Somatoform Dissociation in Traumatized World War I Combat Soldiers: A Neglected Clinical Heritage

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ABSTRACT. The massive traumatization of World War I combat soldiers led to an unprecedented incidence of somatoform dissociative disorders and symptoms, usually diagnosed as hysterical disorders during the war years. Following a brief overview of the scope of the suffering during this Great War, attention is given to British army psychiatrist Charles S. Myers' (1940) observations of the alternation between a so-called ''emotional'' personality and an ''apparently normal'' personality in traumatized combat soldiers. Somatoform dissociation, further categorized into positive and negative symptoms, is related to this structural dissociation, and to fixation in the trauma and avoidance of the trauma, and may be part of a more encompassing symptomatology. Next, a short overview of diagnostic issues is given. We argue that the DSM-IV category of ''conversion disorder'' is incorrect. Rather, the findings revealed here support Janet's classic and Nijenhuis' more recent views on somatoform dissociation. Finally, treatment issues are briefly presented.

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> No doubt they'll soon get well; the shock and strain
> Have caused their stammering, disconnected talk.
> Of course they're ''longing to go out again,''–
> These boys with old, scared faces, learning to walk.
>
> –Siegfried Sassoon, *Craiglockhart*, October 1917

Somatoform dissociation is a lack of the normal integration of sensorimotor components of experience, e.g., hearing, seeing, feeling, speaking, moving, etc. It is a major consequence of psychological trauma that is especially prevelant when threat to life from another person has occurred. Somatoform dissociation has been seriously neglected within the contemporary scientific community. In attempts to compensate for the lack of scientific and clinical attention for this trauma-related class of phenomena, Nijenhuis and colleagues have recently described its phenomenology and relationship to various traumatic experiences, have constructed psychometrically sound instruments to measure it, and have developed an important theoretical perspective (Nijenhuis, 1999, 2000; Nijenhuis et al., 1996, 1998c, 1999). In their studies, they returned to classic 19th and early 20th century approaches in French psychiatry, especially the work of Pierre Janet (Janet, 1889, 1901, 1907, 1911), which has been erroneously ignored for so long (Ellenberger, 1970; Van der Hart & Friedman, 1989).

This article is a report of our explorations of the World War I psychiatric literature on somatoform dissociation in traumatized combat soldiers. We focus on a variety of case examples primarily taken from English sources–as French and German sources offered less, or less suitable, descriptions. These case descriptions proffer a wealth of information on somatoform dissociation and from them we may glean clinical observations and treatment procedures, as well as theoretical insights, still relevant today.

A most important theoretical view from the World War I literature on shell shock will be described as constituting the cornerstone of our present understanding of trauma-related structural dissociation, including somatoform symptoms (cf. Nijenhuis & Van der Hart, 1999; Nijenhuis, Van der Hart & Steele (in press); Van der Hart, Van der Kolk & Boon, 1998). This model was developed by British army psychiatrist/psychologist Charles Samuel Myers (1916a, 1940). He observed structural dissociation between two mental systems, i.e., between a so-called ''emotional'' personality (EP) and an ''apparently normal'' personality (ANP) in acutely traumatized WWI combat soldiers (Myers, 1940). The EP was the part of the personality that remained fixed in the original traumatic experience, suffering vivid, painful sensorimo-

tor memories of the trauma, i.e., hypermnesia. The ANP was the part of the personality associated with partial or complete amnesia of the trauma, detachment, and numbing. This alternating pattern has been noted for more than a century by students of psychotraumatology, but has usually been described in different terms (e.g., APA, 1994; Janet, 1889; Kardiner, 1941; Horowitz, 1976). In contemporary North American psychiatry–exemplified in the DSM-IV (APA, 1994)–only some of the dissociative features that characterized Myers' patients are acknowledged, i.e., those associated with memory, consciousness, and identity, and are referred to as *psychological dissociation* (Nijenhuis et al., 1996). However, in line with the 19th century works by Janet and contemporaries, Myers and other WWI psychiatrists also noted various dissociative symptoms more directly manifested in the body, such as lack of awareness or control of movements and sensations; phenomena that Nijenhuis and colleagues (1996) subsumed under the name of *somatoform dissociation*. We will demonstrate the essential relationship of somatoform dissociative symptoms to Myers' distinction between ANP and EP.

As a corollary we also prefer the term *psychoform dissociation* instead of psychological dissociation, since we are discussing the *form* of symptoms, not their structural origin. It is extremely important to realize that it is only because somatoform dissociative symptoms have been neglected and misunderstood that we are emphasizing them as ''separate'' from so-called psychoform symptoms. In reality, the distinction between somatoform and psychoform symptoms is artificial, as they are both expressions of underlying dissociative processes that transpire within the inseparable union of psyche and soma. All of these phenomena–psychoform and somatoform–constitute manifestations of Myers' ANP and EP; likewise, they exemplify Janet's earlier notion of ''the dissociation of systems of ideas and functions that constitute the personality'' (Janet, 1907, p. 332).

The entire spectrum of dissociative symptoms manifested in the body is described in this article. Several perspectives on somatoform dissociative symptoms will be presented. First, we will offer a description of symptoms from a phenomenological perspective. Then two interrelated theoretical perspectives will be described. The first perspective describes symptoms in the context of the dissociated structural division of the personality (*the structural perspective*). The second describes the varieties of fixed or conditioned traumatic responses (*the functional perspective*).

However, we first begin with a brief description of the enormous scope of suffering, traumatization, and destruction that took place during the Great War, as World War I was called originally. This contextual background is valuable in understanding the basis for such vast numbers of combat trauma cases.

THE SCOPE OF SUFFERING AND TRAUMATIZATION DURING WORLD WAR I

The years of World War I, 1914-1918, were a time of immense suffering, not only among warring soldiers, but also among civilians in the various countries at war and in surrounding countries to which displaced people fled. In addition to the suffering of the countless refugees from the war zones, there was increasing hunger and shortage of all kinds of essential commodities throughout many countries (Van Bergen, 1999; Whalen, 1984), along with extensive environmental damage and the total destruction of civil infrastructures. In all involved countries there was immeasurable mourning and grief for the myriad dead.

For combat soldiers themselves, especially those in the trenches, suffering did not consist only of physical or mental wounding. There was also constant misery produced by the intrinsically horrific conditions in the trenches, as illustrated in a 1918 issue of the French trench journal *Le Filon* (quoted by Van Bergen, 1999, p. 10):

> Fighting a modern war means to entrench yourself in a hole filled with water and to sit in it for ten days without moving, it means looking and listening and keeping a grenade in your hand, it means eating cold food and sinking in the mud and carrying your food through the dark night and wandering hour after hour around the same point without ever finding it, it means being hit by grenades which come from God knows where–*in short: it means privation.*

This picture easily extended to include torment due to the constant presence of vermin, and the need to function despite chronic lack of sleep, exhaustion, cold, thirst, hunger, poor rations, complete lack of sanitation facilities, inadequate medical care, and high rates of disease (e.g., dysentery, trenchfoot and other severe skin disorders, malaria, tuberculosis, pneumonia, and the deadly Spanish influenza pandemic of 1918). There was the constant stress of seeing fellow soldiers being killed or wounded, of the stench and sight of unburied decomposing bodies, of hearing unheeded screams for help from the wounded trapped in no-man's land, and of helplessly watching the wounded drown in mud without the possibility of being rescued. Soldiers lived in trenches for weeks or months at a time, and more often than not, furloughs were extraordinarily brief or entirely absent; thus, there was no relief from the dreadful existence in the trenches. Finally, fear was an ever-present experience. In this war especially, with its unprecedented reliance on massive bombardments and static trench warfare, confrontation with death was inescapable.

Gilbert (1995) reports that the defeated Central Powers lost 3,500,000

soldiers on the battlefield. The victorious Allied Powers lost 5,100,000 men. Gilbert also reported that, on average, this was more than 5,600 soldiers killed each day of the war. The fact that 20,000 British soldiers were killed on the first day of the Battle of the Somme is often recalled with horror. On average, a similar number of soldiers were killed in every four-day period of the First World War (p. 541).

