Questions of Credibility: Omissions, Discrepancies and Errors of Recall in the Testimony of Asylum Seekers

JULIET COHEN*

Introduction

The issue of credibility is frequently raised in refusal notices and appeal determinations dealing with the thousands of asylum seekers arriving in the United Kingdom. The differences between Immigration and Nationality Department (IND) interviews, statements of claim and later statements (if given) are commonly used as a basis for denial of credibility and dismissal of claim. The evidence reviewed below challenges the validity of using these differences as grounds for denying credibility.

In the publication 'Still No Reason At All', produced by Asylum Aid, many examples of such denial are quoted.

'You claimed that your husband was taken by soldiers but in his asylum claim he claims to have been taken by police.'

A Kurdish man who was questioned as to why he had told the interviewing officer that he left his country in June when he later said it was July — 'I don't know, but I do know it was Summer.'

A Home Office refusal letter states: 'in the event a well-prepared statement seven months after the asylum interview has little weight on his claim. Had Mr Z a genuine fear of persecution he would have said so in his (first) interview.'[1]

Officials also tend to be sceptical about incidents described in later interviews of which no mention was made in the first. In one such

* MA, MB, BS, DipRACOG, MRCGP; Medical Foundation for the Care of Victims of Torture.
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[1] 'Still no reason at all — Home Office decisions on asylum claims,' Asylum Aid. Asylum Aid, London 1999.

example where two rapes were later disclosed, the Home Office response was: 'the late inclusion of such information is entirely at variance to your previous interview and thus as a result reflects very unfavourably on your veracity and credibility of your later statements'.[2]

However, paragraph 199 of the UNHCR *Handbook on Criteria for the Determination of Refugee Status* reminds decision-makers that 'it may be necessary for an examiner to clarify any apparent inconsistencies and to resolve any contradictions in a further interview and find an explanation for any misrepresentation or concealment of facts . . .' Clearly this advice is not always followed.

To test the assumption that memories are detailed, accurate and consistent across successive reports this review examines the reliability of ordinary people's memory for autobiographical details. In addition, it evaluates the particular medical and psychological conditions potentially influencing memory from which asylum seekers may suffer. It will be shown that various conditions affect the accuracy of recall.

Recent research on memory, especially in the context of witness statements and interview techniques, is highly relevant to this issue. The present review also examines the evidence for the effects on memory of the following factors: weight loss/malnutrition, minor traumatic brain injury, raised stress hormone levels, post traumatic stress disorder, sleep deprivation, depression, and pain. In the light of these studies the assumption that discrepancies and omissions undermine credibility cannot be justified. It is argued that there are alternative explanations for these differences that are at least equally likely and which must be ruled out before testimony is disbelieved.

Current research on normal memory

We cannot observe the actual physical act of remembering but only indirectly test its efficiency. Hypotheses about memory have been widely tested and a number of different models proposed to explain observed phenomena of everyday memory. Certain core observations can be explained reliably without exceptions. Around these are more contentious areas, where specific variations and exceptions to particular models can be demonstrated under experimental conditions. Much research is concerned with identifying the factors that cause such variations. Both the general principles of normal memory function, and the specific factors that produce variability, are relevant when the accuracy of asylum seekers' recall is being assessed.

[2] Case 92, 'Reviewing the asylum determination procedure — Part 1', Refugee Legal Centre, London.

Short term memory is thought to be able to store about seven items for a few seconds only, until new incoming information displaces the old. If the information does not then move into long term store it is lost. Recall of long term memory depends on retention and retrieval. Memory tends to deteriorate and so become less accurate with time. This is known as the retention interval. As well as being retained, memories must be able to be retrieved. Tulving (1972) suggested that at a given time only a small proportion of all memories are available for retrieval.[3]

For long term memory, visual, verbal and auditory information is thought to be coded by meaning, and then linked to related information and associations. Consequently what is recorded is not an accurate copy of the data but an interpretation. What we remember is influenced by what we already know. Details tend to be lost over time and become generalised, sometimes merging with similar memories. Repeated childhood holidays to the same beach will result in blurred and blended memories. How do we then try to remember more about a particular incident? A further level of processing is proposed in which longer lasting memory is achieved by attaching meaning and significance to the information. If little is attached, recall will be less easy. In our holiday example, we can recall the year in which the dog was lost on the beach by attaching other memories to that year such as the age of the dog, the people present at the incident, the emotions experienced, and so on.

