

Commentary: Dissociative Amnesia and the Future of Forensic Psychiatric Assessment

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In their article, Pyszora *et al.*¹ present the results of research in which they re-examined 50 violent offenders from an original case study. In the earlier study, they evaluated 59 amnesic violent offenders who received a life sentence in 1994 in England and Wales and compared them against a group of nonamnesic offenders ($n = 148$). In the current follow-up study, the authors reinterviewed 31 of the original 59 violent offenders and applied neuropsychological and psychological measures, as noted within the body of their research report.²

Amnesia is the generic term for a severe nondissociative memory deficit, regardless of cause.³ The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)⁴ gives four clinical characteristics that are typical of most amnesic patients: anterograde amnesia, retrograde amnesia, confabulation, and intact intellectual function. Anterograde amnesia is the hallmark of an amnesic disorder and refers to the inability, after the onset of the disorder, to acquire new information for explicit retrieval. Retrograde amnesia refers to difficulty in retrieving events that occurred before the onset of the amnesic disorder, often demarcated at the time of onset by head trauma, stroke, or other injury. Retrograde amnesia is more variably present in different amnesias. Confabulation does not occur in all amnesias, and it is often present only in the acute stage. Finally, in the classic amnesic disorders, the patient's intellectual function remains relatively intact, even though some specific secondary cogni-

tive defects may be noted on careful neuropsychological testing.³

Dissociative amnesia, on the other hand, as discussed in DSM-5 describes an inability to recall important autobiographical information (incidental memory), usually of a traumatic or stressful nature, which is inconsistent with ordinary forgetting. It often consists of localized or selective amnesia for a specific event or events. The symptoms cause clinically significant distress or impairment in other important areas of functioning. The disturbance is not attributable to physiological effects of a substance, a neurological or other medical condition, or other neurological disease. The disturbance is not better explained by dissociative identity disorder, posttraumatic stress disorder, acute stress disorder, somatic symptom disorder, or major or mild neurocognitive disorder.⁵ No methods for measurement or laboratory verification of putative dissociative amnesia are offered in DSM-5.

Jean-Martin Charcot⁶ and Pierre Janet⁷ are the French neurologists most responsible for providing the beginning theories of dissociation. In the era of these two physicians, dissociative disorders were studied in great depth and detail, but after 1890, they received minimal attention for nearly 80 years. In the late 1980s and into the 1990s, there was a renaissance of interest. However, virtually no funds were made available for their systematic investigation. Virtually all of the literature with regard to dissociative disorders was based on using multiple personality disorder nomenclature. Controlled studies about the basic phenomena of the dissociative disorders were relatively few until the 1990s.⁸ The original theories of Janet were the first to show systematically a direct psychological defense against overwhelming trau-

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matic experiences. He demonstrated that dissociative phenomena played an important role in the widely divergent posttraumatic stress responses, which were included under the 19th century diagnosis of hysteria. His nine concepts of dissociation have been elegantly described elsewhere.⁹

Dissociative amnesia is rarely diagnosed in modern times.³ In the classic hysteria study by Perley and Guze,¹⁰ symptoms such as dizziness, headache, fatigue, and abdominal pain occurred at high rates in more than 70 percent of patients. Amnesia was found in only eight percent of cases. Second, patients with dissociative amnesia typically have several other psychiatric disorders or manifest the amnesia after a very stressful trauma. Current nosology excludes a diagnosis of dissociative amnesia in many such instances. A functional amnesia does not necessarily interfere with social or occupational functioning, as noted. Dissociative amnesia is more common among females, and it is thought to occur more often in adolescents and young adults. Most cases show rapid recovery of memory. The classic studies of Ables and Childer,¹¹ and Herman,¹² revealed that in 63 cases of dissociative amnesia, 27 individuals recovered within 24 hours, 21 within five days, 7 within a week, and 4 within three weeks or more (59/63 cases recovered within a week).

