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Stimuli Triggering Violence in Psychoses

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ABSTRACT: Various behavioral and neurophysiological models are suggested to objectify and quantify the defense of insanity and to assess dangerousness in someone who is being considered for release from custody. Two cases are presented that show a pattern of specific relationships between traumatic experiences in youth and a later trigger stimulus that releases homicidal action. Until a refined classification system and neurophysiological understanding of sudden aggression can be achieved, forensic psychiatrists should be aware of the psychotic trigger reaction within a clinical psychiatric model.

KEYWORDS: psychiatry, human behavior, violence

Two cases of homicide are described; in each case, an idea represented in memory suddenly became conscious through a specific external releasing stimulus that had acquired significance during traumatic bodily experiences of youth. Such an acquired releasing stimulus catapulted the patients into aggressive action, uninhibited by social constraints to such an extent that the phenomenon can be viewed as being analogous to a violent state during a seizure, such as seen in temporal lobe pathology: the patient's encounter with a specific releasing stimulus is analogous to the elicitation of rage by electrical stimulation of the amygdala in diagnostic neurosurgery. The frequency with which *functional* psychotic patients suffer from such an acquired releasing mechanism is unknown.

Neurophysiological testing within various models is discussed through which this phenomenon could be further elucidated with potential application for the assessment of criminal responsibility and dangerousness when release from custody is being considered.

The goal of this clinical study is mainly a heuristic one: to assist in establishing a future, refined classification and neurophysiological understanding of a subform of schizophrenia with sudden aggressive acting out. The puzzling phenomenology of this subform brings to mind physiological mechanisms suggestive of an involvement of some kind of limbic system dysfunction.

The two clinical cases suggest that a further refinement of classification may ultimately be called for, more so as it can be assumed that these men represent not just two singled-out cases but rather the tip of the iceberg, as it were, and that more such cases will be identified once attention has been drawn to their existence.

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Highlights of Case History

Case 1

A single white man, in his early twenties, had had three previous psychiatric hospitalizations and had discontinued his antipsychotic medication because it made him feel "weak." He had hitchhiked for two or three weeks before committing the homicide. He commented, "I had been an Artane® speed freak up to that time, but stopped about two weeks before the incident because I sold all I had for food. When I had no more food, I went home. My parents were not there, but my brother [age 14] was home in bed. He had been in a car accident. The teacher came in to tutor him. Then she left and then I killed him [by strangulation and by rupturing his heart]. I went back on the road again and hitchhiked and liked it as before."

He recalled the situation prior to the homicide: "I asked the teacher what they are teaching these days, and she pulled out a paper which gave me the idea to kill my brother. The teacher gave me a report on Lizzie Borden. She killed her parents with an axe, because they put her in an insane asylum. Then she was alright and she was sane and not guilty. I associate this with my parents. They also put me in a mental hospital and I was sane." He told the police, "When you cannot get at the higher ranks you get at the lower strikers."

Thus, the parallel story of Lizzie Borden suddenly revived in him the experience of having been wronged by the parents' placing him into mental hospitals against his will and triggered the homicide.

Case 2

A single white man in his early thirties had a long-standing history of major psychiatric illness with hospitalization and outpatient treatment beginning at age 10. During his teens he began experiencing bodily delusions. Three years prior to the homicide he believed he was going to be killed and began wanting to choke people. On several occasions he made choking motions towards them. He also believed that various family members were trying to poison him. He underwent several examinations of various body parts and functions, culminating in a lung biopsy two years prior to the incident.

Three months prior to the homicide, he began acting strangely: he was up most of the night "biting himself." When his sister came home, he held on to her legs, "stiffening up like a child having a tantrum," and he complained of lockjaw. Later, when I asked him what this meant, he explained that when having "lockjaw" he was feeling "gagged." He even had lost a tooth from such "gagging," biting down so hard. This biting down and gagging had gone on for several days before the homicide.

The day preceding the homicide, his sister had insisted that he eat macaroni, which made him gag, and he heard the male voices of the "outer forces" command him to kill his sister and her four sons. This experience let him repeat the names of these four children in a stereotyped sing-song fashion. The voices also told him to kill all who had sexually molested him in state schools and state hospitals and also his brother-in-law. He recalled: "I tried to argue with them. I said I can't do it, and they said, 'You either kill him or we will kill you.'" (When asked why he did not tell his therapist at the outpatient clinic about it, he said he was afraid that the outside forces would get him if he told about them. He also stopped taking his antipsychotic medication.) "I didn't want to kill my brother-in-law. It was the outside forces that did it. They forced me. I have seen some of them. They looked like us." Asked how he would recognize them, he elaborated: "When you come to a fork in the road you go to the right or to the left." He also heard voices that controlled his everyday actions such as walking, telling him, "Right, left, right, left!"

