

A study of amnesia in homicide cases and forensic psychiatric experts' examination of such claims

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ABSTRACT

About one third of defendants in homicide cases claim amnesia during the time of their alleged act. Examining the authenticity of claimed amnesia is a special challenge for forensic experts. Because the experts' conclusions have legal implications, it is useful to study the characteristics of defendants who claim amnesia regarding a homicidal act and how forensic experts assess these defendants' claims. The forensic psychiatric reports from 2001 to 2007 on 102 Norwegian defendants charged with homicide were assessed quantitatively with a structured rating form. Due to multiple comparisons p of .003 was chosen. Twenty-six defendants claimed partial and 17 claimed total amnesia. No significant differences in the characteristics of the defendants were found between the partial, total, and no amnesia claiming groups. Claims of partial or total amnesia did not change the procedures and content of the forensic experts' examination. A memory test was applied in only one case. Despite the seriousness of the crime and the difficulty of assessing amnesia, the experts did not apply psychological testing of memory function or appropriate tests of possible malingering. Guidelines or standardized procedures for evaluation of defendants who claim amnesia should be developed. This could eventually contribute to more reliable and valid evaluations by forensic experts and increase the probability of just court outcomes.

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1. Introduction

Vignette 1: A man killed his wife by firing two gunshots into her neck. Immediately afterwards, he told the police that they had quarrelled violently. Later on, he could neither remember what she actually had said to him nor that he had picked up the gun. However, he could remember that he had gone through the loading motions and heard the sharp sounds of two gunshots. After the gunshots, he had put the gun back in place, alerted the neighbours, called the police, and told them about the incident. During the criminal proceedings, he claimed that he was not accountable for his actions because he could only remember parts of the incident. Neither the experts assessing the defendant nor

the court accepted this claim due to his ability to recall the incident as a whole.

Vignette 2: At the start of the Nuremberg trials, Rudolf Hess, Hitler's Deputy Fuehrer of the Nazi Party, claimed total amnesia for his Third Reich period. He was examined by nine specialists from five nations, seven psychiatrists and two neurologists. They concluded that Hess's amnesia was genuine. Later, after Hess understood the disadvantages of being unable to respond to allegations, he announced during the trial sessions that he had fooled the experts and simulated the amnesia. Later he professed some pride in his ability to trick the experts (Rees 1947).

The first vignette illustrates a rather typical case of a defendant claiming amnesia for his homicidal act. The second vignette illustrates, though the interpretation of Hess's amnesia differs, the special challenges associated with the assessment of claimed amnesia for forensic experts.

So how *do* forensic experts assess claimed amnesia in such challenging criminal cases? What methods do they apply? Are there any clinical indicators or characteristics the experts can rely on when examining the defendants as to who will typically claim amnesia (falsely or genuinely)?

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Amnesia is a broad term which refers to psychological conditions in which normal memory function is disturbed. The Webster Dictionary (The Merriam-Webster Online) defines amnesia as a loss of memory due usually to brain injury, shock, fatigue, repression, or illness. Another definition of amnesia is an inability to remember or a denial of memory (Gunn & Taylor, 1993). Broadly, in medico-legal settings, causes of amnesia can be divided into organic, psychogenic, or simulated.

Norway uses the term *unconsciousness* (bevisstløs) in the penal code, which is regarded as the collective legal term for all types of severe or global amnesia. A crime done under unconsciousness may lead to acquittal and “reduced consciousness” may lead to a lower sentence.

Unconsciousness has in this context a different meaning than in general medicine as having lost consciousness which involves complete or near-complete lack of responsiveness to environmental stimuli. The meaning is also different from unconscious in the psychodynamic literature, which means “not consciously held or deliberately planned or carried out”. Unconsciousness in the medico-legal context may entitle the defendant to an excusing (medical or psychological) condition which allows a defendant to argue that he/she should not be held criminally responsible for their actions that broke the law.

