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THE EGGSHELL SKULL RULE AND RELATED PROBLEMS IN RECOVERY FOR MENTAL HARM IN THE LAW OF TORTS

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PART I: INTRODUCTION - THE PROBLEMS AND THE PROBLEM

§1 *General introduction*

The theme of this article is the place, actual and proposed, of the “thin skull” rule in relation to mental harm. It is divided into three main parts.

Part I outlines and analyzes the problem. This is not a full scale description and analysis of the cases in all or any jurisdictions. A number of authors have already published detailed articles along those

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lines.¹ The main point here is to provide a general outline of the usual solutions to the problem.

Part II develops the thesis, or rather the hypothesis that predisposing mental conditions of one kind or another are usually, if not universally, present when significant mental impairments develop following psychic trauma. It is further proposed that impairments arising from head trauma will be significantly worse in predisposed persons.

Part III describes and evaluates possible alternative rules for mental harm recovery.

§2 The Problem in General and the Particular Problem of the Eggshell Skull Rule

That there is confusion in the law relating to mental harm is hardly open to question. Jurisdictions are divided in their approaches to the problem. The more conservative hold to the older restrictive rules, and those attempting to do away with them (the “moderns”) have sought to bring mental harm into line with physical impairments. Within these two broad groups, there are other divisions, as courts attempt to modify and improve their rules relating to this matter. But the great remaining question, and it applies in both camps, relates to the “eggshell skull” rule. This rule provides that the defendant takes the plaintiff as *ze* finds *zem*.² This rule is well established as to purely physical harms. For example, one who negligently injures someone with serious heart disease is responsible for that person’s cardiac death even if the same force would hardly have inconvenienced a normal person.³ With regard to mental harms, the status of the eggshell skull rule is far from clear. This is so even in jurisdictions that have sought to treat mental and physical harms in the same manner. Even one as perceptive and learned as Chief Judge Richard Posner, interpreting Wisconsin law, seemed to slide over the problem when he declared

1. See Narbeh Bagdasarian, *A Prescription for Mental Distress: The Principles of Psychosomatic Medicine with the Physical Manifestation Requirement in N.I.E.D. Cases*, 26 Am. J.L. & Med. 401 (2000); Christina Hull Eikhoff, *Out with the Old: Georgia Struggles With Its Dated Approach to the Tort of Negligent Infliction of Emotional Distress*, 34 Ga. L. Rev. 349 (1999); John M. Logsdon, Comment, *The Rise and Fall of Bystander Recovery for Negligent Infliction of Emotional Distress in North Carolina*, 21 N.C. Cent. L.J. 319 (1995).

2. Using the “ze” convention to avoid gender problems in writing. Thus “ze” replaces he/she, “zem” indicates him or her, and “zes” stands for his or hers.

3. *Vosberg v. Putney*, 50 N.W. 403 (Wis. 1891) (where one child in school playfully (but wrongfully) kicked another on the shin, activating a grumbling infection which ultimately led to an amputation).

unequivocally that the thin skull rule applied in a mental harm case.⁴ Judge Posner simply stated, without explanation or comment, that the thin skull rule was the law in Wisconsin and appears to have been unaware that it might make a difference if the harm was mental rather than purely physical. Judge Posner, of course, might have been deciding rather than overlooking the issue; however, it would be odd to do so without argument or discussion. In either event one wonders whether the state courts in Wisconsin, which are still in the conservative camp when it comes to deciding mental harm cases, would go along with this opinion in a future case. The point of this comment is not to criticize Judge Posner's opinion, but to make the argument that if he was indeed unaware of the pitfalls in this area, what about the rest of us? If gold rusts what shall iron do?

§3 Ancient History - From Initial Rejection of Mental Harm to Qualified Admission

The law has always viewed mental disorders with some suspicion. They have seemed vague and subjective in an area where precision and objective proof are valued. To allow recovery for such harms would, it was thought, be an invitation to pad damages or even to practice fraud, since there was no clear way to define mental disorders and no objective method of proving them.

The initial response of the courts to claims for mental harm was to deny them.⁵ However, a number of exceptions to this rigid rule soon developed:

1. The first was in connection with intentional torts. At least some mental upset might be presumed from the sheer vexation of the intentionally wrong act, and specific mental problems such as sleep disturbance and chronic anxiety would likewise be readily presumed to follow with little or no proof required.

4. *Stoleson v. United States*, 708 F.2d. 1217 (7th Cir. 1983) (The plaintiff had been exposed to excessive levels of nitroglycerine at work, and suffered chest pains over the weekend. A medical researcher opined that plaintiff's coronary arteries were dilated by nitroglycerine during the week and became constricted over the weekend when it was withdrawn. Other authorities doubted this hypothesis and there was no evidence that the nitroglycerine had permanently damaged her heart. Nevertheless, the plaintiff, who tended to be hypochondriacal, developed a pathological conviction that she had heart damage. Judge Posner appeared to struggle with the various legal doctrines concerned in this case and eventually decided it, perhaps gratefully, on the grounds that the plaintiff had failed to show that hypochondriasis, in this or some other body system, would not have developed even without the nitroglycerine incident.).

5. *Mitchell v. Rochester Ry.*, 45 N.E. 354 (N.Y. 1896).

2. If the intentional act directly caused brain damage, any psychiatric problems that subsequently appeared would likewise be presumed to follow from the tort.

3. If the wrongful act was one of physical violence resulting in permanent body harm, e.g., an amputation or loss of sight in both eyes, almost any resulting mental disorders would easily be taken to follow from the injury. If all else failed, the mental consequences of an intentional tort might be covered in punitive damages.

There was originally no recovery for negligently inflicted mental harms; but here again, exceptions appeared. The first of these related to telegrams and also to the care of corpses. Many of the negligent telegram cases involved sending a notice of a death or serious injury of a close relative to the wrong family.⁶ In such cases mental suffering would be compensable, and, indeed if alleged, would probably be assumed without further proof. Mishandling of a corpse was frequently treated as intentional or reckless,⁷ but liability for mental harm would still attach to mere negligence. Thus, if a dead body was transported in a flimsy container which burst open so that limbs and body parts were exposed to public gaze, a near relative might recover even if they did not personally see the corpse but only heard of the event.

Proof of negligently caused mental harm came to be allowed in three other circumstances as well:

1. Where the mental harm was causally related to a physical injury, e.g., where amputation of a limb produced depression (the physical contact rule).

2. Where a mental harm produced a physical illness, such as a perforated ulcer (the physical consequences rule).

3. Where a near relative suffered mental distress on seeing a child or spouse killed in an automobile accident (the "zone of danger" rule).

These are, and were intended to be, restrictive rules, preventing fraudulent claims of mental harm and also avoiding the specter of unlimited liability for defendants.

6. See *Johnson v. State*, 334 N.E.2d 590 (N.Y. 1975); *Mentzer v. W. Union Tel. Co.*, 62 N.W. 1 (Iowa 1895).

7. E.g., *Gadbury v. Bleitz*, 233 P. 299 (Wash. 1925) (where a body was held without burial along with demand for payment of another debt. Many of the "dead body" cases are treated as though the family has a property right in the dead body. In *Gadbury*, where the property rationale was confusing, the harm was treated, more reasonably, as intentional infliction of emotional distress). See Prosser, Wade and Schwartz, *TORTS: CASES AND MATERIALS*, at 459 n.3 (10th ed. 2000).

§4 *Persisting Problems in Emotional Distress Cases*

The majority of American jurisdictions have retained one or more of the restrictive rules relating to mental harm; but, it has proved difficult to apply them consistently. The result has been some unpredictability of outcome, and decisions based on the restrictive rules have seemed at times to be unwarranted or even unjust. Furthermore, tinkering with the formulae to improve them has produced considerable variation in the form of the rules from one jurisdiction to another. Some jurisdictions have interpreted the “zone of danger” rule strictly, requiring that the plaintiff be a near relative and present to the extent that they themselves might have been injured. Others have allowed mere viewing of the event from a safe distance to be sufficient or even hearing about it immediately afterward, to make the resulting mental distress compensable. With regard to the requirement of a physical harm, some courts permit a very slight injury, or even a touch, to allow the jury to pass on mental damages. Causation may also be too lightly assumed or allowed on minimal evidence. Other jurisdictions, aware of this expansionist trend and wishing to avoid it, have insisted that significant bodily harm is required and that a causal relationship to the mental damage should be clearly⁸ shown.

A relatively small,⁹ but vocal, minority of jurisdictions have concluded that the restrictive rules are artificial and in a sense irrelevant to the problem. They criticize them as being both too wide and too narrow, allowing claims that should be refused and denying others that should be allowed. These jurisdictions have abandoned the bodily contact, physical consequences, and zone of danger rules and have opted to treat mental harms just like physical harms (generally referred to as the *modern view*). Mental harm which is causally related to a wrongful act will be compensable then, provided that it is significant (not trivial) and genuine (not imaginary). In practice, this means that the problem must be shown to be a recognized mental disorder,¹⁰

8. Or, even more strongly, as in Virginia, requiring *clear and convincing* evidence.

9. Comprising some 12 jurisdictions including North Carolina. See Narbeh Bagdasarian, *A Prescription for Mental Distress: The Principles of Psychosomatic Medicine with the Physical Manifestation Requirement in N.I.E.D. Cases*, 26 Am. J.L. & Med. 401, 402 (2000).

10. Commonly identified as one listed in the Diagnostic and Statistical Manual of Mental disorders, 4th Edition (DSM-IV).

proved in the usual way by a patient state examination¹¹ and by appropriate tests.¹²

All of these views have their critics. Objections to the expansionist versions of the restrictive rules have already been mentioned. Those which attempt to restrict liability by introducing new requirements into the formulae have also been criticized on the ground that the additional terms, such as “significant harm” and “clear and convincing evidence,” are vague and likely to lead to different interpretations of the rules and unpredictable outcomes in the applications.¹³ All of these alternative formulations have been argued back and forth and will be further considered in Part III of this article, where various proposals for improving this area of the law will be considered. However, the principal focus of attention here will be on the most serious problem of all, largely overlooked or misunderstood—namely, the application of the “eggshell skull” rule to mental harm.

§5 *The Unresolved Problem in All Theories of Recovery for Mental Harms - the Eggshell Skull Rule*¹⁴

It would seem that in those jurisdictions that have abolished the physical contact requirement and other artificial rules, mental harm would be treated in exactly the same way as physical harm; but this is not necessarily the case. If these two types of harm were truly the same, one would expect that the “eggshell skull” rule would apply and the defendants would have to take the plaintiffs as they find them. However, many formulations are at least equivocal on this issue; and some clearly state that the *only mental harms which are recoverable are those that would be expected to occur in an ordinary person*. If, then, a particular plaintiff had a previous personal or family history of anxiety disorder or depressive illness, ze might be considered an ultra sensitive person who could not recover for mental harm. Or ze might be permitted to recover only for reactivation¹⁵ and/or exacerbation of these

11. The current term for the older “mental state examination.” The PSE (or MSE) is the equivalent of the history and physical examination in ordinary medical cases.

12. I.e., questionnaires or performance tests.

13. See Narbeh Bagdasarian, *A Prescription for Mental Distress: The Principles of Psychosomatic Medicine with the Physical Manifestation Requirement in N.I.E.D. Cases*, 26 Am. J.L. & Med. 401, 411 (2000).

Dr. Bagdasarian’s article will be discussed further in Part IV of this article where proposals for improving this area of the law are considered.

14. Also known as the “thin skull rule.”

15. This is assuming that a court does not conclude that the mental problem would have recurred in any event without the new injury. E.g., Judge Posner’s decision in *Stoleson v. United States*, 708 F.2d. 1217 (7th Cir. 1983).

problems if there was actual notice of the sensitivity to the defendant who despite this knowledge, proceeded to harm zem.