From a clinical psychiatric standpoint, the neuropsychological pattern of deficits seen in classical nondissociative amnesic states are described in a somewhat arbitrary division as immediate, recent, and remote memory.¹³ Immediate memory span is reflected in the reproduction of material, such as brief digit sequences, which fall within the span of attention. This represents a short-term memory mechanism. Recent memory is the ability to acquire and retain new information or knowledge, and it is often described as new learning. Clinically, it is assessed by testing for the ability to recall simple information (exceeding the memory span) after at least a minute has elapsed. Remote memory is reflected in the ability to recall events or facts acquired at a considerable distance in time, certainly before the onset of the claimed memory difficulties. An impairment in remote memory indicates retrograde amnesia, whereas the inability to learn new information indicates anterograde amnesia.

In the classic nondissociative amnesia clinical picture, perception is unimpaired, and the immediate memory span is well preserved. Severe impairments

of new learning (anterograde amnesia) are present, as is a variable retrograde amnesia, usually with a so-called temporal gradient.¹³ Preservation of the immediate memory span is a point of importance clinically. Performance on a test of digit span is usually normal, and therefore this test will fail to reveal the existence even of a severe amnesic syndrome. Moreover, current and recent memory (new learning) is severely impaired, and disorientation in time is almost universal. In the most extreme cases, new learning may be reduced to virtually nil, so that as time goes by, there is a continuing and extending anterograde amnesia. If recovery subsequently occurs, a dense and permanent gap will be left for the duration of the illness. In less severe examples, the problem reveals an uncertainty about events that occurred minutes, days, or weeks before. The retelling of simple stories is marked by gross omissions, incorrect juxtapositions, and condensations of material.¹³ There are no similar models for describing or measuring dissociative amnesia accurately.

The neuropsychiatry of nondissociative amnesic disorders is well delineated at this time in medical history.¹⁴ Three patterns of remote memory impairment in amnesic subjects have been described in the medical literature. The first is impairment that is temporally limited, involving primarily the few years before the onset of the amnesia, with complete or near-complete sparing of more remote time periods. This is documented in the famous amnesic patient, H. M.¹⁵ The second pattern of impairment involves a temporal gradient affecting all time periods, with greater impairment of memories derived from recent periods. This pattern of remote memory disturbance is said to be typical of patients with alcoholic Korsakoff's syndrome.¹⁶ The third pattern described in the medical literature is an impairment affecting all time periods equally; it has been described in patients surviving herpes simplex encephalitis¹⁷ and in certain other amnesic subjects, as well as in patients with Huntington's disease.¹⁸

In evaluating the nondissociative amnesic person, there are two main goals to meet: establish the severity of the memory disorder in the context of other cognitive complaints; and characterize the nature of the memory impairment at its basis in encoding, storage, and retrieval operations.¹⁴ For the first goal, memory testing should be embedded in a comprehensive mental status and/or neuropsychological examination that includes assessment of general intel-

lectual capacity, language functions, visuoperceptual/visuospatial skill, frontal-executive skills, and motor functions, including an evaluation of psychopathology and emotional dysfunction.¹⁴ The second goal is achieved by assessing memory functions relevant to the diagnostic descriptive task faced by the clinician. (In the case examples in Pyszora *et al.*,² that would be dissociative amnesia for criminal behavior.) In contemporary cognitive science models, memory assessment is performed by using elements from the cognitive information-processing literature, which is applied to the clinical evaluation of memory-disordered patients.

Pyszora *et al.*² document in their article that in their second study of a previously studied cohort of life-sentence prisoners, they use two memory tests to document the memory functioning of the study group.¹ For the first test, no normative standardization for the WMS-III¹⁹ or the WMS-R²⁰ contains subjects with hysterical or dissociative amnesia. The second set of memory tests that they administered were the Camden Memory Tests,²¹ which contain five subsections: The Pictorial Recognition Memory Test, The Topographic Recognition Memory Test, word pairs from the Paired-Associate Learning Test, and two brief forms of the Warrington Recognition Memory Test.^{22,23} The Camden Memory Tests, used as a test battery, contain no normative data for hysterical or dissociative amnesia. The other psychometric measures listed by Pyszora *et al.*² are the Dissociative Experiences Scale, the Perry Traumatic Dissociation Questionnaire, the Regressive Coping Style Questionnaire, the Experience of Shame Scale, the Memory Characteristics Questionnaire, and the Impact of Events Scale.