How about the mental casualties, also referred to as soldiers with *shell shock, neurasthenia, war neurosis*, or the German term, *Kriegsneurosen?* After the war, a witness stated, ''under conditions such as existed in France it is inevitable for the man to break down at one time or another'' (War Office Committee, 1922, p. 5). During the initial stages of the war this insight did not exist among the upper army echelons. In fact, many military authorities were so prejudiced or ignorant about mental casualties that, for example, the official British military position was that shell shock and malingering were impossible to separate, therefore, both should be dealt with in army prisons (Stone, 1985, p. 250). Some ''shell shocked'' soldiers even received court-martialed death sentences for ''desertion'' (Babington, 1983, 1997).

However, it became increasingly difficult to ignore the scope of mental breakdown following the mass devastation of the Battle of the Somme, in particular among the British forces (Bogacz, 1989; Feudtner, 1993; War Office Committee, 1922). Such breakdowns could be caused not only by acute trauma but also by accumulating stresses and strains of life in the war zone. Rivers (War Office Committee, 1922) remarked on these latter cases: ''These were the men who, especially in the early stages of the war, after some shell explosion or something else had knocked them down badly, went on struggling to do their duty until they finally collapsed entirely'' (p. 55).

It was believed, even by Freud (1919), that with the end of the war ''most of the neurotic diseases that had been brought about by the war disappeared'' (p. 1). Reality was quite different, with long-term psychiatric disability for thousands of soldiers on all sides of the Great War. In 1917, the German psychiatrist Robert Gaupp concluded that *Kriegsneurosen* (war neuroses) constituted the largest category of wounded soldiers in the German army: more than 613,000 men. Entire German companies suffered from constant vomiting or unceasing fits of crying (Van Bergen, 1999, p. 211). The numbers within the British ranks are less clear, but one thing is certain: the official number of 80,000 is a vast underestimation (Van Bergen, 1999). Although, at least in Britian, many shell shocked soldiers were gradually able to work, they still experienced significant emotional difficulties: ''The position in 1925 was that 60% were still affected with varying degrees of nervous anxiety, but the number who were unemployable had fallen to 20%'' (Babington, 1997, p. 122). In 1929, British mental hospitals still housed 65,000 cases of ''shell shock'' (Winter, 1979). In 1932, 36% of veterans receiving disability

pensions from the British government were listed as psychiatric casualties of the war (Leed, 1979, p. 185). In 1939, 120,000 British veterans were receiving pensions or had been paid a final award for war-related ''primary psychiatric disability'' (Babington, 1997). Finally, in 1942, Thom reported that 58% (68,000 men) of all the patients being cared for in veterans' hospitals in the United States were neuropsychiatric casualties of WWI (Thom, 1943; quoted by Leed, 1979).

In contrast to the enormous attention military psychiatrists gave to acutely traumatized combat soldiers–with the explicit mission to get them back to the front as soon as possible–there are virtually no post-WWI psychiatric studies on chronically traumatized war veterans. As far as we know there was only one follow-up study. This 1920 American study consisted of 760 men out of a larger group of pensioners suffering from war neuroses, and revealed that more than 60% were troubled with symptoms of psychotic illness and nearly 40% were unfit for any form of employment (Salmon, 1921; quoted by Babington, 1997).

Nevertheless, psychiatry did learn one extremely important lesson: the development of mental disorders could be related directly to traumatic experiences. Whereas initial medical reports emphasized premorbid characteristics, including heredity, as the main factors in the development of these disorders, it was subsequently understood that every man had his breaking point. Hart (1929), ''a veteran of five years working in 'shell-shock' hospitals in England'' (Shephard, 1999, p. 494), wrote:

> During the recent War a great mass of illness occurred which, christened at first by the misleading name of ''shell shock,'' came ultimately to be known as the psychoneuroses of war. This change of nomenclature was due to the rapidly won recognition of the psychological origin of these conditions. Indeed it may be said that, whatever else the War has done, it has at least conclusively demonstrated the existence and importance of psychogenic disorder. (p. 64)

MYERS' DISTINCTION OF "EMOTIONAL" PERSONALITY AND "APPARENTLY NORMAL" PERSONALITY

The mental disorder most commonly associated with the Great War, was, of course, shell shock. Myers was not the only WWI psychiatrist to explain shell shock, or the war neuroses, in terms of a dissociation of the personality (e.g., Brown, 1919a & b; Ferenczi, 1919b; McDougall, 1926; Simmel, 1919). For example, Brown (1919a) stated that ''viewed from the psychological point of view, hysterical disorders all fall under one heading, as examples of *dissociation* of psycho-physical functions (walking, speaking, hearing, re-

membering certain experiences, etc.) following upon a diminution or loss of higher mental control'' (p. 834). Likewise, Myers (1940) formulated the concept that the '' 'functional' nervous disorders are assignable . . . to a dissociated personality and its results'' (p. 71).

We believe that Myers' (1940) distinction between what he referred to as the ''emotional'' or traumatized personality (EP) and ''apparently normal'' personality (ANP) provides a clear theoretical notion that greatly enhances our understanding of trauma-related dissociation. We would, however, emphasize that in no way is our intention to reify separate entities when using the term ''personality.'' Hart (1929) correctly stated that these pheonomena are ''in reality absolutely devoid of any actual spatial aspect, and the introduction of a spatial metaphor . . . can only lead to erroneous deductions unless its purely descriptive and illustrative function is rigidly controlled'' (p. 162). Structural dissociation is both a metaphoric and a theoretical construct, neither of which reflects complete reality, since *all* language–scientific or metaphoric–only approximates reality. Nonetheless, we are persuaded by clinical experience and growing empirical data that the clearest understanding of trauma-induced dissociation and its treatment to date is the view of ANP and EP as metaphoric descriptive labels of mental systems that have failed to integrate. The essence of this failure to integrate, i.e., dissociation, is represented in Janet's definition of hysteria that was the 19th century category of dissociative disorders in a generic sense: ''A form of mental depression characterized by the retraction of the field of consciousness [involuntary and intense narrowing of attention] and a tendency to the dissociation and emancipation of the systems of ideas and functions that constitute personality'' (Janet, 1907, p. 332). The EP and ANP that Myers (1940) observed in traumatized soldiers constitute major examples of these dissociated ''systems of ideas and functions.'' They had their own sense of self, however rudimentary (McDougall, 1926; Mitchell, 1922), and exhibited a concurrent retraction of their field of consciousness that further reduced mental integrative capacity already impaired by dissociation.

In outlining his theoretical model, Myers (1940) began by referring to the typical immediate result of the trauma, i.e., certain changes in the level of consciousness (LOC), which ''may vary from a slight, momentary, almost imperceptible dizziness or 'clouding' to profound and lasting unconsciousness'' (p. 66). It is striking how often various authors referred to apparent changes in LOC in their case reports of shell shock. Of course, initial presentations of unconsciousness certainly could be related to concussive neurological damage, e.g., due to an exploding shell. In many cases of shell shock, initial changes in LOC were related to concurrent neurophysical injury and psychological stress.

Likewise, cases of somatoform symptoms (such as mutism) could occur

initially as the result of the effects of concussion, gas fumes, being buried or otherwise exposed to an exploding shell, whereas other cases were due to ''the horror from some shocking sight or to terror from the heavy bombardment'' (Myers, 1916b, p. 464). But in both cases, Myers observed that the development of a persistent somatoform dissociative symptom ''is *actually* always the result of mental–i.e., psycho-physiological–shock'' (1916b, p. 464).

In our opinion, this reduction in LOC is an important contributing factor to fixation in trauma or trauma-induced dissociation, since decreased LOC (both functional and organic) inevitably diminishes an individual's capacity to integrate salient experience, thus creating a window of vulnerability for structural dissociation. A decline in LOC also can be a manifestation of retraction of the field of consciousness, i.e., involuntary intense and narrow focusing of attention to the exclusion of significant experiences. Observing these phenomena repetitively in acute shell shock, Léri (1918) remarked that a soldier would describe a loss of consciousness and subsequent amnesia, but ''in reality, however, he hasn't lost consciousness, and he perfectly remembers everything . . . While waiting, he is *focussed only on his distress*, indifferent and inattentive to everything, except to what pertains to his instinct of conservation and to the notion of his own safety'' (pp. 46-7).

