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After the Battle: Violence and the Warrior*

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Combat changes a person. This seems like an obvious proposition, but it is a proposition that is not fully appreciated by the average citizen. The only profession that explicitly trains its employees to harm, disable, and destroy another human being is the professional warrior—the soldier, sailor, airman, and Marine. More directly put, the primary objective of the combat troop is to kill. The primary objective of the combat support troop is to make sure the combat troop can complete his objective. For those who have never worked with a professional warrior, this is a concept that can be somewhat unsettling. Appreciating the cognitive and emotional sequelae that occur from struggling with the social, moral, and religious implications of taking another's life based on a job description is hardly an easy accomplishment. But, for the

* Much of the content of this chapter is based on the highly acclaimed book *On Combat: The Psychology and Physiology of Deadly Conflict in War and in Peace*, by Lt. Col. (Ret.) Dave Grossman and Loren W. Christensen.

nonmilitary practitioner, it is important at least to appreciate the warrior's beginnings to understand where he* is headed.

Somewhat limited in depth, the psychological literature does provide examples of increased risk of violence perpetration among some, but certainly not all, combat veterans. The risk of domestic violence is particularly high in this population (Taft et al., 2005, 2007); however, most studies have looked at this issue within the context of posttraumatic stress disorder (PTSD) and Vietnam era veterans. Although certainly not as common as partner abuse, murder committed by veterans is not unheard of, particularly in the Special Forces (SF) community. Several cases have gained considerable attention in the media over the past few decades. One of the most extreme examples is that of Captain Jeff MacDonald, a U.S. Army physician and Green Beret who was convicted of killing his family in Ft. Bragg, North Carolina, in the early 1970s. It should be remembered that MacDonald, as a physician, had none of the military training of the Green Beret unit to which he was assigned, and he had never been to Vietnam. The most plausible explanation for his killings was dissatisfaction with his family and concomitant substance use; no one ever theorized that the killings had anything to do with MacDonald's military experience, which was negligible.

Even more disturbing was the series of killings in 2002 at Ft. Bragg when the wives of four Army soldiers were killed within a matter of 6 weeks. Three of these soldiers had recently returned from tours in Afghanistan. These events brought headlines pointing to such causal factors as antimalarial drugs, combat stress, and partner infidelity. The apparent rise in suicide rates, spiking in 2007, also raises the question of increased self-homicide by means of suicide (from the Latin *sui* for "self" and *cidium* for "a killing").

Although the adaptability and necessity of aggression in the combat environment are discussed in greater detail later, the point that aggression is an integral part of the warrior armamentarium as much as the rifle, ammunition, and the armored vest cannot be stated enough. Clinicians who treat service members usually ask: What happens when the warrior returns home from the battlefield? How does he compartmentalize this fundamental aspect of the warrior mentality? How does one go from a trained killer on the battlefield to an ordinary Joe in the civilian world? How can I prevent another headline?

In the following pages, it is our goal to illuminate the difficulties that may arise once the warrior returns from the battlefield. Specifically, we address how a soldier learns to manage the aggression, hostility, and, yes, even the desire to kill, which is considered to be adaptive in the combat environment. We discuss what it means to be a warrior and highlight some of the characteristics unique

* * For consistency and due to the fact that combat infantrymen are males, the authors use the masculine form when describing the service member. It is not meant to take away from the courageous sacrifice made by women in combat support roles often found on the frontlines.

to these individuals. We delve into the mentality of the warrior and how hostility and aggression are key components of his psyche. We discuss the myths and misperceptions related to veterans and violence, and, finally, we review factors that likely contribute to violence and aggression in the warrior after his return and ways to protect the service member and those around him.

Who Are These Men?

The third author (Grossman) introduced the concept of the *universal human phobia* in a series of papers he presented at the annual conventions of the American Psychological Association, American Psychiatric Association, and the International Congress of Critical Incident Stress Management. The concept is by no means a novel one, but it does attach a new name to something that is generally well known, nor is it truly universal, as it probably affects around 98% of the population. This universal human phobia is *interpersonal human aggression*.

In their book *On Combat*, Grossman and Christensen (2007) provide the example of a stranger walking into a crowded room and emptying a pistol into a random person. Up to 98% of the average audience would experience an extreme phobic reaction. Due to the fight instinct hardwired into our evolutionary make-up and the desperate nature of the situation, some may actually defend themselves against the attacker and become the aggressor. A few brave people may even risk their lives to care for the wounded, but most of the room would flee from the gunman and seek safety. In spite of the fear and the instinctual disposition to move away from the threat, and when every other sane, rational creature does what every ounce of their physical and psychological being tells them to, the warrior almost always moves toward the universal phobia. More accurately, he rushes toward it.

Today's soldiers, sailors, airmen, and Marines are the knights of old. Everyday they are asked to don their armor, secure their weapons, and purposefully confront danger to protect those they have sworn to protect. They are paladins in the most literal and contemporary sense. These men are typically not products of royalty or privilege, but represent the heartland of a country and the traditionalism of a nation. They are patriotic and loyal. They are honest and hardworking. More importantly, they are proud, self-sacrificing, and voluntary.

In the same work, the authors wrote about an anonymous military leader and his leader's thoughts about his men after watching them engage in uncommon acts of valor (Grossman and Christensen, 2007, p. xxii):

Dear God, where do we get such men? What loving God has provided, that each generation, afresh, there should arise new giants in the land. Were we to go but a single generation without such men, we should surely be both damned and doomed.

It is difficult to argue his point. If we were somehow forced to endure a single generation without the men who have so honorably agreed to be the point of the spear in defending a nation, we would certainly be both damned and doomed. Although difficult and costly, we could go for a generation without doctors, teachers, ministers, and, yes, even the guy that makes that perfect nonfat, sugar-free vanilla latte at our favorite coffee house, but we would still survive. One generation without warriors to defend our collective welfare against aggression would be catastrophic.