Memory is also inevitably influenced by higher cognitive interactions with personality, mood and the perceived intentions of the interviewer. Bartlett in 1932 introduced the idea of 'schemata' to explain the observation that when people remember stories the recall is not accurate, but people typically omit some details, and reconstruct the story in the light of their own experience and knowledge.[4] He proposed that the story is stored in memory in a pre-formed schema based on prior knowledge. Recent research endorses this observation. In one study by List in 1986, subjects were asked to view a video with eight different acts of shoplifting.[5] The acts that were rated as highly probable were remembered better than those rated as less probable. Subjects also falsely 'remembered' some events that were highly probable but had not actually occurred. Particularly with repeated experiences, information specific to one episode tends to drop out while information common to other similar episodes is incorporated into the general schema and retained. A kind of blended memory is formed. It is thought that information is not stored in distinct compartments and does not remain inert but is dynamic. However, if

[3] Tulving, E., (1972), *Episodic and Semantic Memory*, New York Academic Press, 381–403.
[4] Bartlett, F. C., (1932), *Remembering*, Cambridge: Cambridge University Press.
[5] List, J. A., (1986), 'Age and schematic differences in reliability of eyewitness testimony', *Development Psychology*, 22:50–7.

the information is particularly unusual, distinctive or emotional in relation to the general experience, it may be retained.

McIntyre and Craik (1987) showed memory for facts is better than that for the source of those facts, so people retain the information but are unable to say how they know it or where it came from.[6] They also showed that memory for dates and times is notoriously unreliable, probably because there are fewer links for this kind of information to other knowledge. Yet date errors have been used to undermine credibility of asylum seekers' testimony, as in the example cited in the introduction.

Remembering and forgetting

Storage failure describes the case where the memory cannot be retrieved and it is lost. Retrieval failure suggests that finding the right cues and hints can result in successful recall. This is also known as cue-dependent forgetting. 'Blocks' may persist for long periods to even trivial information. 'Pop-up' recall may occur later, spontaneously or in response to a different cue.

Free recall is where open questions are asked and no cues given. In cued recall closed questions containing suggestions as to the target information are used. This may cause problems in that it may affect the accuracy of the recall, provoking falsely 'remembered' details. On the other hand it may also trigger far better and more detailed recall than by open questions.

It has been shown that closed questions may cause shifting responses under repeated questioning of child witnesses, while open-ended questions do not impair accuracy. Gisli Gudjonnsen (1992) suggested that although cued recall after free recall can elicit more full testimony, cues may influence the recall and be misleading, amounting to post-event interference.[7] To distinguish between such real/perceived memory and suggested/confounding memory, Gudjonnsen recommends asking further questions. 'Real' memories contain more sensory information such as colours, size, shape and sound. 'Suggested' memories tended to be long winded but lacking in vividness. These observations are further explored in the paper by Schooler, Gerhard and Loftus (1986).[8] They confirmed that 'real' memories contain more sensory and geographical detail and are expressed with greater confidence. 'Suggested' memories are described with more words, verbal 'hedges', justifications, rationalisations and descriptions of function rather than actuality.

[6] McIntyre, J. S. & F. I. M. Craik, (1987), 'Adult age differences for item and source information', *Canadian Journal of Psychology*, 41: 175–92.

[7] Gudjonnsen, Gisli, (1992), *The Psychology of Interrogations, Confessions and Testimony*, Chichester: John Wiley and Son.

[8] Schooler, J. W., D. Gerhard & E. F. Loftus, (1986) 'Qualities of the Unreal', *Journal of Experimental Psychology, Learning, Memory and Cognition*, Apr, 12 (2): 171–81.

The effectiveness of cues in aiding recall has been used by the police in the cognitive interview technique in which witnesses are encouraged to remember as much detail as they can about an event, no matter how irrelevant, as any detail may trigger further recall of more relevant information. One of the obvious differences between IND interview technique and that of immigration law solicitors, as can be seen by transcripts of the interviews, is just such a difference in the relative use of free and cued recall. In initial immigration department interviews asylum seekers are invited to answer mainly closed questions with brief details. In later statements to their solicitor, questions are more often open and asylum seekers are encouraged to give as much detail as possible.

Hypermnesia — Remembering more

Hypermnesia describes the observation that people remember more details with repeated recalls. In 1987 Payne showed that this is a reliable phenomenon even when the time between recalls of word lists is varied or the nature of the material to be remembered is varied.[9] He also showed that it is more common when subjects are asked to recall high imagery material than low imagery material. Pictorial material produced hypermnesia in 95 per cent of cases compared to verbal material in 50 per cent. This is thought to be because the more elaborate or complex material can give rise to greater numbers of recall cues which then increase the chances of recall over time. Black, Levine and Laulhere (1999) demonstrated the phenomenon of hypermnesia in autobiographical material.[10] This occurs when individuals are seen to recall more information over repeated sessions even after they thought they could recall nothing further. Other workers have shown that personal autobiographical memories are highly imaginatively recorded. Over time and repeated recall, there may be a tendency to confabulate and produce more false responses. Even when the material to be recalled is a videotape, for example, of a crime,[11] there is an increase in error rate with repetition.

In Black, Levine and Laulhere's study, the memory tested was for the verdict of the O.J. Simpson trial.[12] The numbers of errors increased in successive recalls cumulatively, although the ratio of errors to accurate information did not change over time. This means that the increased information recalled in subsequent interviews was not due to an increased

[9] Payne, D. G., (1987), 'Hypermnesia and Reminiscence in Recall: A Historical and Empirical Review', *Psychological Bulletin*, 1015–27.