This difficulty applies in both intentional and negligent torts. Even for intentional infliction of emotional distress claims, many jurisdictions insist that the mental distress be such that a normal person would experience the same mental distress. This appears to be the view taken by the *Restatement (Second) of Torts*,¹⁶ which is indeed cited with approval by many jurisdictions on this point. Comment f to §46 states that behavior may be regarded as extreme and outrageous because of the defendant's knowledge of some peculiarity or susceptibility of the plaintiff.¹⁷ Comment j, which characterizes severe emotional distress, seems to go further: "The distress must be reasonable and justified under the circumstances, and there is no liability where the plaintiff has suffered exaggerated and unreasonable emotional distress, unless it results from a peculiar susceptibility to such distress of which the actor has knowledge."¹⁸ It is not stated, of course, that anxiety disorders or depressive mental states could not be expected in a "normal" person. This issue is not considered. However, it will be argued in Part II of this article that significant mental disorders due to fright, with no actual brain damage, are unlikely to occur in "normal" persons. Rather, they occur only in those persons with a predisposition in the form of a personal or family history of mental problems. If there is no such history and the plaintiff develops a recognized mental disorder that can be causally linked to a tortious act, there is no problem; in sufficiently drastic circumstances, causation may even be presumed. If, however, as will commonly be the case, there is evidence of a predisposition on the part of the plaintiff—unknown to the defendant at the time of injury—compensation for the mental harm may be denied or reduced if the court allows the damages to be partitioned.

PART II: THE PSYCHOLOGICAL PERSPECTIVE

§6 *The Purpose of This Section: To Present a Plausible Hypothesis Concerning the Place of Predisposing Conditions in the Causation of Mental Harm*

The aim here is not to develop an authoritative psychological treatise on the relationship of mental harm to physical or psychic trauma. This I must leave to others better qualified to deal with it, assuming

16. RESTATEMENT (SECOND) OF TORTS § 46 (1963).

17. *Id.* at Comment f.

18. *Id.* at Comment j.

that it can be done.¹⁹ What is proposed here is a thesis, or perhaps a hypothesis, representing what I believe to be plausible and defensible psychological positions that are relevant to the questions involved in the compensation of mental harm. The main contention is that mental harm, especially that due to psychological trauma, seldom if ever gives rise to serious long-lasting impairments in the absence of prior predisposing conditions. This thesis, *in toto* or in its individual parts, may or may not survive expert scrutiny; but, it is suggested that the views presented here are sufficiently plausible to serve as the context in which the legal theory of mental harm might be viewed to see whether and how it might work better than it does at the present time.

This part will also be used to provide some basic understanding of the processes involved in the development of and recovery from mental harm. This will include:

1. Current views of the functioning of the brain cells (neurons) in learning and in recovery from injury.
2. Head injuries in general and the postconcussional syndrome in particular.
3. The stress response and stress disorders.

§7 *The relative importance of physiological and statistical studies*

There are four main kinds of study, which contribute to the understanding of mental harm from the legal perspective:

1. Contemporary notions of the response of the brain to new information or experience (learning), and how this applies to recovery from brain damage.
2. Current theory about the stress response and how it applies to horrifying and awful experiences.
3. Studies relating to head injuries and especially the postconcussional syndrome.
4. Statistical studies on the effect of preexisting conditions which predispose to the development of more serious and more prolonged mental disorders following brain trauma or nasty experiences.

Items 1 through 3 above can be presented with greater confidence since they are grounded on fairly solid anatomical and physiological evidence. The fourth item is less satisfactory and more likely to produce differences of opinion among mental health experts.

19. It is often difficult to arrive at a view on any medical topic that will satisfy all the experts, and this may well be the case here. Clinicians have learned to deal with this situation by adopting what seems to be the safest and most prudent course, pending further developments and fuller knowledge. The same approach has been traditional in law also.

§8 Brain Function in Learning and in Recovery from Injury

Until relatively recently, it was thought that memory was achieved by reverberating electrical circuits in the brain. It is now known, from animal experiments and other evidence, that remembering and learning takes place by the restructuring of the neural connections in the brain. Each neuron has several hundred tiny dendrites (receiving fibers) which connect with and receive signals from the axons (transmitting fibers) of other nerve cells. These fibrous interconnections, indeed, make up the great bulk of the cerebral cortex where learning is ultimately processed and stored. The ratio of fibers to neuronal cell bodies changes with age. There are astronomical numbers of neurons in the cerebral cortex of children, but humans lose quantities of them every day so that by the age of seventy, adults must make do with some 75% of the original number. While persons lose neurons, however, they are gaining vast numbers of new fibrous interconnections between the remaining cells. In short, experience (the new interneural synapses) is compensating for the loss of raw brain power (fewer neurons). Thus, persons tend to feel more rather than less intelligent as they grow older. This is in part an illusion, as anyone can find out by changing to a completely different field of learning in middle life: it is possible, but much more difficult to absorb completely new materials than it was in childhood or even in the teens and early twenties.

The same process takes place during recovery from a brain injury or insult. If neurons have been irreparably damaged they will not be replaced, but development of new synapses may partly or even completely restore function. Recovery is much accelerated by mental activity of any kind, and early vigorous rehabilitation has become viewed as a vitally important aspect of treatment following strokes, head injuries, and brain insults of every kind.²⁰

Another phenomenon should be noted here, namely, that when one cortical area has been destroyed, its functions can be reallocated to another part of the cortex or even to locations in the deep gray matter of the brain. How or by what mechanisms this transfer takes place is not really known, but the phenomenon is well established. Clearly, however, there are two essential requirements for relocation to take place: first, there must be sound cortex to receive the function, and second, there must be intact white fibers to transport it to the new destination. If these conditions are not present and adequate, transfer

20. Encouraging mental activity is also considered an important part of the *treatment*, and is especially important in the prevention of dementias of every kind, including Alzheimer's disease.

of the functions will not be complete or will not take place at all. So, if there is local cortical damage in the motor speech area, the ability to speak will be completely lost for a time but will gradually return as function is relocated.²¹ If, however, there is generalized cortical damage or serious disruption of the white fiber pathways connecting the original and new sites on the cortex, then relocation will not take place and the motor speech impairment will be permanent.

§9 Head Injuries - the Postconcussional Syndrome

Head trauma cases can be classified in a number of ways. The traditional division was into *major* and *minor* head injuries, depending on whether the period of unconsciousness is greater than or less than twenty-four hours. The conventional wisdom has been that significant long-term sequelae are unusual following a minor head injury. This may be true as a statistical generalization, but studies of head injured patients show that many of those that have long-term or permanent impairments have had relatively brief loss of consciousness and some have had little or none. Coma scales, especially the Glasgow Coma Scale (GCS), have also been used to predict outcomes of head injuries, and in general, persistent poor scores go along with a poor prognosis; but here again the GCS is widely acknowledged to be a poor predictive tool in the individual case. The duration of amnesia, especially post traumatic amnesia (PTA), is thought to correlate better with outcomes than the length of time the patient was unconscious. Yet, careful studies have not found this to be universally true. The main compensation problems occur in those cases where the trauma was mild and recovery rapid and complete (minor trauma with no residual neurological findings), yet, the patient continues to complain of relatively minor ailments which are nevertheless disabling.

Neurologists and neurosurgeons have been slow to acknowledge that there can be serious long-term sequelae from minor head injuries. Professor Henry Millar's study, published in 1961,²² essentially stated that there could be no serious impairments in the absence of neurological findings. If short-term problems (dizziness, headache, etc.) did not clear up fairly rapidly, the problem was not medical but related to compensation. Millar indeed coined the term *accident neurosis*, and opined that it was largely due to hope of financial gain. Subsequent research has largely refuted most of the arguments supporting Millar's

21. The usual and preferred location is in the parietal cortex just posterior to the central sulcus.

22. H.C. Millar, *Accident Neurosis*, 1 *British Medical Journal* 919, 919-25 (1961).

thesis. It has been reported, contrary to Millar's findings, that patients with severe head trauma indeed have the same kinds of post-concussional symptoms that appear following the mild head injury. It has also been found in more than one study that compensationitis, while it can be a factor in any kind of injury, was not a major factor concurrent with head injury-producing impairments. Studies involving children, for instance, where awareness of compensation is seldom a factor, show the same post-concussional symptom complexes that are found in adults. Animal studies, involving monkeys and other animals, have shown that there are physical changes in the brain accompanying these injuries and that their presence can be found long after apparently complete recovery. Animal studies have also shown that repeated minor head injuries have a cumulative effect.²³ The most recent studies have combined psychological inventories of various kinds with physiological studies including sophisticated computerized imaging such as positron emission tomograms (PET scans), single photon emission computerized tomograms (SPECT scans), and electrodiagnostic studies such as evoked potential studies (EPSs). Some of these are prospective studies comparing test groups which had suffered mild head injuries with controls.²⁴ The groups studied are rather small, typically containing fifty patients in the test group, but the results are impressive, showing all sorts of lesions in the brain following an apparently mild brain injury. Particularly significant are brain stem auditory evoked potential studies (BSAEPs) where a sound is delivered to either ear and the resulting brain waves studied by scalp electrodes on the patient's head. Five waves normally appear, representing discharges at various points in the auditory pathway. Brain stem damage is indicated by delay between the first and fifth of these waves (prolonged I-V interval). The delay of transmission through the brain stem correlates well, better than any other factor, with the severity of the symptoms and the chronicity of the complaints.

23. This is thought to be the explanation for boxers becoming "punch drunk." See K.G. Harmon, *Assessment and Management of Concussion in Sports*, 60(3) *American Family Physician* 887, 887-92 (1999).

24. N.R. Varney et al., *Quantitative PET Findings in Patients with Posttraumatic Anosmia*, 16(3) *Journal of Head Trauma and Rehabilitation* 253-59 (2001); D. Ju et al., *Can Head Injury Patients Simulate Malingering?*, 7(4) *Applied Neuropsychology* 201-07 (2000); N.R. Varney et al., *NeuroSPECT Findings in Patients with Posttraumatic Anosmia: a Quantitative Analysis*, 13(3) *Journal of Head Trauma and Rehabilitation* 63-72 (1998); R.J. McClelland et al., *The Postconcussional Syndrome Revisited*, 508 *Journal of the Royal Society of Medicine* 87 (1994); E.A. Montgomery et al., *The Psychobiology of Minor Head Injury*, 21 *Psychological Medicine* 375-84 (1991).

The overall impression one obtains from these studies is that only a small percentage of patients have symptoms at the six-month and one year follow-ups. This percentage tends to encompass those with the most severe symptoms, especially diplopia, and also with marked delay in brain stem conduction. Much of the symptomatology of the postconcussional syndrome is psychological in nature being marked by irritability, fatigability, poor concentration, anxiety with depression, noise intolerance, and photophobia. Many of these, of course, have an evident physical component such as ethanol intolerance, with the patient becoming inebriated after drinking very small amounts of alcohol. Postconcussional problems can clear and then reappear late in one (small) group of patients. This is commonly attributed to a psychological component, either overtly or latently present before the injury.²⁵

§10 The Stress Response

Until rather recently, within the last decade or so, there was considerable reluctance on the part of neurologists to recognize that there was such a thing as post traumatic stress disorder (PTSD). This was perhaps surprising, as research into the stress response had been proceeding apace at least since 1965 when Selye²⁶ reported remarkable changes in the organs of rats that had been subjected to prolonged stress of various kinds. Animal and human studies have since confirmed Selye's findings, and by and large support his theories.²⁷

25. One study has drawn attention to the possibility that recurrent headaches following head trauma may be due to migraine, whether concomitant or resulting from the stress, rather than the result of trauma. See S. Margulies, *The Postconcussion Syndrome After Mild Head Trauma Part II: Is Migraine Underdiagnosed?*, 7(6) *Journal of Clinical Neuroscience* 495-99 (2000).