Although it is debatable, warriors are not born but rather are developed. They are built, trained, and nurtured. On the first day of basic training (or boot camp) these new professionals immerse themselves in a culture with a history and a tradition like no other. They learn to live by creeds and are taught about concepts such as honor, duty, courage, and sacrifice. These are not just words but real concepts that have genuine meanings and implications far beyond what the average citizen will ever know. They are trained in warrior tasks such as hand-to-hand combat, weapons proficiency, and battlefield medical care. They are also taught that aggression and the ability to kill without hesitation are part and parcel of being a warrior. The soldier who embraces these concepts and learns to control his impulses and behavior and to direct them against the enemy when called upon will be the ultimate warrior; in other words, controlled and deliberate aggression is key to being successful in this profession.

The Warrior Mentality

In *On Combat*, Grossman and Christensen (2007) discuss two types of people found on the battlefield: warriors and sheep. Sheep avoid the battle or refuse to participate, but warriors seem to have two basic attitudes as they go into combat. One group appears to look forward to it. The other group does not really want to do it, but since it has to be done their attitude is one of biting the bullet and getting the job done. Both are healthy responses. The following is an e-mail exchange with a reporter embedded with U.S. forces preparing to invade Iraq in 2003 (Grossman and Christensen, 2007, p. 139):

I know that a lot of what I'm hearing is bravado. You often hear things, like "I just want to get in there, get it over with and get the job done" or "It's just part of the job," both of which indicate a more detached view. How does one explain these two attitudes from a psychological point of view? Do you really buy it when you read about soldiers who say they want to go to war? What is driving these men? And, also, how does one account for the more detached attitude?

The reply was that a sizable number of warriors really do want to see combat. Some of this might be mindless bravado, but some of it is not. These warriors have trained for the "big fight." For many, anything less than a full-out brawl will be a letdown. What fuels this desire? Training, training, and more training.

As mentioned earlier, warriors are groomed, nurtured, and developed. They are taught that aggression and killing are acceptable, but contextual. They are taught that their job is to protect those who are innocent and to annihilate those who pose a threat. First, one deters and then one stops the threat. The most effective way to stop someone is to kill them. But, as mentioned earlier, this is contextual. There are rules of engagement in which deadly force can only be used under specific circumstances. When it is done right, as he has been trained, the threat may die, a possibility the warrior must accept and embrace.

For the warrior, accepting the need to kill is protective. In the chaos and physiological intensity that unfolds in any firefight, the warrior will not respond with panic. He will slow his breathing, scan his environment, and engage his target. What gets people killed is the individual who cannot control his emotions and who debates the moral and religious implications of taking another's life while bullets fly over his head. The correct response is this: "I think I'm going to have to kill this guy. I knew it might come to this some day. This is what I trained for."

In his Pulitzer Prize-nominated book, *On Killing: The Psychological Cost of Learning to Kill in War and Society*, Grossman (1995) discusses a set of stages that one goes through when taking a life. First is the exhilaration stage in which there might be joy. The common psychological term for this is "survivor euphoria" and combat survivors know that there can be an intense relief and satisfaction that comes from killing your opponent and knowing that you will live another day. Then there is an overwhelming rush of remorse and guilt. Sometimes they say, "I just killed a man, and I enjoyed it. What's wrong with me? Is this normal?" Finally, there is a lifelong process of rationalization. If this process fails, it can be one of the paths to posttraumatic stress disorder (PTSD) or, at a minimum, a path to lifelong doubt, guilt, and ruminations about the event. Unfortunately, many of these men will never come to grips with taking another's life.

There is nothing wrong with those who are not disturbed by the killing or who may even derive joy from the act during combat. Let me say it again: There is nothing wrong with the men who find peace and satisfaction in killing on the battlefield. *On Combat* advances the idea that believing that a person will be irreparably damaged from a mental and psychological standpoint by the act of killing during combat is primarily a modern-day cognitive and emotional concept. Based on personal interviews with hundreds that have killed, Grossman (1995, p. 170) posits:

If you tell yourself that killing will be an earth-shattering, traumatic event, then it probably will be. But if you prepare yourself mentally and can rationalize and accept that killing is lawful and justified during combat then using deadly force does not have to be a psychologically damaging event.

Again, there is nothing wrong with those who find killing distasteful and unsettling, and such individuals deserve compassion and support. But, there is absolutely nothing wrong with those who are not troubled or disturbed by it. Combat kills enough. It is senseless to let combat experience ruin a warrior's life, especially if he could have prevented it through prior preparation. The key is mental preparation, to have the warrior spirit and the Kevlar mind before stepping on to the battlefield. This is the warrior.

Violence and the Warrior: Myths and Misperceptions

Is a new generation of crazed, suicidal, and otherwise dysfunctional veterans about to be unleashed on an unsuspecting homefront population? The answer is yes—but only if you believe a recent front-page *The New York Times* story. According to the paper, tens of thousands of vets are returning from Iraq “with serious mental-health problems brought on by the stress and carnage of war.” The number of soldiers eventually requiring treatment for posttraumatic stress disorder or the like, says *The Times*, could top 100,000. If that conjures up the image of the Vietnam vet—unable to cope with life and threatening either to kill himself or to go postal on innocent folks—well, it's probably meant to.

Such is the beginning of a *New York Post* editorial that ran in 2004 (Anon., 2004). Only a little more than a year into Operation Iraqi Freedom (OIF), a plethora of articles and publications began to emphasize the numbers of soldiers who supposedly would return from Iraq and Afghanistan psychologically scarred from their service in combat. A January 13, 2008, article in *The New York Times* was subsequently widely circulated after it claimed that 121 OIF and Operation Enduring Freedom (OEF) veterans had been charged with murder after returning from combat; however, the article was widely criticized as it failed to give any professional analysis of such claims. This included the fact that adjusted for murders per 100,000, killings in the District of Columbia itself accounted for at least twice the number of deaths as the veteran figures, and this was after a decline of murders in the District which had spanned at least 15 years. Indeed, cities in which the yearly murder rate probably exceeds that of OIF veterans include Detroit, Baltimore, New Orleans, Newark, St. Louis, and Oakland, along with the District of Columbia (Wikipedia, 2008).