[10] Black, S., L. J. Levine & T. M. Laulhere, (1999), 'Autobiographical Remembering and Hypermnesia: A Comparison of Older and Younger Adults', *Psychology and Ageing*, 14 (4): 671–82.

[11] Scrivner, E. & M. A. Safer, (1988), 'Eyewitnesses show hypermnesia for details about a violent event', *Journal of Applied Psychology*, 73: 1–77.

[12] Above, n. 10.

error rate, and confabulation was not the reason for the hypermnesia. In three interviews conducted within one hour the information recalled increased between the first and second interviews. Between the second and the third, although no new information was recalled, previously-recalled information was 'forgotten' or omitted, so no overall increase was shown. Their interpretation of this result is that autobiographical memories are not traces that are retrieved and described, but are reconstructed from event-specific knowledge. The exact form is guided by the social and situational context in which they are recalled. Thus no two reformulations can be identical.

Reproductive versus reconstructive memory

Memories that remain exactly the same each time they are recalled appear to be reflecting a reproductive mechanism but memories that vary are more likely to be generated by a reconstructive process. As long ago as 1932 Bartlett observed that retold stories change with each retelling,[13] and more recently, a study by Anderson, Cohen and Taylor (2000) confirmed the variability of autobiographical memory.[14] They examined successive recalls of personal memories by older and young adults and found that older adults' memories had greater stability. The memories of younger adults varied more in both content and output order. It was also found that recent memories varied more than older ones. This suggests a shift over time from dynamic reconstruction toward a reproductive mechanism, whereby a memory becomes more fixed after a long time has elapsed. In both age groups the second recall of a memory produced an elaboration of the original version with less than 50 per cent of the facts being identical and much new detail being added. There were few verbatim repetitions, and differences in phrasing suggested that the recall is reconstructed from a non-verbal store. The fact that such marked variability occurs in the recall of everyday experiences that are not traumatic indicates that it is misguided to expect the successive recalls of asylum seekers to be perfectly consistent. Although it was formerly considered that so-called 'flashbulb' memories for dramatic events that are highly important and emotionally charged remain fixed, this view has been challenged by recent research which has shown that these memories also show variability.[15]

[13] Above, n. 4.

[14] Anderson, S. J, G. Cohen & S. Taylor, (2000), 'Rewriting the past: some factors affecting the variability of personal memories', *Applied Cognitive Psychology*, 14: 435–54.

[15] Christianson, S. A., (1989), 'Flashbulb memories: special but not so special', *Memory and Cognition*, 17 (4): 435–43; Neisser, U. & N. Harsch, (1992), 'Phantom flashbulbs: false recollections of hearing the news about Challenger', in Winograd, E. & U. Neisser, eds., *Affect and Accuracy in recall: Studies of flashbulb memories*, Cambridge: Cambridge University Press.

Anderson, Cohen and Taylor comment that there is a possible effect of 'demand characteristics' of the task.[16] When people are asked to repeat information they have already given they usually assume that the first account is unsatisfactory in some way and may try to rectify this by supplying more and different details.[17] Tversky and Marsh (2000) showed that when people retell events they take different perspectives for different audiences and purposes.[18] These observations are directly relevant to the different settings in which asylum seekers give successive statements.

Effects of the experience being recalled

Memory stability is known to be affected by the nature of the event being recalled and the level of associated emotion with it.[19] The accuracy of recall of torture victims can be shown to be further influenced by a number of special factors related to torture and its consequences. Studies of victims of torture have established the most common symptoms suffered to be: depression, anxiety, emotional lability, disturbed sleep, nightmares, impaired memory and concentration, headache, cardiovascular symptoms, dyspepsia, joint and muscle pain.[20] These are described by clinicians as diagnoses of post traumatic stress disorder, sleep disorder, depression, anxiety state, post-concussion syndrome, chronic pain state and others. Other symptoms and conditions may be directly related to an individual's particular history such as of significant weight loss — discussed below — or a specific torture. For example repeated submersion and other forms of suffocation may cause cerebral hypoxia leading to loss of consciousness, confusion, disorientation and memory impairment. These effects may be transient or persistent depending on the extent of hypoxic damage to the brain.[21]

Emotional arousal and coping mechanisms

As Schactel (1947) defined it: 'Memory as a function of the living personality can be understood as a capacity for the organisation and reconstruction of past experiences and impressions in the service of present

[16] Above, n. 14.

[17] Edwards, D. & J. Potter, (1992), 'The Chancellor's Memory: Rhetoric and truth in discursive remembering', *Applied Cognitive Psychology* 6: 187–215.

[18] Tversky, B. & E. J. Marsh, (2000), 'Biased retellings of events yield biased memories', *Cognitive Psychology*, 40(1): 1–38.

[19] Wynn, V. E. & R. H. Logie, (1998), 'The Veracity of Long-term Memories — Did Bartlett get it right?', *Applied Cognitive Psychology*, 12: 1–20.