As a part of their standard mandate from the courts, Norwegian forensic experts must evaluate whether the defendant suffered from either unconsciousness or reduced consciousness.

To claim amnesia could be seen as a conscious defence strategy because it is easy to fake and hard to disprove (Parkin, 1997; McSherry, 1998; Kirsch, 1962). Even though some defendants are not convincing, that is, using bogus or dubious psychiatric defences (Ornish, 2001), some going so far as to try to imitate things they've seen on films or television (Baxendale, 2004). Still, other simulators are very effective, making it difficult for forensic experts to distinguish genuine dissociative or organic amnesia from an act.

Claims of amnesia for criminal acts are not uncommon for defendants in general but are most common in homicide cases (Leitch, 1948; O'Connell, 1960; Bradford & Smith, 1979; Taylor & Kopelman, 1984; Parwatikar, Holcomb, & Menninger, 1985; Guttmacher, 1955; Pyszora, Barker, & Kopelman, 2003; Menzies, 2005). The prevalence of such claims range from 22% to 47% (mean 33%) in the studies cited above, and, as a rule of thumb, about one third of defendants in homicide cases will claim amnesia for their alleged acts.

The literature suggests the following four causes for amnesia: First, organic conditions like epilepsy, intoxication (including medication, drugs, and alcohol), concussions/head injuries, and some rare sleep disturbances. Second, psychogenic types of amnesia stated in the ICD-10 classification, like dissociative amnesia or dissociative states, that is, depersonalization or derealization. Third, rare and doubtful cases of dissociative (multiple) identity disorder have been described (Piper & Merskey, 2004). The fourth cause of amnesia, described particularly in the forensic domain, is simulation or malingering (Cima, Merckelbach, Nijman, Knauer, & Hollnack, 2002; Merckelbach & Christianson, 2007). *Simulation* is, in a more general sense, a medical and psychological term which refers to an individual fabricating or exaggerating the symptoms of mental disorders or somatic diseases for various reasons or motives.

In this context simulation could be seen as a deliberate/conscious strategy of pretending to suffer from a mental disorder or somatic disease resulting in memory loss in order to minimize the responsibility for their crime.

Several studies have explored circumstances and characteristics of defendants who claim amnesia for their alleged homicidal acts. Variables such as intelligence, age, mental disorders, substance abuse, sex, and extreme affective reactions have been investigated. These studies show mixed results regarding offender characteristics of those who claim amnesia in criminal cases versus those who do not. However, alcohol intoxication and a violent crime, particularly homicide, seem to be two common denominators in these defendants (Taylor & Kopelman, 1984; Cima, Merckelbach, Hollnack, & Knauer, 2003;

Pyszora et al., 2003; O'Connell, 1960; Häkkinen, Weizmann-Henelius, Putkonen, & Lauerma, 2008; Parwatikar et al., 1985; Gunn & Taylor, 1993). Some evidence has shown that defendants who claim amnesia are older than those who do not (Cima, Nijman, Merckelbach, Kremer, & Hollnack, 2004; Häkkinen et al., 2008; Taylor & Kopelman, 1984). Otherwise, there appears to be no clear “amnesia-claiming profile” or specific causal factor for claiming amnesia in the offender groups. Methodological criticism has been raised concerning several of these studies because of selection biases and small sample sizes (Pyszora et al., 2003; Evans, 2006).

There is an ongoing debate among forensic experts about whether claims of amnesia in criminal settings should be considered as genuine or simulated. One argument supporting the idea that some amnesic claims are genuine is that some defendants are able to report themselves to the police after a crime, though still unable to recall the criminal act itself (Pyszora et al., 2003; Taylor & Kopelman, 1984; Porter, Birt, Yuille, & Hervé, 2001; Hopwood & Snell, 1933). In addition, amnesia is not regarded as a valid legal defense in some countries, and the motivation for simulating amnesia is less in these countries (Kopelman, 1995; Gunn & Taylor, 1993).

