Rigidity is easily increased or decreased (abolished) by stimulation or destruction of the ventrolateral nucleus (VL) of the thalamus and tremor is by Ventralis Intermedius nucleus (Vim). VL specially, mainly receives fibres from the pallidum and the Vim, which is posteriorly located to VL and anteriorly to the thalamic sensory nucleus, receives more fibres from the cerebellar dentate nucleus. These may lead to the assumption that interrelation between these two different anatomo-physiological systems may be important for the phenotype of tremor. And it is also hypothetized that a certain level of hypertonus must be important for manifestation of tremor.

3. To prove these, the series of monkey experiments were performed. Three monkeys were cerebellar-hemispherectomized including their deep nuclei (mainly dentate nucleus) and one unilaterally. In all four, the midline vermal structures with deeplying fastigial nuclei remained intact.

   These monekys were then kept and fed chronically at least for four months.

   When the harmaline was applied intramuscularly, normal control monkeys did show stiffness of muscles with forebent posturing and shivering-like shaking. But when the same dosage of medicine was given to the chronic operated monkeys, they start to show marked tremorous movement resembling parkinsonian one, as will be shown on the 16mm film.

   On the other hand, for the purpose of facilitating the pallidothalamic system, the VL nucleus was electrically stimulated by 60 c/s, 8 – 12V, and 1 msec, and the typical 5 to 6 c/s resting tremor started to appear, which could not be obtained in normal control monkeys.

4. These experimental observations in animal and experiences in human cases suggest the understanding that tremor may appear on the combined basis of some facilitated state of pallido-thalamic system and also of chronic dysfunction of the cerebellar hemispheric circuit. The latter may involve the rubro-olivo-dentate-rubral pathway, as suggested by Poirier.

PSYCHO-SOCIAL AND THERAPEUTIC PROBLEMS RELATED TO EPILEPTIC PERSONALITY

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As we know, epilepsy, under all aspects, may produce grave difficulties on the patient's relationship to his environment, psychologically as well as socially. These problems will be easily or hardly solved according to the extent of tolerance of society. Hence, we just deal with the out-patients (not the institutionalised ones)—those who, although quite able to live in family or society, show some abnormal personality traits and characteristics. We consider 2 cases.

1. Characteristic Abnormalities Observed in:
   A) *Epileptics with Clinical Seizures:* Among them 40 – 90%, according to the duration of their disease, have the following traits and characteristics.
   a) *Instability on mood and activity* is the predominant disorder. Epileptic children are often overly aggressive, restless, overactive, moody, stubborn, over-sensitive, while the adult patients have a rigid, unpleasant, irritable personality and may then manifest sudden emotional outbursts in response to apparently slight stimuli, and unconsciously provoke conflicts in their family and office.
   b) *Viscous affection to objects*, persons and traditions related to a certain mental slowness from which a contraction of

interests is originated, will develop a self-centred personality. So, the patients often suffer with or without reason, from frustration, social rejection, constant anxieties.

These feelings make them become maladjusted in their environment and may create anti-social tendencies.

B) *Epileptics Who Have Neither Clinical Syndrome (Seizures) Nor Constant Typical Records of EEG but an Abnormal Behaviour*

It must be remembered that some outpatients, never suffered from seizures of any kind, show minor dyschythmia in the EEG and in the others (the percentage seems greater) the EEG is almost absolutely normal. So we can think about possible epilepsy, through their abnormal behaviour, before obstinate patients indefinitely discussing, unable of any control, obsequious, becoming easily exuberant or in the contrary taciturn, often honeyed and clinging, endlessly calling for attention and care, and suddenly manifesting violent and explosive reactions.

II. *Psycho-Social Problems related to Epileptic Personality*

A) *In Family Life*

Conduct disorders observed in Epileptic children are often produced by faulty attitudes such as rejection or overprotectiveness, on the part of their families. Consequently, it is necessary to bring them up in a way as normal as possible. Of course, it is not easy because parents should be able to react, with the knowledge of the elements of the child's personality which still remains intact. So they must receive from pedo-psychiatrist and social workers, advice concerning the education of these epileptic children.

Epileptic Adults often show feelings of inferiority, frustration, discouragement and hopelessness arising from a bad home environment. They live with a permanent tension, in an emotional world to which they cannot adjust themselves and which also hardly accepts them. For the married patients, familial conflicts are related to these reasons:

1. The fear or the mistrust of the partner who often has not been prepared to face the difficulties caused by the patient's character.
2. the feeling of inferiority and guilt of the epileptic
3. the rejection of the relations
4. the fear of giving birth to a possible epileptic child by heredity.
5. the side effects of medicine, particularly to sexual activities, such as impotency in the husband and frigidity in the wife.

B) *In Office*

The patient's work efficiency diminishes because of

1. the risk of accident (fall, burn) in manual career. Known as dangerous and involving responsibilities (driving a car). It can be reduced by a judicious choice of job and a severe medical control.
2. Intellectual deficiency
3. Non-adapting character
4. Prejudices of their colleagues

These above facts lead epileptics to

- absenteeism
- conflicts with their co-workers or even their boss under the form of fighting or frequent job alterations
- alcoholism used for relief of emotional stress which has been induced by their professional troubles. But the abuse of alcohol is known to provoke seizures, aggressive behaviour leading to delinquency, so that an absolute abstinence is necessary.

III. *Therapeutic Aspects:*

Many epileptics, thanks to actual medicine, may live as normal citizens, provided that they should follow appropriate treatment, and most important, have to be accepted heartily by their family and society.

In the view-point of therapy, 2 aspects have to be considered:

A. *Supportive Psychotherapy* aims to maintain contact with the patients and relieve them of their emotional difficulty by reviving their feelings of security and self-esteem, helping them to adjust themselves with their environment.

B. *Psychotropic Medication* used to modify behaviour:

a) *Major Tranquillizers:* among them chlorprothixene (Taractan) seems to be the most effective against characteristic abnormalities on the epileptics (15–60) mgm

per day)

b) *Minor Tranquillizers:* We distinguish

1. *Benzodiazepines*
   - Chlordiazepoxide (Librium: 10–30 mg per day)
   - Diazepam (Valium: 10–30 mg per day) have been used for relief of anxiety and tension and occasionally to subdue seizures.
2. Carbamazepine (Tegretol: 400–1000 mg per day) seems, besides its anti-convulsive effect, to give excellent results against Epileptic characteristic abnormalities especially on Psychic slowness, mood changes, irritability and anxiety. So it increases the patient's ability to deal with difficult situations and consequently helps them to adapt themselves in their family and society. This report is the result of a one-year study (April 1972 – April 1973) of a metropolitan out-patient clinic which is in charge of:
   - treating new patients
   - transferring agitated ones to the Psychiatric Hospital of Bienhoa
   - following up discharged patients.

The total number of patients treated in one year is 3,216 and is allotted as follows:

male adult patients	1,460
female adults patients	1,458
male children patients	143
female children patients	155
Total	3,216

Among those patients, we see about 106 epileptics. Apart from their common personality traits and characteristics we found:

96 Epileptics with clinical syndrome (3.5%)

10 without clinical syndrome and this consists of
4 with minor dyschythmia in EEG
6 with normal EEG

The above figures are not highly accurate because of restricted time spent for observation. It is just worthwhile as indicative value. There were difficulties in obtaining regular medical supplies, therefore any appropriate medicine available had to be used. Only 20 out of 106 epileptics had been treated by Carbamazepine (Tegretol) for a short period of time. Therefore the results could not be considered as definite.