[20] See, for example, Petersen, H. D. & P. Jacobsen, (1985), 'Psychical and physical symptoms after torture: A prospective, controlled study', *Forensic Science International*, 29 (3–4): 179–89; Hougen, H. P., J. Kelstrup, H. D. Petersen & O. V. Rasmussen, (1988), 'Sequelae to torture: A controlled study of torture victims living in exile', *Forensic Science International*, 36 (1–2): 153–60.

[21] Norfolk, G. A., (1999), 'Physical illnesses and their potential influence', in Heaton-Armstrong, A., E. Shepherd & D. Wolchover, eds. *Analysing Witness Testimony*, Blackstone Press Ltd., London, 99–107.

fears, needs and interests.'[22] There is ample evidence that memory is affected by the need to cope with emotional and traumatic experiences.

Allodi in 1991[23] and several others have demonstrated the upsetting nature of torture recall and the effect of this on testimony. Christianson and Loftus (1991) showed that increased arousal during an event led to a concentration on certain detail with reduced recall of peripheral detail.[24] Open-ended questions and free recall led *to* the greatest distress and limited reporting while neutral cues including reading from a list of possible events produced better recall. The different effects of open versus closed questioning on recall in the general population have already been noted. Obviously, the particular effects are very dependent on the circumstances of the interview, the time elapsed since the torture, and the relationship with the interviewer. Mollica (1988) showed that the interviewer's own mental protective devices will be employed to resist the negative effects of hearing about upsetting events. Often there is a fear held by the interviewer that recall will trigger uncontrollable mental distress for the interviewee. This leads on to feelings of inadequacy in comforting the person and voyeurism in 'forcing' them to relive traumatic events.[25] There may be further complications due to the interpreter if one is present. If interpreters are also torture victims, or closely involved with such victims, they may close off certain questions and answers or give non-verbal cues discouraging elaboration of detail. The use of checklists as an aid to free recall can be helpful in overcoming the barriers of awkwardness and emotional distress, especially for experiences difficult to accept or verbalise, such as sexual assault.

Events encoded during high levels of arousal have been shown to be more difficult to retrieve, although they can be retrieved in time.[26]

Weight loss and malnutrition

Sutker et al. (1986 and 1991) demonstrated that prolonged malnutrition and weight loss can affect memory function.[27] This work was mainly on

[22] Schactel, E. G., (1947), 'On memory and childhood amnesia', *Psychiatry*, 10: 1–26.

[23] Allodi, F., (1991), 'Assessment and treatment of torture victims: a critical review', *Journal of Nervous and Mental Disease*, 170 (1): 4–11.

[24] Christianson, S. A, E. F. Loftus, H. Hoffman & G. R. Loftus, (1991), 'Eye fixations and memory for emotional events', *Journal of Experimental Psychology, Learning, Memory and Cognition*, 17(4): 693–70.

[25] Mollica, R. F., (1988), 'The trauma story: the psychiatric care of refugee survivors of violence and torture', in Ochberg, F. M., ed., *Post traumatic therapy and victims of violence*, Brunner/Mazel, New York.

[26] Bradley, B. P. & A. D. Baddeley (1990), 'Emotional factors in forgetting', *Psychological Medicine*, 20(2): 351–5.

[27] Sutker, P. B., D. K. Winstead, K. C. Goist, R. M. Malow, & A. N. Allain, (1986), 'Psychopathology subtypes and symptom correlates among former prisoners of war', *Journal of Psychopathology and Behavioural Assessment*, 8:89–101; Sutker, P. B., D. K. Winstead, Z. H. Galina, & A. N. Allain, (1991), 'Cognitive deficits and psychopathology among former prisoners of war and combat veterans of the Korean conflict', *American Journal of Psychiatry*, 148(1): 67–72.

prisoners of war and holocaust survivors from the Second World War, but in medical terms is congruent with established knowledge on vitamin deficiency disorders, especially the B vitamins. In patients on total intravenous nutrition multivitamins must be included or deficiency syndromes may rapidly ensue.[28] A condition known as Wernicke's encephalopathy can follow severe thiamine deficiency and memory and cognitive deficits have been demonstrated in this condition, reversible after treatment with thiamine. Elderly patients with low folic acid levels had poor episodic recall.[29] At the other end of the life cycle, a randomised controlled trial of treatment with micro-nutrient fortified biscuits carried out with children from a poor rural area in South Africa,[30] showed a distinct improvement after treatment, in both cognitive function and short term memory. In torture victims subjected to prolonged detention a history of available diet and estimations of weight loss would indicate the possible presence of this effect.