Merckelbach and Christianson (2007) summarized three related motives for simulating amnesia: First, a claim of amnesia may enable the defendant to remain silent without appearing uncooperative. Second, the defendant's having no memory of the criminal act may initiate a forensic psychiatric examination, which can increase the chances that the defendant will be found to have some kind of disorder or abnormality (Wedding & Faust, 1989). Third, the defendant may try to avoid painful memories and use amnesia as an excuse not to speak with the forensic experts.

Various procedures for evaluating the authenticity of defendants' claims of amnesia have been suggested (Cima et al., 2002; McSherry, 1998; Schacter, 1986; Hartvig, Rosenqvist, & Stang, 2003; Wells & Wilson, 2002; Sadoff, 1974; Sweet, Condit, & Nelson, 2008). In addition, it is useful to explore empirically how forensic experts (psychiatrists and psychologists) assess claims of amnesia. The findings could indicate ways in which procedures can be improved, ultimately contributing to the legal safeguards of the defendants in these cases.

Specific methods for validating the authenticity of alleged amnesia have been suggested (Jelicic & Merckelbach, 2007). Apparently unknown to many forensic psychiatric and psychological experts, several psychological tests have been used or developed in order to establish if a claimed amnesia is genuine or simulated. There are at least two validated interviews on specific memory characteristics: for dissociative (psychogenic) cases of amnesia there is Dissociation Experience Scale (DES) which is a 28-item self-report measure. The SCID-D (Structured Clinical Interview for DSM-IV Dissociative Disorder) is a structured psychiatric interview for the dissociative disorders.

The following instruments have been developed to support the expert, in addition to the clinical interview, to detect possible malingering: Structured Interview of Reported Symptoms (SIRS), Minnesota Multiphasic Personality Inventory (MMPI-2), Structured Inventory of Malingered Symptomatology (SIMS), Rey's 15-Item Memory Test, Test of Memory Malingering (TOMM), and Atypical Presentation Scale (AP) have been suggested. However, a flexible approach, using multiple psychological tests, could have the best potential for revealing different types of simulation attempts (Heinze & Purisch, 2001). In addition, Merckelbach and Christianson (2007) have suggested a more standardized procedure for evaluating claims of amnesia in criminal settings. This procedure will, in a modified form, be used throughout this article as a hypothetical “gold standard.” Below is an outline of this model:

- 1) The complete record of the defendant must be available (e.g., police documents, accounts of third-party witnesses of the defendant's behavior around the time of the crime.
- 2) Collateral sources of the defendant's background (i.e., sources of information that do not come only from the defendant).

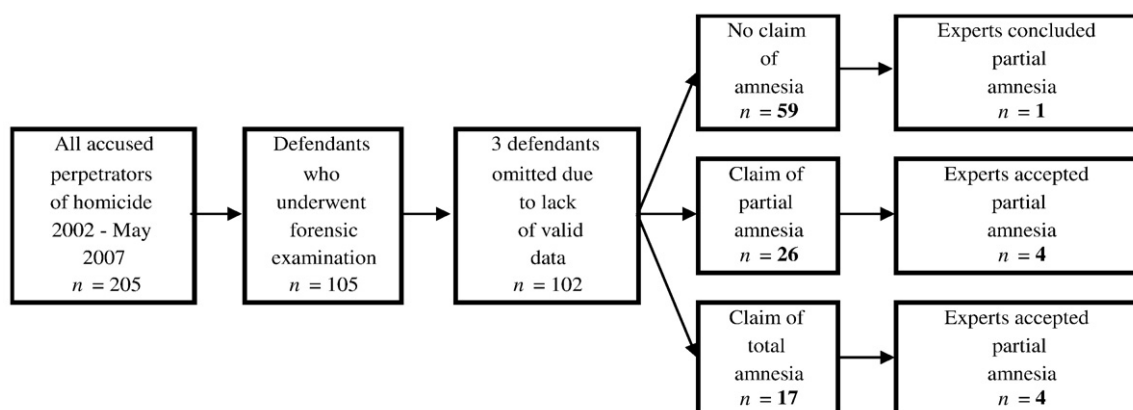


Fig. 1. Overview of the material and the different groups regarding claims of amnesia.²