26. Hans Selye, born in Vienna 1907, was appointed director of the Institute for Experimental Medicine and Surgery at the University of Montreal in 1945. Selye popularized the term "stress disorder" that had been introduced by Dr. Walter Cannon, a Harvard physiologist, writing early in the twentieth century. The term is taken from engineering. Selye is also credited with introducing the term "stressor" for any life experience that produces stress. Dr. Selye was a prolific author. Two of his earlier books, *The Stress of Life* (originally published in 1936 and republished by McGraw-Hill in 1978) and *Stress Without Distress* (republished by Signet Books in 1975) were bestsellers (the latter in 17 languages). His two final publications, representing collaborative research with Dr. Richard Earle, were *Stress and the Workplace* and *Your Vitality Quotient*.

27. Selye thought that the ill effects of prolonged stress were due to exhaustion of the supply of stress hormones. Later studies have tended to show that it is prolongation of the stress response itself that causes the damage.

The stress response is triggered from a tiny gray nucleus in the brain stem, known as the locus ceruleus,²⁸ which monitors input from the eyes, ears, and the body generally. When any of this sensory input portends danger, the stress response is triggered and motor signals are directed to various organs in the body:

1. The immediate response is to activate the reticular formation in the brain stem that causes the animal to instantly become awake and alert.

2. The sympathetic nervous system centers in the brain are also brought into action and adrenalin is released into the blood from the adrenal medulla and elsewhere to ready the subject for "fight or flight."²⁹ Adrenaline redirects blood flow away from the skin, viscera, and kidneys (which are temporarily unimportant) and stimulates the heart to deliver blood to the muscles where it is most needed. The immune response is also placed on hold by sympathetic activity.

3. A third set of neural impulses are directed to the cerebral cortex which is presumably readied to determine what is happening and direct appropriate responses.

4. A fourth set of signals is directed to the hypothalamus, which in turn activates the pituitary gland, causing it to release adrenocorticotrophic hormone (ACTH) into the blood stream. ACTH is delivered to the adrenal cortex where it produces the release of large volumes of hydrocortisone, which travel to all parts of the body. The exact functions of this steroid are not well known but it is certain that it is required for the survival of the organism in a serious stress situation.

So in the acute stress response, the organism will be alert and fearful, with a rapid heart beat and pale sweaty skin (sweating is controlled by sympathetic nerves). It will also be scanning all around for information needed to assess the situation. Internally, large amounts of cortisol will be found in the blood and serum adrenalin levels will also be elevated.

§11 The Stress Response and Post Traumatic Stress Disorder (PTSD)

The stress response will generally be a positive and helpful reaction in a dangerous situation, allowing for maximal and rapid analysis

28. The locus ceruleus is literally termed the "blue spot." This coloration is not due to uptake of dye stains in specimens prepared for microscopy, but is the natural coloration of the area itself.

29. Harvard physiologist, Dr. Walter Cannon, who introduced the term "stress response," also coined the phrase "fight or flight reaction." It is now usually termed the "fight, flight or fright reaction," since the subject is often poised, undecided, and fearful, between these alternatives.

and evasive or protective action. But if the stress is prolonged, the response is harmful and accompanied by organ changes. Selye noted that rats subjected to prolonged stress had swollen and enlarged adrenal glands, atrophy of the spleen, and other immune tissue and gastric ulcers (stress ulcers). Similar findings have been noted in humans. The chronic stress response differs from the acute reaction in several ways. A prolonged stress response is uncomfortable and undesirable, so the body damps it in several ways. The pituitary-adrenal axis, the feedback system controlling cortisol production, is damped so that ACTH release from the pituitary gland is inhibited and the amounts of cortisol released from the adrenal cortex are reduced. Cortisol levels in the victims of chronic stress tend to be lower than normal. Adrenergic stimulation is also damped and chronically stressed humans develop a kind of apathic state which is sometimes termed "emotional anesthesia" where they seem, and indeed are, unresponsive to their surroundings including their family and friends.

These changes can be definitively shown by clinical and objective evidence. The patient history is characteristic, with reexperiencing of the event in the form of nightmares and in "flashbacks," similar events while the patient is awake. The appearances are also distinctive with a fearful facial expression (facies), pale skin (not usually sweating), scanning movements of the eyes, fine tremor of the fingers, and lack of emotional response to situations.

Psychological testing is available and important. There are a number of well-validated questionnaires and other instruments that can be used to confirm the diagnosis and distinguish the problem from depression or other mental disorders.

Some laboratory findings can also be confirmatory. The "dexamethasone test" involves intravenous injection of a drug that resembles cortisol: this blocks the presentation of hydrocortisone to the pituitary gland and fools the gland into thinking that cortisol levels in the blood are low. The result should be release of ACTH to stimulate cortisol production in the adrenal cortex. In chronic stress victims this response is damped and there is no elevation of ACTH or cortisol levels in the blood. In major depression syndromes on the other hand, steroid levels tend to be higher than normal.

One further point about chronic stress syndromes needs to be emphasized. All or most of the persons subjected to a dreadful and frightening event will have significant stress responses and some of them will experience nightmares, flashbacks, etc. However, in the course of a very short time, days or at most a week or two, almost all of them will have returned to relative normality, with the event now only

an unhappy memory. Only a small percentage of exposed persons, typically estimated around 5%, will continue into a chronic stress condition that will last for months and in many cases become permanent. It is thought, and with good reason, that these unfortunate subjects have some preexisting defect or defects, which predispose them to suffer more severe and more prolonged stress disorders. This has been illustrated by comparing the human stress response to a fire alarm linked to sprinklers in a building. When the fire is extinguished and the smoke dispersed, the system is designed to switch off. But if the device is defective in some way, it may stick and go on sounding and sprinkling when the danger is past. So, it is said, some people have a defect in the *locus ceruleus*, or some other unit of the stress response, so that the system does not return to normal when the horrifying event is over. Deprivation of affection in infancy has been identified both in animals and humans as a predisposing condition along with other conditions. But this point leads into statistical evidence that will be discussed in the next section.

§12 Statistical Studies of the Effect of Predisposing Conditions on Mental Harm

Departing from anatomical and physiological studies of the stress response, etc. and entering the realm of statistical analysis and outcome studies, is rather like leaving firm ground for marshland dotted with quicksand,³⁰ or, to change the metaphor, like leaving established roads for less clearly marked trails and paths in the woods. Lord Rutherford is credited or debited with the remark that if your experiment needs statistics, you ought to have done a better experiment.³¹ The French novelist Jean Cau was even more caustic, remarking that statistics is the most exact of the false sciences.³² Cau's comment may be viewed as a *bon mot*, not intended to be taken too seriously. Lord Rutherford's remark, though made more seriously, also seems to be an overstatement of the case, but there is a point to it. Statistical studies may show that there is some kind of link, firm or otherwise, between two items, but do not directly provide the underlying reason for the connection. Furthermore, it is very difficult, if not impossible, to carry out a statistical study that someone will not find flawed in one

30. This is not to say, of course, that there is no controversy about physiological or even anatomical findings: the question is one of degree. The consequence of this fact, medically and legally, is not perpetual Cartesian doubt, but rather, taking the safest and most sensible course pending the results of further research.

31. Reported elsewhere as "statistics is a terrible way to do science."

32. Reported in a list of quotations concerning statistics on the internet.

way or another. The selection of the study and control populations may be suspect, or potential bias on the part of the investigators may not have been excluded. Case studies on stress-related mental disorders may have another serious flaw. The two main populations studied are military personnel who have been in the Vietnam conflict or have taken part in "Desert Storm," and civilians who have been in accidents or closely associated with horrific events such as bombings or train wrecks. Both of these groups are very likely to be influenced by secondary gain. Prolonging their condition will allow the soldiers to get out of battle and the civilians to avoid working for a living. Disabling conditions may also be prolonged for monetary gain. Nevertheless, despite its drawbacks, statistical studies are important if for no other reason, *pace* Lord Rutherford, that in many areas there is no other way to gather information.

§13 *The Place of Factors Predisposing to Development of Mental Harm from Trauma*

Authors discussing predisposing causes to mental harm following either psychic or physical trauma frequently lament that there is a scarcity of good studies that might clarify the issues. Such studies (other than the military and disaster investigations already mentioned) present considerable difficulties to would-be investigators, and those investigations that are undertaken are generally on a relatively small scale with limited objectives. Investigators can also vary widely in their findings in very similar studies: with some reporting an 80% association between two items, others finding only 30% agreement, and some reporting no noticeable connection whatever. The bottom line here, as in all medical science, is not perpetual Cartesian doubt, but rather to take the safest and most sensible course pending the results of further enquiries. And through all the smoke of controversy, some generalizations tend to emerge from the various reports that may be summarized as follows:

1. Persons who have known preexisting mental conditions such as depressive or anxiety disorders are more likely to have accidents, i.e., they are *accident prone*.

2. Persons who have had a recent head injury weeks to months earlier are likely to show considerably greater mental harm from a second head injury than would have been expected from the nature and severity of the new trauma.

3. Cumulative head injuries have an additive effect with some residual disability, perhaps not apparent at first, being built into later traumatic injuries to augment their effect. This has been thought to

happen with boxers and other persons exposed to repeated head trauma.

4. Some studies have shown that persons with preexisting personal or family histories of mental disorders show more mental impairment than would have been expected from a head injury. This observation is rendered more plausible if one accepts the organic view of serious mental disorders, considering that the neurochemical or structural abnormalities underlying them are analogous to brain damage.

5. Controlled studies of populations exposed to horrendous psychic trauma show a much higher incidence of prior mental disorders and complaints in those who develop long lasting or permanent stress disorders, compared with controls who recover quickly and normally from the inordinate stress.

6. Animal studies and human investigations show that deprivation of affection in early life is an important predisposing condition to the development of serious and long lasting stress disorder from exposure to horrific experiences.

7. Episodes of serious mental disorder can be triggered by stress. In many of these cases there was a prior history of something, perhaps only a personality trait, that could have been considered a predisposing condition. In others there was a definite personal or family history of mental disorder. Even when no such predisposing conditions are present, it seems plausible to think, and is probably the working hypothesis of mental health professionals, that the new stressor was not the sole efficient cause of the episode but that it worked on some latent condition already present.³³

8. The final point about exposure to horrendous shock situations is that early vigorous rehabilitation is important and can be effective in preventing chronic stress disorder from developing.

§14 Proposed Working Hypothesis: All Serious Mental Harm Resulting from Psychic Trauma is Related to Predisposing Conditions in the Patient

It has been contended already that there is a good deal of evidence that predisposing conditions are very important causative factors in the development of mental harm from physical or psychic trauma. It is now proposed that we go one step further and assume that these

33. The older distinction between reactive depression (a response to a depressing situation) and endogenous depression (sadness unrelated to circumstances) is now being questioned. It is suspected that reactive depression is simply a latent depressive disorder triggered by unhappy events.

predisposing factors are necessary preconditions for significant and long lasting mental harm. This may seem an unjustifiable leap of faith: to proceed from a series of approximate and provisional statements to the more universal notion that all serious cases of mental harm arising from psychic trauma, with or without bodily injury, occur in patients with latent or overt predisposing conditions. Nevertheless, that is what is being proposed here, not necessarily as an absolute fact, but as a plausible possibility to be taken as true in order to study its implications for the compensation of mental harm. And it may not be far from the truth. A significant number of those who develop depressive disorders or panic attacks following a severe stressor event, have a history of predisposing conditions, and it is suspected that the remainder have latent predisposing traits. Similarly, many of those who suffer long lasting mental harm from psychic trauma (PTSD) are known to have predisposing mental disorders or peculiarities; and again, it might reasonably be suspected that the remainder has latent traits that become patent with severe mental stress. This kind of extrapolation beyond the absolutely known evidence is neither necessarily unscientific nor mere speculation. It is following the direction in which investigations are proceeding, looking a little beyond the present picture to where, with further knowledge, one could reasonably expect to be. Projection of this kind is not uncommon in medical science. It is confidently predicted, for instance, that all myopathies will be shown to be genetic disorders; or, that genetic explanations will be found for every kind of mucoviscidosis (cystic fibrosis) and not merely those for which genetic probes are already available. So it may be here, and whether this position will be supported by further studies or not, this universal proposition will be taken as true and used as a likely possibility to see what its effects might be on the proposal to compensate mental harms in the same way as physical harms, i.e., adopting the "thin skull" rule.

