancy*") (delusion?), excited, suicidal. "*People trying to get father's money,*" "*parents would be turned out of house because patient was in Danvers.*" Hallucinations (people talking through ventilators).

Lesions: Pregnancy, ten weeks. Partial placenta prævia, slightly fatty liver. Death from pneumonia.

CASE XI (D.S.H., 11,394, Path. 821): Very possibly a manic-depressive case (third attack at sixty-three years after exhaustion by nursing cancerous husband). Despite delusions of "*control by an Indian doctor*" and of "*going to be killed*" or "*etherized*," "*confined*," had a considerable coloring by autopsychic factors ("*will never get well*," "*calls self an Indian*").

The chronic lesions in this case were chiefly abdominal and pelvic (hypernephroma of kidney, chronic diffuse nephritis, fibromyoma and polyp of uterus) although the chronic passive congestion of liver was associated with cardiac disease (including coronary sclerosis).

CASE XII (D.S.H., 5,970, Path. 346): Carpenter of fifty-four years, diagnosticated general paresis, history of syphilis. *Delusion*: "*Some one or some animal trying to get at him.*"

Lesions: The autopsy showed instead of paresis large areas of chronic internal hemorrhagic pachymeningitis with organization over frontal, parietal and part of occipital regions. Contracture of legs, slightly aortic sclerosis, slight chronic adhesive pleuritis, decubitus, emaciation.

CASE XIII (D.S.H., 7,094, Path. 372): Housewife, with insane uncle and cousin; for some years distrustful of husband (would not trust him with bank book), "*shock*" eighteen months before admission, at sixty-five. *Delusion*: "*Clothes being taken away*," patient suffering *bad treatment*.

Lesions: The case perhaps hardly belongs in the normal-brain group by reason of marked cerebral arteriosclerosis and marked chronic fibrous leptomeningitis. However, no special lesions of the brain were noted. Cirrhosis of the liver, cholelithiasis, chronic diffuse nephritis, aortic sclerosis and aortic valvular sclerosis with calcification.

CASE XIV (D.S.H., 8,349, Path. 486): Swedish housewife, married; originally of a cheerful disposition, had mental symptoms at the menopause at fifty-one and a second attack with sleeplessness at sixty-two. *Delusion*: Patient said "*neighbors stole flowers*"; patient was "*undergoing electric shocks*."

Lesions: Cause of death pneumonia; chronic lesions, chronic obliterative pleuritis of both sides, bronchiectases

of right upper lobe, mitral valvular sclerosis, chronic interstitial nephritis, chronic gastritis, numerous fibromyomata of uterus.

CASE XV (D.S.H., 367, Path. 526): Married Irish housewife, probably manic-depressive. History of domestic trouble, attack at thirty-six (Worcester State Hospital), and at thirty-eight. Death at forty. Delusions of infidelity of husband and as to husband's attempting to get money to spend for other women (delusions?).

Lesions: Hypertrophy and dilatation of heart, chronic passive congestion of liver. Cholelithiasis, chronic interstitial nephritis. The thick and eburnated calvarium frontal osteitis, chronic external adhesive pachymeningitis, a slight degree of chronic leptomeningitis and sclerosis of the arteries at the base of the brain, with a brain weight of one thousand one hundred grams, suggest that the brain was not entirely normal, but since no lesions of the cortex are recorded, the case has been put in the "normal-brain" group. There is considerable question whether this case showed true delusions, and there is some evidence that the beliefs concerning patient's husband were at least partially grounded.

CASE XVI (D.S.H., 856, Path. 854): Unmarried Irish Catholic servant-maid of low mentality, and always eccentric character, had delusions that people were "*stealing from her*," and that people "*talked about*" her.

The autopsy indicates that it would hardly be safe to describe the brain of this imbecile as normal, since it weighed one thousand and thirty-five grams, and showed chronic internal hydrocephalis, with marked cerebral arteriosclerosis, and chronic external adhesive pachymeningitis. There was mitral sclerosis, cardiac hypertrophy and a moderate degree of coronary arteriosclerosis, the liver was slightly fatty; there were subperitoneal fibromyomata of uterus.

CASE XVII (D.S.H., 8,463, Path. 600): Swedish epileptic laborer (traumatic injury of skull, two operations with partial relief); despondency. *Delusion:* "*Followed by animal intending to devour him.*"

Lesions: Of a chronic nature, included hypertrophy and dilatation of heart, chronic passive congestion of liver,

chronic perisplenitis, and bilateral chronic obliterative pleuritis. There were ecchymoses of the fundus of the stomach and tuberculous ulcers of the ileum. Cause of death, bilateral phthisis.