He also hallucinated threats against himself: "They were telling me that they could cut off my balls and my penis if I did not kill my brother-in-law. They would torture me, tie me around a tree, start to cut me up—begin with my privates and then cut the whole body, and they would put the balls and the penis in my mouth to gag me. [Note the repetition of the pattern of the trauma of his having been sexually molested at age six by a man.] Then, these forces would cut me up and stab me all over the body. They would start at my privates, then stab my stomach, my arms and legs too would be stabbed, and they would keep stabbing me until I was dead."

The triggering event was approached further by the following incidents: "The voices said that my brother-in-law was a homosexual and he would gag me as they did in those dirty books he had given me. There were pictures of men putting their penes into women's mouths. Seeing these pictures reminded me of what was done to me at six and later on in state schools and state hospitals. The day I shot my brother-in-law I did not want these dirty books in my room any longer and I put them out on the street. But my brother-in-law gave me an argument. He said it was not trash collection day and he made me bring back the dirty books into the house. Then my brother-in-law was yelling at me, calling me a child molester. I thought he knew that I had been molested. I told him: 'I am not a child molester.' I left the room and the 'outer forces' began to tell me again: 'It is either him or you.' I went for the gun and then when I went back into the room it happened." (A year prior to this, he had been talked into buying a gun with ammunition in the street, he in his withdrawn state probably having been an easy mark for somebody wishing to get rid of a hot gun.)

"The outer forces kept saying, 'It's either him or you.' When I stood in front of him, the voices said, 'Shoot the dog instead,' but I could not change and I shot my brother-in-law in the stomach. He was standing watching television. He fell to the floor and didn't move. He said, 'You . . . asshole!' The outside forces said, 'Make sure he is dead,' and I shot him more after reloading the gun. I kept on shooting until the voices stopped. During the shooting, everything was very quiet. I heard the shooting, but it was not loud, and everything looked green and red and sometimes I saw gray too. My brother-in-law looked like a giant, about a foot taller than he was and 40 pounds fatter. I felt nothing. The children came in. They did not say anything, they just stood there. I told them to get out, and they left. The voices told me to kill them too. After I killed my brother-in-law, I went outside on the porch and policemen came because some neighbors had called them."

Differential Diagnoses

These two cases do not completely fit the following existing diagnostic classifications though they share certain aspects with each one of them:

1. *Impulsive acting out* can be ruled out mainly on the ground that there were no strong emotions involved at the time of the homicide, and these men showed definite signs of psychosis.

2. They are not typical for the syndrome of *episodic behavior disorder*, which Monroe [1] describes as "precipitously appearing, maladaptive behavior that interrupts the lifestyle and life flow of the individual." This behavior "is out of character for the individual and *out of context* for the situation." By contrast, the behavior of these two psychotic men was to an extreme *within the context* for the given situation that triggered their homicidal acts. Furthermore, in our cases, the behavior appeared not precipitously but within several seconds, possibly even within a few minutes, after the encounter with the extremely specific stimulus, which fit like the key into the lock, as it were. Furthermore, our two men showed psychotic symptoms.

3. The sudden aggressive behavior of these two psychotic men can be classified only partially as showing the signs of *schizophrenia, paranoid type*, even though they show its main symptoms (flat affect, autism, ambivalence, and thought disturbances as well as auditory and at times visual hallucinations [Case 2] and ideas of reference [Case 1]). However, in the present cases there was no delusional system that could satisfactorily explain the specific trigger reactions.

4. The diagnostic class of *monomania* does not fit here either, since there was no persistent conscious idea.

5. The present two cases suggest the existence of a new diagnostic class, provisionally termed *psychotic trigger reaction* (PTR), that shares certain features with the previous four classes yet differs sufficiently from them to warrant further delineation, more so because this diagnosis shows promise for clarifying some specific neurophysiological features. The outstanding features of PTR can best be discussed within the context of *specific behavioral models* known from other fields.

Behavioral Models

Acquired Releasing Mechanisms

Innate releasing mechanisms (IRM) are known in ethology [2]; a highly specific visual stimulus is known to trigger the releases of species-specific behavior patterns in animals. For instance, a coarse pattern of a bird of prey, when presented during a critical time to newly hatched chickens, triggers in them an immediate flight response.