PART III: SUMMARY, DISCUSSION AND CONCLUSIONS

§15 Brief Summary of the Main Issues to be Resolved

Part I presented a brief descriptive analysis of the law as to compensation for mental harm in America generally. Two main groups have been identified, the majority view which retains the old restrictive rules (See Fig. 1 *Schematic representation of the relationship of mental harm to physical harm according to traditional rules*), and the modern view which attempts to replace rather than amend the traditional law on this subject (See Fig. 2 *Schematic representation of recovery for*

mental harm according to “modern” rules). The pros and cons of both positions have been argued at some length with neither side apparently being moved to change positions. The “modern” group feels that the restrictions employed by the traditionalists are artificial and unjust, while the traditionalists feel that the legal apparatus used by the “modern” jurisdictions is vague and unworkable.

There are, however, significant areas of agreement. Both sides seem to be in agreement as to the objectives of this area of the law. These objectives are:

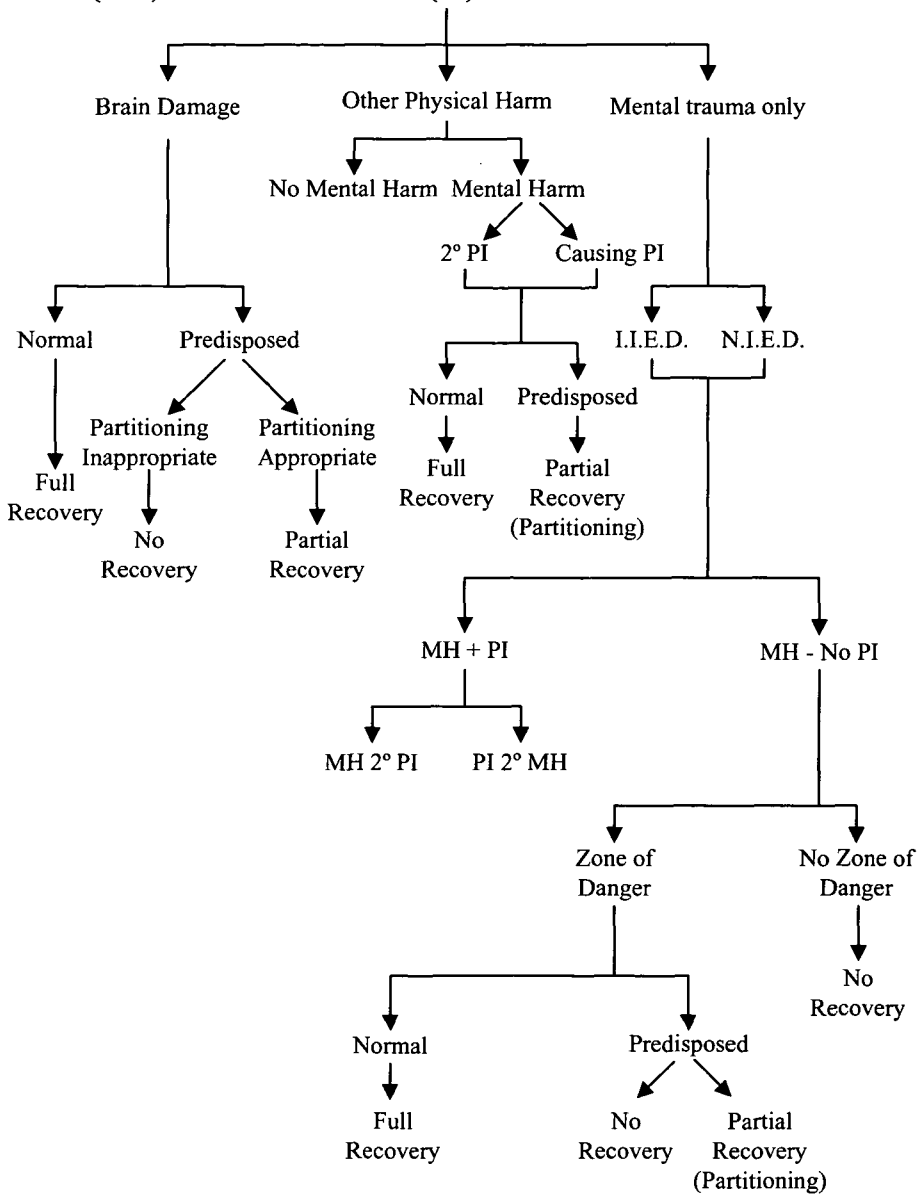
1. The legal formulae should be sufficiently clear to allow consistent decision-making.
2. Trivial mental harms should not be considered (*de minimis non curat lex*).
3. Fraudulent claims should be prevented as far as possible.
4. Allowing claims for mental harm should not open the flood-gates of litigation and overwhelm the compensation adjudication system.
5. The system should be affordable, not casting an impossible burden on businesses with consequent undesirable consequences for the rest of the community.

There is also one other area of agreement, albeit by oversight rather than design. Both sides, traditionalists and modernists, seem to have adopted the view that the only mental harms that should be foreseeable are those which would happen among ordinary normal people. There is no duty to compensate predisposed persons for their mental harms unless the defendant had advance notice of the specific sensitivities of the potential plaintiff. The thin skull rule is not always, perhaps not often, specifically considered in these formulae, but the implication seems to be that the “eggshell skull” rule is not held to apply to mental harms.³⁴

This difference in the treatment of mental harm as opposed to physical harm is justified as putting a reasonable limitation on the amount of mental damages that will be compensable and also as avoid-

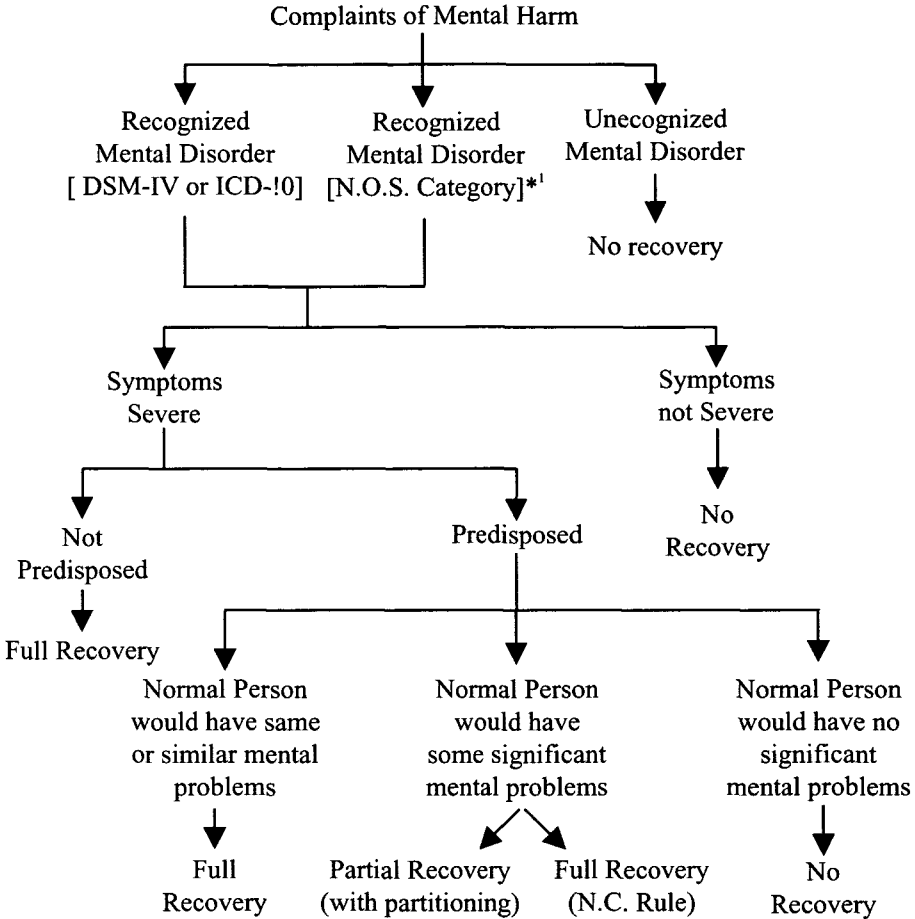
34. North Carolina is a notable exception, but here too, the eggshell skull rule is not applied exactly as it would be for physical injuries. See *Poole v. Copland, Inc.*, 348 N.C. 260, 264-65, 498 S.E.2d 602, 604-05 (1998). The other notable exception is Chief Judge Posner’s opinion in *Stoleson v. United States*, 708 F.2d. 1217 (7th Cir. 1983), a mental harm case, that the eggshell skull rule was the law in Wisconsin. This is no doubt true, but it is another thing to say that it applies to mental harms in the same way as with physical damages. The case was decided on the ground of causation (plaintiff did not show that her hypochondriasis would not have happened even in the absence of exposure to nitroglycerin) so Judge Posner’s opinion was, to relapse into Austinian mode, obiter.

FIG. 1 SCHEMATIC REPRESENTATION OF THE RELATIONSHIP OF MENTAL HARM (MH) TO PHYSICAL INJURY (PI) ACCORDING TO TRADITIONAL RULES



ing “opening the floodgates” of litigation. However, it has been further argued here (Part II) that mental disorders do not normally occur following even extreme stress or fright except in susceptible people, i.e., those who have a personal or family history of mental disorders or some indication (a personality trait perhaps) that they are likely to

FIG. 2 SCHEMATIC REPRESENTATION OF THE RECOVERY FOR MENTAL HARM (MH) ACCORDING TO "MODERN" RULES



develop psychological problems of some kind or other. If we refuse compensation to such sensitive individuals we may not merely be avoiding a flood, but also reducing the stream to a trickle or even drying it up altogether. Psychologists may differ as to the extent of the problem or even as to its existence. But we do not have to resolve this scientific question here for all time. There is sufficient weight of evidence and expert opinion arguing for this proposition that it ought at least be seriously considered by the legal community.

It is not proposed, in the remainder of this article, to resolve all these difficult questions; but, rather to lay out the various options clearly, so that informed decisions can be made on this matter.

§16 Methodological Considerations: A Logic-Based Approach to Legal Decision Making

It would ill become a teacher of jurisprudence, with a lifetime of exposure to philosophical questions, to approach a complex problem such as we have here without awareness that basic underlying premises can control an inquiry and significantly affect the outcome. This influence is all the more powerful and potentially distorting when it is unrecognized. So, I have thought it best then to lay my conceptual cards, those of which I am aware, openly on the table for the inspection of the reader. These mainly center around two topics: modern notions of *logic*, and to a lesser extent, *value* theory. A brief summary of these premises follows and for those who are interested, a fuller explanation of these notions is provided in an appendix to this article.

There are several themes, implicit or explicit, in the present article which rest on philosophical foundations, namely:

1. Legal theory is important.
2. It should be expressed as precisely as possible with clear definitions of terms and illustrative diagrams wherever appropriate.
3. Legal rules and decisions are justified by their ability to promote and realize accepted values.

These positions are contrary to the anti-logical stance that has been a recurrent theme in jurisprudence since Holmes' unfortunate comment that the life of the law has not been logic but experience. The difference is philosophical. Holmes' views were based on what he perceived to be the pragmatism of Charles Sanders Pierce. The current anti-logicians appear to accept, tacitly perhaps, radical versions of existentialism that propose the position that important decisions, including legal ones, are grounded in personal choice rather than argument.

Anti-logicalism, of whatever variety, appears to be both untenable and untimely. *Untenable* since, with David Hume, I think that reasoning, and logical reasoning at that, is inescapable. Even those who attack logic do so using logical arguments. It is also *untimely* since it is being promoted in legal theory at a time when new logics are flourishing. This is the age of the computer, with all its processes based on decisional algorithms expressed in binary mathematical form (another logic). It is also a time when other professions, such as business and clinical medicine, which are required to make important decisions, are using formal logical devices, especially decisional branching logics (algorithms), to improve communication among researchers and avoid errors. It seems a pity that when formal devices are proving useful and considered necessary in other professions that legal theory should be lingering behind the starting line.