Minor traumatic brain injury

'Minor traumatic brain injury' describes head injury of the kind that does not involve prolonged loss of consciousness but may nevertheless have significant effects on health and in particular on cognitive function and memory. It is generally established that more major head injury has similar, though more serious effects, but it is the consequences of minor head injuries that have tended to be overlooked. Many victims of torture, not surprisingly, are unable to clearly estimate periods of unconsciousness, or to distinguish the cause between such other possibilities as vaso-vagal inhibition (fainting) or suffocation. However, a detailed history should be able to elicit rough estimates of severity and frequency of head injury, prolonged or brief loss of consciousness and symptoms noted afterwards attributable to head injury (post-concussion syndrome). Such symptoms include dizziness, drowsiness, double vision, headache and nausea in the short term and persisting headache, dizziness, poor concentration, poor memory, fatigue, irritability, anxiety, noise sensitivity and insomnia in the longer term.

Clear-cut examples of retrograde and post-traumatic amnesia have been accepted as influencing ability to give testimony.[31] Where the history

[28] Hahn, J. S., W. Berquist, D. M. Alcorn, L. Chamberlain & D. Bass, (1998), 'Wernicke encephalopathy and beriberi during total parental nutrition attributable to multivitamin infusion shortage', *Paediatrics*, 10(1): E10.

[29] Hassing, L., A. Wahlin, B. Winblad, & L. Beckman, (1999), 'Further evidence on the effect of vitamin B 12 and folate levels on episodic memory functioning: A population-based study of healthy very old adults', *Biol. Psychiatry*, 45(11): 1472–80.

[30] Van Stuijvenberg, M. E, J. D. Kvalsvig, M. Faber, M. Kruger, D. G. Kenoyer & A. J. Benade, (1999), 'Effect of iron-, iodine-, and beta-carotene fortified biscuits on the micronutrient status of primary school children: a randomised controlled trial', *American Journal of Clinical Nutrition*, 69 (3): 497–503.

[31] Above, n. 21.

is less clear cut, there may still be effects on the brain from minor injury. In 1999 Voller et al. published findings in a study of very minor traumatic brain injury, defined as loss of consciousness less than 20 minutes with a normal score on neurological examination.[32] They found significant impairment of verbal memory persisted even after six weeks, together with attention deficits and poor information processing. On MRI scan 25 per cent had positive findings of traumatic lesions to the brain. In a review of post-concussion syndrome, Evans (1992) described the organic nature of the syndrome as being well-documented in findings in neuro-pathology, neuro-physiology, neuro-imaging and neuro-psychological studies.[33] The principal sequelae are headache, psychological and somatic complaints and cognitive impairment. Most resolve within three months of injury, but a minority persist for months or even years. Risk factors identified for such persistence include age over 40, lower socio-economic level, female sex, alcohol abuse, prior head injury and multiple trauma. The latter two categories at least would therefore potentially include victims of torture.

Stress, arousal and cortisol

In both human and animal experiments, glucocorticoids such as cortisol have been shown to regulate hippocampal mechanism in the brain and so affect memory. This has also been observed in patients with Cushing's disease, in which excessive amounts of these hormones are produced from the adrenal gland, and in patients requiring treatment with steroids for conditions such as arthritis or asthma. Both are at risk of impaired memory. Impaired memory and raised cortisol levels have also been found in the elderly and in patients with depression. In an experiment by Newcomer et al. (1999),[34] subjects were given four days treatment with low dose cortisol, a glucocorticoid known to be produced when under stress. Other subjects were given higher doses to simulate major stress. The trial was conducted as a double blind, randomised, placebo controlled study. Cognitive testing was done at intervals of day 0, day 1, day 4 and day 10. Cortisol treatment at higher dose produced reversible reduction in verbal declarative memory without effects on non-verbal memory or attention. The levels of cortisol given were based on those detected in the blood of those undergoing surgery, which provokes a physiological stress response. The authors conclude that these results are

[32] Voller, B., T. Benke, K. Benedetto, P. Schnider, E. Auff & F. Aichner, (1999), 'Neuropsychological, MRI and EEG findings after very mild traumatic brain injury', *Brain Injury* 13(10): 821–27.

[33] Evans, R. W., (1992), 'The post concussion syndrome and the sequelae of mild injury', *Neurol. Clin.* 10(4): 815–47; also, Gfeller, J. D., J. T. Chibnall & P. N. Duckro, (1994), 'Post concussion symptoms and cognitive functioning in post traumatic headache patients', *Headache*, 34(9): 503–7.

[34] Newcomer, J. W., G. Selke, A. K. Melson, et al., (1999), 'Decreased memory performance in healthy humans induced by stress-level cortisol treatment', *Arch. General Psychiatry* 56: 527–33.

directly relevant to the interpretation of decreased memory performance in humans under periods of extended stress due to the effect of raised plasma cortisol on the memory encoding and retrieval processes. These results were confirmed in a similar experiment by de Quervain et al. (2000).[35]

