realized what he was doing. Seeing the blood he left and went around the streets. A little later he returned to his mother's house, hoping to see an ambulance in the street. Next he went to her door, hoping to hear some sign of life from inside. Neither of his hopes were fulfilled, so he went to his own home, where hours later, he was arrested for the murder of his mother.

Throughout his earlier life the young man had suffered from frequent nightmares and as a smaller child he had been known to sleep-walk. The relationship between mother and son had never been very good and it had worsened because of the mother's disapproval of the son's girl-friend. In the days before his mother's murder the young man's dreams about his mother had been extremely vivid. Whenever he woke up he had to concentrate for a time in order to tell dream from reality. The young man stressed convincingly—and he was supported by the evidence of others—that it was very far from his nature to react with violence.

In the requested psychiatric report it was concluded that the young man was in good health physically, examination by specialists in neurology and EEG revealed no abnormalities. Psychiatric examination showed that he was immature and insecure, but there were no decisive signs of psychopathology. A similar conclusion was drawn from a full scale psychological test, where, in addition, evidence of difficulties in controlling aggressive impulses were seen.

It was claimed that at the time of the crime he had been in a somnambulistic state, a state of reduced consciousness and consequently he had been in psychosis-like condition. According to the Danish Penal Code, section 16—"Acts committed by persons being irresponsible owing to psychosis or similar conditions or pronounced mental deficiency are not punishable"—it was suggested that the crime should be dealt with by treatment and supervision. The case was presented to the Danish Medico-Legal Council, and the Council too concluded in favour of a psychosis or a similar condition. The court followed the medical experts. Discharge took place soon after, and in the first year the young man regularly consulted his psychiatrist, who described him as still immature and periodically anxiety-ridden. In the periods of anxiety he was not able to sleep without sedative medication. He was again admitted to hospital for a time, mostly because of lodging-problems. In the following years he saw his probation officer regularly, and seemed to undergo a positive development, both emotionally and socially. Seven years after the criminal act he was tested by the same psychologist who examined him during the period of mental observation. The psychologist reported the young man to be quite well functioning and compared with his earlier condition he was now quite well controlled, almost inhibited emotionally. Thus the test indicated character neurosis and thereby confirmed the clinical impression of personal stabilization.

Our case might be found somewhat more controversial than those presented by Oswald and Evans—some motive could be postulated and the degree of consciousness-reduction is not quite clear. Still, as the border between sleeping and waking is perhaps not very well defined, we have great sympathy for our older colleagues who remembered the possibility of somnambulism.

In his precise and thorough survey of the subject Schmidt (1943) differentiates somnambulism from epilepsy, discusses psychiatric and forensic aspects and presents material on 15 cases of homicide. Furthermore a nosological subdivision is made; along with the sub-type called the dreamy type ("Die traumhafte Form"), there is a discussion of crimes committed—as in our case—while under the influence of a dream. In his conclusion Schmidt advocates that somnambulism should legally be treated like psychosis. The question whether the defendant is responsible or not must be answered with a no ("verneint"). In these cases the medical opinion is therefore fundamental. We close this letter, like Schmidt did his paper, by observing that even the most careful examination can leave the investigator in doubt.

PETER GOTTLIEB
OTTO CHRISTENSEN
PETER KRAMP

Clinic of Forensic Psychiatry, Dept. A
Nytorv 21, DK-1450 Copenhagen K
Denmark

Reference

SCHMIDT, G. (1943) Die Verbrechen in der Schlaftrunkenkeit. *Zeitschrift für die Gesamte Neurologie und Psychiatrie*, **176**, 208–254.

SIR: The article by Oswald and Evans (*Journal*, December, 1985, **147**, 688–691) states that sleep walking can be accompanied by violent injury to the self or others. We would like to report another case.

Case report: A 25 year old divorced man was admitted to our service, having been charged with the attempted murder of his *de facto* wife. The circumstances surrounding the attack were unusual. After an uneventful day he helped his wife to prepare the evening meal, played a game of dice and then watched a movie on TV. On finding this uninteresting they had another game of dice and retired to bed at midnight. His wife's young son was ill and at that time was sleeping, in a single bed, in their room. The boy woke up several times during the night, vomiting, and our patient and his wife at various times got up to attend to him. This occurred till at least 2.00 am. His next recollection was of waking up as it was becoming light and seeing his wife sitting at the corner of their bed with something around her neck. He said that it looked like a piece of string or rope. He pulled it from her neck as a result of which she fell on the floor. He immediately ran down the hallway to the kitchen and telephoned for an ambulance

and the police. His wife was taken to hospital where, fortunately, she made a good recovery. He was charged with attempted murder and taken into custody. He denied any conflict with his wife; she was pregnant and they were both looking forward to the birth of their first child. He specifically denied any disagreement with her before they went to bed, while no sexual activity or attempted sexual activity occurred between them that evening. His wife, who left him after the assault and moved interstate, confirmed his story.