The main philosophical positions underpinning these views have been appended to this article in a more expanded form. They are, in brief:

1. David Hume's ultimate position on skepticism as to the senses, where he comments that the skeptical arguments (denying the existence of external objects, causes, other minds, or even our own continuing identity) can neither be refuted nor believed. He states that Nature has not left such important matters to so feeble an instrument as reason. His position would appear to be that certain ways of thinking, and reasoning itself would have to be included, are hard wired into our nature. We can use them, reflect on them, and even theoretically consider them invalid, but we cannot ultimately deny them in our behavior.

2. Ludwig Wittgenstein's later views,³⁵ that all forms of thinking, whether mathematical, scientific, or the arguments of ordinary language, consist essentially of games (like chess), using symbols, moves, and the end point (winning). These may be pure games, played for fun, or applied to some purpose. From this perspective both substantive and procedural law can and should be expressed as word games³⁶ applied to disputes (actual or potential) to achieve the best balance of the relevant values that is possible under the circumstances.³⁷

3. Value theory, as employed in the present article, does not require much explanation here, since the ends and goals of this part of the law are more or less agreed upon. The law should be as fair as possible to injured persons, but at the same time, it should be workable (producing reasonably consistent decisions) and also economically feasible so that it does not bankrupt the compensation system, nor compromise education, health, and other desirable enterprises which need to be funded. If justification for any particular values were required I would employ some version³⁸ of Natural Law.

35. As expressed in the lecture notes of his students (*the Blue and Brown Books*) and in shorthand reports of conversations with his friends (*Philosophical Investigations*). See Appendix.

36. Law has generally employed word games, representing the elements of causes of action and procedure in technical terms. But these, as with all logical forms, are capable of being translated into other symbols such as letters, numbers, and icons.

37. This is essentially Plato's representation of justice as a harmony, like the tuning of a lyre, with each string (good end) being given its appropriate value (length).

38. There is no "authorized" version of Natural Law theory, indeed, there is a brand suitable for almost every taste. It could, of course, be argued that there is a "best" theory (superior brand) but there is no need to go into this matter for the present purposes.

The most obvious logical item employed here is the decisional branching tree (algorithm). Five of these algorithms are included in the article to represent various views as to how the law relating to mental harms is currently perceived, and also to lay out possible changes in a systematic manner. Other devices such as the “circles of Aristotle” (used to apply legal terms to fact situations) and the “factors game” (weighing pros and cons in decision making) are not featured here since they are mainly utilized in deciding individual cases rather than in analyzing a whole area of the law. Value theory, though vitally important for law, has likewise been largely ignored here, since the ends and goals of this aspect of tort law are hardly in dispute. The algorithms will be used to schematically represent the various existing views of the law relating to mental harm and also to illustrate, hopefully, better formal systems for deciding mental harm cases.

§17 Possible Disposition of Mental Harm Cases under Currently Available Formulae

In the present status of the mental harm question, with different courts applying different formulae, the likely outcomes of cases may be expected to vary. The following list is proposed to classify the likely outcomes with standard situations in different jurisdictions. It is assumed here that the other requirements for liability, especially causation, have been met.

1. A previously normal plaintiff suffers a physical injury that results in brain damage. Any consequent mental harms that are proved may be assumed to be the result of the injury and therefore compensable.

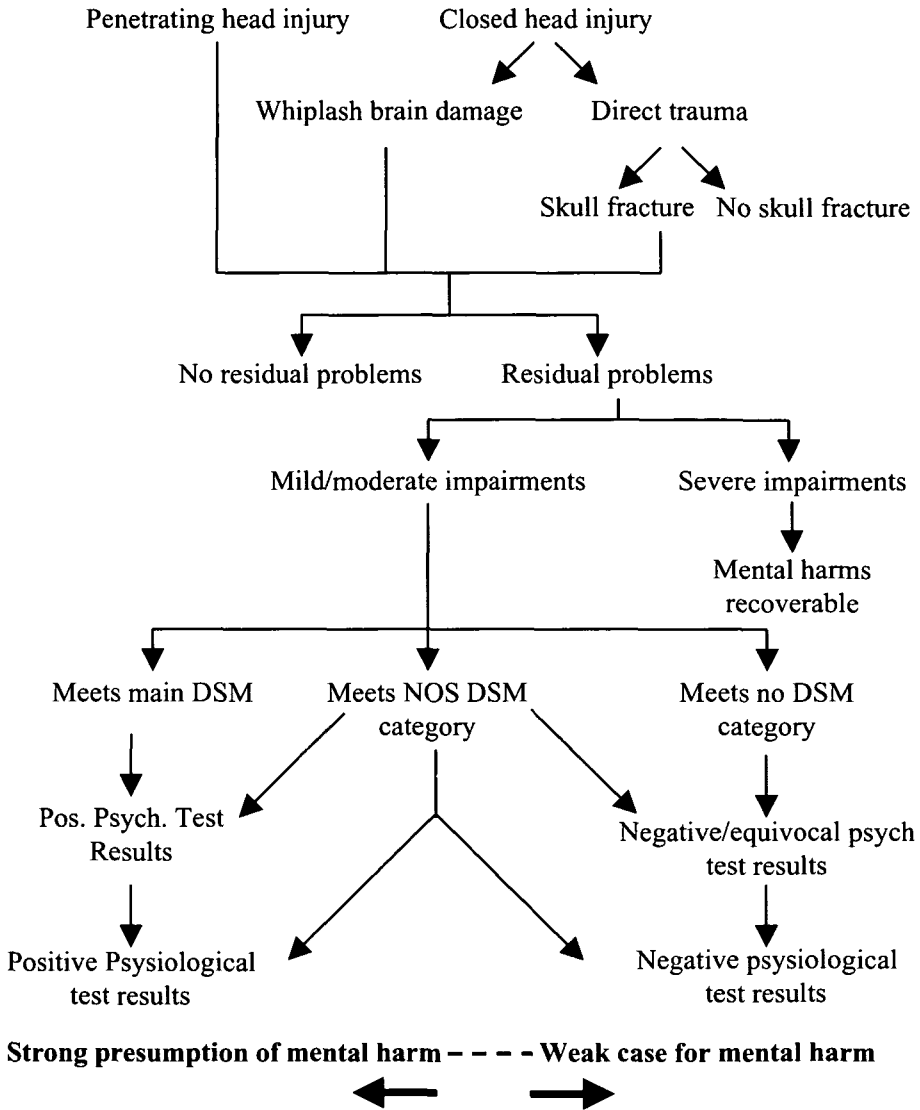
2. A susceptible plaintiff (with a prior personal or family history of mental disorders) suffers a physical injury resulting in brain damage. There are two possibilities here (See Fig. 3 *Schematic representation of mental harm due to head trauma*):

a. The close relationship to a physical injury might argue that the “eggshell skull” rule should be applied (treating the case like a physical injury) where the defendant takes the plaintiff as ze finds zem.

b. Alternatively, the case might be deemed no different from other mental harm situations so that the mental damages might be denied, or perhaps partitioned and reduced.

3. A previously normal plaintiff (with no family history of mental problems) is wrongfully and intentionally exposed to a horrific experience, without physical injury, and develops recognized mental disorders. There are again several possibilities:

FIG. 3 SCHEMATIC REPRESENTATION MENTAL HARM DUE TO HEAD TRAUMA



a. The most likely result would be that the plaintiff would be allowed to reach the jury and recover for the mental harms, with the unexplained appearance of the problems following the injury providing circumstantial evidence of causation.

b. If, on the other hand, the jurisdiction were to accept the contention that serious, permanent, or long-lasting mental disorders are highly improbable in normal persons exposed to frightening events

(“the predisposition thesis”), then the plaintiff would not be likely to recover, failing on the issue of causation.

c. Even in a jurisdiction that takes cognizance of “the predisposition thesis,” i.e., that only susceptible people suffer serious mental harm following noxious experiences, mental harm, though not properly recoverable, may be surreptitiously compensated by punitive damages.

d. It is conceivable that in a jurisdiction that accepts “the predisposition thesis,” mental harm may be partitioned with only that part compensated which was due to the injury and not to the predisposing causes.

4. A susceptible plaintiff is exposed to intentional infliction of emotional distress. Ze may recover for the prolonged effects of common fright and annoyance that a normal person would experience. If, however, ze develops recognized mental disorders of the same kind that were revealed in zes personal or family history, ze may not be allowed to recover for these harms, since the harms are not such as an ordinary person would be likely to experience in these circumstances. Special harms may of course be surreptitiously compensated by the jury in the form of punitive damages. Also, the damages only may be partitioned with those arising absent predisposing causes.

5. Plaintiffs with no history of mental disorders, who complain of negligent infliction of emotional harm without physical injury, present three possibilities:

a. In a jurisdiction which has not accepted “the predisposition thesis,” the fact that mental harm appeared *de novo* following a noxious experience may constitute sufficient proof of causation to allow a plaintiff’s case to go to the jury. If ze has a prior history of predisposing factors ze may not reach the jury or have the damages partitioned.

b. In a jurisdiction which accepts “the predisposition thesis,” even plaintiffs with no psychiatric history, who develop serious mental disorders following noxious mental experiences, could not expect to recover damages, since prior susceptibility, even though not evident, could be presumed.

c. If the plaintiffs are susceptible, with an actual history of predisposing conditions, recovery is even less likely in a jurisdiction accepting “the thesis.” Unless the defendant has actual notice of plaintiffs’ peculiarities, plaintiffs could only recover for such mental disorders as could be expected to ensue in a normal person in the same circumstances.

These possible situations can be presented in the form of decisional algorithms with the various options laid out schematically so

that they can more clearly be discussed. The traditional view with the restrictive rules requires a somewhat complex schema (See Fig. 1 *Schematic representation of the relationship between mental harm and physical injury according to traditional rules*). The so-called modern view is simpler but by no means dispenses with the need for analysis of alternatives (See Fig. 2 *Schematic representation of recovery for mental harm according to "modern" rules*).

§18 *The Need for Objective Criteria - Dr. Bagdasarian's Proposal*

All parties accept the desirability of objective methods to show mental harm and causation. The traditionalists believe that the restrictive rules supply this objectivity, and they do. The modernists, however, point out that the restrictive criteria focus on things that are incidental and collateral to the mental harm, so that genuine cases may be refused and spurious ones allowed.

The modern view has difficulty in convincing its critics, which compose the majority, that the ordinary processes of clinical psychiatric evaluation, the mental state examination,³⁹ and psychometric testing are sufficiently objective for legal purposes. In short, the suspicion remains that any and every claim based on mental harm would find a psychologist or psychiatrist somewhere to accept it as genuine and perhaps interpret test results to support it.

The perfect solution, then, which would bring both parties in the dispute together, would be to identify findings which would conclusively establish that a claimant really had a serious mental harm which was caused by the negligent or intentional behavior of the defendant. The traditionalists may object that this is howling for the moon, that such a wonderful shibboleth/sibboleth⁴⁰ is not always available in ordinary medicine, let alone psychiatry. Nevertheless, lame people do not walk,⁴¹ blind persons do not see, and vague medical complaints are likely to get a cool reception from the jury, if not the court. Indeed, there would appear to be a mounting trend of suspicion on the part of jurors towards any claim that does not have some piece of objective evidence to support it.

39. Currently termed the Patient State Examination (PSE) since psychologists are a little uneasy about the subjective associations of the term "mental."

40. See *Judges* 12:6, where the inability of the men of Ephraim to say shibboleth was used by their enemies, the men of Gilead, to identify (and kill) them.

41. The successful plaintiff who got out of his wheelchair and did a victory dance was captured on a hidden camera and is presently spending time in jail.