CASE XVIII (D.S.H., 10,352, Path. 687): A laborer, formerly of cheerful though reserved disposition, at seventy-five years became irritable and irrational, talked to himself, and became vagrant. Failed to recognize his family, became restless and noisy, struggled and shouted "*murder.*" *Delusions:* "*Family down on him*" and "*wants to get rid of him.*"

Lesions: Chronic interstitial nephritis, slight coronary arteriosclerosis, death from hypostatic pneumonia.

CASE XIX (D.S.H., 7,690, Path. 717): Housewife of reserved disposition, stated to be "unkind and mean at home, though agreeable and entertaining to strangers"; stated to have put arsenic in beans and to have poisoned daughter. Obscene and violent and sometimes homicidal. Death at seventy-five. *Delusion:* Transient, "*every one was going to steal from her.*"

Chronic lesions: chronic diffuse nephritis, cholelithiasis, left-sided chronic obliterative pleuritis, adhesions of right lung, vegetative tricuspid endocarditis.

CASE XX (D.S.H., 10,923, Path. 756): German woman of seventy-four years, with amnesia for ten years, noisiness at night for two years, disorientation for place and time. *Delusion:* "*People come to the house at night to steal.*"

Lesions: Cholelithiasis, abscess of gall bladder, and occlusion of cystic ducts, chronic nephritis. The brain weight, nine hundred and twenty-five grams, indicates very probably that this case should be put in the group of senile atrophic dementia.

CASE XXI (D.S.H., 1,093, Path. 760): A carpenter, naturally of a melancholy and reserved disposition, said to have suffered congestion of the brain twenty-five years before death, at sixty-six; had mental symptoms for a period of three months, at sixty-two. *Delusion:* "*Wife and daughter are keeping patient at hospital in order to spend his money.*"

Lesions: Prostate enlarged, heart hypertrophied, kidneys contracted, sclerosis of aorta with calcification, moderate mitral sclerosis, and fibrous endocarditis, cataract

of right eye. Death from pneumonia, arteries at the base of the brain were sclerotic and there was diffuse chronic leptomeningitis. The brain, however, weighed one thousand four hundred and fifty grams.

CASE XXII (D.S.H., 10,787, Path. 769): Widowed butcher of sixty-seven years; cheerful, occasionally alcoholic to excess. In the forties was quite wealthy but fell into business troubles, failed at sixty-five, has become worried and melancholy since. *Delusion*: "*Something he ought to tell but couldn't*"; "*was put in asylum to get property*"; "*to be killed and poisoned*"; "*all food poisoned*"; "*was defending himself in a breach of promise suit.*"

Lesions: Death from pneumonia; chronic lesions, emaciation, mitral sclerosis and chronic adhesive pleuritis. Arteries at base of brain were sclerotic.

CASE XXIII (D.S.H., 10,783, Path. 775): Blind, dis-oriented housewife of eighty-four years; melancholy after death of daughter. "*People had ill-treated her.*" "*If she walked about she would walk on children.*" Threw food about for children.

Lesions: Cardiac, arteriosclerotic, cholelithiasis, old appendicitis. Cerebellar cyst of softening would tend to exclude case from the normal-brain series. Chronic internal hemorrhagic pachymeningitis.

CASE XXIV (D.S.H., 9,975, Path. 778): An imbecile gardener, forty years, brooded over lawyer's letter for weeks. "*Everybody down on him,*" "*people chasing him and trying to kill him*"; "*to be taken away and killed.*"

Lesions: Extensive tuberculosis, probably pulmonary in origin, but extending to peritoneum, lymph nodes, liver.

CASE XXV (D.S.H., 11,140, Path. 780): Once successful shoe manufacturer, eighty-one years, of good character and ability; latterly suspicious, confused, sleepless, restless.

Delusions: "*Patterns stolen.*"

Lesions: Cardiac, arteriosclerotic. Chronic nephritis was the only abdominal lesion. The brain was beyond question atrophic, as well as arteriosclerotic at the base.

CASE XXVI (D.S.H., 11,147, Path. 812): Somewhat inferior grocer who failed in business and became stubborn, irritable and full of *ideas of persecution* by wife

and her family (delusion?). Syphilis at twenty-five. Immoral.