The Pyszora *et al.* papers^{1,2} are a bellwether for the potential future limitations of forensic psychiatric assessment. Unfortunately, the authors were extremely handicapped in their ability to assess their prisoners with regard to dissociative amnesia. The facts are that, much as Kluff⁸ points out, there are still virtually no tests to measure dissociative amnesia or dissociative memory disorders. The medical literature is silent on any psychometric techniques that can be used to assess claims of dissociative amnesia. There are no highly standardized psychometric tests available that measure the phenomena of dissociation in general. The lack of psychometric resources is a significant weakness of modern forensic psychiatry, and it left Pyszora *et al.* unable to make accurate assess-

ments of their participants. Their problem demonstrates the general lack of capacity for forensic psychiatrists to perform a scientific assessment of a claim of dissociative amnesia. This handicap in our profession is striking and potentially hazardous to the future of forensic psychiatry.

There are almost no clinical or forensic measures of any significance used by psychiatrists on a daily basis to assess patients or examinees clinically. There are a few, such as the Beck Depression Scale,²⁴ the Mini-Mental State Examination,²⁵ the Montreal Cognitive Assessment,²⁶ and the MacArthur Competence Assessment Tool (MacCAT-CA),²⁷ which are well researched and widely used among psychiatrists. Beyond that, we in forensic psychiatry have few, if any, scales and measurement techniques for clinical and forensic assessment that meet even the basic standards of scientific measurement. Currently, a move is afoot among scientists and statistical mathematicians to increase the statistical evidence standards on hypothesis testing to a degree that will mandate the conduct of such tests at the .005 or .001 level of significance. Without a focus on reproducibility of assessments and testing in forensic psychiatry, we as a profession may come to a position of having our work and research significantly restricted for publication or testimony. Reproducibility of scientific research is being examined critically on a regular basis, and researchers and statisticians are bemoaning the apparent lack of reproducibility in general and the risk that it will threaten the credibility of the scientific enterprise.²⁸

Forensic psychiatrists, being physicians, may wish to observe their forensic pathology colleagues. No one would equate the practice of psychiatry with the practice of pathology, but there is much to be learned by observing the scientific approach of our fellow scientists in forensic pathology. It is further suggested that forensic psychiatrists leaving their fellowship training should have learned the contemporary skills of scientific measurement; psychometric statistics; that is, the use and understanding of forensic and psychological scales and tests as applied to forensic psychiatric cases; basic psychiatric genetics and testing; the base rates of all psychiatric disorders that come to forensic psychiatric assessment; and brain neuroimaging. Then, the forensic psychiatrist should be able to demonstrate these techniques and skills in the analysis of a forensic case and, particularly, to apply them in a scientific study. The forensic psychi-

arist leaving a fellowship program will be expected to use these techniques as scientific evidence criteria further develop and advance, or if not, other scientific professions may move into traditional forensic psychiatry areas and potentially displace us from medical-legal analyses that are currently the purview of forensic psychiatrists. The current weakness in standardized metrics for forensic assessment could result in forensic psychiatry's lacking the accepted scientific skills to provide opinions after forensic assessment to triers of fact and adjudicative bodies. For instance, it is generally the standard that neurologists will order magnetic resonance neuroimaging and chemical laboratory tests in any patient referred to them with a chief complaint of a memory disorder, who has not been previously imaged; forensic psychiatrists often do not conduct such tests. Psychologists are rapidly developing a subspecialty field that scientifically correlates static lesions on magnetic resonance imaging (MRI) or abnormalities on functional (f)MRI against standardized psychometric tests.^{29,30} Sociologists are increasingly providing sophisticated statistical algorithms and actuarial methods for the assessment of dangerousness, violence, and phenotypical criminal behavior.³¹ Even in dissociative disorders research, there are at least three recent fMRI studies.³² One clear theme from this research is that the symptom presentation of dissociative disorder, whether clinically diagnosed or simulated by using hypnosis, is associated with increases in prefrontal cortex activity, suggesting that intervention by the executive system in both automatic and voluntary cognitive processing is common to both hysteria and hypnosis.

One potential remedy to our assessment weakness is improved scientific instruction of forensic psychiatry fellows, more rigorous standards for the publication of forensic psychiatric research, and the improvement of professional science-based and evidence-based teaching of practicing forensic psychiatrists, in turn causing the promulgation of scientifically and statistically sound, evidence-based forensic psychiatry.

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