Dr. Narbeh Bagdasarian has suggested, in an interesting article,⁴² that the principles of psychosomatic medicine could supply this objective need. He points out that the central nervous system and the body are not isolated from one another, but interconnected, so that the one affects the other. It is unlikely then that a mental disorder can exist without some bodily manifestation either in functions controlled by the somatic nerves, or in the case of visceral functions, by the autonomic nerves. The latter are indeed extremely important since mental disturbances commonly and indeed generally will cause sleep disturbances, eating disorders, abdominal pains, or some other problems that can be studied by the resources of ordinary medicine. Dr. Bagdasarian's contention is no doubt true, and in many cases such objective findings could be helpful or even conclusive. Whether this proposal will supply the litmus test for all cases is, however, more doubtful. Attempting to decide whether physical problems are psychosomatic in origin or not is often a very difficult task, and the final determination is generally only reached when all physical causes have been ruled out. A different solution will therefore be suggested here which will incorporate Dr. Bagdasarian's psychosomatic evidence, where available, but will also go beyond it to include other items.

§19 First Item of Change - Persuading the Traditionalists to Opt for an Amended Version of the Modern View.

The first suggestion is that the restrictive rules be abandoned, as has been done in North Carolina and in other "modern" states. Several reasons can be given for this proposal:

1. The sheer complexity of the traditional approach can be seen by looking at the algorithm representing it (See Fig. 1 *Schematic representation of the relationship of mental harm (MH) and physical injury (PI) according to traditional rules*).

2. It is also clear that there is something artificial about the restrictive rules, judging the validity of a mental health claim by incidental items such as whether the plaintiff was physically injured or not, whether physical disorders followed the mental harm, and where the plaintiff happened to be when ze was exposed to or informed of a horrific sight.

3. In consequence of the above items, the scheme can be very unfair in its disposition of cases, denying claims in one set of circum-

42. Narbeh Bagdasarian, *A Prescription for Mental Distress: The Principles of Psychosomatic Medicine with the Physical Manifestation Requirement in N.I.E.D. Cases*, 26 Am. J.L. & Med. 401 (2000).

stances and allowing them in others where the intensity of the psychic trauma is the same or even less than those in which recovery was refused.

4. There is no good reason to treat psychiatric evidence differently from that of ordinary medicine. All studies that have been done show that inter-rater reliability, with one clinician agreeing with the opinion of the others, is equivalent to or better than the performance of internists or surgeons or any other group of medical doctors.

5. The final and most important reason for the switch is that the main argument in favor of the restrictive rules is that, bad as they are, they are better than the vague and open-textured prescriptions of the modern view. If this objection can be met, then there would be no reason to stay with the older artificial formulae.

The modern view must be amended then to answer the traditionalist's objections.

§20 Second Item - Fine Tuning the Use of Psychiatric Evidence for Compensation Purposes

The basic apparatus representing the modern view of mental damages is very simple. There are three elements required for recovery: there must be (1) a recognized mental disorder which is (2) serious and not trivial (3) and is causally related to wrongful behavior of the defendant.

This set of elements is obviously vague on its face so that decisions will be on a case by case basis with opportunity to reach the jury almost guaranteed. Therefore, "modernist" courts have inserted some restrictive provisions of their own, designed to rule out all but serious claims. The following are the usual interpretative glosses:

1. A recognized mental disorder is one which a psychologist or psychiatrist would treat such as anxiety, depression, and so on. A trivial mental harm would be one that a psychiatrist or psychologist would not be required to treat such as mere fright or vexation.

2. The causal link between the defendant's wrong and the mental harm must be shown by good evidence (clear and convincing evidence in some cases).

These interpretative changes are clearly desirable to meet the goals and objectives of compensation law but they will hardly satisfy the doubts of the traditionalists. Something more must be done to enable them to provide the objective criteria that will allow consistent determination of cases. It is submitted here that the tools to allow this further transformation are already at hand. Reliability, especially inter-rater reliability, has long been an important concern for the psy-

chiatric and psychological community; and, great strides have been made in that direction. Three of these developments are worthy of special mention: the standardized criteria provided in DSM-IV and ICD-X, the new protocols which must be followed in interpreting test results, and physiological testing to support psychiatric diagnoses.

§21 *Standardized Classifications of Mental Disorders - DSM-IV and ICD-X*

It is very important to have standardized definitions and descriptions of all diseases, both for research and reimbursement purposes. This has long been available for ordinary medical conditions in the International Classification of Diseases (ICD) published by the World Health Organization (WHO). When it was decided to introduce a standard classification of mental disorders and the first version was published, it was apparently very defective, and the American Psychiatric Association decided to produce their own system. This was the first edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) published in 1952. It was only 100 pages in length. The fourth edition, DSM-IV, some 900 pages long, was published in 1994. The International Classification of Diseases⁴³ had meantime gone through numerous revisions and the present volume, the tenth edition, is usually designated ICD-X. The two editions (DSM-IV and ICD-X) are essentially alike, and indeed each is cross-referenced to allow users of one to find the equivalent parts in the other. All government agencies and most insurance companies use ICD-X for administrative purposes, especially reimbursement for services rendered. DSM-IV continues to be the favored tool of practitioners in America and indeed in other parts of the world. As such, it is likely to be the classification encountered in courts and other compensation proceedings.⁴⁴ DSM-IV has a number of useful features but two in particular are relevant here:

1. The standard criteria for identifying particular mental disorders.
2. The Global Assessment of Functioning Scale.

A list of criteria (both positive and negative) is provided with each category and the number and types of these required to make the diagnosis are also specified. Thus, for the diagnosis of major depressive disorder, at least one major depressive episode must have occurred,

43. The portion devoted to mental disorders.

44. W. Mittenberg et al., *Diagnosis of Mild Head Injury and the Postconcussion Syndrome*, 15(2) *Journal of Head Trauma and Rehabilitation* 783-91 (2000). This article compares the ICD-X and DSM-IV treatments of postconcussion syndrome.

i.e., the presence of depressed mood over a two-week period. In addition, at least four out of an additional seven symptoms complexes must be noted (weight loss absent dieting; sleep disorder; psychomotor agitation or retardation; loss of energy; feelings of worthlessness; inability to concentrate; and thoughts, not plans, of suicide). The symptoms must cause significant loss of function (that is what a disorder means) and must not be explained by substance use or as the effects of a general medical condition. These objective criteria are intended for clinical use (not compensation), and the editors are anxious to point out that the DSM categories may not match or be equivalent to legal criteria. This disclaimer is understandable, but it overlooks the usefulness of this aspect of DSM-IV for legal purposes. The criteria can be used to evaluate expert opinion. It is no longer enough for a mental health professional to provide a diagnosis. They can be required to show the presence of the appropriate DSM criteria which support the diagnosis, and these should be present in their clinical notes. A psychiatrist or clinical psychologist who cannot meet this requirement should not be surprised if his/her opinion is not deemed credible or even admissible.

The second useful feature of the DSM system is provided by the axial system of reporting,⁴⁵ and especially by Axis 5, Global Assessment of Functioning. This is carried out using a Global Assessment of Functioning (GAF) Scale that rates the patient's psychological, social and occupational functioning in standard terms. The characteristics of each level of functioning (or malfunctioning) are laid out in some detail and the overall result is expressed in a score ranging from 0-100. A score of 0 means that there was inadequate information; a score of 1-10 indicates such things as recurrent violence, inability to maintain personal hygiene, and serious risk of suicide. A score of 91-100 indicates more or less normal functioning despite the presence of the disorder. Other regions of the scale represent behavior falling in between these extremes. The editors are again most anxious to disclaim any suggestion that these numbers indicate percentage disability and they are obviously right, since scales are number games that must be applied to life situations with some caution. Nevertheless, the GAF scale⁴⁶ is a useful tool—a starting point or rough measure—which can

45. Axis I reports treatable disorders; Axis II represents contributing but not treatable conditions such as personality disorders; Axis III is general medical conditions contributing to the problem; Axis IV notes relevant social and family matters; Axis V refers to global (overall) assessment of functioning.

46. There are a number of different scales included in DSM-IV. All of these are interesting but not so directly valuable for compensation purposes as the GAF.

be used to estimate the severity of any condition and its affects on the person's performance.

One other feature of the DSM listings is worth mentioning. At the end of each set of categories (Anxiety Disorders, Depressive Disorders or whatever) there is an additional category titled "Disorders Not Otherwise Specified" (NOS). These are conditions where the dominant symptoms point to a particular grouping, e.g., depression, but the strict criteria are not quite met. This category is designed to meet the needs of clinicians who may have difficulty fitting a particular case into any of the listed categories. But it should be pointed out that it is not an open door allowing any patient to qualify as having a serious mental disorder. The findings which argue for treating the patient's condition as a mental disorder must be described and the nearest listed category stated. It might also be suggested that a disorder not otherwise specified (DNOS) might not be as impressive in a compensation case as one meeting the regular listings.

§22 *The Improved Status of Psychometric Testing*

Psychometric tests can be divided into inventories, performance tests, and projection tests. The most commonly used are inventories, or questionnaires, where the subject responds to a series of questions generally with a yes/no check mark. There are innumerable inventories, covering every conceivable kind of mental problem and they are extensively tested for different kinds of validity, especially test-retest and inter-rater validity. Test-retest validity means that the instrument will produce the same or nearly the same results each time it is scored by the same person. Inter-rater validity means that matching results will be found when the test results are scored by different persons. *Performance tests* are commonly used to check cognitive abilities and can cover anything from serial addition or multiplication to manipulative skills testing hand/eye coordination. *Projection tests* are designed to reveal the inner mental functioning of the subject. The best known projection tests are the Rorschach ink blot test⁴⁷ and the Thematic Apperception Test (TAT), which uses 31 picture cards to which the subject responds by saying what ze thinks is happening (telling the story). The reputation of all forms of psychometric tests has been improved by the development of scoring protocols, standard ways in which the tests must be interpreted. This is particularly the case with projection tests which did not have a very good reputation for reliabil-

47. A considerable number of ink-blot tests have been devised but the Rorschach is the best known and reportedly the most accurate.

ity. The development of the Exner scoring protocols for the Rorschach test have greatly improved its inter-rater reliability and hence its reputation among clinicians.⁴⁸ Positive test results, therefore, will have a strong confirmatory effect along with the findings of the Mental State Examination (MSE),⁴⁹ which is considered the gold standard for psychiatric diagnosis. Negative test results, if the tests had been properly conducted, would have an adverse effect on a claim.

§23 *The Availability of Physiological Evidence*

Dr. Bagdassarian's thesis seems basically sound, namely that the mind and the body are not dissociated and damage to the one is likely to cause dysfunction in the other. Clearly, physiological findings would provide that objective type of evidence that is so desirable in compensation cases. Clinical opinion, as Bagdassarian suggests, would be relevant here, especially where it lists findings such as sweating, pallor, tremor, etc., noted during physical examination. More important, however, where obtainable, are laboratory test results and some of these have already been mentioned. Thus blood levels of hydrocortisone and the results of dexamethasone suppression testing would be important corroborative evidence in a stress disorder case.⁵⁰ In minor head injury cases, where the genuineness of the complaints is in question, any kind of brain function studies could be very helpful in supporting or denying a claim. These would include electrodiagnostic findings, such as brain stem auditory evoked potential studies (BSAEPs),⁵¹ brain electrical activity mapping (BEAM),⁵² or functional imaging, such as PET⁵³ or SPECT.⁵⁴

48. Projective tests including the Rorschach still have their critics. Some of the studies criticizing these tests were, however, performed on random populations that had not been clinically examined (e.g., people showing up at a blood drive). Tests are confirmatory and not intended to be used on their own. Much of the criticism has been generated by the use of projective tests in custody hearings, where it is known that parents can be prepared for the tests by instructing them how to respond to the various ink blots so as to conceal their less desirable characteristics and parade their better ones. Dr. Exner also comments on the scoring of such tests by persons hired by the contending parties.

49. Currently the patient state examination (PSE). See §41 *supra*.

50. See §25 *supra*.

51. See §9 *supra*.

52. Where a visual initiates a wave of depolarization at the occipital (posterior) pole of the brain. This spreads forward over the surface of the brain with dysfunctional parts of the cerebral cortex producing abnormal brain waves. These are mapped by the computer to show areas of brain damage.