Soon added to accounts of those needing treatment were the numbers of veterans who experienced concussions, often dramatically being described as “brain damaged,” and those with amputations and other disabling injuries that undoubtedly take a psychological toll. Many of these claims were unfounded, however, and exaggerated the real problems that did exist. Articles in *USA Today*, for example, quoted data from Walter Reed Army Medical Center, which seemed to imply that over 60% of returning veterans would be brain damaged, misrepresenting data that were from a highly specialized medical

unit that accepted only those patients most at risk for such injuries (Zoroya, 2005). *USA Today* also claimed at one point that more “brain injured” soldiers were to be found at Ft. Hood, Texas, than had been medically evacuated out of the entire OIF theater of operations (Zoroya, 2007). This “fact” was quite surprising to the second author of this chapter (Hopewell), who, as Co-Director of the Ft. Hood Brain Injury team, was in charge of monitoring such injuries at Ft. Hood and who found the claims of *USA Today* to be quite exaggerated. The initial findings of Hopewell and Christopher (2007) that fewer concussions were occurring among the armed forces than were often reported in the media and that the majority of those with concussions showed cognitive improvement and returned to duty have now been confirmed in a survey of 2525 infantry soldiers after their return from a year-long deployment to Iraq (Hoge et al., 2008).

Such embellishments by the media present two generally clear conclusions: Hundreds of thousands of veterans (extrapolating from *The Times* story) would return mentally unstable from the Global War on Terror and would show the potential for violence once back in society, and these veterans would require substantial mental health treatment. The overall theme is an extension of that repeated during the Vietnam conflict—that otherwise normal and well-adjusted American youth are trained by the military to kill and are then sent into the trauma of combat which leaves them scarred for life. Mentally crippled, they are then unable to adjust upon their return home and are unusually prone to violence, substance abuse, and mental instability.

The *New York Post* editorial continued, however: “Don’t get us wrong here: Wars—all wars—take a psychological toll on those who fight them. That’s been true throughout history. . . . We don’t mean to belittle the psychological trauma that war can—and, sadly, does—produce. But the myth of the dysfunctional vet that began with Vietnam has been created and spread, in large measure, by groups bitterly opposed to all U.S. military action. . . . This latest attempt at myth making needs to be challenged and discredited before it becomes, once again, received wisdom.”

Such Vietnam myths were finally and thoroughly discredited by the exhaustive work done by Burkett and Whitley (1998), who showed that as a group Vietnam veterans did not show nearly the problems that one would believe by reading newspapers or watching television or film. Indeed, people began to grow suspicious of the Vietnam PTSD figures as the numbers of veterans diagnosed and compensated for PTSD grew to more than double the number of total service members known to be involved in actual combat operations in Vietnam. The numbers of patients with PTSD from Vietnam are now acknowledged to have been inflated about threefold, with the number of severe cases at 18.7% after American withdrawal and 9.1% 12 years after the communist North invaded and ended the war. This was in sharp contrast to the estimate of 30.9% which had been reported for years (Dohrenwend et al., 2006).

Indeed, Burkett and Whitley (1998) showed that the vast majority of veterans were as well adjusted or even more successful than their nonserving civilian peers, and estimates of violence and incarceration of these veterans did not seem to differ from their nonserving peers. Yet, no one can dispute that some veterans show signs and symptoms of mental scarring as casualties of war, and for some these scars eventually erupt into their lives and the lives of their family members as violent action, violence that appears to have followed the veteran home from the field of combat and explodes as an unwelcome guest when the veteran should, in theory, be at rest from violence.

The problem here is delineation of a truthful estimate of the amount, severity, and nature of violence that may occur among combat veterans and devising an accurate way to identify, treat, and predict such trends without embellishment for political gain, unwarranted mitigation to avoid personal responsibility, or the disparagement of true heroes. This chapter, therefore, reviews the factors that contribute to violence, how this may occur in a veteran population, how to avoid the excesses of the “Whacko Vet” myths, and how to identify and intervene effectively in such disorders.

Risk Factors

As has been noted, many factors contribute to the fact that the majority of warriors return from the battlefield, resume normal lives, adjust, and often succeed better than their nonserving peers and are never unusually violent. Despite the most rigorous training and monitoring in the world, things still can and do go wrong, and some violent acts will be committed by a minority of veterans after leaving the battlefield and returning to civilian life. In addition to the “habit of violence,” the acute and sustained stress of combat and the potential neuropsychological changes resulting from brain injury can change the nervous system and possibly the mind and behavior of the warrior.

Impact of Sustained Stress

Early in the 20th century, one of the most influential of all psychologists, Clark Hull, believed that human behavior is a result of the constant interaction between the organism and its environment; therefore, even with substantial training and overlearning, stimulation occurring in the environment can trigger individuals to react in ways they normally would not, prodding them at times to violence. Hull noted “when survival is in jeopardy, the organism is in a state of need (when the biological requirements for survival are not being met) so the organism behaves in a fashion to reduce that need” (Schultz and Schultz, 1987, p. 238). Simply, the organism behaves in such a way that reinforces the optimal biological conditions that are required for survival. A number of classic Hull experiments were even designed mathematically to predict the very point at which an organism (in Hull’s case, rats) would inhibit a response or would become overwhelmed with anxiety to the point that it

would attack or engender risk of self-harm to achieve a goal. To extrapolate to humans, if threat or anxiety becomes too much for the veteran to bear, he or she may therefore revert to a protective mode, which may include violence as a way to cope with stress. Of course, a number of other factors may also lower this threshold, such as physical or mental illness, fatigue, and alcohol or substance abuse. It now appears that it is this sustained or even multidetermined stress that may be the cause of at least some, if not much, of the long-term residuals from concussion rather than the cognitive impact of the concussion itself, such as those experienced in blast injuries (Hoge et al., 2008).

Hull also recognized that organisms were motivated by other forces, those known as *secondary reinforcements*. This means that previously neutral stimuli (such as fireworks) may assume drive characteristics because they are capable of eliciting responses that are similar to those aroused by the original need state or primary drive (such as incoming mortar and rocket explosions) (Schultz and Schultz, 1987, p. 240). The veteran therefore begins to react to the fireworks on the Fourth of July as if they were a mortar barrage, showing increased anxiety, fear, startle reactions, and perhaps even fleeing, fighting, or hiding.