- 3) Experts should not take the defendant's self-report about his memory complaints at face value. That is, psychological testing of memory functioning is essential.
- 4) Use of appropriate tests and tools to evaluate possible malingering.
- 5) Consideration of the defendants' medical records in order to critically examine if the amnesia claim is consistent with well-established facts about organic amnesia.
- 6) Data from neurophysiologic tests such as PET (positron emission tomography), MRI (magnetic resonance imaging), or EEG (electroencephalography) should not be used as a starting point in evaluations of claimed amnesia in a forensic setting.

Little research has been done with regard to the quality of forensic psychiatric evaluations (Wettstein, 2005). To our knowledge, only one small study has examined how experts assess amnesia/unconsciousness in defendants. Hartvig et al. (2003) studied all ($N=42$) forensic psychiatric reports issued in Norway from 1981 to 2000 where the forensic experts had stated that the defendant was (totally) "amnesic/unconscious" at the time of the act. The authors disagreed with the experts' conclusions in 12 of the reports and concluded that many of the reports lacked valid premises behind the conclusions (i.e., somatic examinations and collection of verifiable data from different sources).

2. Objectives of the study

In order to expand our knowledge on how forensic experts assess amnesia/unconsciousness in defendants, we examined a nationwide Norwegian cohort of all forensic psychiatric reports made in 5 years on defendants charged with homicide. The study had two main objectives: (1) to explore the circumstances reported by defendants claiming amnesia in a cohort of Norwegian defendants charged with homicide and (2) to examine how forensic psychiatric experts methodologically assess claimed amnesia in these defendants.

3. Method

3.1. Cohort

This cohort came from all Norwegian forensic psychiatric reports issued from January 2002 thru May 2007 concerning defendants charged with homicide. The total of 105 reports was obtained from the National Forensic Board. Three cases were omitted for administrative reasons (Fig. 1). None of the defendants was convicted when the reports were issued.

The reports were independently scored by two of the authors (PG and HV) according to a standardized rating form they developed. The

form consisted of 92 variables divided into nine sections: (1) socio-demographic and criminal variables on the defendant (age, sex, place of birth, education, employment, income, partner relationship, former contact with psychiatric health care, and former sentences and forensic psychiatric examinations); (2) observation setting (dates for the alleged act and for the examination and whether the defendant participated or not); (3) expert's profession; (4) main conclusions concerning amnesia; (5) type and pathogenesis of amnesia (organic or psychogenic), which was only registered if the experts concluded that amnesia was present; (6) supplementary background information concerning eventual amnesia (e.g., former episodes of amnesia, substance abuse at the time of crime, sleep disorders, and other organic factors); (7) diagnostic evaluation; (8) registration of the methods used by the experts and eventual stated doubts and uncertainties in the report; and, finally, (9) eventual comments from the National Forensic Board about the reports.

Inter-rater reliability was checked by both raters scoring 12 of the reports on the following three key variables: whether the defendant had claimed amnesia for the act or not, if the expert had accepted the claim of amnesia as valid or not, and the presumed main cause if the claim was considered valid.

3.2. Statistics

The inter-rater reliability was estimated by kappa statistics. Continuous variables were analyzed with Mann-Whitney U -test (non-parametric). The categories of claimed amnesia (partial and total) versus not claimed amnesia were analyzed in 2×2 contingency tables with Fisher's exact test due to small numbers in the cells. The level of statistical significance was set at $p < .003$ due to multiple comparisons based on Bonferroni's correction. All tests were two-tailed. The statistical analyses were carried out using the SPSS version 15.0 software.

3.3. Ethics

The study was approved by The National Committee for Research Ethics of Health Region East and The National Data Inspectorate. The National Forensic Board gave permission for examination of the forensic reports. The defendants who were referred to in the examined reports in this study received no information.