In our two psychotic men, the acquired specific trigger stimulus suddenly revived in a vivid manner the memory representations of a traumatic situation that had been experienced repeatedly during childhood or youth. Thus, we may modify the above definition of IRM in the present cases as representing an acquired kind of IRM, called an acquired releasing mechanism. At the time of the releasing reaction there existed a critical context, a *critical space*, as it were, within which the stimulus became effective in triggering homicidal action. (Such a critical context or space is revived only in rare circumstances, and usually not within a psychiatric interview, so that the interviewer is not in danger of getting killed by mentioning the trigger stimulus.)

Furthermore, there is a precise specific fit between the suddenly introduced trigger stimulus (that had been acquired by these two men) and the revived trauma. This fit is analogous to the specificity of the innate (IRM) version of this mechanism.

Neuropharmacological Model

In a recent study by Antleman et al [3], stress (tail pressure) sensitized rats to the effects of amphetamine given later, and vice versa. The results encouraged those authors to generalize their results as potentially applicable to schizophrenia.

In the two cases under discussion here, the stressor (the initial and repeated past trauma) is viewed as having sensitized the men to such an extent that the trauma on the fateful occasion needed to be represented only by a perceived (or possibly even by a hallucinated) word ("child molester") or by a visual stimulus (the story of Lizzy Borden provided in written form) to release homicidal action. The effect can be seen as being analogous to an overreaction to amphetamine in association with specific prior traumata in the experiments by Antleman et al [3].

Future research could assess whether in such cases of PTR there is also a concomitant sensitization to amphetamine, particularly during the presentation of the trigger stimulus within the critical context or "critical space." Since, however, the opportunity for such neuropharmacological assessment would of necessity occur only *after* the criminal incident,

a word-association test laced with the trigger stimulus could be used in combination with a determination of the existence of an amphetamine sensitization. This way the necessity for the presence of a critical context or “critical space” may be circumvented, since the response in such a setup occurs on a noncortical level.

Psychophysiological Model

Another assessment of noncortical, autonomic nervous system responses could be made under circumstances similar to those of the neuropharmacological model. While a word association test containing the specific trigger stimulus was being administered, a polygraph study could be made of blood pressure, pulse, respiration rate, and skin resistance to assess to what extent the trigger stimulus could still be effective.

Limbic System Seizure Model

There exists a further analogy, one between PTR and limbic system seizure, to which I was alerted by Park Dietz in a personal communication.

Ervin et al [4], during diagnostic neurosurgery, electrically stimulated the amygdala of a patient, thereby releasing an aggressive storm.

In the context of this analogy, it may even be speculated that in our two psychotic men the revival of the initial traumatic situation could have constituted an intense reliving experience that amounted to a temporary altered state of consciousness. (This speculation too has yet to be tested by future neurophysiological research.) Such an altered state of consciousness may be of the kind where seemingly purposeful actions can be performed, as is also the case in temporal lobe epilepsy; such action may or may not be remembered afterwards.

During the revival in memory of the initial trauma, these two psychotic men no longer experienced the social constraints that had been present during their actual traumatic experiences in the past, so that now—in their encounter with the trigger stimulus—homicidal action was released. Such a situation can be seen within a model of reciprocity between aspects of the limbic system and of the frontal lobe system [5]. The applicability of this model appears to be the more reasonable to assume, as in Patient 2's experiences there are two indications for low frontal lobe system functioning: his inability to switch from shooting a man to shooting a dog instead, as the voices had asked him to do, and his delusional belief in his loss of control. This may reflect some psychotically distorted awareness of a lowering of frontal lobe system functioning. Future exploration of such symptoms is indicated to assess a potential imbalance between limbic and frontal lobe systems functioning in felonious criminal action, more so as the factor of frontal lobe system dysfunctioning has already been revealed in subgroups of juveniles [6] and of adults [7] charged with lesser crimes.

The following aspects reminiscent of a seizure were revealed by Patient 2 (who was the only one of the two patients willing to discuss his experiences in detail). He had episodes of depersonalization (experiencing himself as being two persons or as an alien or as being controlled by “outer forces” that he heard and at times even saw in his hallucinations.) Moreover, he at times talked in a stereotyped rhythmical fashion (such as repeating the names of the victim's four children in a singsong fashion). He also experienced somatic delusion (especially gagging experiences, which he described as having “lockjaw”). This at times made him actually bear down on his teeth so hard that he lost a tooth. At the time of the homicide, he experienced silence around him and saw everything as being green and red, at times gray. He experienced no feelings and felt compelled by “outer forces,” having lost control over his actions.

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