The phrase “fight or flight” is often used to describe the body’s appropriate response to a stressful stimuli. When an individual is exposed to real or perceived danger, a series of complex, interactive neurophysiological reactions occur in the brain, the autonomic nervous system, the hypothalamic–pituitary–adrenocortical (HPA) axis, and the immune system. These responses are thought to have initially developed during evolution to provide the vital total body mobilization required for the individual to survive a life-threatening danger. During the alarm reaction and the stage of resistance to acute stress, the parts of the brain involved in arousal, attention, and concentration functions become activated. This results in hypervigilance to the threat and a decrease in attention to less pressing environmental stimuli—the warrior in the midst of a firefight, for example, may not know he has been wounded until the end of the fight. This also contributes to the telescopic vision and perceptual distortions well documented by Grossman and Christensen (2007).

The degree of anxiety varies with the degree of threat, ranging from jitters to outright panic and terror, and stress reactions have often been considered a *spectrum reaction*, merely annoying to some but creating substantial disability in those either more vulnerable or exposed to more severe and cumulative stress. In addition to changes in brain functioning, other organ systems are involved in this same systemic reaction. The sympathetic division of the autonomic nervous system (SNS), which originates in the brain and distributes throughout the rest of the body, implements the brain’s mobilization of the rest of the body. The activation of the SNS increases blood pressure and pulse, dilates the pupils, increases respiratory rate, increases the blood supply to the muscles, and inhibits digestion. The HPA axis is activated, thereby releasing a variety of stress-related hormones. Neural and hormonal signals activate the

adrenal glands, which release important stress-related hormones, including epinephrine (or adrenaline) and cortisol. These hormones enter the bloodstream rapidly, acting in all organ systems to prepare the body to fight or flee. The cost of such an adaptive hyperarousal mechanism can be substantial; the alarm reaction consumes energy and depletes stores of available neurotransmitters and hormones.

With sufficient time between threatening events, the body usually makes substantial progress in returning to a previous homeostasis or equilibrium by replenishing the stores of neurotransmitter, hormone, glucose, and other important chemicals. When the stressful event is of a sufficient duration, intensity, or frequency, however, the body does not have the capability to sustain this high state of arousal—the stress-responding apparatus becomes fatigued. One theory is also that under extreme stress of repeated stress (such as repeated attacks or deployments), neurotransmission may become overly sensitized. A type of kindling, or cascade, effect is also thought to occur when anxiety spikes and sets off the entire surge of HPA activation in an abnormal and maladaptive manner; consequently, changes in mood states and behavior may occur. It is now also known that more severe combat exposure increases later risk of risk taking, in that warriors who have been exposed to more violent levels of combat, those who have killed others (depending in part on the physical proximity in which the killing occurs), and those in contact with a high level of human trauma are those who show the highest levels of risk-taking, impulsivity, feelings of invincibility, etc. (Kilgore et al., 2008). Such factors, of course, may or may not translate into violence, but it is presumed that when combined with ingredients such as anger, substance abuse, irritability, etc., violence may well result.

The Contribution of Brain Injury

During the course of the current conflicts in Afghanistan and Iraq, traumatic brain injury (TBI) has emerged as a significant cause of injury to our warriors and has at times been designated the “signature injury” of the Global War on Terror. Although penetrating and severe closed head injuries are typically identified and cared for immediately, mild TBI (mTBI or concussion) may be missed, particularly in the presence of other more obvious injuries. Due to numerous deployments and the nature of enemy tactics, warriors are at risk for sustaining more than one mild brain injury or concussion in a short time-frame (DVBC, 2006). This is particularly true for those serving in high-risk jobs such as route clearance and bomb disposal units. Mild TBI, or as it will be termed here *concussion*, is not felt by itself to be a significant risk factor for violence. Yet, the question arises, how much, if at all, will these combat concussions contribute to aggression among returning veterans? We predict, that like PTSD and herbicide orange in the Vietnam era, OIF concussions will soon be blamed for everything from homelessness to murder.

It is true that violence can occur as a result of brain damage, but such damage usually must be rather severe and normally involves damage to areas that either control emotional responses or serve as inhibitory centers (braking systems), or both. Uncharacteristically violent behavior has been documented in patients after the onset of metabolic disease, dementia, and tumors and following head trauma or stroke, for example (Paradis et al., 1994). Such damage, though, normally must be significant, and one study done at the University of Southern California indicated that as many as six areas of the brain had to demonstrate significant abnormalities in order for a level of violence to occur that led to murder, conditions that rarely occur in concussion and do not occur in most veterans returning with concussion from Iraq or Afghanistan (Hopewell and Christopher, 2007). As with any other problem, risk of aggression might be elevated by comorbid problems such as alcohol abuse, PTSD, or multiple concussions that are severe enough to cause more substantial damage. Further research into the correlation of concussion and PTSD confirm the 2007 findings of Hopewell and Christopher and suggest that many of the persistent difficulties shown by such patients are much more related to PTSD issues than the original concussion, the latter usually resolving (Hoge et al., 2008). Violent behavior after simple, uncomplicated concussion, therefore, should not be expected.

Among actually violent offenders, frontal lobe damage may result in a loss of inhibitory control over other brain centers, to include those areas that modulate fear, arousal, and emotion (Donavon-Westby and Ferraro, 1999). In addition to prefrontal lesions, areas of damage in the hypothalamus of the brain have been shown to be related to problems such as intermittent explosive disorder (Tonkonogy and Geller, 1992). In contrast, most concussions contribute to what is felt to be minute damage at the cellular level, such as axonal shearing, or, with blast injuries, cell death deep within areas such as memory centers (Taber et al., 2006). Blast injuries can occur as a direct result of blast-wave-induced changes in atmospheric pressure (primary blast injury), from people being struck by primary or secondary fragments (secondary blast injury), or by people being forcefully put in motion by the blast (tertiary blast injury) (Taber et al., 2006.) Such injuries may result in diffuse axonal injury, contusion, or even subdural hemorrhage. Diffuse axonal injuries are very common following closed head injuries and can result when shearing, stretching, or angular forces pull on axons and small vessels. Impaired axonal transport leads to focal axonal swelling, which, after several hours, may result in axonal disconnection. The most common locations are the corticomedullary (gray matter–white matter) junction (particularly in the frontal and temporal areas), internal capsule, deep gray matter, upper brainstem, and corpus callosum. Concussion also leads to a mismatch between cerebral demand for glucose as opposed to a drop in cerebral blood flow and decreased oxygen metabolic rate, the occurrence of which may result in metabolic and neurotransmitter dysfunction. This leads to a cascade of:

- Nonspecific depolarization
- Release of excitatory neurotransmitters
- Massive efflux of potassium
- Increased activity of membrane ionic pumps to restore homeostasis
- Hyperglycolysis to generate adenosine triphosphate (ATP)
- Lactate accumulation
- Calcium influx and sequestration in mitochondria leading to decreased oxidative metabolism
- Decreased ATP production
- Calpain activation and initiation of apoptosis
- Axonal swelling and eventual axotomy

Although irritability can occur, the most frequent symptoms seen after concussion are those of headache, impaired information processing (which people interpret as memory dysfunction), and photo/audio phobia. Most people with concussion want to withdraw and reduce stimulation, and few are violently aggressive. The vast majority also recovers well and return to normal function. If concussion is related to aggression and violence, it is most likely due to more severe damage from cumulative concussions being present, along with probably comorbid disorders such as noted above.

The Nature of the Job

Creature of Habit

On December 22, 2007, the U.S. Central Command Rest and Recuperation Pass Program announced its 150,000th participant since its inception in 2004. Often coming straight from combat duties in Iraq, warriors on pass are able to have four days of respite from the field. "The best thing is not having to worry about anything" said Paul Harris, an infantryman from Valdosta, Georgia. "I was riding in a vehicle through Qatar with no equipment, no rifle—it felt great. ...But I caught myself still looking along the roadsides, scanning rooftops ... it becomes a habit.

Stars and Stripes (Anon., 2007)

Much of a warrior's life becomes, and remains habit. Habit is as necessary to a combat troop as are food, water, fuel, and ammunition. Without habit, one is untrained, one is vulnerable, and one probably dies. From the first day of boot camp or officer's training, the recruit is drilled and drilled and drilled again in habit. It was only with the drilling of von Steuben at Valley Forge that the Continental Army began to become effective, with the soldiers marching, forming, firing, and reloading all in accordance with habit. One hundred and twenty-five years later, at the beginning of the 20th century, William James, one of the founders of psychology, defined as formal

scientific principles that which von Steuben knew as common sense in training men (James, 2003, p. 48):

- Habit is second nature, or rather, ten times nature.
- Ninety-nine hundredths or, possibly, nine hundred and ninety-nine thousandths of our activity is purely automatic and habitual, from our rising in the morning to our lying down each night.
- We are stereotyped creatures, imitators, and copiers of our past selves.
- The teacher's prime concern should be to ingrain into the pupil that assortment of habits that shall be most useful to him throughout life. Education is for behavior, and habits are the stuff of which behavior consists.
- We are mere bundles of habits.

Habits, however, are merely tools and means to an end. A hockey stick is essential to the game and provides hours of active sport for the entire team. Holding and manipulating the stick are so much a habit that a player may even perform the actions unconsciously; however, when swung in anger at a player, the very same hockey stick becomes a weapon. Warrior habits are much the same. They are critical and vital to survival and, just as in hockey, the game of survival in combat could not be won without extensive training that produces the instant and flawless habits needed when the warrior's life is in danger. On the other hand, hypervigilance while on pass in Qatar, much less at home in River City, America, is of less use and may be counterproductive.

In the Zone

Mihaly Csikszentmihalyi (1990) coined the term *flow* as the mental state in which a person is fully immersed in what he or she is doing. Flow is characterized by a feeling of energized focus, full involvement, and success in the process of the activity. Other terms for this or similar mental states include being *on the ball*, *in the zone*, or *in the groove*. Athletes generally talk about being in the zone or on an aerobic high when in this state. Some of the psychological aspects created in this state include:

- A distorted sense of time, as one's subjective experience of time is altered
- Concentrating and focusing, with a high degree of concentration on a limited field of attention
- A loss of the feeling of self-consciousness, the merging of action and awareness
- People becoming absorbed in their activity and the focus of awareness being narrowed down to the activity itself, with action awareness merging

Such a state is a clear example of what psychologists have long termed *overlearning* and has profound implications for survival in a dangerous situation such as combat.

Habits and skills learned for combat survival are considered by psychologists to be functions of motor or procedural memory and are quite different from other types of memory such as recalling a poem or when one was married (declarative memory). Procedural memory is also known to be encoded in the brain in an entirely different manner than are other memories. Whereas declarative memory uses primarily areas of the brain that process verbal and visual memories such as the hippocampus, procedural memories are largely processed through the brain centers used for muscle movement and coordination such as the basal ganglia, cerebellum, and motor cortex. Memories processed in this manner become so ingrained and permanent that they are virtually resistant to decay; for example, no one ever forgets how to ride a bicycle, drive a car, or play the piano, unless a progressive neurological illness literally destroys these areas of the brain.

It should now be obvious that critical warrior training, so absolutely essential to surviving combat, requires extensive overlearning and makes use of procedural/motor learning. The end result places the warrior in the zone, which is needed for survival. Such learning, however, is extremely difficult to suppress or unlearn, and the application of these skills in a civilian or home environment may place the veteran at risk. Fortunately, however, the human brain possesses the capability to take old habits and procedural learning and to make modifications to them to develop new ways of responding and adapting. Bike riders learn to ride motorcycles, high school quarterbacks may be switched to college receivers, and piano players often learn to play other instruments.

But, does such overlearning, this being in the zone, produce men who are ultimately killers when returned to society? Does such training increase the probability of violence? It is unlikely. Experts point out that the returning veteran is often a more integrated member of society and is less likely to use his skills inappropriately than someone who has never served in the military. What the veteran learns, as does the police officer, are restraint and discipline rather than impulsivity and carelessness. Research has continually shown that from the time of World War I, veterans as a group are less likely to be incarcerated, have higher educations, and generally achieve more success upon return to the civilian world than their nonserving peers (Burkett and Whitley, 1998; Grossman and Christensen, 2007). This is because, beginning with World War I, not only are recruits screened rigorously for mental attitudes, but their further training in discipline and restraint to use violence only in specific circumstances is also extensive and ongoing. As Grossman and Christensen (2007, p. 250) point out, veterans “were less likely to use those skills [of violence] than a nonveteran. The reason is clear: combined with learning to kill, they acquired a steely, warrior discipline—and that is the safeguard.”