4. Results

4.1. Inter-rater reliability

The inter-rater reliability between PG and HV on whether the defendant had claimed amnesia for the act obtained a kappa .75 (95%CI .30–1.0). There was complete agreement (kappa 1.00) between both

² The figures are obtained from the National Criminal Investigation Service (NCIS).

raters as to whether the expert had accepted the claim for amnesia as valid or not and concerning eventual main cause of the amnesia.

4.2. Characteristics of the defendants

The mean age of the 102 defendants was 33 years ($SD = 10.5$). Ninety-four of the defendants were men; 8 were women. There were 73 Norwegian citizens, and 56 had 9 years of education or less. Sixty-two were single; 58, unemployed; 52 had previous convictions; and 11 had undergone a previous forensic examination. A total of 62 had former contact with the psychiatric health care system.

We found that 17 defendants claimed total amnesia for their alleged acts, 26 claimed partial amnesia, and 59 had no such claim (Fig. 1).

4.3. Socio-demographic and criminal profile of the cohort

No significant differences were found when the group that claimed amnesia was compared to the non-claim group with Fisher's exact test (Table 1).

4.4. Methods applied by the experts

There were no significant differences found between the three amnesia groups as to the experts' application of diagnostic instruments, neurophysiologic examinations, neuropsychological tests, memory tests, or somatic examinations. Only one defendant with no claim of amnesia had a memory test, namely the Wechsler Memory Scale (Table 2).

Table 1
Socio-demographic, criminal, and psychiatric profile of the cohort.

Variables	No claim of amnesia (<i>n</i> = 59)	All claims of amnesia (<i>n</i> = 43)		Total and partial claims versus no claim of amnesia <i>p</i> *
		Partial claim (<i>n</i> = 26)	Total claim (<i>n</i> = 17)	
Age, mean (<i>SD</i>)	32.4 (10.9)	32.3 (9.7)	35.9 (10.3)	0.20
	<i>N</i> (%)	<i>N</i> (%)	<i>N</i> (%)	
Gender				1.0
Male	52 (88)	25 (96)	17 (100)	
Female	7 (12)	1 (4)	0 (0)	
Country of birth				0.48
Norway	41 (70)	18 (69)	14 (82)	
Other countries	18 (30)	8 (31)	3 (18)	
Level of education				0.21
≤9 years	35 (59)	15 (58)	6 (35)	
>9 years	22 (37)	10 (38)	10 (59)	
Not registered	2 (4)	1 (4)	1 (6)	
Civil status				1.00
Paired relation	19 (32)	12 (46)	8 (47)	
Non-paired relation	39 (66)	14 (54)	9 (53)	
Not registered	1 (2)	0 (0)	0 (0)	
Occupational status				1.00
Employed	17 (29)	10 (38)	6 (35)	
Not employed	35 (59)	14 (54)	9 (53)	
Not registered	7 (12)	2 (8)	2 (12)	
Psychiatric treatment				0.74
No	21 (35)	8 (31)	6 (35)	
Yes	37 (63)	16 (61)	9 (53)	
Not registered	1 (2)	2 (8)	2 (12)	
Former forensic examination				1.00
Yes	10 (17)	1 (4)	0 (0)	
No	49 (83)	21 (81)	15 (88)	
Not registered	0 (0)	4 (15)	2 (12)	
Convictions				0.75
No	26 (44)	14 (54)	7 (41)	
Yes	31 (52)	12 (46)	9 (53)	
Not registered	2 (4)	0 (0)	1 (6)	

* Non-parametric test.

Table 2
Methods used by the forensic experts.