Although not every shell shock victim presented with an initial decrease in LOC, this common phenomenon is an appropriate point of departure from which to understand the essential role of dissociative alternations between the ANP and EP in psychoform and somatoform dissociative symptoms. Myers (1940) noted that during the initial lowered LOC:

> The normal personality is in abeyance. Even if it is capable of receiving impressions, it shows no signs of responding to them. The recent emotional [i.e., traumatic] experiences of the individual have the upper hand and determine his conduct: the normal has been replaced by what we may call the ''emotional'' personality . . . Gradually or suddenly an ''apparently normal'' personality usually returns–normal save for the lack of all memory of events directly connected with the shock, normal save for the manifestation of other (''somatic'') hysteric disorders indicative of mental dissociation. Now and again there occur alternations of the ''emotional'' and the ''apparently normal'' personalities . . . On its return, the ''apparently normal'' personality may recall, as in a dream, the distressing experiences revived during the temporary intrusion of the ''emotional'' personality. The ''emotional'' personality may also return during sleep, the ''functional'' disorders of mutism, paralysis, contracture, etc., being then usually in abeyance. On waking, however, the ''apparently normal'' personality may have no recollection of the dream state and will at once resume his mutism, paralysis, etc. (pp. 66-67)

It becomes clear from the quote above that the alternations between ANP and EP are the hallmark of the failure to integrate traumatic experience. Below is an example of early and profound reduction in LOC, ensued by clear alternation between ANP and EP. This case illustrates initial failure to integrate traumatic experience, followed much later by a significant integrative event.

> *Case A, Dissociative stupor, dissociative deaf-muteness* (Myers, 1940, pp. 42-3): A large ''heavy explosive'' shell fell on a dug-out, killing two of the occupants and blowing two other men to the far end of it. One of the latter (. . .), a sergeant, was brought into the Aid Post on a stretcher, unable to stand or to give any coherent statement. By the time he was admitted into a Casualty Clearing Station, his condition had become one of pronounced stupor *[severe reduction in LOC]*, which continued for more than a fortnight, accompanied at first by fever. Gradually he *[ANP]* began to take notice of his surroundings and on the seventeenth day after burial he *[EP]* suddenly sat up in bed and spoke for a few minutes, evidently with reference to some trench experiences–''They're at it again. D'you see that one, Jim?'' etc., then relapsing into stupor *[ANP with severe reduction in LOC]*. He virtually recovered his normal personality in England, but deafness and mutism remained *[ANP with increased LOC]* until one day he had a hysteric, convulsive seizure *[dissociative convulsion]*, after which he *[EP]* shouted orders given in the trenches and thereupon *[integration of ANP and EP]* regained his hearing and speech.

In this case, we observe that the patient functioned as an ANP following his return to England, though with continued and significant functional loss: deaf-muteness. A dissociative convulsion heralded the appearance of the EP once again, shouting orders given in the trenches. From this description it can be observed that the experiences of the ANP and EP differ in many respects, but that significant psychoform and somatoform dissociative symptoms are experienced by both, and that such symptoms disappear following integration. At this point, we must again stress, as did Janet before us, that ''somatoform and psychological dissociation are highly intertwined phenomena,'' both being an integral part of an individual and his/her self-representation (Nijenhuis & Van der Hart, 1999b, p. 109).

The interrelatedness of these two types of dissociative symptoms are described in the following case.

> *Case B, Dissociative deaf-muteness* (Mott, 1916, pp. xv-xvi): A deaf-mute, aged 24, with no history of a neurotic temperament or neuropathic predisposition, was admitted under my care on November 16, 1915.

> He wrote the following account of himself: ''I left England the 8th of March and went to Gallipoli on the 26th May, and about the middle of August one of our monitors fired short. I felt something go in my head, then I went to the Canada hospital; they said it was concussion'' *[reduction in LOC]*. In answer to questions he says the last thing he remembers is seeing the monitors firing. He came to a dug-out about one hour later. He could see and speak a little, but was quite deaf, and his head felt as if it would burst. He lost his speech completely when Bárány's tests (hot and cold water tests) were applied. He does not now complain of headache, but is quite deaf and dumb. Captain Jenkins reports that the ears are normal; it is therefore a functional deafness *[somatoform: ANP]*. He is able to cough and whistle, but cannot speak *[somatoform: ANP]*. His wife says that she has letters from him, in one of which he described how he killed a Turkish woman sniper. He does not remember writing this letter, but there is evidently some retrograde amnesia *[psychoform: ANP]*. He says he does not dream, but it seems certain that he has dreams but does not recollect them *[psychoform: ANP]*, for the sister of the ward says that while asleep he *[EP]* assumes the attitude of shooting with his rifle, and he gives a jerk as if pulling the trigger, then he assumes the attitude of using his bayonet; the other men in the ward tell her that he gives the movement of the right parry, then the left parry, and lastly the thrust, as if he were in action *[somatoform: EP]*. He sometimes jumps his whole body as if he heard or saw a shell coming, and he catches his right elbow as if he were hit there. He was then observed to open his eyes wide, get up, and look under the bed *[somatoform: EP]*. Apparently he is not conscious of this *[psychoform: ANP]*. He then awakens and begins to cry, but there is no sound *[somatoform: ANP]*.

Whatever experience is lost for the ANP in the process of dissociation will be encoded and stored by the EP: ''what is not sensed, perceived or controlled by one state of consciousness is processed by one or more other states'' (Nijenhuis & Van der Hart, 1999b, p. 109). It is the dissociative alternation of the ANP and EP that cause (psychoform and somatoform) symptoms to appear changeable and contradictory. The ANP is most often characterized by *losses of memory, sensory, perceptual or motor functions,* such as amnesia, mutism, and paralysis. The EP is most often characterized by *sensorimotor traumatic reexperiences that intermittently intrude* on the ANP. These intrusions may encroach on the ANP in an alternation, or they may be in a dispositional or inactive state during which the ANP experiences only functional losses. Intrusions reflect psychoform and somatoform symptoms present in reexperiences of various traumatic memories, dissociative states/personalities, and in reactive dissociative psychosis (Nijenhuis & Van

der Hart, 1999b; Van der Hart, Witztum, & Friedman, 1993). Intrusion is usually transient, though not always. However enduring it may be, intrusion is still only a partial dissociation. A complete dissociation is that which results in the total dominance of the EP in current consciousness, thus deactivating the ANP. Such dominations are also usually transient, but may last for longer periods of time. *Cases A* and *B* include examples of temporary but complete dominance of the EP.

In both somatoform and psychoform dissociation, functional losses are referred to as *negative* symptoms and intrusions as *positive* symptoms. The next section will offer a more detailed phenomenological description of negative and positive somatoform dissociative symptoms and their relationships.

A DESCRIPTIVE PERSPECTIVE ON SOMATOFORM DISSOCIATIVE SYMPTOMS

Various authorities have noted the differences between positive and negative dissociative symptoms, and have referred to them in various conceptual terms. Janet called positive symptoms *mental accidents*, and negative dissociative symptoms *mental stigmata* (Janet, 1901; cf. Nijenhuis & Van der Hart, 1999b; Van der Hart & Friedman, 1989). During WWI, Simmel (1919) subsumed them under the concepts of *states of inhibition* and *states of excitement* (Hemmungs und Erregungszuständen) (p. 49); Ferenczi (1919) spoke of *manifestations of somatic stimulation and loss* (Körperlichen Reiz und Ausfallserscheinungen) (p. 2). Particularly relating to somatoform dissociation, Myers (1940) spoke of *inhibitory* and *excitatory* manifestations of ''functional dissociation.'' All of these terms reiterate Myers' concept that one dissociated state (ANP) suffers from symptoms related to loss or inhibition, while another (EP) suffers from symptoms related to reactivations of trauma and overwhelming sensorimotor experiences.

Modern views on the dissociative disorders usually emphasize the so-called *negative dissociative symptom*s that indicate more or less permanent functional losses in the ANP, such as amnesia, depersonalization, anesthesia, analgesia, and paralysis (cf. Nijenhuis, 1999b). This was also often the case in WWI military psychiatry as well. However, trauma-induced dissociative disorders are also characterized by *positive dissociative symptoms*. Janet described positive symptoms as typically acute, transient dissociative features, often manifestations of reactivated traumatic memories or aspects of these memories, tending to be intermittently present and usually experienced as distressing or painful. These are manifested in the intrusion or dominance of the EP, as stated above.