Post traumatic stress disorder

It has been known since at least as far back as the First World War that battle experiences can cause episodes of memory loss. Pelmanism, a system of memory training exercises, was used with shell shocked patients to improve their memory and concentration. In 1889, a French doctor, Janet, was writing about amnesia for part or all of traumatic experiences. Post traumatic stress disorder was defined after the Vietnam War, but it essentially describes the symptoms that may develop in any victim or witness of violent and terrifying traumatic experience. These symptoms are characterised by distressing recall, nightmares, flashbacks, avoidance behaviour, sleep disorder, irritability, hyper-arousal and social withdrawal. According to the criteria for the diagnosis of post traumatic stress disorder they must persist for more than one month. Disturbances of memory and concentration have been found in studies on prisoners of war from the Second World War and the Korean War. Torrie in 1944 found that immediately after a major campaign about 5 per cent of soldiers had no memory at all of the events.[36] Other studies have shown dissociative amnesia, which includes the inability to remember some aspects of the trauma, occurs in large numbers of disaster victims: 29 per cent of earthquake survivors, 57 per cent of ambush victims and 61 per cent of tornado survivors.

Such dissociative processing complicates the capacity to communicate the trauma. The memory may be wholly or partly organised on an implicit or perceptual level, with no accompanying narrative about what occurred. During provocation of traumatic memories under neuro-imaging, an experiment showed decreased activation of Broca's area, the speech area of the brain. At the same time there was enhanced imaging of the right hemisphere areas most associated with intense emotion and visual images.[37]

In 1992, Bremner et al. reported lower hippocampal volume in patients with combat-related post traumatic stress disorder than in matched

[35] De Quervain, D., B. Roozendaal, R. Nitsch, J. McGaugh & C. Hock, (2000), 'Acute cortisone administration impairs retrieval of long-term declarative memory in humans', *Nature Neuroscience* 3(4): 313–4.

[36] Torrie, A., (1944), 'Psychosomatic casualties in the Middle East', *Lancet*, 29: 139–43.

[37] Rauch, S., B. A. van der Kolk, R. Fisher et al., (1994), 'PET imagery-positron emission scans of traumatic imagery in PTSD patients'; paper presented at the annual meeting of the International Society for Traumatic Stress Studies, Chicago, IL.

controls.[38] Interestingly, recent research on London cab drivers who are required to memorise all the streets of the city shows that they have increased hippocampal volume. In 1993, Bremner et al. showed that Vietnam veterans with post traumatic stress disorder had lower scores on both immediate and delayed recall on memory testing.[39] This links with the evidence cited above that severe stress induces a cortisol release that has a neurotoxic effect on the hippocampus, an important part of the brain in memory storage mechanisms.

Numerous other studies illustrate the effects of post traumatic stress disorder on memory. For example, Yehuda et al. (1995) found that veterans with post traumatic stress disorder had a quite circumscribed cognitive deficit affecting memory retention.[40] Jenkins et al. (1998) studied rape victims with post traumatic stress disorder and found they had recall deficits also.[41]

There is relatively less published work specifically on victims of torture, but in two reviews of a series of patients' symptoms, impaired memory and poor concentration are specifically cited as amongst the most common symptoms.[42] In this case no formal diagnosis of post traumatic stress disorder was made, although the other psychological symptoms listed in these studies are essentially those of post traumatic stress disorder: disturbed sleep, nightmares, emotional lability, anxiety and depression. In one study almost 50 per cent of London asylum seekers presenting to the Medical Foundation for the Care of Victims of Torture were found to have post traumatic stress disorder compared to an expected incidence of 5–7 per cent in the normal population, using the internationally agreed DSM-IV diagnostic criteria.[43]

With specific reference to autobiographical memory, Harvey et al. (1998) have studied both acute stress disorder, which can develop within the first month after a traumatic experience, and post traumatic stress disorder, in which symptoms persist for longer than one month.[44] Harvey found that patients with acute stress disorder reported fewer specific memories of the trauma than did non-acute stress disorder patients.

[38] Bremner, J. D., J. P. Seibyl, T. M. Scott et al., (1992), 'Decreased hippocampal volume in PTSD' in *New Research Program and Abstracts*, 145th Annual meeting of the American Psychiatric Association, Washington DC.

[39] Bremner, J. D., T. M. Scott, R. C. Delaney et al., (1995), 'Deficits in short term memory in post traumatic stress disorder', *American Journal of Psychiatry*, 150: 1015–19.

[40] Yehuda, R., R. S. Keefe, P. D. Harvey, et al., (1995), 'Learning and memory in combat veterans with post traumatic stress disorder', *American Journal of Psychiatry*, 152: 137–39.

[41] Jenkins, M. A., P. J. Langlais, D. Delis & R. Cohen, (1998), 'Learning and memory in rape victims with post traumatic stress disorder', *American Journal of Psychiatry*, 155: 278–79.

[42] Above, n. 20.

[43] Ramsay, R., C. Gorst-Unsworth & S. Turner, (1993), 'Psychiatric morbidity in survivors or organised state violence including torture', *British Journal of Psychiatry*, 162: 55–59.

[44] Harvey, A. G., R. A. Bryant & S. T. Deng, (1998), 'Autobiographical memory in acute stress disorder', *Journal of Consulting and Clinical Psychology*, 66(3): 500–506.