Variables	No claim of amnesia (<i>n</i> = 59)	All claims of amnesia (<i>n</i> = 43)		Total and partial claims versus no claim of amnesia <i>p</i> *
		Partial claim (<i>n</i> = 26)	Total claim (<i>n</i> = 17)	
Number of clinical examinations				0.12
Mean (<i>SD</i>)	3.2 (1.4)	3 (1.2)	3.6 (1.3)	
	<i>N</i> (%)	<i>N</i> (%)	<i>N</i> (%)	
Information from third party				0.33
Yes	34 (57)	14 (54)	13 (77)	
No	24 (41)	9 (35)	4 (23)	
Not registered	1 (2)	3 (11)	0 (0)	
Applied any test or checklist etc.				0.07
Yes	28 (48)	9 (35)	11 (65)	
No	31 (52)	17 (65)	6 (35)	
<i>Sub-analysis of applied tests/instruments/checklists etc.</i>				
Diagnostic instruments				1.00
Yes	12 (20)	3 (12)	2 (12)	
No	47 (80)	23 (88)	15 (88)	
Symptom lists				0.40
Yes	3 (5)	0 (0)	1 (6)	
No	56 (95)	26 (100)	16 (94)	
Neurophysiologic tests				0.27
Yes	7 (12)	2 (8)	7 (41)	
No	52 (88)	24 (92)	10 (59)	
Neuropsychological tests				0.40
Yes	5 (8)	0 (0)	1 (6)	
No	54 (92)	26 (100)	16 (94)	
Somatic examinations				0.15
Yes	2 (4)	0 (0)	2 (12)	
No	57 (96)	26 (100)	15 (88)	
Memory tests				Not applicable
Yes	1 (2)	0 (0)	0 (0)	
No	58 (98)	26 (100)	17 (100)	

* Non-parametric test.

There were no significant differences in the methods applied by the experts between any (total and partial) claims of amnesia versus the group with no claim of amnesia. Regarding professions, no significant differences were observed between two psychiatrists and team of one psychiatrist and one psychologist.

We summarized seven methods and sources of information of the defendant applied by the experts (Table 3).

Of the 102 reports, 1 report had only used the police documents, and 28 reports contained two of the sources/methods listed (police documents and a personal examination). Three sources/methods (police documents, personal examination of the defendant, and collected information from third party) were used in 54 of the reports. Furthermore, 13 reports had used four sources/methods, 5 had five sources/methods, none had used six of the sources/methods, and 1 had used all seven listed. Of the reports, 80% contained three or less methods/sources as a basis for the report.

Table 3
Summarized seven methods/sources of information about the defendant used by the experts.

Method	<i>N</i> (%)
Police documents	102 (100)
Conducted examination with defendant	100 (98)
Collected info from third party	61 (60)
Diagnostic instruments	17 (17)
Neurophysiologic tests	16 (16)
Neuropsychological tests	6 (6)
Memory tests	1 (1)

4.5. Cases where the experts accepted some claim of amnesia

The experts accepted partial (but not total) claim of amnesia in 9 of the 102 cases, which constituted 9% (95%CI, 4.5–16.1%). Four of the total group and 4 of the partial group were accepted as partially amnesic by the experts (Fig. 1). One was accepted as partially amnesic due to intoxication of alcohol and drugs, but this defendant had made no such claim. In the 9 cases accepted, 3 (33%) of the reports had received corrective comments from the National Forensic Board, which functions as a supervisory organ for all forensic reports issued in Norway. This was in contrast to the total cohort where corrections were given in 17 of 93 (18%) cases ($p = .37$) (Table 4).

A typical case of accepted amnesia would be a defendant with a diagnosis of substance abuse (F10 or F19) and having an earlier verifiable disturbance of his consciousness. A defendant with a rejected claim of amnesia would be a defendant with some form of substance abuse, but apparently not reaching the threshold level for such diagnosis by the experts. He would not have had verifiable disturbances of consciousness nor other mental disorder diagnosis within the ICD-10 system.

4.6. Time span

The mean time from the alleged crime to the first examination of the defendant by the experts was 193 days ($SD = 476$, Range 1–3987) (two cases were not registered). After omitting seven cases that were observed more than a year after the criminal act, the mean time was reduced to 91 days ($SD = 73$, Range 1–353).