Ferenczi (1919a, 1921) described several cases in which he argued that positive dissociative symptoms point to the patient's, i.e., the EP's, *fixation in the trauma* (1921; quoted by Leys, 2000, p. 149):

> [A]n unexpectedly powerful trauma can have the result in tic, as in traumatic neurosis, of an over-strong memory fixation on the attitude of the body at the moment of experiencing the trauma, and that to such a degree as to provoke a perpetual or paroxysmatic reproduction of the attitude. (1921, p. 156)

Janet referred to traumatic fixation as *idées fixes*, a concept that extends beyond simple fixed ideas or obsessions to psychophysiological states comprised of all BASK (behavior, affect, sensation, knowledge) elements (Braun, 1988). Regardless of the complexity of fixed ideas, they always take on exaggerated proportions, have a high emotional charge, and, in dissociative patients, become isolated from the ANP (Janet, 1894, 1898). They serve as the basis for behavior of the EP when it dominates consciousness, or may manifest themselves in the ANP as intrusions. We would like to emphasize that symptom presentations involving these *idées fixes* are usually ensembles of psychoform and somatoform dissociative symptoms, as most of our cases illustrate. Although somatoform manifestations may at times be the presenting symptom, still they directly relate to mental images, emotions, intentions, behaviors, etc. Thus, psychological content or the loss thereof (as in amnesia) always accompanies the somatoform. It is also crucial to recall that prior to integration, traumatic memories are experienced and expressed primarily as sensorimotor experiences, i.e., they remain in a somatoform organization. Thus it follows that somatoform symptoms would be core to traumatic reexperiences (Janet, 1919/25; Nijenhuis & Van der Hart, 1999a, pp. 41-2; Van der Kolk & Fisler, 1995; Van der Kolk & Van der Hart, 1991).

Negative and positive symptoms are often opposite sides of one coin, manifesting themselves in the alternations of ANP and EP, as described by Myers. For instance in Myers' *Case A* of the deaf-mute soldier, his ANP manifested negative somatoform dissociative symptoms (e.g., pronounced stupor, inability to walk or talk coherently, and apparent amnesia for the trauma). Then the EP emerged on the 17th day after the traumatic event in a re-experience of some trench events (positive symptom), obviously able to speak, saying, ''They're at it again. D'you see that one, Jim?'' Later, the ANP remained mute and deaf (negative symptoms) until the EP again emerged with a dissociative convulsion (positive symptom), the traumatic event was relived by the EP, whereupon the ANP regained speech and hearing, i.e., integration (of ANP and EP) occurred.

In Table 1 we have compiled a synthesis of prominent negative and positive somatoform dissociative symptoms derived from Janet, Myers, and current authors (Janet, 1901, 1907, 1911; Myers, 1915, 1916a&b, 1940, p. 30; Nijenhuis, 1999, 2000; Nijenhuis & Van der Hart, 1999b; Van der Hart & Friedman, 1989; WHO, 1992). Table 1 is meant to be a phenomenological

TABLE 1. A Descriptive Perspective on Negative and Positive Somatoform Dissociative Symptoms

Negative Somatoform Dissociative Symptoms (Nijenhuis, 1999; Nijenhuis & Van der Hart, 1999b)	**Positive Somatoform Dissociative Symptoms** (Nijenhuis, 1999; Nijenhuis & Van der Hart, 1999b)
Inhibitory symptoms (Myers, 1940)	Excitatory symptoms (Myers, 1940)
Mental stigmata (continuous phenomena) (Janet, 1901)	Mental accidents (intermittent phenomena) (Janet, 1901)
Symptoms of Sensory and Perceptual Dissociation	
Abnormal sensations: Paresthesias	Increased sensation: Hyperesthesia
Sensory loss: Anesthesia, superficial or deep	Dissociative pain disorders
Vision loss: Blindness or impaired visual acuity Hearing loss: Deafness or impaired acuity Speech loss: Aphonia or dysphonia Smell loss: Anosmia or hyposmia Taste loss: Ageusia or hypogeusia Perceptual comprehension loss: Agnosia Insensitivity to pain: Analgesia Loss of organic sensation: loss of urge to eat, drink, defecate, urinate; loss of sexual functioning, lack of experiencing the need to rest or move Changes in the level of consciousness: stupor, unresponsiveness	Heightened sensory acuity or dysphoric sensations or perceptions Simple sensory or perceptual hallucinations related to traumatic reexperiences Hysterical attacks (simple or complex sensory reexperiences of traumatic events) Reactive dissociative psychosis: delirium–prolonged reexperience of trauma with dominance of EP and lack of functioning of ANP, lack of reality testing
Symptoms of Motoric Dissociation	
Paralysis: mono, hemi, or paraplegia	Convulsions or pseudoseizures
Incomplete paralyses: Paresis Contractures	Simple movements: Tics, tremors, choreoform movements, palsy, speech
Incoordination: Ataxia, Astasia-absia Inability to perform purposive acts: Apraxia Loss of voluntary movement: Akinesia or dyskinesia	Complex movements: Obsessive, symbolic, persistent, or other acquired acts that are involuntary
Sudden loss of total body muscle tone without loss of consciousness: Cataplexy	Somnambulisms: Domination of EP, but with some degree of reality testing
General unresponsiveness similar to trance-like states, includes motor unresponsiveness: Catalepsy	Hysterical attacks: simple or complex motor acts in complete traumatic reexperiences
Nutrition: bulimic or bizarre eating related to persistent *idées fixes*	Nutrition: anorectic eating problems related to persistent *idées fixes* (not true anorexia)

description only; a more thorough analysis of varying symptom presentations and their underlying causes will be presented in the next section.

STRUCTURAL AND FUNCTIONAL PERSPECTIVES ON SOMATOFORM DISSOCIATIVE SYMPTOMS

Up to this point we have presented a *phenomenological* description of negative and positive somatoform symptoms. There are two additional perspectives that add to the understanding of somatoform dissociation: the *struc-*

tural and the *functional* views. The *structural* perspective involves the dissociation of the personality, i.e., ANP and EP, with dissociation, intrusions and alternations resulting in somatoform symptoms. The *functional* perspective considers how the varieties of fixed responses to the trauma in the ANP and EP contribute to somatoform symptoms.

Since we are discussing various perspectives rather than describing typology of symptoms, each case example can be viewed from all three perspectives: descriptive, structural, and functional. Regardless of which perspective is being used, the *symptoms* themselves remain the same.

A structural perspective on somatoform dissociative symptoms. From a *structural perspective,* the presence of negative and positive somatoform dissociative symptoms are directly related to the structural division of the personality, i.e., ANP and EP. From the structural viewpoint, negative symptoms in the ANP result from dissociative losses that are contained in the EP. Many of these negative symptoms in the ANP are relatively enduring across time (*mental stigmata*). There are also a multitude of incidental positive symptoms in acute and chronic posttraumatic states, as they are manifestations of intrusive traumatic experiences (*mental accidents*). These are most often intermittent and somewhat changeable rather than permanent. Referring to this intrusion, McDougall (1920) stated, '' . . . [T]he amnestic content of the mind *[i.e., the EP]* does not simply lie quiescent . . . [I]t may reveal a continuous activity by maintaining a spasm or tremor of the muscles of the paralysed limb, or some tic or repeated involuntary movement'' (p. 193). Positive symptoms include those that have been lost from the ANP's experience, are contained in the EP, and subsequently intrude into the consciousness of the ANP.

Positive symptoms from a structural perspective, for example, might include intermittent spasms or tics in the ANP that represent intrusions of traumatic fixation of the EP (*idées fixes*), as described in the next two cases.

> *Case C, Dissociative spasms of the face* (Simmel, 1919; quoted by McDougall, 1926, pp. 300-1): A soldier always suffered, upon attempting to eat, a spasm of the muscles of the jaw and of those concerned in swallowing, a spasm which produced a facial appearance of rage *[positive somatoform: ANP]*. He had no understanding of the origin of the *tic [negative psychoform: ANP]*. In hypnosis he *[EP]* relived a forgotten scene: he oversaw, while lying hidden in the enemy's territory, several enemy soldiers maltreating one of his comrades; he was overcome with rage, and at that moment he received a bullet-wound and lost consciousness *[initial reduction in LOC resulting in window of vulnerability for dissociation]*. As in many other such cases, the tic ceased as soon as the memory of the incident was restored to the patient in the waking

state *[ANP]*; i.e., as soon as the dissociation was overcome *[integration of ANP and EP]*.