Management of Aggressive Risk

Now that the primary factors related to aggression and violence in a veteran population have been identified and reviewed, what can be done to manage these risk factors? Current thinking formulates this risk management in terms of the three main interventions of:

- Prediction and communication of risk
- Post-deployment screening and service utilization
- Evidence-based therapeutic interventions

The Prediction and Communication of Risk

The first of these, prediction of risk, has already been reviewed to some extent. The importance of this issue is that risk management begins with prediction and identification. If some veterans are felt to be at risk for violence, what factors contribute to this and what issues would be predictive of violence? Secondly, how might this risk be managed therapeutically? To investigate the nature and causes of violent risk among veterans, it is hoped that one would be able to identify risk factors as well as be able to make at least a modicum of accurate prediction of risk.

In the general population, some risk factors have been posited. Although these factors are not specific to service members, they may be useful when assessing and communicating risk. They include: juvenile delinquency and family problems (Bonta et al., 1998); a history of harm and injury to others (Wolfgang et al., 1985); factors that suggest exploitation of others and a chronically unstable lifestyle (Hare, 1991); deviant sexual arousal and a history of maladaptive personality factors (Hanson and Bussier, 1998); substance use (Epperson et al., 1995); severe brain and frontal lobe damage (Donavon-Westby and Ferraro, 1999); spousal assault, criminal history, and poor previous psychosocial adjustment (Kropp et al., 1999); and a remote and recent history of violence, opportunity, and triggers (HOT) (Hall and Ebert, 2002).

Some argue, however, that the prediction of violent behavior in any circumstance is unreliable. Indeed, mental-health professionals have been cast from the one extreme of being essentially omniscient and being able to predict far-flung behavioral events with great accuracy to being completely incompetent to predict anything and no better than the average person in terms of predicting violence. The truth, as usual, seems to lie somewhere in between, and prediction has been enhanced by recent progress in both our technical tools as well as how we think about the problem.

Advances in predictive procedures have been developed that allow for relatively accurate predictions of illegal behavior, at least within reasonable time frames. (Harris and Rice, 1997). These measures are specific to different types of persons such as criminal offenders, antisocial personality disorders, the mentally ill, etc. The predictive accuracy of these procedures depends on

the collection of high-quality objective information, both historical and current. In addition, risk appraisal research indicates that violence is well predictable in some populations, such as those noted previously (Monahan, 1996). Interestingly, military service attempts to screen for all of the most predictive variables with the exception of sex. Ongoing programs of risk assessment research in psychology seek to improve the precision with which psychologists can estimate the risk of harmful behavior under specified conditions (Monahan and Steadman, 1994).

In addition to predicting risk, perilous factors must be communicated. Risk assessment by itself is useless if the assessment is not communicated and subsequently acted upon. An ideal system for communicating assessments of risk would provide clear, precise, and complete information regarding those assessments in a form that would be fully accessible to the parties who must make decisions and take action on the basis of those assessments. The system would also communicate this information in a manner that would reflect and facilitate the appropriate allocation and discharge of responsibilities among the participants in light of their competence and authority (Schopp, 1996). For example, a clinician might discern evidence of fear and agitation associated with delusions of being persecuted in a veteran who has previously engaged in assaultive behavior in response to similar states of emotional stress. The veteran has also been drinking heavily and his spouse has threatened to leave. Such observations need then to be communicated to family, healthcare givers, and pertinent authorities, who could arrange for a restraining order, shelter and a security plan for the wife and children, and treatment for the veteran.

Thus, clinicians might be able to provide reasonable estimates of risk by virtue of their ability to describe and explain: (1) psychological processes, (2) impairment of those processes, (3) the relationship between the current impairment and the person's impairment at the time of past dangerous conduct, and (4) the relationship between that past dangerous conduct and the impairment at that time. In this pattern of clinical risk assessment, professionals provide information relevant to an estimate of the risk represented by the individual in the current circumstances by describing and explaining that person's history of risky or harmful conduct in similar circumstances, to either mental-health or civil authorities who are empowered to undertake appropriate intervention, or both. The person's psychopathology constitutes one type of relevant circumstance in which risk may be assessed and subsequently communicated (Schopp and Quattrocchi, 1995).

Finally, the communication should ideally structure a prescriptive narrative that: (1) includes a categorization of level of risk, (2) provides an estimate of time structure, and (3) communicates a prescriptive narrative. In simple terms, the communication should inform those who are responsible for completing the action plan how significant the risk is, when it might happen, and what to do about it. A recommendation for a judge for a restraining order,

shelter and a security plan for the wife and children, and treatment for the veteran as outlined in the scenario above would be an example of a narrative prescription.

Postdeployment Screening and Redeployment Services

The movie *We Were Soldiers* (Paramount Pictures, 2002) has several moving scenes in which both families and the soldiers themselves experience the pain and frustration of being unprepared for many of the emotional issues that accompany combat and the return of the warrior from the combat environment. Undoubtedly the most moving of these scenes is when Mrs. Hal Moore, the Commander's wife, has death notices delivered to her by taxicab because the military was completely unprepared to handle this tragedy in a better manner. The Commander's wife and other officer's wives then had to organize their own support system and procedures themselves.

Partly as a result of such experiences early during the Vietnam conflict, considerably more preparation has occurred in the ensuing years to cope with such emotional and family stresses. Even before leaving the battlefield, each warrior is now processed through what is known as a Post-Deployment Health Assessment (PDHA) and then reassessment (PDHRA). This is conceptualized as part of a complete "deployment cycle" that prepares both service member and family to anticipate the challenges of a deployment assignment, supports them through the training and predeployment phase, provides family support through family readiness groups and rear detachment operations throughout the deployment itself, and then provides for postdeployment healthcare assessment, to include mental health care upon return, such as transfer to the Veterans Affairs healthcare system if the service member moves on to civilian life.