5. Discussion

The first aim of this study was to examine under which circumstances defendants charged with homicide would claim amnesia. We observed no clear characteristics of the defendants who claimed amnesia emerged in our cohort.

We were, in agreement with other studies, unable to identify any clear “amnesia-claiming profile” among the defendants in our cohort. Our findings, then, suggest that forensic experts cannot rely on any clear indicators as to which defendants typically will claim amnesia. This may indicate that in some cases there will be a need of more extensive procedures and tests as supplements to the clinical examination. Such procedures may assist the experts in proper evaluation of the correctness of claims of amnesia.

The second objective of this study was to examine how forensic experts methodologically assess claimed amnesia in homicidal cases. The major finding was that claims of amnesia in no observable way influenced the way the experts assessed the defendants. Generally, the

experts made little use of methods other than obtaining police documents, clinical examination and information from third parties.

The experts in our study collected information about current memory function through direct observation and examination of the defendants, together with collected observations and relevant background information through third parties. However, the experts rarely used appropriate memory tests or screening tests for possible simulation of amnesia. A memory test was applied in only one case and that was in a case without any claim of amnesia.

Testing may not be necessary in all cases of claimed amnesia. There may be information in the police documents indicating that the defendant has had some memory about the criminal act, but later (in contact with the experts) claims that all memories are “lost”. However, the need for tests beyond the clinical judgment arises in cases where the defendant consistently claims amnesia and there is doubt about whether the claim is genuine or not.

Given the time span between the alleged homicide and the experts' first examination of the defendant had a mean of approximately 90 days, it is a challenging task to evaluate the claimed amnesia. According to Christianson, Freij, and Vogelsang (2007), an expert will only be able to identify simulators by using tests and structured interviews focusing on specific memory characteristics.

There may be several reasons for the low proportion of test applications. First, both in Norway and in the other Nordic countries, there is no established tradition for the use of tests as a part of a standard forensic psychiatric examination (Grøndahl, 2005). Second, we find that forensic textbooks in forensic psychiatry seldom give good methodological guidelines as to how to make assessment of claimed amnesia in defendants. Third, the experts making forensic assessments are mainly psychiatrists without sufficiently psychometric experience as to employ the relevant test, though such knowledge will vary. Fourth, the experts studied by us may lack the knowledge about which tests to use for the assessment of the validity of claimed amnesia. Fifth, during the examination in court, some experts may think it easier to defend not using tests than to be exposed to tricky questions from lawyers about the validity and reliability of applied tests.

Because they primarily only use police reports, clinical examinations and data from medical records and no additional tests, the experts' assumptions and conclusions may not be better than those of lay people (Cima et al., 2002). Lack of scientifically based methods may both threaten the legal safeguards of the defendant and jeopardize the principals' need for a thorough examination of the defendant's claim of amnesia. According to Wettstein (2005), there is a risk that experts are satisfied with the quality of their evaluations without undertaking self-assessment or quality improvement unless externally mandated. A more positive interpretation is that the experts use the LEAD principle – that is, longitudinal observations

Table 4
Characteristics of the amnesic cases accepted by the experts.

Characteristics of the cases that were accepted by the experts as amnesic, $n = 9$				
Main reason	ICD-10 Diagnoses	DSM-IV diagnoses	Former psychiatric treatment	Former disturbances of consciousness
Organic 0	Substance use disorders 5	Substance use disorder 5		
Psychogenic 3	Acute psychotic disorders 1	Brief psychotic disorder 1	Yes 3	Yes 5
Drugs/alcohol 6	Dissocial personality disorder 1	Antisocial personality disorder 1	No 6	No 2
	No diagnosis 2	No diagnosis 2		Not registered 2
Methods applied in the cases that were accepted by the experts as amnesic, $n = 9$				
Any test	Diagnostic tests	Neuropsychological tests		Memory tests
Yes 4	Yes 1	Yes 1		Yes 0
No 5	No 8	No 8		No 9
Methods applied and premises in the cases that were accepted by the experts				
Somatic examination	Neuropsychologic tests	Stated insecurity		Forensic board corrections
Yes 0	Yes 2	Yes 2		Yes 3
No 9	No 7	No 7		No 6

made by clinical experts with all relevant data for deciding on a diagnosis – and consider it a method which is valid and sufficient in most cases (Spitzer, 1983).

