Eugene Bleuler (1857-1940) a man of our time

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Abstract

"Disturbances of perception, orientation, and memory, in the sense that they were previously defined, never belong to schizophrenia: whereas they prove the existence of some other psychoses, they do not exclude the possibility of schizophrenia. On the other hand, definite schizophrenia disturbances of association alone are sufficient for the diagnosis." (p.298)

"Of the thousands of associative threads which guide our thinking, this disease seems to interrupt, quite haphazardly, sometimes such single threads, sometimes a whole group, and sometimes even large segments of them. In this way, thinking becomes illogical and often bizarre." (p.14).

These quotations harmonise with our current concepts of a failure of integration of diverse brain regions in this psychiatric disorder. Bleuler tended to see and to treat the more chronic 'process' cases. Blueler's genius was to foreshadow recent brain function findings in this group and to anticipate our modern concepts of neural connectivity, with a prescient analysis of the core features of the disease he named.

The parallels in Bleuler's writings with modern neurological concepts will be explored.

Key-words: Schizophrenia; Bleuler.

BRAIN ORGANISATION

The rich white fibre connections emanating from spindle cells in the anterior cingulate in the human brain enable a very flexible communication between distant brain areas and a continuous rhythm of integrated brain activity, which Stansislas Dehaene has speculated differentiates humans and the great apes from all other species.

Modern functional imaging techniques have demonstrated characteristic patterns of this neural activity, with widely separate brain areas working in conjunction during perception and cognition. This integration of information processing necessarily requires temporary suppression of activity in other brain areas.
The orchestration of these shifting patterns which should be related to the perceptual or cognitive task is defective in schizophrenia, exactly as postulated by Bleuler in the very term which he coined and reflected in the cognitive defecits which he identified:
"In all probability we also ought to include in these same primary symptoms a number of simpler manifestations, above all, a part of the disturbances of association. It appears as if those pathways of association and inhibition, established by experience, had lost their meaning and significance. Associations seem to take new pathways more easily, and thus no longer follow the old preferred ways, that

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is the logical pathways indicated by past experience... In the healthy psyche, only the dream forms a sufficient analogy to what goes on in schizophrenia." (pp 349-350)

The group differences between controls and schizophrenic patients seen in functional neuroimaging studies are paralleled by deficits in the allocation of attention, both distractibility and excessive preoccupations, which show up neurophysiologically as abnormalities of the orientating response, which Hernandez-Peon demonstrated tunes the sensory receptors to salient features of the environment. Peter Venables demonstrated that this function is impaired in schizophrenia at an early age and is also associated with schizotypal personality.

Karl Pribram showed the intimate connection between orientating abnormality and disruption of the normally smooth modulation of attention between focused and scanning attention, undermining perception and cognition.

Pribram was able to show that these abnormalities are linked to limbic system dysfunction, emphasising the normal linkage between attention and emotion, a link, which Bleuler emphasised, was broken.

"The schizophrenic's behaviour as regards the function of attention can be explained for the most part, by the affectivity of which attention forms only one aspect. Where interest and aim are lacking, attention forms only one aspect. Where interest and aim is lacking, attention is bound to be weak. But in this connection, we must remember that thinking disturbances of all kinds may affect attention itself, as well as its consequences. The possibility of splitting of attention is naturally a consequence of the personality split" (p.371).

The passage is self-explanatory but is perhaps worth further clarification. Under normal circumstances, our emotions dictate what aspects of the stimulus field of our environment is the focus of our attention and what is most strongly impressed upon our memory. If the linkages between emotion, thinking and perception are weak or malfunctioning, then the effortless hierarchical grading of saliency is lost. Additionally, our emotional resonance with others is disrupted. Empathetic understanding and social bonding, as well, are dependent on harmonising our emotional responses; 'each to each a looking glass' (Emerson).

Man is a social animal and the autistic features of schizophrenia, stressed by Bleuler, probably increases eccentricity of

thinking because of the release from the normal constraints of shared belief and need for cooperative endeavor.

"The autistic world has as much reality for the patient as the true one, but his is a different kind of reality. Frequently they cannot keep the two kinds of reality separated from each other even though they can make the distinction in principle." (p. 66)

The normal inhibitions and withholding of responses in schizophrenia link with a deficit in prepulse inhibition of the startle reaction. Prepulse inhibition is disrupted by dopamine receptor agonists. Bleuler anticipated these concepts in his careful phenomenological description.

"It kind of strikes the patient" to do this or that thing.

Often he has no reason or possibility of resisting the impulse. The action is immediately translated into action... The patient's consciousness knows neither affective nor intellectual motives for his actions" (p. 205-206).

As shown by Roger Garside, long before the illness crystallises, cognitive deficiencies are apparent in academic school performance and David Romney was one of the first to show that cognitive markers are also apparent in the seemingly unaffected relatives. Peter Venables showed that the personality features described as schizotypy can be seen as the non-pathological counterpart of schizophrenia, possibly brought about by the same 'schizotaxic' predisposition(s). Holzman showed eye-tracking dysfunction in this unaffected group and Goldman-Rakic explained how this harmonises with subtle frontal lobe dysfunction and failure of fully integrated neural activity.

The normal human frontal areas are a twenty to fifty times greater in man than in monkeys and the prefrontal cortex is involved in working memory, which is deficient in schizophrenia.

The dysexecutive syndrome of frontal lobe dysfunction consists of interference in the ability to formulate efficiently or plan, organise, execute and monitor thoughts and behaviour, and to revise or regulate such thoughts and behaviour according to feedback.

Subcortical dementia is likely to affect attention, motivation and emotionality. People with subcortical dementia often show early symptoms of depression, clumsiness, irritability or apathy.

As the disease progresses, problems arise in

thought, memory and judgment.

Similar and parallel deficits in these abilities are apparent in schizophrenia, linking the concepts of Dementia Praecox of Kraepelin and Schizophrenia of Bleuler. Both of these pioneers believed in the neurological basis of the disorders but it was Bleuler who continued to probe for a fundamental basis, of which thought disorder and its subtle variant thought slippage are ineluctable markers of a disease process.

Peter Liddle has identified the "disorganization syndrome" as cutting across the divisions of positive and negative symptoms and is in agreement with Blueler's belief that disturbances of association is fundamental:

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