VARIETIES OF DISORIENTATION

By

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DISORIENTATION is not a uniform phenomenon and does not always follow the same pattern. Its pattern varies with its causes. Three varieties may be recognized. (1) The disorientation of toxic delirium. This is the best known variety. (2) The disorientation seen in some cases of schizophrenia. (3) That seen in some cases of brain tumour and other organic brain disease. The three varieties are all different, and the object of this paper is to consider why.

DELIRIOUS DISORIENTATION

The disorientation of toxic delirium is the simplest and the easiest to understand. For our understanding of it we are indebted to Hughlings Jackson, who showed that it is an example of "reduction to a more automatic condition". It was one of his favourite examples.

Delirious disorientation bears a characteristic and unmistakable stamp: the patient tends to mistake the unfamiliar for the familiar (7, 9, 10). Thus a man in hospital will think he is at home, and the nurse he will mistake for his wife. Why did Jackson consider this an example of "reduction to a more automatic condition"?

The functions of the nervous system vary from the most automatic (or least complex) to the least automatic (or most complex). The most automatic functions are the oldest and are mediated by the lowest levels of the nervous system, while the most complex are the newest and are mediated by the highest levels.

By "reduction to a more automatic condition" Jackson meant that when a centre is paralysed, lower centres take over as best they can. Often it is the job of the higher centre to keep lower centres in check, and these are now released from control. A given stimulus will now elicit, not the higher and more complex response, but an inferior and more automatic one. The brain, so to speak, does its best with what it has, like an armless man who writes with his feet.

Jackson considered the delirious man in hospital who mistakes nurse for wife. I have quoted extensively from his writings on this point (7) and a brief statement here will suffice.

Jackson said that a wife represents, to the average man, his "well-organized symbol-image" of woman. The woman a man knows best is his wife; her image therefore is his "symbol" image of woman. When he thinks of "woman" the image activated or closest to being activated is that of his wife, just as when an Englishman thinks of "language" he will, if anything, think of English. When a man sees another woman, an act of discrimination takes place, as if he says to himself, "This is a woman other than my wife." To be sure, this act of discrimination is unconscious.

The wife, said Jackson, is a "well-organized" symbol-image. The lowest levels of the nervous system are the most highly organized, for they are the oldest and the most firmly established. Since a man sees his wife and thinks of her more often than of other women, the neural pathways corresponding to her image are the most highly organized. Practice makes for organization. The more

https://doi.org/10.1192/bjp.102.428.619 Published online by Cambridge University Press

you practice an act, the more automatic does it become, and the more highly organized does its neural substrate become.

Physicians sometimes make the mistake of supposing that the highest centres are *more* highly organized than the lowest. Thus one writer speaks of the control exercised by the highest centres "over automatic and unorganized" lower centres. Another, referring to Jackson's three levels, speaks of the highest as the "third and most highly organized level". These writers confuse "organized" and "complex", two things that are *inversely* related. The highest centres are the most complex, but the *least* highly organized. The most highly organized centre is that whose component parts are most firmly interconnected. It is that which functions most stably under the widest variety of conditions. On this view the most highly organized centres are the lowest. Thus the centres for circulation and respiration are so highly organized that they function day and night under all but extreme conditions. By contrast, the highest centres are so slightly organized that they are easily affected by adverse influences: a little alcohol will befuddle the mind. Were the highest centres the *most* highly organized, the mind would lack agility and plasticity; people would be too rigid, and would be unable to meet new and unexpected conditions (10).

So when a man lays eyes on his wife, the neural pathways that come into action are well organized. Recognition of his wife is a simple and automatic act. When, however, he sees another woman, a double event occurs. The simpler pathway is activated (corresponding to the idea "This is my wife") but a higher and more complex pathway is activated too (corresponding to the idea "This is not my wife but another woman"). The higher pathway asserts itself over the lower one, and the discrimination is made. But if he is delirious, the discrimination is apt to founder. The simpler event alone will occur; the "well-organized symbol-image" alone will be roused and will stand uncorrected, and he will mistake the woman for his wife.

Difficulty in grasping the unfamiliar gives rise not only to disorientation but to various other misinterpretations. Thus a farmer was brought to the hospital in delirium tremens. Hearing the scratchy sounds of an ancient phonograph at the other end of the ward, he mistook them for the crowing of a rooster.