Overall, of the 43 defendants who claimed partial or total amnesia for their alleged homicidal act, only 8 were accepted as genuine claims by the experts (and 1 was accepted without stating such a claim). This may imply that the experts used a narrow definition of the amnesic conditions that should be accepted as valid in the forensic psychiatric context. This could also mean that because the amnesia concept is so nebulous and difficult, only the most obvious cases were accepted. An alternative interpretation is, of course, that the defendants claimed amnesia as a defence strategy, irrespective of the facts of the case.

It needs to be considered that clinical assessment and validation of the authenticity of amnesia is a difficult professional task, a task that is further complicated by differences between the clinical and legal concepts of the phenomenon. Automatism and unconsciousness are purely legal concepts which are complicated to grasp and poorly defined. The lawmakers in various countries clearly see the need to acknowledge and cover instances of criminal acts committed by persons not remembering (unconsciousness) or voluntarily controlling (automatism) their actions. Thus they seek psychiatric expertise to cover cases with claimed amnesia and automatism. These legal concepts are only partly congruent with medical/psychological terms. Therefore, a heretical question would be whether the psychiatric experts should have the task to examine for such legal concepts at all? Perhaps the legal entities should define and verify conditions like automatism and unconsciousness themselves, in court proceedings and through judicial considerations, without assistance from medicine or psychology. If the lawmakers and legal parties still demand that psychiatric expertise ought to assist in these matters, a requirement should be that the lawmakers define the terms in ways that are in accordance with psychological and psychiatric concepts and examinations. This might enable the experts to make better and more systematic evaluations of defendants who have claimed to be insane by legal terms due to unconsciousness or automatism. On the other hand, the forensic psychiatric milieu should, when accepting to make evaluations in such complicated criminal cases, develop procedures, standards, and methods that can meet scientific standards in such assessments.

5.1. Strengths and limitations

This study covers nearly all homicide cases that were forensically assessed in Norway over a 5-year period. This was possible because of the good quality of the register of the National Forensic Board. Another strength of the study is the high levels of inter-rater reliability of the two raters. These two factors indicate that our findings give a reliable picture of the current methods applied by the forensic experts in Norway.

Despite the fact that we included all homicide cases the last 5 years, the cohort is small, particularly in the total amnesia subgroup. Hence, we run a risk of type II statistical errors. There might be more significant differences between defendants claiming amnesia and those who do not, if observed in a larger cohort. This would require, however, a much longer sampling period, with the risk of changes in forensic methods, laws, and court practices over time.

6. Conclusions

No clear characteristics of the defendants who claimed amnesia emerged in our cohort. Whether the defendant claimed amnesia or not did not influence the methods used by the experts, despite the apparent difficulty in assessing the veracity of such claims. One might expect that more of the reports would contain a greater scope of applied sources, methods, or tests as a basis for the experts' conclusions to avoid both false positive and negatives in the claimed

cases of amnesia, particularly as all of the cases in this cohort were suspected of homicide, implying the possibility of a harsh sentence. Nonetheless, surprisingly, a claim of (even total) amnesia did not influence or alter the methods used by the experts.

There are no legal regulations concerning the use of standardized tools in forensic assessments, either in the Scandinavian countries or in the European Union (Grøndahl, 2005; Dressing & Salize, 2006). The authors recommend that guidelines concerning evaluation of claimed amnesia in criminal cases should be developed both nationally and internationally. This could increase the reliability and validity of such evaluations and, in turn, increase the legal safeguard of the defendants. In addition, this would most likely contribute to a higher regard from the legal parties for the assessments done by forensic experts.

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