Depression was found to play a significant role in the memory deficits of acute stress disorder patients, but when this was controlled for, some effect of acute stress disorder alone was still evident. Harvey also showed that the presence of acute stress disorder was highly predictive of those who would go on to develop post traumatic stress disorder. Seventy-eight per cent of acute stress disorder patients had post traumatic stress disorder at six months where the average expected number in the non-acute stress disorder population is less than 30 per cent. The model postulated is thus that *high* cortisol levels released at the time of maximum stress affect the organisation of memories leading to disrupted retrieval processes, reduced optimal recall of the traumatic memories and possible unwanted excessive recall in the form of flashbacks, nightmares and persistent thoughts of the trauma. Some therapeutic approaches to post traumatic stress disorder reflect this model by working on the 'processing' of traumatic memories in a way that reduces the associated distress and aims for integration of the memories into 'normal' long-term storage.

Sleep loss

Sleep deprivation is a common form of torture. In addition, as quoted above, torture survivors often suffer from ongoing sleep disorder with difficulty falling and staying asleep and frequent nightmares. This may be part of a diagnosis of post traumatic stress disorder or may be present without the rest of the syndrome. In a retrospective analysis of fifty patients seen for any clinical problem at the Medical Foundation for the Care of Victims of Torture, the author found 75 per cent to be gaining 4 or less hours sleep in 24.[45] Studies in sleep-deprived subjects have shown impaired cognition and recall. Harrison and Home (1992) showed impaired facial recognition in sleep deprived subjects even when given caffeine.[46] Idzidowski in 1984 showed sleep deprivation impairs long-term memory and other workers have shown a link specifically with the lack of REM phase sleep.[47]

Depression

Depression may be part of the post traumatic stress disorder spectrum or made as a separate diagnosis in its own right. In the words of Dietrich (2000), 'one of the most frequent and neuro-psychologically well investigated symptoms in depression is reduced memory capacity'.[48] Recent confirmation can be found in the work of Pelosi et al. (2000),

[45] Cohen, J., unpublished report.

[46] Harrison, Y. & J. A. Horne, (2000), 'Sleep loss and temporal memory', *The Quarterly Journal of Experimental Psychology*, A 53(1): 271–279.

[47] Idzidowski, C., (1984) 'Sleep and memory', *British Journal of Psychology*, 75(4): 439–449.

[48] Dietrich, D.E., A. Kleinschmidt, U. Hauser et al., (2000), 'Word recognition memory before and after successful treatment of depression', *Pharmacopsychiatry*, 33(3): 221–228.

who demonstrate that depressed patients had poor recall compared to controls, and this became worse as the memory load increased. They concluded that major depression significantly affects working memory.[49]

Depressed patients with minor traumatic brain injury reported more severe cognitive symptoms.[50] Autobiographical memory is known to be affected by depression.[51]

In the study on London asylum seekers, 30 per cent were found to have depression, compared to 5–10 per cent of the normal population.[52] This study used the internationally agreed diagnostic criteria of DSM-IV.

Chronic pain

It can be very difficult to separate the effects of chronic pain from depression as pain itself is such a potent trigger of depression. In addition, pain patients often have very poor sleep. Iezzi et al. in 1999 studied the neuro-cognitive performance of pain patients related to their emotional state.[53] They found that those highest in emotional distress experienced most difficulty in intellectual function, delayed recall and problem solving. Schnurr and MacDonald (1995) tried to exclude the effects of depression in their study of pain patients and found that differences in memory complaint were *still* greater than in controls.[54] Although pain patients often themselves attribute their memory problems to their use of codeine and other strong analgesics, there was no evidence of this in their study. In victims of torture there is a combined incidence of chronic pain from musculo-skeletal injury, sleep disorder, depression and emotional distress which would be very difficult to study separately but clearly all of these conditions can combine to produce similar effects on memory.

Assessment and quantification

How can all of the above conditions be quantified and documented? A detailed history and examination by independent medical experts is the simplest, and arguably the most important element. CT scans, bone scintigraphy and other medical tests can provide further evidence for a history of torture but are expensive and not necessarily conclusive. A

[49] Pelosi. L., T. Slade, L. D. Blumhardt & V. K. Sharma, (2000), 'Working memory dysfunction in major depression; an event-related potential study', *Clinical Neurophysiology*, 111(9); 1531–43.

[50] Gfeller et al., above, n. 33.

[51] Brittlebank, A. D., J. Scott, J. M. G. Williams & I. N. Ferrier, (1993), 'Autobiographical memory in depression: state or trait marker', *British Journal of Psychiatry*, 162: 118–121; Kuyken, W. & C. R. Brewin, (1995), 'Autobiographical memory functioning in depression: reports of early abuse', *Journal of Abnormal Psychology*, 104: 585–591.

[52] Ramsay, Gorst-Unsworth and Turner, above, n. 43.

[53] Iezzi, T., Y. Archibald, P. Barnett, A. Klinck & M. Duckworth, (1999), 'Neurocognitive performance and emotional status in chronic pain patients', *Journal of Behavioural Medicine*, 22(3): 205–16.