Case D, Dissociative tic of the head (Kardiner, 1941, p. 131): A sailor was on board a battleship when, without his being warned, a turret situated above and to the right of him discharged a volley. He was thrown to the ground, and since that time he has had a persistent tic of the head to the left *[positive somatoform]*.

Contractures are especially interesting phenomena that express a loss of function in the ANP, yet are still considered to be a positive symptom, since they reflect the intrusion of an *idée fixe* into the ANP's consciousness. *Case E* is such an example.

Case E, Dissociative contracture (Ferenczi, 1919, p. 62): In one patient, the peculiar contractions of the man's shoulder and elbow had probably mimicked the position of his arm at the moment of trauma: ''The man whose right arm is contracted at an obtuse angle, was concussed by the shell just as he was sliding *his rifle into the 'stand easy' position*. This position corresponds exactly with that imitated by the contracture.''

Eder (1917) presented an example of a special type of traumatic fixation, i.e., *idée fixe*, that also resulted in positive somatoform symptoms in the ANP. In these special cases, fixation in the trauma is in the form of traumatic imitation, which Rivers (1920) referred to as *mimesis*: i.e., ''the motor or effector side of the process whereby one animal or person influences another unwittingly.''

Case F, Dissociative twitch of the lower jaw (Eder, 1917, pp. 38-9): A wounded soldier had ''[i]n addition to the symptoms of anxiety-hysteria . . . a twitch of the lower jaw. This was rather slowly depressed and the mouth opened with a sigh as if about to yawn or take a deep breath *[positive somatoform: ANP]*. . . . An officer to whom this man was most attached . . . was killed alongside him in the trenches; the patient had seen his officer gasping for breath in the death agony. To use his own words, he 'had never seen such sights before'.''

In short, somatoform dissociative symptoms can be viewed from a structural perspective that emphasizes the dissociation between ANP and EP. Avoidance of the trauma is a prominent feature of the ANP, which subsequently suffers functional losses. These losses are usually permanent (*mental stigmata)*, and include the negative somatoform symptoms (cf. Table 1). What is lost in the ANP is simultaneously contained in the EP, and intermit-

tently intrudes into the consciousness of the ANP (*mental accidents)*, though with continued lack of integration.

A functional perspective on somatoform dissociative symptoms. From a *functional perspective*, we analyze the various forms of fixed or conditioned responses that result in somatoform symptoms. At this level of analysis, we regard somatoform symptoms as resulting from the fixation of the ANP in avoidance of the trauma, and from the fixation of the EP in the trauma. In the EP, these responses include fixed ideas (seen in all case examples), complete reexperiences (e.g., *Cases A, B, G,* and *H*), and displays of inhibitions or excitations (negative or positive symptoms). Negative (*inhibitor*y) somatoform symptoms in the EP reflect losses primarily related to animal defense reactions, i.e., anesthesia, analgesia, and freezing (*inhibition of movement*), e.g., the example below from E. M. Remarque, 1929/82. Positive symptoms can be the result of other animal defense reactions, e.g., hypervigilance, hyperarousal, and movements of flight, fight or submission. Or other negative and positive symptoms can occur from additional fixations in the trauma. The phenomenology of these symptoms is described in Table 1.

Although such symptoms may intrude into the ANP, they are most clearly manifested when the EP *completely dominates* consciousness and the ANP is therefore (temporarily) deactivated and unaware. When the ANP dominates consciousness and does not experience intrusion of the EP, these symptoms continue to exist in the EP, albeit in a dispositional form. *Cases A* and *B* above and *Cases F, G,* and *H* below contain examples of negative somatoform dissociation in the EP that are expressed during the complete domination of the EP over the ANP.

The EP may involve simple or singular traumatic reactions such as freezing, flight, fight, etc., or more complex reactions that are more global reexperiences of the entire trauma. Positive and negative symptoms may occur as a result of either. Many of these symptoms are enduring rather than intermittent, with the EP then usually in a persistent state of reexperience. The ANP also has fixed responses to the trauma: these involve avoidance of the trauma, and are reflected in functional losses such as amnesia, anesthesia, analgesia, etc.

Although a semi-fictional account of WWI, E. M. Remarque's book *All Quiet on the Western Front* (1929/82) provided a remarkably accurate description of the trench soldier's true experience. The following quote might describe the negative symptom of freezing in the EP–a manifestation of an animal defense reaction. (We actually have no way to determine whether this example is dissociative in nature, and perhaps could only know in retrospect if Remarque later reexperienced this freezing). Nevertheless, the description of freezing is typical:

> My forehead is wet, the sockets of my eyes are damp, my hands tremble, and I am panting softly. It is nothing but an awful spasm of fear, a simple animal fear of poking out my head and crawling on farther. All my efforts subside like froth into the one desire to be able just to stay lying there. My limbs are glued to the earth. I make a vain attempt; they refuse to come away *[Negative symptom: animal defense reaction of freezing: EP]*. I press myself down on the earth, I cannot go forward. (Remarque, 1929/82, p. 211)

In another account of freezing, one British soldier remarked that he was so afraid he was ''jellified'' (Miles, quoted in Macdonald, 1988, p. 251).

Dissociative attacks–formerly called ''hysterical attacks''–should receive special attention as a major form of somatoform dissociative symptoms that can be viewed from the structural and functional perspectives. As *Case H*, presented below, illustrates, these ''attacks'' can be regarded as more or less fully reactivated traumatic memories (Nijenhuis & Van der Hart, 1999b) in which the EP completely dominates consciousness. Additional examples of symptoms in which the EP completely dominates consciousness for a period of time, and after which the ANP is amnestic include *Case A* (dissociative stupor and deaf-muteness), *Case B* (dissociative deaf-muteness), and *Case G* (dissociative ''attacks''). In all these examples, we see once again the complex relationship between positive and negative dissociative symptoms. From a structural perspective, such ''attacks'' or trauma re-enactments are the result of the complete alternation of ANP and EP. From a functional perspective, they involve the ANP's fixed avoidance of the trauma, and the EP's fixation in the trauma. These ''attacks'' are obviously complex dissociative symptoms that are *excitatory* (Myers, 1940). When the ANP returns, it is usually amnestic for such an episode: a *negative dissociative symptom* that is an *inhibitory* manifestation of dissociation.

> *Case G, Dissociative "attacks"* (McDougall, 1926, p. 260): A young soldier had fought very gallantly until wounded in one foot. When convalescing from the wound he began a long series of ''attacks,'' each of which closely resembled the rest. Sometimes the ''attack'' came on in his sleep, sometimes during waking. He would suddenly fall to the ground, seem to be utterly unaware of his surroundings *[negative psychoform: functional loss of awareness, including retraction of the field of consciousness: EP]*, and would re-enact, in a most dramatic way, a scene lived through in the trenches but forgotten; in this scene he took a very active part in repelling an attempt of the enemy to rush the trench; he worked the machine-gun, shouting in the utmost excitement to his comrades *[positive somatoform and psychoform: EP]*. As the excitement subsided the dramatic actions gave place to mere spasmodic

> movements and contortions which in turn would subside and leave him sleeping quietly *[gradual change from complete domination of EP to partial intrusion into ANP]*.
>
> *Case H, Dissociative "attacks"* (Mott, 1919, pp. 166-7): Captain J–, age twenty, was admitted December 18th, 1915, exhibiting a purposive motor delirium like that of a man suffering with terrifying hallucinations; thus he sat up in bed muttering continuously, moving his head and body from side to side, stretching out first one hand and then the other as if pushing away some hateful object, alternating this movement by that of passing his hand across the forehead. There appeared to be a perseveration of the gestures of horror *[positive somatoform and psychoform, e.g., in the muttering, it is ideas that are reactivated: complete domination of the EP]*. When, however, his mind was diverted by conversation he would answer questions rationally and the movements would become quieter, although his utterances remained jerky and hesitant *[negative somatoform: partial functional loss of ANP]*. It was ascertained that he had not lost consciousness when the shell exploded near him, but that he had received a terrible emotional shock. A piece of exploded shell had knocked off the head of a brother officer while he was talking to him, scattering blood and brains over his face. . . This officer even after a year had not received emotional stability, and finally had to be boarded out as permanently unfit.