The PDHA consists of health screening conducted for all personnel from 90 to 180 days after their return to their home station from deployment. The assessment is designed to be completed before the end of 180 days to afford Reserve Component members the option of treatment using their TRICARE health benefit. Forms used for screening have had additional questions added specifically to check for mTBI as a result of combat action in addition to the screenings done for PTSD. Also, a number of **projection installations** with large numbers of returning warriors have further modified screening procedures in an attempt to identify those with mTBI (Hoge et al., 2008). Active-duty members may be referred immediately for further evaluation and care. Reserve Component members have the option to seek treatment in a military treatment facility, to use their TRICARE benefit, or to use their veteran's benefit through the Veterans Health Administration or Veterans Centers. In addition, all service members and dependents are authorized to complete up to six counseling sessions on any issue with Military One Source, a benefit usually managed contractually with the TRICARE contractor.

Sentence
OK?

BATTLEMIND training, developed by the Walter Reed Army Institute of Research (Castro, 2006), was created specifically for the “acquisition of a new habit, or the leaving off of an old one” (James, 2003) as mentioned above (e.g., the return of OIF and OEF veterans to civilian life upon redeployment). BATTLEMIND training was designed to be administered immediately at redeployment as part of the Deployment Cycle Support Program with a follow-up training module at 3 to 6 months after deployment. The warrior is taught that BATTLEMIND is his inner strength to face fear and adversity in combat, with courage, and that he has well acquired and demonstrated these strengths during his combat tour. Psychological experiences, including combat stress and in-the-zone issues are normalized as a normal reaction to an abnormal environment and the warrior is taught to rechannel to new, more adaptive habits. This reorientation is begun as the warrior winds down his combat tour and begins the medical review process to return to his home garrison station. Emphasis is upon relearning adaptive civilian habits as an ongoing process upon return to the United States while at the same time retaining the discipline, safety habits, and mental focus that were the determinants of a true warrior in the first place.

In addition to the BATTLEMIND program, a number of classes and briefings are offered throughout the postdeployment adjustment cycle. These include such handouts as “ACS One Source Brief,” “Educators Guide,” “Family Reunion Handbook,” “Family Support Group Leader Basic Handbook,” “Homecoming Card,” “I Can do That,” and “Personal and Family Handbook,” among many others. Classes and briefings include, again among many additional ones, “Home for the Holidays,” “Homecoming and Going,” “Normalization of Experiences,” “Reunion—Soldiers’ Brief,” “Signs and Symptoms of Distress Briefing,” and “Family Reintegration Briefing.”

Evidence-Based Therapeutic Interventions

The subject of therapeutic intervention, of course, is vast, and the majority of such material is beyond the scope of this chapter but is covered in other chapters of this volume. Although this section has shown that aggression and violence are multidetermined behaviors, a logical place to begin a review of intervention strategies is with those geared toward the warrior exhibiting PTSD. This is because research among military veterans has shown that those with PTSD are higher in anger, hostility, aggression, general violence, and relationship violence and abuse than those without the disorder (Taft and Niles, 2004), and PTSD will exacerbate the effects of other disorders such as concussion (Hoge et al., 2008, Hopewell and Christopher, 2007). Also, irritability and outbursts of anger represent one of the diagnostic criteria for PTSD. When PTSD is comorbid with other factors known to contribute to aggression as previously outlined, such as substance abuse, mental health interventions are virtually mandated if aggression is to be ameliorated or avoided

altogether. Best-practices recommendations by the Department of Veterans Affairs' National Center for PTSD (NCPTSD, 2004) specific for the treatment of anger associated with PTSD now include anger management, psycho-education about PTSD, self-monitoring techniques, assertiveness training, stress management, and communication skills training. Best practices for the treatment of PTSD in general include exposure therapy, cognitive therapy, eye movement desensitization and reprocessing (EMDR), and family counseling. Of course, veterans with comorbid disorders, such as substance abuse, violent histories, personality disorders, and other mental illnesses or behavioral problems, should be treated with specific interventions for those issues as well. For those suspected of experiencing concussion, proper neuropsychological assessment and treatment should be sought.

In conclusion, our modern soldiers, sailors, airmen, and Marines really are our new knights in every sense of the word. As we have noted, every day they are asked to confront danger to protect those whom they have sworn to defend. In doing so, they represent the heartland of our country and the traditionalism of our nation. Truly we could not survive a generation without them. They undergo strenuous and constant training as well as discipline in the art of arms and warfare. They then subject themselves selflessly to levels of danger and stress unimaginable to those who never have served, and never will, in the Armed Forces. The great majority does well upon return to civilian life, and their overall adjustment and civilian achievements equal or exceed those of their civilian counterparts; however, combat and stress take a toll upon all, and some warriors from every conflict will be expected to show adjustment problems and to be at some risk for violence. Such aggression is usually directed at families or significant others, less frequently in alternative ways, and is rendered more probable by the presence of comorbid disorders such as substance abuse or preexisting personality problems. Many of these risk factors are known, and an estimate of risk, access to available resources postdeployment, and therapeutic mental health strategies all help to manage such risk and to treat those warriors who are most vulnerable.

References

- Anon. (2004). Return of the "wacko vet" myth [editorial], *New York Post*, December 19, p. 28.
- Anon. (2007). R&R program hits No. 150,000. *Stars and Stripes*, Mideast Edition, December 22, p. 2.
- Bonta, J., Law, M., and Hanson, K. (1998). The prediction of criminal and violent recidivism among mentally disordered offenders: a meta-analysis. *Psychological Bulletin*, 123, 123–142.
- Burkett, B. G. and Whitley, G. (1998). *Stolen Valor: How the Vietnam Generation Was Robbed of Its Heroes and Its History*. Dallas, TX: Verity Press.
- Castro, C. (2006). *BATTLEMIND*. Washington, D.C.: WRAIR Land Combat Study Team, Walter Reed Army Medical Center.