Lesions: Pernicious anemia with posterior column sclerosis. Cardiac, arteriosclerotic. Abdominal lesions few, (chronic perisplenitis, slightly fatty kidneys).

CASE XXVII (D.S.H., 11,804, Path. 865): Died at seventy-one after two years of increasing dementia. *Delusions:* *Apprehensive*; "House broken into," "brother-in-law to blame."

Lesions: Death from pneumonia. Cardiac disease, with chronic passive congestion of liver. Chronic interstitial nephritis.

CASE XXVIII (D.S.H., 3,702, Path. 939): Catholic housewife, two commitments at thirty-one and thirty-four, childbirth assigned cause. *Delusions:* Jealous and suspicious of husband; "others filthy," "divine authority," "toilet filthy."

Lesions: Cardiac disease and complications. Arteriosclerosis.

CASE XXIX (D.S.H., 6,373, Path. 1,032): Alcoholic Irishwoman, forty years. "People call her bad names."

Lesions: Death from pulmonary tuberculosis. Disseminated tuberculosis of both lungs. Miliary tuberculosis of liver and left kidney. Thrombosis of iliac and femoral vein. Atrophy of left leg. Chronic external pachymeningitis, slight edema of *pia mater*, chronic adhesive pleuritis, atrophy of right optic nerve.

CASE XXX (D.S.H., 13,011, Path. 1,056): Unhappy Irish housewife. *Delusions:* Complicated delirium due to streptococcus meningitis. *Food and water poisoned.*

CASE XXXI (D.S.H., 7,280, Path. 689): An imbecile servant-maid, alcoholic, from an alcoholic family; fifty-two years.

Delusions: *Persecution.* Persistent thymus, thyroids small, brain atrophic. Ascites, ovarian atrophy.

Analysis of these thirty-one cases shows at least eight cases with a well-marked alteration of the personality recognized by the patient. All but one (a case, [V, 280] not certainly equipped with a normal brain, who alongside unpleasant yearlong delusions of *injury by witches* some-

times mentioned *property in China*) showed delusions of an unpleasant nature only. On one (Case X, 151) the *fear of pregnancy* was grounded in fact, and the case should perhaps, be counted out of our group either as non-delusional or as somatopsychic. Another (Case XXIII, 775) felt an apprehension about *walking on children*, somewhat reasonable in view of her impairment of vision, (nor is it clear whether her ideas of *ill-treatment by others* were delusional).

It would perhaps be going too far to call these eight cases essentially non-allopsychic just because they exhibit autopsychic changes. Nevertheless we are inclined to think that in Cases I (477), II (503), and possibly III (653), the delusion-formation spread, as it were, outwards from a conceived alteration of the Ego rather than inwards from a conceived alteration of society. That is to say, we should regard the delusions of these cases as essentially egocentrifugal rather than egocentripetal from the patient's point of view. Case V (280)'s late delusion of grandeur may possibly have been of brain-manufacture, and, so far as it goes, is of an egocentrifugal character from the patient's viewpoint. Case X (151) was, if delusional, in the same group. Also Case XXIII (775).

On the other hand the autopsychic delusions complicating Cases VII (978) and especially XI (821), seem to be of an egocentripetal character as viewed by the patient. That is, these two cases of predominantly allopsychic content remain essentially allopsychic even after their autopsychic complications are reviewed. The selves of these patients are, as it were, damaged by a spreading inwards of the delusion-formation (egocentripetal from the patient's point of view and possibly from the outsider's point of view).

From this sketchy analysis of certain impure cases of allopsychic delusion-formation, we accordingly obtain a method of approach in the analysis of various mixed cases which we have so far not analyzed.

We will proceed to consider the remaining group of twenty-three cases in which no certain traces of autopsychic or somatopsychic change can be found. There, if anywhere in this material, shall we be able to determine what share the environment may have had in actually producing (from

the outsider's point of view) the delusions which concern the environment.

We at once find three *imbeciles*, Cases XVI (854), XXIV (778), XXXI (689), from whom it is hard to exclude the effects of personal abnormality from any analysis of their reactions to the environment. (Possibly Case XXV [812] belongs also in this group.) In these cases we may surmise that, however little the patients may themselves have suspected it, there were being wrought in their lives certain, as it were, egocentrifugal effects, egocentrifugal, that is to say, from the alienist's point of view.