The above two cases do not mention whether the ANP was subsequently amnestic for the EP re-experiences. Our view, however, is that some degree of amnesia is implied by the nature of the dissociative division of the personality. In general, we should keep in mind that amnesia is dimensional, ranging from a variety of partial forms to complete absence of memory. McDougall (1920) felt that using the term ''amnesia'' in considering all grades of dissociative functional loss was

> abundantly justified; not only because the cases form a series continuously graded in degree of completeness . . .; but also because the slighter and the more pronounced degrees of amnesia are alike in the nature of the mental and bodily disturbances in which they play the essential part, and in the essential principles of the treatment which they demand for their relief–namely, the bringing into clear consciousness and a readjustment of the attitude of the patient to the content of the amnesia. (p. 187)

In summary, from a functional point of view, somatoform symptoms are the result of fixation and conditioned responses in the ANP (avoidance of the

trauma) and in the EP (fixation in the trauma). While the ANP is persistently avoidant and amnestic–to a greater or lesser degree–of the trauma, the EP maintains a chronic hypermnesia of the trauma, with an extreme retraction of the field of consciousness that usually excludes the present moment. That is, the EP is fixated in the trauma, and reexperiences various aspects of the trauma.

In these WWI cases, we have analysed somatoform symptoms from several different perspectives and conclude that traumatic intrusions are positive dissociative phenomena, and complete traumatic reexperiences are also dissociative. It follows that all phenomena that are manifestations of trauma re-experiences (reactivated traumatic memories), such as flashbacks, should be seen as *positive dissociative symptoms*. To the extent that this theoretical position can be accepted by students of trauma, they cannot but consider the reexperiencing phenomena in PTSD, such as ''recurrent and intrusive recollections of the event, including images, thoughts, or perceptions'' (APA, 1994, p. 428), as positive dissociative phenomena. The same is also true for Acute Stress Disorder (ASD). Unaware of this point of view, the authors of a leading article in the *American Journal of Psychiatry* on both disorders stated (Marshall, Spitzer, & Liebowitz, 1999): ''[T]he presence of dissociative symptoms might be recognized as an associated, but not required, feature of acute PTSD'' (p. 1683). The realization of the existence of both negative *and* positive dissociative symptoms might have led them to conclude that both PTSD and ASD are essentially dissociative disorders.

In summary, various negative and positive somatoform symptoms have been described. We have discussed dissociative somatoform symptoms manifested in the EP, in addition to those of the ANP. We have proposed a theoretical position that intrusions are dissociative in nature, leading to the conclusion that traumatic stress disorders are, in fact, essentially dissociative in nature. Somatoform symptoms have been demonstrated to be an integral part of dissociative symptoms. Below, we postulate some ideas regarding the especially high prevalence of somatoform dissociative symptoms in WWI combat soldiers.

FORCED IMMOBILITY, FREEZING AND SOMATOFORM DISSOCIATION

Compared to war neurosis patients from WWII, mental casualties during the Great War were much more characterized by somatoform dissociative disorders (e.g., Lefebvre & Barbas, 1984). An important factor explaining the sheer magnitude of such disorders was the static nature of trench warfare, characterized by forced personal immobility, especially during the heavy

bombardments which could last for hours or even days. Leed (1979) remarked that when the war

> became again a war of movement with the German offences of 1918, even though the fighting was intense and exhausting, the incidence of war neurosis dropped dramatically. It was generally recognized that neurosis was germane to trench warfare and the peculiar emotional states that were generated by stable, siege war. It was precisely the immobilization of combat that seemed to be the most basic underlying reality of the neurotic symptom. (p. 181)

Leed continues with a quote from Maxwell (1923):

> Experience has shown that a high degree of nervous tension is commonest among men who have . . . to remain inactive while being shelled. For the man with ordinary self-control this soon becomes a matter of listening with strained attention for each approaching shell, and speculating how near it will explode; and behind this thought looms another, namely, how many seconds before he will be blown to pieces. An hour or two of this strain is more than most men can stand. (p. 66)

Rivers (War Office Committee, 1922, pp. 56-7; cf. Leed, 1979) observed the same kind of effects in the Air Force, where nervous breakdown was a function of the fixity and not the intensity of battle. Pilots, men with some active control over their fate, had the fewest cases of mental breakdown. Observers, who were occupied in other ways but were not in charge, exhibited more severe symptoms. ''In the balloon service, where men were tethered above the front to offer excellent stationary targets to enemy fliers and artillery, psychic casualties outnumbered physical wounds. This was the only branch of service in which this was so'' (Leed, 1979, p. 182).

Prolonged forced immobilization (e.g., in the trenches) can be related to extreme loss of internal locus of control, particularly regarding the ability to move in order to evade threat to bodily integrity. Thus, WWI soldiers were often in situations of chronic threat to life, without hope of defending themselves by moving out of harm's way. In addition, trench life itself was a chronic assault on mental and physical integrity, leaving soldiers trapped between two serious threats, the one continuous (the trenches) and the other intermittent (bombardments). The desperation and helplessness of such conditions was expressed by a Scottish regimental soldier at Gallipoli:

> . . . I might not have been wounded in body but I was wounded in my mind. I don't know if you can imagine it but obviously when there's shell fire, you get down to get cover . . . so you get down and you can't

> get your nails into the ground and your head under the ground, you can't get down because you can't go any further . . . How the devil did you get out of that unscathed? (Hay, quoted in Macdonald, 1988, p. 84)

Emerging data indicate a subgroup of negative symptoms best predict trauma, especially physical abuse and threat to life by a person, i.e., anesthesia, analgesia and motor inhibitions (Nijenhuis et al., 1998a-c, Nijenhuis, Van Engen, Kusters, & Van der Hart, 2000; Waller et al., 2000). Such data can also be interpreted as being related to instinctual activation of evolutionary prepared animal defense states, e.g., fight, flight, freeze, submission (Nijenhuis, 1999; Nijenhuis et al., 1998 a&b; Nijenhuis, Van der Hart & Kruger, submitted). We might thus hypothesize that the high rate of somatoform dissociative symptoms in WWI combat soldiers was, at least in part, due to forced immobility in the face of threat to bodily integrity, thereby evoking chronic animal defensive states, in particular, freezing, with concomitant somatoform manifestations.

The high rate of somatoform dissociation in WWI combat soldiers also led to complexities and divergent beliefs regarding appropriate diagnosis. We will address this issue in the next section.

SOMATOFORM DISSOCIATION AND DIAGNOSTIC ISSUES IN TRAUMATIZED WWI COMBAT SOLDIERS

During WWI, the major psychiatric diagnostic category involved the *war neuroses* (*psychonévroses de guerre, Kriegsneurosen*)–initially called *shell shock* by British physicians (Myers introduced this controversial term in 1915). Generally, military psychiatrists distinguished two subcategories, i.e., *hysterical disorders* (e.g., Babinski & Froment, 1916; Gaup, 1915; 1916; Léri, 1918; Myers, 1940; Roussy & Lhermitte, 1917), which included the somatoform dissociative disorders, and *neurasthenia* (e.g., Lépine, 1917; Myers, 1940; Simmel, 1919; Wright, 1917; see Young [1995], for a more detailed discussion). Myers (1940) described neurasthenia as a disorder primarily caused by exhaustion, and included symptoms such as abnormal irritability, depression, loss of confidence, loss of concentration ability, headache, general fatigability and loss of sleep and appetite. It was generally thought that officers suffered more from neurasthenia, and the ''other ranks'' from hysterical disorders (e.g., MacCurdy, 1918; Myers, 1940; Wittkower & Spillane, 1940). Actually, in many cases both diagnostic categories overlapped.

Hysteria. WWI physicians saw in a whole range of psychological and somatoform dissociative symptoms in many traumatized patients–often with one symptom, such as dissociative amnesia or dissociative paralysis, as dom-

inant. Brown (1919b) noted that all the severe cases of shell shock near the firing line in France who showed ''loss of sensory or motor powers'' also suffered from memory loss (amnesia). All these cases were subsumed under the diagnostic categories of hysteria or shell shock. We would consider today that all cases of traumatic stress correspond to the classic 19th century definition of hysteria, involving a lowered level of integrative mental abilities (whether it be from trauma, illness or extreme fatigue), manifested in the retraction of the field of consciousness and dissociation.