Another example, reported by Jackson (3), is that of a "sack dealer (who) was delirious during erysipelas. The house-surgeon opened a small abscess in one eyelid, while the patient was in a straitjacket. The patient's account of these circumstances was that he had been to a public house, that the landlord fastened him down with two sacks, and then poked out one eye." This man in his delirium failed to grasp the novel and unfamiliar experience of an operation on the eye. A man who presumably was no stranger to the pubs in his neighbourhood, he grasped the event in terms of a bar-room brawl.

It is remarkable that this tendency in toxic delirium, to mistake unfamiliar for familiar, was known to Jackson, who was not a psychiatrist, while it escaped the notice of Kraepelin. Jackson at heart was a physiologist, and was quick to see anything that exemplifies a physiological principle.

Paranoid Disorientation

Some schizophrenics are disoriented. A schizophrenic, like anyone else, may be stricken with toxic delirium. Then too, those who are not delirious may be disoriented from delusions in respect of their environment. In either case the disorientation bears a characteristic stamp.

I will call the disorientation of a schizophrenic "paranoid disorientation",

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as opposed to "delirious disorientation", which refers to that of a man who is delirious but not also schizophrenic.

The two varieties of disorientation differ profoundly. They share the same name, disorientation, but otherwise have almost nothing in common. Two differences are known.

(1) The delirious man has no idea he is disoriented. The schizophrenic, by contrast, knows that you differ from him, or at any rate, *pretend* to differ with him, in his conception of the environment. He believes *he* is right, not you, and thinks you have a motive for pretending to differ from him (e.g. he may think you are testing his mind). An example is Case 4 in an earlier paper (4). This woman, after a bromide delirium, sank into a schizophrenic dementia. She now knew the place was, as she put it, "*supposed*" to be the Harrisburg State Hospital, but she didn't believe it. She was convinced it was 1933, though the rest of us said it was 1931. She thought we said 1931 to see if we could deceive her and so test her mind. Letters postmarked 1931 did not convince her, for she said they could be two years old, though they looked clean and fresh. The dateline on the newspaper was equally unconvincing; she said the papers destined for the hospital were misdated. I offered to take her into town and let her buy a paper at any news stand. She declined the offer, saying that even then the false dating could somehow be pre-arranged.

(2) The delirious man who is not schizophrenic thinks in familiar grooves. The hospital he mistakes for his home, the nurse for his wife. The farmer noted above mistook the scratchy sound of the phonograph for the crowing of a rooster. In sharp contrast, the disorientation of the schizophrenic is shot through with the remote, the bizarre; the exotic. At the Harrisburg State Hospital, whose patients, drawn from the rural counties of central Pennsylvania, had seldom been out of the country and sometimes not even out of the State, I saw disoriented schizophrenics who named the place as Italy, Alaska, Ethiopia, China, Japan and the planet Mars. Delirious patients have often taken me for a son or relative or a man in some familiar occupation, such as a teacher or lawyer, but it was a schizophrenic who (in an alcoholic delirium) mistook me for Chancellor Dollfuss (in 1934, when Dollfuss was in the news).

This second difference is striking. When a schizophrenic becomes delirious, his schizophrenic traits—aloofness, bizarre thinking, etc.—remain manifest. By contrast, when a non-schizophrene becomes delirious, there is a homely air about him. Sick as he is, his aspect and behaviour are the opposite of bizarre. Typical is the man in an alcoholic delirium who, when I walked into his room, courteously asked me to sit down and said he would try to find me something to drink. He thought he was at home and acted accordingly.

In pointing out the distinctive marks of delirious and paranoid disorientation, I do not mean to imply there are never any exceptions. If one talks to a delirious man often enough to collect a hundred examples of his disorientation, there may be a few examples that will fall out of the common pattern.

Paranoid disorientation is obviously a more complex phenomenon than delirious disorientation. In toxic delirium the disturbance is relatively simple. The higher the centre, the more vulnerable it is to poison. There is therefore a relatively harmonious pattern of dissolution, with "reduction to a more automatic condition". In paranoid disorientation the disturbance is not so simple. Here we have to deal with personal idiosyncrasies, perversities, complexes and evasions, and the problem, like schizophrenia itself, does not admit of simple physiological formulation.