[54] Schnurr, R. F. & M. R. Macdonald, (1995), 'Memory complaints in chronic pain', *Clinical Journal of Pain*, 11(2): 103–111.

negative bone scintigraphy test does not mean no bone injury occurred. Psychological assessments with batteries of questionnaires can give scores for depression, anxiety, post traumatic stress disorder, short and long term memory, trauma experience and chronic pain, but these tests are by no means all internationally validated. There are also considerable difficulties in performing these tests through an interpreter if all questions are not available in translation, as is generally the case. There is a subjective element to many such questionnaires and day-to-day variation in responses can be significant. It is difficult with the current state of knowledge to determine if such assessments are in effect going to be more useful than a general medical examination.

Conclusion

In assessing the credibility of asylum seekers what should we regard as reasonable degrees of error or omission? In what numbers? Classes of error may be categorised as: calendar errors, detail differences from one period of detention to another similar one, errors of definition or translation, for example, soldiers/police/men and numbers of men present during torture, telescoping and expansion of time-frames, omissions of rape and other deeply traumatic incidents. It is possible some of these can be explained by the potential for variability of true memories.

The observation of a lack of supporting detail, especially sensory and geographical, for example, describing cell, food, and hygiene arrangements, may indicate unprepared answers to an unforeseen question. However, it may also simply indicate limitations in the interview technique. An important element often neglected in written evidence is the presence of visual cues for the interviewer including changes of expression, gesture, body language indicating emotion and re-enactment of posture during torture. Documentation of secondary symptoms, for example, post traumatic stress disorder, sleep disorder, gastritis, shortness of breath, palpitations, headaches, chronic back and joint pain and skin irritation which are all well-recognised in victims of torture is also too often neglected.

The earlier sections have demonstrated just how unusual it is if recall is accurately reproduced and how common differences in detail can be. So is there any way in which variable statements can be said to affect credibility or should the legal system be altering its approach?

Let us look at the treatment of witnesses in court. Acceptance of their credibility can be crucial in establishing guilt or innocence and yet these judgements may be made on what is all too probably an unproven and unprovable supposition.

First comes the observation: *'liars change their story'*. This is supposedly because a made-up story is harder to remember consistently than an

autobiographical event, or because when challenged, liars change details to cover inconsistencies.

This leads to the hypothesis: *'changes in a story indicate falsehood'*, but this is the converse of the observation and has never been conclusively proven to be so. Just because cats like milk does not mean any creature drinking milk must be a cat. In logic this is known as the 'fallacy of converting the proposition'.

Current research on memory shows that stories can change for many reasons and such changes do not necessarily indicate that the narrator is lying. In the real world, we know that the most rigidly reproduced accounts may be so because they have been memorised from a script. Conversely, those with certain discrepancies may be so because they have been genuinely reconstructed from autobiographical memories. Yet we encourage consistency in all testimony because it 'keeps it simple'. Motivation to be consistent is only present if the subject first knows that consistency is valued above everything. If not, it is 'accidental' rather than intended. In Britain we give witnesses their statements to read before going into court, to ensure they are happy to swear to them on oath and to make sure they do not then depart from the 'established' story. Presumably this is based on the assumption that they are likely to do so. This does not mean we are suggesting they lie, just that experience in the courts has shown it is almost impossible to maintain absolute consistency, especially if it is a long time since the events to be recalled. Yet this latitude is not given to asylum seekers who are repeatedly judged and found not credible on this very issue. This application of dual standards is iniquitous.

There are strong grounds for arguing that lack of consistency *per se* cannot be used to give any negative weight to the assessment of credibility. In addition, it needs to be acknowledged that judgements about credibility are extremely fallible. Schooler, Gerhard and Loftus (1986) tried to give 'judges' cues on differentiating 'real' from 'suggested' memories.[55] They were able to improve their scores from 50 per cent to a mere 60 per cent success rate. This clearly still leaves enormous scope for error in such judgements. The findings of this review have wider implications for any witness evidence presented in court. In the case of asylum seekers, especially, it is clear that great caution needs to be exercised in denying credibility. The normal variability of memory is likely to be exacerbated by the medical factors reviewed above and a general impairment of recall is to be expected as a result of their traumatic experiences and physical and mental state.

Further research would be invaluable in quantifying the degree of memory impairment suffered by asylum seekers with some of the medical

[55] Above, n. 8.

conditions reviewed above, and assessing the possible use of trauma scales and other measurements.

On a practical level, standardising questions and formats of all interviews would go some way to improving consistency. Increasing the detail of medical histories with particular reference to the conditions discussed: weight loss/malnutrition, head injury, post traumatic stress disorder, sleep disorder, depression and chronic pain, would also aid in this difficult task of assessing credibility.

In effect, however, this review concludes that credibility assessment by the determination of accuracy and reproducibility of an asylum seekers' recall is not a valid component of asylum decision making.