53. See §9 *supra*.

54. See §9 *supra*.

§24 Using Diagnostic Tools to Evaluate Alleged Mental Harms

Using the resources of DSM-IV and the other items mentioned in the previous sections, it is possible to divide alleged mental harms into three groups (corresponding to the three arrangements of the circles in formal logic) namely:

1. Those that clearly show the presence of a recognized mental disorder. These will have met the listing requirements of DSM-IV. If in addition they have supporting test findings and/or objective physical findings, this will be corroborating and very important proof of the genuineness of their claim. Thus, in the case of anxiety disorders sympathetic nervous system abnormalities would be expected, and in the case of stress disorders biochemical testing might even be important.⁵⁵ In postconcussional syndrome cases positive results from brain stem auditory evoked potential studies might be decisive. In these well-supported cases, there might be a rebuttable presumption that they fulfill the requirements for a recognized mental disorder.

2. A second category, corresponding to the intersecting circles of the syllogism, would be those with less than clearly convincing features, but which nevertheless would be worth considering for compensation. These would correspond roughly with the "not otherwise specified" (NOS) grouping. They might also be those that roughly meet the criteria for a disorder but lack the desirable physiological findings or have equivocal or negative psychometric test findings. These will not automatically be included in the compensable group of disorders, but may nevertheless deserve serious consideration before exclusion. They would not be presumed to meet the requirements but might be allowed to argue their case and perhaps reach the jury.

55. Stress disorders represent dysfunctional persistence of the stress response when the original stressor has disappeared. The stress response produces excessive flow of adrenaline (sympathetic nervous system) and also high levels of hydrocortisone put out by the adrenal glands when they are stimulated by adrenocortical stimulating hormones (ACTH) from the pituitary. The pituitary and adrenal glands thus form a system (the adrenal pituitary axis), which is self-regulating. When levels of steroid in the body are low, the pituitary gland is stimulated into activity and depressed when steroid levels are high. In stress disorders the body damps down the response of the pituitary to avoid overproduction of cortisone in the body. This can be shown by the dexamethasone suppression test. Dexamethasone resembles hydrocortisone sufficiently to damp down the pituitary production of ACTH so that steroid levels in the blood fall. If the pituitary gland response is already suppressed by the stress disorder, the injection of dexamethasone will have a reduced or no effect in lowering steroid production. Steroid levels generally tend to be lower than normal in stress disorders and higher than normal in major depressive disorders.

3. The third group would be those who do not fit within any established group, not even the NOS category, and who have equivocal or absent psychological and physiological test findings. There would here be a strong, but possibly rebuttable presumption that the mental complaints are not compensable.

§25 *The Question of Causation and the Eggshell Skull Rule*

Problems in showing causation in mental harm cases largely center around the status of the “eggshell skull” rule. As has been noted (Judge Posner notwithstanding), there has been an almost universal reluctance to extend liability for the peculiarities of the plaintiff, generally acknowledged in ordinary physical damages, to mental harm cases. Plaintiffs must show that the mental harms that they have developed from the defendant’s actions are such as an ordinary (normal) person would have. Even in North Carolina, the “thin skull” rule is only allowed if the plaintiff can show that *some* significant mental harm could be expected to follow the wrongful behavior of the defendants in a normal person.⁵⁶

If the argument advanced in Part II is correct, significant damage in a person with no prior sensitivity will almost never happen. Significant and enduring mental disorders following psychic trauma, mainly, and some will argue always, occur only in persons with some susceptibility. This holds, to some extent, even in the case of traumatic brain damage; for it has been noted that persons with prior psychiatric problems develop more severe impairments than controls from comparable head injuries. There is also the finding, in both animal and human studies, that a second head injury of the same magnitude in the same subject, after complete recovery, will produce more damage than the first. So those suffering a second head injury will also have more severe impairments than a comparable control group following a single head injury⁵⁷ (See Fig. 3 *Schematic representation of mental harm due to head trauma*).

Even if this argument is merely plausible, and all scientific opinions are more or less open to question, it is surely necessary for the legal community to consider the possibility that in denying recovery for the effects of predisposing mental conditions, the statement that mental harms are compensable has been made largely meaningless.

56. *Poole v. Copland, Inc.*, 348 N.C. 260, 264-65, 498 S.E.2d 602, 604-05 (1998).

57. Studies on the effect beyond six months of a single injury are hard to find. Repetitive injuries are generally viewed as having a cumulative effect.

§26 *Alternative Solutions to the Eggshell Skull Problem in Mental Harm.*

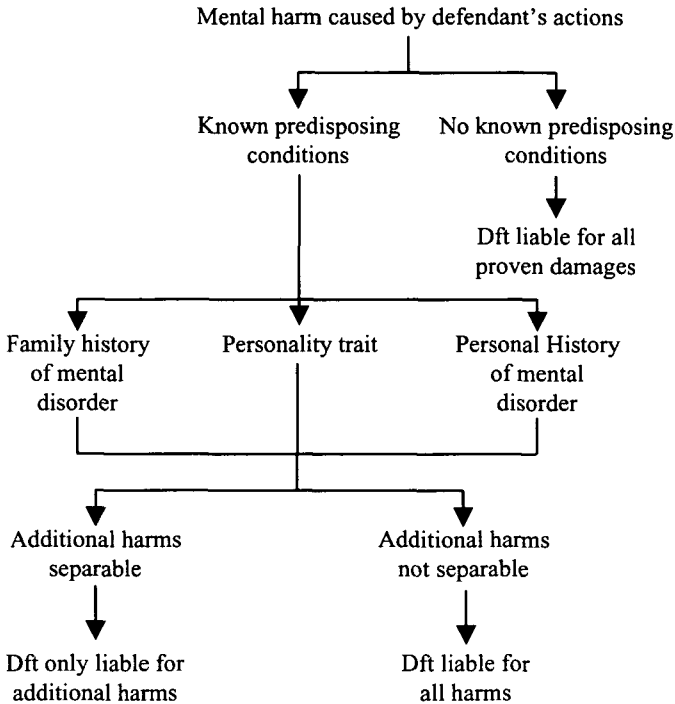
There are three possible responses to the problem of predisposition to mental harm:

1. The first alternative is to continue with the rules as we have them and exclude many if not most forms of mental impairment following psychic trauma (no physical injury to the brain). One might, indeed, deny even such cases as are considered compensable under present rules, arguing that predisposition usually (perhaps always) underlies or contributes to this kind of harm. In rare cases it might be possible to partition the damages and allow predisposed claimants to recover for the additional harms that would have occurred without their predisposing conditions.

2. The second alternative is to allow predisposed persons to recover for mental harm under the "thin skull" rule and hope that the number of such persons would not be so great as to make the economic cost of compensation unacceptably high. A provisional assessment here can be made on the assumption that the number of persons with predisposing conditions, though high in the population with long-term sequelae, is relatively small in the general population. But theoretical assumptions of this nature are notoriously fallible. A more detailed economic analysis might be helpful, although these too are fallible. A practical trial in one or more jurisdictions might be more reassuring (See Fig. 4 *Schematic representation of the application of the thin skull rule to mental harm cases*). This rule is particularly arguable in cases of intentional infliction of emotional distress to discourage outrageous behavior. Application of the rule is also beneficial in intentional infliction of emotional distress claims since the danger of opening the flood gates of litigation is much less likely. This is because it is firmly established that transferred intent does not apply in this tort so that third parties would not normally be able to bring suit without notice of their presence and likelihood to suffer mental harm.

3. A third mediating position would be to allow recovery for any mental harm that is shown, but permit the court (or jury) to partition the damages to allow for the effect of the predisposing causes. It should be noted here that expert opinion will normally be required and this could be a serious obstacle for predisposed plaintiffs. It could be very difficult for an expert witness to testify with any reasonable degree of certainty on this point. In some cases, as in *Stoleson v.*

FIG. 4 APPLYING THE THIN SKULL RULE TO MENTAL HARM CASES



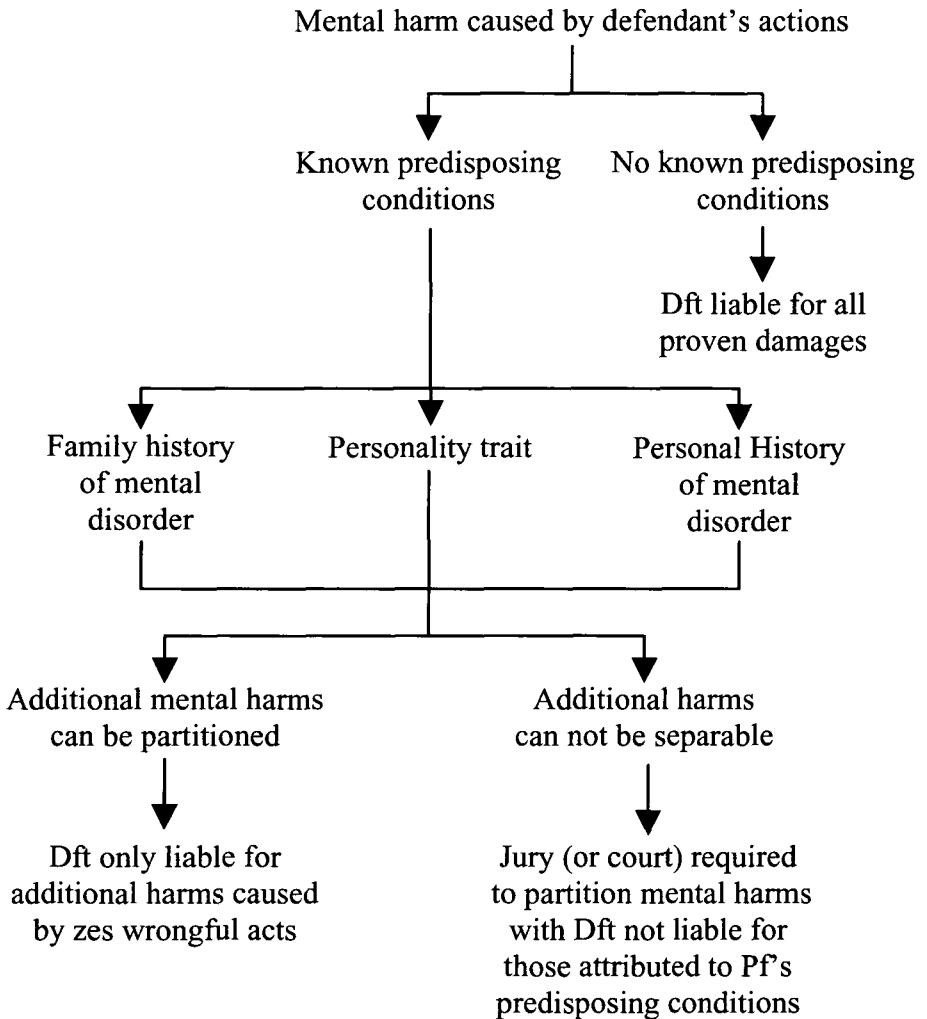
United States,⁵⁸ the plaintiff's recovery would be reduced almost to nothing by the likelihood that the mental problem would have occurred anyway if it had not been triggered by the tortious act. In others, recovery may be virtually 100% from the likelihood that the plaintiff could have been normal indefinitely had the latent condition not been activated by the traumatic event. In order for this proposal to work, the jury would have to be allowed to make this determination as it sees fit after both sides have had the opportunity to provide whatever evidence they can. Partitioning is generally an impossible task, but probably no more so than the other determinations which juries routinely are required to make (See Fig.5 Schematic representation of requiring the partitioning of mental harms).

4. The North Carolina rule, propounded in *Poole v Copland, Inc.*,⁵⁹ might be considered as a fourth alternative. A predisposed person could then recover for *zes peculiar* harms if a "normal" person

58. 708 F.2d. 1217 (7th Cir. 1983) (the patient's hypochondriasis might have fastened on some other disease even if the exposure to nitroglycerin and fear of heart damage had not occurred).