Conversion disorders. Several authors on traumatized World War I combat soldiers emphasized the dissociative nature of ''hysterical'' symptoms such as anesthesia, contraction, mutism (e.g., Brown, 1919a&b; McDougall, 1926; Myers, 1940). Thus, McDougall (1926) remarked: ''The evidence of fragmentation may seem strongest in the case of those minor dissociations that result in such disabilities as an anaesthesia of a limb'' (p. 543). Other authors adopted the Freudian concept of ''conversion'' (e.g., Eder, 1917; MacCurdy, 1918; War Office Committee, 1922) which is still recognized in the DSM-IV (APA, 1994) diagnostic category ''conversion hysteria.'' Brown (1934) eventually mixed his dissociative perspective with Freud's notions and stated that somatoform dissociative symptoms–as we call them–are conversion symptoms, because ''they represent painful emotion converted into physical innervations'' (p. 91). McDougall was highly critical of this view: ''Even less satisfactory is the language of those psychoanalysts who are content to postulate within the organism a 'mechanism' of conversion through which various mental entities are put, much as you put in a pound of pork at one end of a mechanism and get it out in the form of sausages at the other'' (p. 276). The recent research done by Nijenhuis and colleagues (Nijenhuis, 2000; Nijenhuis et al., 1996) strongly indicates that those World War I authors, and Janet before them, who emphasized the dissociative nature of ''hysterical'' symptoms, were correct. This fact was also recognized in the ICD-10 (WHO, 1992) when ''conversion disorders'' were renamed as dissociative disorders of movement and sensation.

Dissociative symptoms versus dissociative disorders. Specific dissociative symptoms were noted but not used as separate diagnostic categories, such as the DSM-IV and the ICD-10 later refined. Consequently, in this article we have used the concepts of dissociative disorders and dissociative symptoms interchangeably. WWI physicians also noted that the somatoform dissociative symptomatology was extremely varied (e.g., Babinski & Froment, 1918; Bickel, 1918; Brown, 1918, 1919a&b; Eder, 1917; Ferenczi, 1919b; Gaup, 1916; Grasset, 1915; Kutzinski, 1918; Léri, 1918; Liebermeister, 1917; McCurdy, 1918; Mott, 1919; Myers, 1915, 1916a&b, 1940). Whenever applicable, various subcategories of these somatoform dissociative disorders were described, such as monoplegia and paraplegia among the dissociative

paralyses. Authors differed in opinion about the most common forms of somatoform dissociation. Myers (1916a) reported that about 25% of the large numbers of shell shock which had come under his observation ''met . . . with various disorders of cutaneous sensibility'' (p. 608), such as anesthesia and analgesia. MacCurdy (1918) stated that dissociative mutism was most frequently seen, followed by various other motor disorders. Léri (1918) noted dissociative convulsions and dissociative mutism as the most frequent ones, and Babinski and Froment (1918) observed it was dissociative trembling, followed by dissociative paralyses and dissociative ''attacks.''

All the dissociative disorders seemed to have fulfilled the common criterion of the present ICD-10 dissociative disorders, i.e., ''a partial or complete loss of the normal integration between memories of the past, awareness of identity and immediate sensations, and control of bodily movements'' (WHO, 1992, p. 151). However, the range of such somatoform dissociative disorders as observed in World War I combat soldiers is much more extensive and detailed than those listed in the ICD-10. For instance, dissociative pain disorder and dissociative tics are not identified as such in the ICD-10. (The DSM-IV has been completely neglectful of the dissociative nature of such symptoms and disorders.) In McDougall's (1926) case example of a tic, its dissociative nature is clearly demonstrated.

> *Case I, Dissociative tic* (McDougall, 1926, p. 300): A tough soldier, who had seen much service at the front, displayed an obstinate tic, consisting in a twitching of the head toward the left shoulder *[positive somatoform]*. This was complicated by a continuous inability to hold his head erect; the neck was kept bowed forward. The history was as follows: He was advancing in an attack, carrying two heavy buckets of ammunition by means of a strap passed over his neck. While his neck was thus bowed by the burden, a shell-explosion buried him. In the light of other cases we may suppose with some confidence that, at the moment the shell fell, he made some violent movement of the head to the left, in order to free himself of his dangerous burden. When he recovered consciousness the tic set in. It was thus a fixation of a bodily attitude and movement of the moment of the emotional shock *[and this fixation marks the EP]*.

Various other authors report similar cases (e.g., Eder, 1919; Kardiner, 1941; Simmel, 1919). Most case examples of tics pertain to the muscles of the face, neck and shoulders, but Simmel (1919; also quoted by McDougall, 1926) presented a typical tic of the fingers:

> *Case J, Dissociative repetitive movements* (Simmel, 1919; McDougall, 1926, pp. 300-1): The leading symptom was a peculiar rotary motion of

> the forefinger and thumb *[positive somatoform: ANP]*. The symptom was eliminated by direct suggestion; but reappeared immediately after a fearful dream which the patient could not recollect *[negative psychoform: ANP, amnesia]*. In hypnosis the dream was at once recovered, namely, a Russian soldier throwing himself upon the patient. He then recollected that he had seen this Russian appear upon the parapet of the trench as he was adjusting, by screwing action of finger and thumb, the time-fuse of a hand-grenade, and that in the next moment he was ''knocked out'' by an explosion.

Organic versus functional symptoms. The WWI army physicians–many of them neurologists–were generally very keen on differentiating organic from functional (including dissociative) symptoms (e.g., Babinski & Froment, 1918; Gaup, 1916; Hargreaves, 1940; Léri, 1918; MacCurdy, 1918; Mott, 1919; War Office Committee, 1922). A major concern was that somatoform dissociative symptoms could develop concurrently with organic injury, creating a complex issue of comorbidity. Grasset (1915; also quoted by Brown & Williams, 1918) reported that out of 193 cases of traumatic lesions of the nervous system examined by him during the first three months of his service, 59 cases of war neuroses were found. The following case, from MacCurdy (1918), illustrates the frequently observed overlap between concussion and dissociative symptoms, and the difficulty in distinguishing them.

> *Case K, Concussion, fatigue tremors, spasms* (MacCurdy, 1918, pp. 103-105): The patient is a private in the artillery who enlisted in December 1914, but did not reach France until March 1916. His history showed that he had some mild neurotic tendencies in as much as he was afraid of high places, uncomfortable in thunder-storms, and did not like to go into tunnels. In other respects he was quite normal and seemed to have an open personality and to be quite sociable. He was happily married. He enjoyed his work at the front tremendously and the severe strain of long continued duration produced no symptoms, not even subjective fatigue. On August 2, 1916, when he had been fighting for four months, he was buried by the earth thrown up from the explosion of a heavy shell, and suffered severe concussion. Consciousness, as far as he could remember, returned only after three weeks and following that for about ten days he suffered from lapses of consciousness *[reduction in LOC]* whenever he exerted himself in the slightest degree. For months he continued to be extremely weak *[Possible negative psychoform and somatoform symptoms, or lingering neurological deficits]*. Soon after recovering consciousness for the first time he found that he was easily startled by sudden noises, but had only occasional nightmares of fighting, and absolutely no continuous anxiety during the day.

> He was, as is often the case after severe concussion, subject to almost constant tremors that were independent of any conscious anxiety *[Possible positive somatoform symptom, or lingering neurological deficits]*. This ''shakiness'' as he termed it, continued whenever he made any exertion for some months, and he found that the only way that he could control it was to cross his legs and hold them stiffly in this position.