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Disorientation in Organic Brain Disease

There have been noteworthy reports on disorientation in brain tumour and other organic disease by Paterson and Zangwill (11, 12, 13), Gooddy and Reinhold (1, 2), Weinstein and his associates (14, 15) and others. These authors have found many remarkable patterns of disorientation associated with paraphasia, agnosia and denial of illness.

In respect of pattern of disorientation there is an outstanding difference between toxic delirium and focal organic disease. In any group of cases of toxic delirium there will be more or less uniformity, whereas in cases of focal disease such as tumour the disorientation, if any is present, will show no such uniformity. To be more specific, in obeying the "law" of the unfamiliar mistaken for the familiar, the cases of delirium follow a common principle, whereas in tumour cases with disorientation there is great diversity, each case seemingly a law unto itself. The reason for this is clear. In toxic delirium there is no discrete lesion as in tumour. The poison has invaded all parts of the brain, not just one cerebellar hemisphere or a part of one frontal lobe. Since the entire brain is involved and since the highest centres are the most vulnerable to poison, there is a certain uniformity of result; there is "reduction to a more automatic condition", manifesting itself in the tendency to mistake unfamiliar for familiar. No such uniformity is seen in the tumour cases; in them, when disorientation occurs, its characteristics will depend on how high the tumour is situated, on whether there is involvement of areas dealing with speech and mentation, etc. Hence in tumour we should expect no two cases to be alike.

Double Orientation. The many diverse patterns of orientation in organic disease cannot all be considered here. I will consider only the common occurrence of "double orientation", in which the patient, while disoriented, is yet in some degree correctly aware of his environment. As Weinstein and Kahn said (14), "the correct and the faulty identifications (exist) side by side". One of their patients in the Mount Sinai Hospital said "she was in her apartment in Ridgewood which was also the Mount Sinai Hospital". Other patients said "they were in a restaurant or hotel but named it 'Mount Sinai Restaurant' or 'Mount Sinai Hotel.' " One patient "claimed the hospital and his home were actually in the same building".

A remarkable example of double orientation was in the case of a friend in another city whom I did not see in his illness. The facts were reported to me. He had an international reputation in one of the social sciences, but had never found a proper scope for his talents. He lived in a city I will call Metropolis. He died of cancer of the lung, and for some weeks before death was in a grandiose paranoid state, so that he may have had cerebral metastases. In this state he believed he was a high official in the League of Nations (this was in 1939). He believed the city was Geneva, yet knew that when he looked out of the window he saw the familiar skyline of Metropolis. He reconciled these ideas by saying that the League had gone to the fantastic expense of erecting a replica of Metropolis in the heart of Geneva.

Double orientation is quite a different thing from the typical disorientation of toxic delirium, in which there is simply a mistaking of unfamiliar for familiar. It has been suggested by some that there is an incongruity here. I disagree. The seeming incongruity springs from a difference in the degree of cerebral involvement. As regards cerebral function the tumour patient is not as sick as the man in toxic delirium. We see this in their disorientation. From the standpoint of orientation, the delirious man is farther off the beam. He is "all wrong", whereas the tumour patient with double orientation is only "half wrong", for while he

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misnames the place he at the same time grasps, albeit inadequately, its true nature. The patient who called the place a restaurant also had some grasp of the fact that it was the Mount Sinai Hospital, for he called it the "Mount Sinai Restaurant". It stands to reason that such a man is not as sick, not as abnormal, as one who calls the hospital his home with no inkling of anything to the contrary. This is not a matter of prognosis. If we had to choose between toxic delirium and brain tumour, we would take our chances with the former. But cerebral dissolution is more profound in delirium, since *all* the cortex has been affected by the poison. The tumour patient with double orientation is not so completely bereft of his senses, since only a part of his cortex has been affected.

I therefore do not agree that there is an incongruity. It is not puzzling at all that brain tumour and toxic delirium differ in pattern of disorientation. On the contrary, it would be puzzling if they did *not* differ.

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https://doi.org/10.1192/bjp.102.428.619 Published online by Cambridge University Press