59. 348 N.C. 260, 498 S.E.2d 602 (1998).

FIG. 5 SCHEMATIC REPRESENTATION OF REQUIRING THE PARTITIONING OF MENTAL HARMS



would have suffered significant mental harm in the circumstances. It is submitted that this is not a good solution since it requires the jury or the court to speculate, even after expert opinion, as to what harms a normal person might have sustained. In short, this appears to be a somewhat vague formula which is likely to lead to somewhat inconsistent decisions.

§27 Final Summary and Argument

A number of arguments and positions have been advanced here, namely:

1. That both the traditional and modern views of compensation for mental harm are open to critical objections. The traditional (restrictive) view is hopelessly complex and based on criteria which are objective, but tend to focus on items that are peripheral to the real question. The modern view, on the other hand, is systematically vague, even when additional criteria are added to prevent recovery for trivial harms (e.g., ordinary fear and vexation and dubious causation).

2. That the objections made by the traditional group to the modern view can be alleviated or removed by introducing more precise criteria from the listings in DSM-IV, using test protocols to make interpretation of tests more reliable, and utilizing physiological testing. The severity of disability can also be more objectively evaluated using the Global Assessment of Functioning Scales provided in DSM-IV.

3. That the legal community should face up to the fact, or at least the possibility, that prior predisposing conditions produce, or at least exacerbate mental harm.

4. Three possible responses to the “eggshell skull rule” (“thin skull rule”) have been put forward:

a. The first possibility is to continue with the rule that only mental harms that a normal person would sustain are recoverable. This is probably unacceptable and was only tolerated because the problem of predisposition was ignored or underestimated.

b. The second is to recognize the thin skull rule in mental harms. This would be the fairest rule, in line with treatment of physical harms. It is particularly persuasive in cases concerning intentional infliction of emotional distress.

c. The third alternative, partitioning the damages, is a compromise solution. The jury (on whatever evidence was available) would be allowed (or required) to deduct any harms attributable to the predisposing conditions from the plaintiff's recovery. This would be more realistic than the restrictive rules (alternative 1) but less fair than alternative 2, being out of line with the treatment of physical harms where the thin skull rule is applied.

d. The North Carolina rule, propounded in *Poole v Copland, Inc.*, would allow some predisposed persons to recover, and to that extent is it more equitable; but, it is hardly objective or precise enough to provide guidance to courts in mental harm cases.

5. The economic consequences of bringing mental harm into line with physical damage should be estimated, or better, found by practical experiment in a limited number of jurisdictions.

APPENDIX ON FORMALISM

The term "logic" is not a popular one in contemporary jurisprudence. Holmes remarked that the life of the law was not logic but experience; and if logic be considered, as is often the case, as being synonymous with Aristotelian syllogisms, he was correct.⁶⁰ However, he spoke too soon. More recent advances in philosophy have widened the concept of logic to include all sorts of things now grouped together under the title of formal studies or formalism. The general view of formal studies is that they comprise any method of organizing materials in a systematic manner to improve communication and avoid errors. There are all sorts of formal systems, ranging from complex and internally consistent mathematical games to the looser logical tools of ordinary language. The version of formalism adopted here is based largely on language/logic notions of organization as propounded by Ludwig Wittgenstein in his later lectures and conversations with friends,⁶¹ rather than on his earlier treatise.⁶² These have been discussed more fully elsewhere⁶³ but may be summarized here as follows:

60. See Neil MacCormick, *LEGAL REASONING AND LEGAL THEORY* (1994). In his book on legal logic, Professor MacCormick points out that the Aristotelian syllogism only really applies in law when a legal term (the major premises) is being applied to a particular fact situation.

61. See Ludwig Wittgenstein, *THE BLUE AND BROWN BOOKS* (Harper-Collins 1976) (These are notes dictated by Wittgenstein to his students in the 1930's. However, they contain all the doctrines characteristic of his later period, especially his repudiation of the "name" theory of meaning, which focused on nouns); Ludwig Wittgenstein, *PHILOSOPHICAL INVESTIGATIONS* (G.E.M. Anscombe trans., Prentice Hall 3rd ed. 1999) (1973). *THE BLUE AND BROWN BOOKS* were lecture notes taken by Wittgenstein's students while *PHILOSOPHICAL INVESTIGATIONS* consisted of Wittgenstein's conversations with friends which were taken down in shorthand. The new element in Wittgenstein's later thinking is the realization that function and purpose is an important component of application. A typical comment here is his statement that "a lever is a bar used for a different purpose." As applied to language, this states that we do not understand the meaning of words unless we specify the purposes we have in mind when using them. The statement that "my preferred kind of monarch is the present King of France" is not a statement of fact but a republican *bon mot*.

62. See *TRACTATUS LOGICO-PHILOSOPHICUS* (Oxford 1921). The best-known edition is Ludwig Wittgenstein, *TRACTATUS LOGICO-PHILOSOPHICUS* (C.K. Ogden trans., Routledge & Kegan Paul, 1981). This important work has recently been republished in a new translation from the German by Dover Publications (1999). The *TRACTATUS* represents Wittgenstein's thinking before he realized the importance of purpose/intent for meaning. He later stated that in his earlier work he had overemphasized the indicative (label) functions of language.

63. See J. Stanley McQuade, *Medieval Ratio and Modern Formal Studies: A Reconsideration of Coke's Dictum the Law is the Perfection of Reason*, 38 *Am. J. Juris.* 359 (1993).

1. All formal systems, including mathematics, traditional logic and scientific theories are essentially games; they are rather like chess, with pieces (pawns, knights, etc.) and rules which govern their moves down to the point where the game ends.

2. The "pieces" may be numbers, letters, words or even icons.⁶⁴

3. Law, whether substantive or procedural, is commonly represented by word games, although these can be transposed into other kinds of symbols.⁶⁵

4. Formal games can be "pure" or "applied." A pure game is common in theoretical mathematics, where strange games with no obvious application are constantly being produced. Law games are usually applied calculus.⁶⁶

5. The principles which govern the satisfactory application of a game to an enterprise are:

a. The game must be well thought out with clearly defined symbols and moves and with no inherent contradictions or inconsistencies.

b. The application must be clearly identified since the same game will apply quite differently to two different enterprises. Even weighing apples will be conducted differently in a scientific laboratory testing the effects of different strains or fertilizers, than weighing the apples in a store where they are being sold.

c. The purposes of the application must be clearly identified and characterized. This is in line with Wittgenstein's dictum that the interpretation of a piece of language is largely governed by the functions which it serves. A joke will be interpreted very differently from a piece of descriptive information.

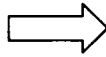
These considerations apply readily in legal analysis. Both substantive and procedural law can be considered as word games applied to disputes (present or potential) to achieve a balance of values (justice). From this perspective, law can be represented formally as in the following figure:

64. Many mathematical and scientific games use icons. In mathematics, they may be used to represent huge chunks of mathematical transpositions. In chemistry or physics, they may represent structures, e.g., where the large ball in the middle with four small balls attached to it by matchsticks represent the carbon atom.

65. This necessarily takes place when a legal topic is computerized.

66. Using Wittgenstein's term for a set of symbols assembled into a game.

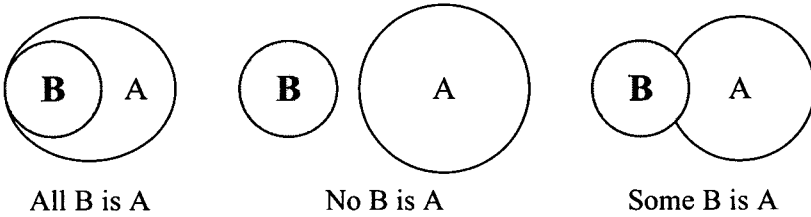
WORD GAMES



JUSTICE

DISPUTES

Applying this to legal discussion, an area of the law, or a particular view of a legal topic, can be represented as a formal system, either by providing a list of the legal elements involved, or, as is common nowadays, by an algorithm or decisional tree of some kind or other. The definition of technical terms (elements) and also their application to cases resembles the old Aristotelian logic of classes (“all” and “some”) which has often been explained to students using circles.



A term can thus be defined by giving clear positive and negative examples, where the term clearly applies or does not do so. Borderline examples may then be given to show how more problematic uses would be decided. The same procedure can be used to show how a term would be used to decide cases at law. A case can clearly fall within or outside the circle of a category (e.g. nuisance) or be on the borderline. The decision one way or the other involves consideration of the third element in the diagram above, the values served by that portion of the law. Outcomes have always been justified in this manner. Formal analysis, then, is doing no more than lawyers have always done—applying key terms to cases and justifying the result by the given goals of the system. But it does so in a clear way that avoids misunderstanding and facilitates discussion and resolution of differences.

The basic underlying notion for present purposes is that logic, defined in the modern sense as formal systems, is as important in law as it is in business, medicine, and science generally. All these professions, and more, are employing formal games using numbers, letters, words or icons, to facilitate communication and standardize research. We in law lag behind and seem to be currently suffering from an anti-logic trend based on post-modernist existentialist philosophy.

The forms used in the present article are simple lists and decisional trees (algorithms). These are intended to allow the reader to see exactly how legal arrangements are being viewed and the precise changes that are being advocated. The reader may then respond appropriately by suggesting amendments to the system. It is this kind of arrangement that the medieval lawyers had in mind when they used the term "ratio" (reason). Reason, for them encompassed not only the processes of reasoning but its product (the law) which Coke described as "the perfection of reason." I think that we have much to learn from them in this matter. Instead of criticizing legal forms, we would be better employed in improving them, as our medical and business colleagues have done by developing branching algorithms and other fairly precise decisional tools.

Wittgenstein's notion that thinking, including scientific thinking, boils down to developing and applying formal games, is very apt for the development of new directions in legal research. Legal theory has, in the past, been squeezed and stretched to fit into the Procrustean⁶⁷ mould of whatever scientific discipline was on the ascendant at the time. The medievals tried to make it geometrical, and John Austin sought to apply the methods of the empirical sciences as he understood them.⁶⁸ The American Legal Realists favored the methodology of the social sciences. Wittgenstein's view of science is more in line with the ways lawyers have always thought, but at the same time would allow us to take advantage of modern formal systems. The decisional tree (algorithm) is an obvious example and should be as fruitful in law as it has been in other fields. The use of the "Circles of Aristotle" is another helpful device, which indeed is old in the law. Law writers have also used what might be termed the "factors game," found in the various Restatements of the Law, which is employed in guiding decisions where there is no clear answer but certain possibilities must be weighed and considered in coming to a conclusion. Here again, we have lagged behind our colleagues in other professions, who have made this tool more precise by dividing factors into major and minor

67. Procrustes, the mythical giant, had a famous bed which he boasted would perfectly fit any one of his guests. He made this claim good by stretching the short ones and shortening the tall ones.

68. A modern version of Austin's approach is to study legal logic by analyzing the opinions of judges and taking the methods found therein as the basic data to be organized into a formal theory. Judges are, by and large, users of legal logic rather than developers, though they can occasionally give a novel twist to a piece of legal apparatus. They tend to depend heavily on the work of legal scholars to analyze the law as it is and discuss possible improvements. It would be nice if this were made easier for them by provision of clear formal arrangements.

types and providing the mix of each that justifies a decision.⁶⁹ Even better is providing each factor with a numerical value so that the contributions of each factor can be summed to provide a total score.⁷⁰ These devices have proved very valuable in all sorts of enterprises and would almost certainly be equally helpful in legal research. They would make legal analysis more precise, allow better communication among researchers, and provide most valuable tools to judges and lawyers who have to find and apply the law.

69. This is the method employed in both DSM-IV and ICD-X to make psychiatric diagnoses more reliable.

70. This method has been used in all sorts of medical decisional devices, e.g., the Glasgow Coma Scale (GCS) which uses five categories of clinical information to evaluate head injured patients on a scale ranging from 15 (normal) to less than 6 (comatose and in serious condition).