Malingering. Among army physicians there existed differences of opinion about the prevalence and the practicality of detecting malingered shell shock, including the somatoform dissociative disorders (War Office Committee, 1922). Some physicians regarded cases of neurasthenias as more genuine than cases of somatoform dissociation, which fell under the category of hysteria. Others believed that simulation was rare, but exaggeration of symptoms common. Brown (1918) reported that he found 28 malingerers (less than 3%) in a series of 1000 patients with major hysterical (dissociative) symptoms. The War Office Committee concluded that, with regard to malingering, ''close and often prolonged observation may be necessary, that occasionally doubt may still remain and that in all important cases the decision should be made by a specially trained physician well acquainted with functional nervous disorders'' (p. 142). MacCurdy (1918) attempted to differentiate pure somatoform dissociative disorders from malingering by emphasizing inquiry into

> the mental attitude of the patient before the onset of the symptoms. In a true hysterical case an admission is apt to be made as to the breaking down of adaptation to warfare and the consequent wish to be rid of it all, particularly the wish for an incapacitating wound. The malingerer is not apt to reveal the history because the symptom represents this wish to him quite consciously. (p. 92)

TREATMENT

It is beyond the scope of this article to go into much detail on treatment issues, but we will include a few general remarks on the choice of specific treatment approaches, the timing and location of the therapy, and treatment outcome. Treatment approaches of the somatoform dissociative disorders in WWI soldiers depended largely on the prevailing understanding of their nature. Initially there were two general ways of understanding shell shock (including somatoform dissociative disorders): one was the view that they were essentially organically determined (e.g, Lépine, 1917; Mott, 1916; Oppenheim, 1915); the other was that they were expressions of cowardice and malingering. The latter view led to harsh approaches to soldiers exhibiting these symptoms, up to the point of executions for desertion. Psychiatric

treatment–especially in Germany, Austria (cf. Eissler, 1986), and France–could be extremely cruel.

Eventually, the view that these disorders were essentially psychogenic disorders–to which organic factors could contribute–became dominant. The issue of cowardice or malingering was never satisfactorily resolved, however (cf. Shephard, 1999; War Office Committee, 1922). Some agreement existed among British and French physicians that treatment of the somatoform dissociative disorders should consist of well-defined stages: (1) *preparatory,* including rest, medical examinations, reassurance, and psycho-education; (2) *stage of active treatment,* and (3) *re-educative and occupational stage* (War Office Committee, 1922, pp. 133-4). ''Active'' treatment approaches consisted of symptomatic treatment or exploratory therapy. The former included disciplinary techniques, persuasion, suggestions (e.g., for hypnosis; see also Cardeña et al., 2000), behavioral exercises, physiotherapy, hydrotherapy, gymnastics, manual work, faradism (the application of–often painful–electric current to the afflicted body parts: one of the most popular treatment techniques), isolation, and rest. Exploratory treatment consisted of uncovering the traumatic experiences supposedly underlying the symptoms and letting the patient more or less relive these events. Advocates of this approach often used symptom-oriented techniques first.

Among therapists applying exploratory approaches, differences of opinion existed regarding the correct healing principle: abreaction or relief of dissociation and subsequent integration of the personality (for reviews, see Brown, Van der Hart & Graafland, 1999; Leys, 1994, 2000; Van der Hart & Brown, 1992). Our current understanding of abreaction is that it is an incorrect treatment principle, associated with the idea of reliving or *revivifying* trauma in order to release affect, rather than a relief of dissociation and subsequent integration (Van der Hart & Brown, 1992; Van der Hart, Steele, Boon & Brown, 1993). Consistent with the integrative rather than the abreactive approach, Myers (1940) formulated the treatment goal of the integration of the patient's EP and ANP:

> [T]he treatment to be recommended–which is particularly important and easy in early cases seen in France–consists in restoring the ''emotional'' personality deprived of its pathological, distracted, uncontrolled character, and in effecting its union with the ''apparently normal'' personality hitherto ignorant of the emotional experiences in question. When this re-integration has taken place, it becomes immediately obvious that the ''apparently normal'' personality differed widely in physical appearance and behaviour, as well as mentally, from the completely normal personality thus at last obtained. (pp. 68-9)

This re-integration implied that all dissociative symptoms were resolved.

Brown (1919a) indicated that exploratory approaches were especially indicated when dissociative amnesia was part of the symptomatology:

> In 15% of all the cases seen by me in the field there was pronounced loss of memory, combined with the different varieties of physical functional symptoms (paralysis, mutism, deafness, contracture, etc.). My method of dealing with these cases was to restore the memory in a state of light hypnosis, taking care to encourage the revival of the emotional elements of the forgotten experience in all their original intensity. The result was that the accompanying physical symptoms disappeared of themselves, with more or less completeness (. . .), without the need of making specific suggestions that they should disappear. (p. 835)

Regardless of the exploratory approach, these clinicians understood the importance of recognizing that somatoform symptoms were not simply a condition of the ANP, but indeed, involved dissociated states that were not yet integrated into the ANP. Thus clinicians attempted to access the EP in its fixated traumatic state, to allow for eventual integration with the ANP.

Another important treatment issue pertained to the timing and location of therapy. Many authors noted that in most cases, treatment was easy and successful when applied early and near the front lines (e.g., Brown, 1934; Dumas, 1919; Eder, 1917; Léri, 1918; Wilmanns, 1929). This finding inspired Myers, in the British Army, to develop treatment centers near the front. Thus, Brown (1918), one of the most successful clinicians in one such center, reported having dealt with 2,000 to 3,000 cases of war neurosis between November 1916 and February 1918. The majority were seen within 48 hours of breakdown (with the majority of them very ''light'' cases [Brown, 1919a]) and 70% were returned to the line after an average of a fortnight's rest and treatment. Brown (1919a) reported that at the end of 1917, he was able to return 91% to duty. In a subsequent paper, Brown (1919b) stated he saw 121 cases of dissociative mutism during this period of time. ''Every one of them spoke when made to live again through their terrifying experiences. Some of them stammered, but these were a small minority. I did not need to give a specific suggestion that they would be able to speak'' (p. 735).

We would express doubts about sending most cases immediately back to the front, given our understanding of the complex nature of dissociative reactions. There were no statistics kept on recidivism, except a general guideline that if a soldier broke down twice it was useless to send him back to the front again (Myers, 1940), so it is impossible to determine how many of those initially sent back to the front eventually developed chronic shell shock. Cases treated in the rear country, which in British cases meant the U.K., were much more refractory or treatment resistant; in any case, treatment took much

more time (Brown, 1919a; Léri, 1918; Roussy & Lhermitte, 1917; War Office Committee, 1922). This was not only determined by the fact that eventually the more serious cases were sent to the rear. One of the lessons learned during WWI, and subsequently applied during WWII and other wars, is the need–if at all possible–for treatment centers close to the lines (Myers, 1940). One presumed factor was that cure in the rear country meant to be sent back to the danger zone, which could be perceived as punishment for improvement. In his report on treatment outcome of 230 patients with dissociative disorders of movement in a clinic at Heidelberg, Germany, Stern (1918) stated that 177 of them were eventually ''unsuitable for combat,'' while 33 were still or again in army service. Actually, only 1.7% of all 230 patients became ''combat ready'' again, with another 12% active in noncombat units. Other reports were not much more encouraging.

In short, WWI physicians developed a wide range of treatment approaches, both symptom-oriented and exploratory, for ''hysterical disorders,'' i.e., the somatoform dissociative disorders and related dissociative disorders. Early treatment, in frontline treatment centers, was considered to be faster and more effective than treatment in the rear. There was also a development to send the more serious cases to the rear. However, when treatment success was specifically measured in terms of becoming ''combat ready'' (the main goal in general), many reports, as exemplified by Stern (1918), were not positive.

CONCLUSION

Allan Young (1995), in his most interesting chapter on World War I trauma, concluded that the developments in certain fields of medical science were accelerated by the carnage of WWI's killing fields. ''In the case of the psychogenic traumas, there was no accumulation of knowledge, development of new treatments, or revision of established theories to parallel the changes that occurred in biological medicine'' (p. 85). It is true that most army psychiatrists relied on theoretical and clinical approaches developed by 19th century masters. Thus, Young (1995) remarked that Rivers conjured up the ghosts of Herbert Spencer, Hughlings Jackson, and Théodule Ribot. And Myers, whose views received a major place in this article, seemed to have taken up Pierre Janet's dissociation theory. For us, this view constitutes the best available description of the basic structure of trauma-related dissociation, with recent empirical data now beginning to converge with 150 years of clinical observations to validate this position of great heuristic value. Finally, in emphasizing the dissociative nature of many somatoform symptoms, as elaborated in this article, many WWI physicians were more correct

in their view than modern North-American psychiatry which espouses ''conversion disorders'' instead of the accurate theoretical understanding of the dissociative process, one which now has growing empirical evidence.

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