Faults of temperament are recorded in another series of four cases (VIII [993], IX [1,115], XIX [717], XXI [760]), which again argue that not the environment alone was responsible for the allopsychic delusions, but that the delusions were in some sense (though perhaps hidden from the patients) egocentrifugal in origin. Again, there is a group in which the effects are possibly due to, or complicated by, organic brain disease (of such a nature as to elude the diagnostic forms dealing with the *cortex cerebri*, but of sufficiently definite nature), Cases XII (346), extensive organized internal hemorrhagic pachymeningitis; XVII (600), epileptic with cranial trauma; XXX (1,056), streptococcus meningitis. It is of interest to note that the delusions in XII and XVII resembled each other ("*some one or some animal trying to get at him*" and "*followed by animal intending to devour him.*")

We remain with thirteen cases in which to prove our hypothesis that environmental difficulties might account for delusions of an allopsychic nature. Of these, eight (Cases XIII [272], XIV [486], XVIII [687], XX [756], XXV [780], XXVII [865], XXVIII [939], XXIX [1032]) exhibit little or nothing environmental to account for their delusions. Brain-manufacture or cortical injury to the personality might be urged in the arteriosclerotic Case XIII, the senile atrophic Case XX, the arteriosclerotic and atrophic Case XXV.

We remain with six cases in which environmental causes seem to stand in fairly close connection with the delusions. Business difficulties here stand first (Cases IV

[272], VI [331], XXII [769], XXVI [812]), and domestic difficulties next (Cases XV [526], XXVIII [939]). The business difficulties were in men; the domestic difficulties in women.

Let us admit, however, for the sake of argument, that all the thirteen cases which remain to us from thirty-one (after subtracting eight essentially or partially autopsychic cases, three imbeciles, four cases of psychopathic temperament, and three cases of cephalic disease) are all strongly influenced by the environment in the formation of their delusions, it is clear that the environment has far less to offer in the direction of delusion-production than might be expected.

A table may perhaps bring out these factors more clearly:

	Cases.
Danvers Autopsy Series,	1,000
Cases with little or no gross brain disease,	306
Cases listed as with allopsychic delusions	117
" " " " " " only,	58
Of these, cases in which the beliefs could not be regarded as delusory,	14
Cases with too meager notes,	13
Residue of allopsychic cases,	31
Cases with demonstrably morbid personality,	8
Imbecile types,	3
Temperamental faults,	4
Residue of truly allopsychic cases,	13
Environmental factors not proven,	8
Environmental correlation highly probable,	6

Little might a *priori* be hoped from the analysis of somatic lesions found in these cases of allopsychic delusions. If we take the selected thirteen cases of practically pure allopsychic delusions, however, we shall be struck by several features in the autopsies. The absence of chronic pulmonary lesions is surprising (Case XXIX [1,032] was the only case of death from pulmonary tuberculosis among the thirteen; another (XIV [486]) had some bronchiectases of one pulmonary lobe). The prominence of cardiac, renal, and cardio-

renal disease is striking. Ten out of thirteen cases showed cardiac disease of severe type, in several instances associated with aortic disease or with well-marked cardiac complications in other organs. Renal disease, as a rule of a chronic character, is hardly less frequently in evidence (9 in 13 cases).

The ancient maxim concerning the relatively unpleasant emotions allied with disease "below the diaphragm" comes possibly here in question. But the heart, as might be suspected from the effects of angina pectoris in particular, does not fit the maxim.

CONCLUSIONS

By choosing cases (from a group of 1,000 cases of mental disease *autopsied* at the Danvers State Hospital) on these grounds: (a) That the *brains* were *normal* or normal-looking, and (b) That the delusions *recorded* were purely or almost purely *environmental* (allopsychic) in scope, we have arrived at a small group of thirteen cases suitable for analysis. In addition to these thirteen cases there were eighteen others (31 in all) which had been *listed* as almost purely allopsychic in scope; but, of these eighteen, eight had to be excluded as probably autopsychic (intrapersonal) in essence, three as imbecile, four as complicated by temperamental faults, three as influenced by cranial or meningeal disease.

Of the thirteen more truly allopsychic cases, six showed close correlation between previous history and contents of delusions, but the others failed to show such correlation.

The problem at once arises whether concealed or unknown personal factors may not have had much to do with these seemingly pure allopsychic cases.

Whether delusions often spread inwards (egocentrically) or habitually outwards (egocentrifugally) becomes a problem to be studied along these same statistical lines.

The paucity of pulmonary lesions in this group and the great frequency of cardiac and renal lesions suggest further problems of a more difficult nature.