- Csikszentmihalyi, M. (1990). *Flow: The Psychology of Optimal Experience*. New York: Harper & Row.
- DVBIC. (2006). *Defense and Veterans Brain Injury Center Working Group on the Acute Management of Mild Traumatic Brain Injury in Military Operational Settings: Clinical Practice Guideline and Recommendations*, Washington, D.C.: Defense and Veterans Brain Injury Center
- Dohrenwend, B. P., Turner, J. B., Turse, N. A., Adams, B. G., Koenen, K. C., and Marshall, R. (2006). The psychological risks of Vietnam for U.S. veterans: a revisit with new data and methods. *Science*, 313, 979–982.
- Donavon-Westby, M. D. and Ferraro, R. F. (1999). Frontal lobe deficits in domestic violence offenders. *Genetic, Social, and General Psychology Monographs*, 125, 75–102.
- Epperson, D. L., Kaul, J. D., and Huot, S. J. (1995). Predicting Risk for Recidivism for Incarcerated Sex Offenders: Updated Development on the Sex Offender Screening Tool (SOST). Poster session presented at the Annual Conference of the Association for the Treatment of Sexual Abusers, New Orleans, LA.
- Grossman, D. (1995). *On Killing: The Psychological Cost of Learning to Kill in War and Society*. Boston, MA: Back Bay.
- Grossman, D. and Christensen, L. W. (2007). *On Combat: The Psychology and Physiology of Deadly Conflict in War and in Peace*, 2nd ed. Bellville, IL: PPCT Research Publications.
- Hall, H. V. and Ebert, R. (2002). *Violence Prediction: Guidelines for the Forensic Practitioner*. Springfield, IL: Charles C Thomas.
- Hanson, R. K. and Bussiere, M. (1998). Predicting relapse: a meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology*, 66, 348–362.
- Hare, R. (1991). *Manual for the Hare Psychopathy Checklist (Revised)*. Toronto: Multi-Health System.
- Harris, G. T. and Rice, M. E. (1997). An overview of research on the prediction of dangerousness. *Psychiatric Services*, 48, 1168–1176.
- Hodierne, R. (2007). War story told by former sailor disputed. *Navy Times*, March 25 (http://www.navytimes.com/news/2007/03/navy_timesmagazine_veteranrape_070322w/).
- Hoge, C. W., McGurk, D., Thomas, J. L., Cox, A. L., Engle, C. C., and Castro, C. A. (2008). Mild traumatic brain injury in U.S. soldiers returning from Iraq. *New England Journal of Medicine*, 358(5), 453–463.
- Hopewell, C. A. and Christopher, R. (2007). *Military Personnel and Combat Trauma: Operation Iraqi Freedom; Operation Enduring Freedom*. Sparks, NV: Professional, Clinical, and Forensic Assessments.
- James, W. (2003/1890). *Habit*. Whitefish, MT: Kessinger Publishing.
- Kilgore, W. D., Cotting, D. I., Thomas, J. L., Cox, A. L., McGurk, D., Vo, A. H., Castro, C. A., and Hoge, C.W. (2008). Post-combat invincibility: violent combat experiences are associated with increased risk-taking propensity following deployment. *Journal of Psychiatric Research*, 42(13), 1112–1121.
- Kropp, P., Hart, S., Webster, C., and Eaves D. (1999). *Spousal Assault Risk Assessment Guide User's Manual*. Toronto: Multi-Health Systems and British Columbia Institute Against Family Violence.
- Monahan, J. (1996). Risk appraisal and management of violent behavior. *Criminal Justice and Behavior*, 23, 107–120.
- Monahan, J. and Steadman, H. (1994). *Violence and Mental Disorder: Developments in Risk Assessment*. Chicago, IL: University of Chicago Press.

- NCPTSD. (2004). *Iraq War Clinician Guide*. Washington, D.C.: Department of Veterans Affairs National Center for PTSD.
- Paradis, C. M., Horn, L., Lazar, R. M., and Schwartz, D.W. (1994). Brain dysfunction and violent behavior in a man with a congenital subarachnoid cyst. *Hospital and Community Psychiatry*, 45, 714–716.
- Schopp, R. F. (1996). Communicating risk assessments. *American Psychologist*, 51, 939–944.
- Schopp, R. and Quattrocchi, M. (1995). Predicting the present: expert testimony and civil commitment. *Behavioral Sciences and the Law*, 13, 159–181.
- Schultz, D. P. and Schultz, S. E. (1987). *A History of Modern Psychology*. Orlando, FL: Harcourt Brace.
- Taber, K. H., Warden, D. L., and Hurley, R. A. (2006). Blast-related traumatic brain injury: what is known? *Journal of Neuropsychiatry and Clinical Neuroscience*, 18, 141–145.
- Taft, C. T. and Niles, B. L. (2004). Assessment and treatment of anger in combat-related PTSD. In: *Iraq War Clinician Guide*, 2nd ed., pp. 70–74. Washington, D.C.: National Center for PTSD and the Department of Defense.
- Taft, C. T., Pless, A., Stalans, L., Koenen, K., King, L., and King, D. (2005). Risk factors for partner violence among a national sample of combat veterans. *Journal of Consulting and Clinical Psychology*, 73, 151–159.
- Taft, C. T., Street, A. E., Marshall, A. D., Dowdall, D. J., and Riggs, D. S. (2007). Posttraumatic stress disorder, anger, and partner abuse among Vietnam combat veterans. *Journal of Family Psychology*, 21, 270–277.
- Tonkonogy, J. M. and Geller, J. L. (1992). Hypothalamic lesions and intermittent explosive disorder. *Journal of Neuropsychiatry and Clinical Neurosciences*, 4, 45–50.
- Wikipedia. (2008). *Crime in Washington, D.C.*, http://en.wikipedia.org/wiki/Crime_in_Washington,_D.C.
- Wolfgang, J., Figlio, R., Tracy, P., and Singer, S. (1985). *The National Survey of Crime Severity*, NCJ-96017. Washington, D.C.: U.S. Government Printing Office.
- Zoroya, G. (2005). Key Iraq wound: brain trauma. *USA Today*, March 3, p. 1.
- Zoroya, G. (2007). Combat injuries multiply: 20,000 vets' brain injuries not listed in Pentagon tally. *USA Today*, November 22, p. 3.