He came from a somewhat troubled background, in that his parents separated when he was a child, and for a time he was placed in a Boy's Home before reuniting with his father. He had a very close relationship with his father, both shared a common interest in black magic and seances. He was very distressed by the death of his father some years earlier and continued to maintain the contact with him by wearing some of his clothes on a regular basis. It was subsequently discovered that the article used in the apparent attempt to strangle his wife was the cord of the dressing gown previously owned by his father. Additionally the attempted strangling occurred very close to the anniversary of his father's death. Although the patient had a history of impulsive suicidal attempts, coupled with alcohol and drug abuse, these behaviours had not been evident for some time and there was no evidence to suggest that he had been so troubled, in any way, at the time of the attack on his wife. Again this history was confirmed by her. Our patient claimed that for some days prior to the attack his sleep pattern had been disturbed with night terrors/nightmares.

Physical examination and a range of laboratory investigations were normal. A skull x-ray, an EEG and CT scan of his brain were also normal. Neurological opinion was sought but no pathology was identified. Neuropsychological testing did not reveal any abnormality. An MMPI demonstrated a hypochondriacal profile.

At his trial, the defence raised the possibility of somnambulism which, at law, would fall within the category of non-insane automatism. He was found guilty by the jury and sentenced to 15 months hard labour, with a non-parole period of 11 months. This was suspended in favour of a probation order of three years with a condition to undertake any medical treatment as the supervising probation officer might direct.

Although it is clear that this man had an abnormal personality structure and some unusual interests, no convincing explanation or precipitant has ever been identified with respect to his assaultive behaviour. He had a history of disturbing dreams dating back to childhood. He had a vague partial recollection of one sleep-walking incident, some years earlier, when having gone to bed he woke up in the kitchen. No violence was exhibited on that occasion.

KENNETH P. O'BRIEN
ALAN N. E. FUGLER

Hillcrest Hospital & Northfield
Security Hospital, Adelaide
South Australia 5001

Tardive Dyskinesia and Parkinsonism

SIR: Tardive dyskinesia (TD) and drug induced Parkinsonism (PS) both occur in association with the use of neuroleptics. The co-existence of TD and PS has been documented (McCreadie *et al*, 1982) but interest has mainly centred on the unmasking or the amelioration of dyskinesia either by anti-cholinergic agents (Chouinard *et al*, 1979) or of GABA agonists (Gerlach, 1977). The subject has also been studied using multivariate statistics on populations who exhibit neuroleptic induced extra-pyramidal effects (Kidger *et al*, 1980). These studies report that three independent factors emerge which approximate to the clinical syndrome of Parkinsonism, oral dyskinesia and akathisia. No study appears to have specifically considered the relative severities of the TD and PS syndromes when they co-exist and no comparison has been made with a control non-dyskinetic Parkinsonian cohort.

The aim of our study was to test the null hypotheses that the severity of PS in a TD group is no different from that of a control group exposed to neuroleptics but without TD. We also examined the correlation between the severity of TD and PS in our index group. The groups were carefully matched for age, sex, and type of medication. The 16 patients in each group were rated on the Abnormal Involuntary Movements Scale (AIMS) (Guy, 1976) and the Webster rating scale (Webster, 1968). The criterion for diagnosis of TD was a clinically recognisable disorder and a score of two or more on any item on the AIMS. The patients were on long-stay wards and had a primary diagnosis of functional psychosis. All subjects were on neuroleptics at the time of assessment and 9/16 in each group had been on long-term anti-cholinergics.

The mean age of the index group was 64.75 years (range 50–82) and of the control group 63.82 years (range 50–87). The Webster scores were compared between the groups and were not statistically different ($t = 0.926$, d.f. 30, NS). There was no correlation between the total AIMS and Webster scores ($r = -0.08$). We conclude that TD patients over 50 years have PS to a similar degree as an age- and sex-matched group without TD. In addition, in the TD group, the severity of PS did not predict the severity of TD. The co-existence of TD and PS and our findings of an independence of their relative severities calls into question the currently held view that PS results from a blockade and TD a hypersensitivity of dopamine receptors (Marsden *et al*, 1980). In our view the two conditions are either mediated through different dopamine systems or through independent but related neurotransmitter systems which have not yet been fully elucidated.