Although it has not always been recognized that stress can cause both psychological and physiological symptoms, medical science does so today. Few events are more stressful than war, and a rich literature examines the relationship between combat-induced stress and various symptoms manifested by soldiers, sailors, and airmen. During and after every war this nation has fought, members of its armed forces have suffered ill effects from combat-related stress, and the Persian Gulf War was no exception.

But the Gulf War was unusual. First, it was mostly an air war and against an overmatched enemy. After the first few days, coalition aircraft owned the skies, and the Iraqi air defenses posed only a marginal threat. Second, it was short. The air war lasted less than two months, and the ground war was even shorter, lasting a matter of days. The huge disparity between the coalition forces and those of Iraq not only translated into a short war but also into one of few casualties for the coalition. The United States sustained fewer than 200 killed, an unusually low number of casualties given the number of forces arrayed on both sides and the lethality of their equipment.

But one of the most striking aspects of the Gulf War appeared after it was over. Thousands of veterans began reporting a wide variety of symptoms, ranging from sleeplessness, to aching joints, to memory loss that remained undiagnosed. Many of the symptoms are evocative of those reported by veterans of previous wars and attributed to the psychological trauma of combat. While multiple pathways are being followed in an effort to determine the cause of these symptoms, the fact that at least some of the symptoms mirror those caused by combat-induced stress in previous wars raises the possibility that stress plays a role here as well.

PURPOSE AND ARGUMENT

This report investigates that possibility (i.e., that stress might have played a role in some of the undiagnosed illnesses among Persian Gulf War veterans
(PGWV)), but the task is complex because the relationship between stress and physical and psychological symptoms is complex. The physical and psychological interact with each other, serving as both cause and effect. Individual differences make the task of teasing out cause from effect even more difficult. Two soldiers exposed to the same combat situation may react very differently. Also, how they react is shaped, in part, by cultural influences, which vary over time. The medical profession itself adds yet another layer of complexity. Doctors do not practice medicine in a vacuum. They are part of a culture and a profession, each of which may shape the way they respond to a patient’s symptoms. In some instances, these anthropological influences have led to a search for a singular cause of the undiagnosed symptoms of Gulf War veterans. Furthermore, the veterans themselves are subject to cultural influences that condition their own responses to their illnesses.

This report argues that the trauma of combat, high-stress environments, or simply deploying to a theater of war can have immediate and long-term physical and psychological consequences. These consequences are not random; rather they follow a pattern that can be traced throughout the history of warfare, even though the manner and scope of warfare have changed enormously. In making this argument, the report implicitly rejects the concept of a singular cause for the undiagnosed illnesses of the veterans. It is argued that this concept flows naturally from a model developed to explain postwar illnesses of Vietnam veterans.

**APPROACH**

The report takes a historical approach. It reviews conflicts of the past in an effort to provide a useful framework to interpret the symptoms Gulf War veterans are reporting. The examples chosen are meant to be illustrative but representative of the current thought at the time.

**HISTORICAL OVERVIEW OF THE PSYCHOLOGICAL CONSEQUENCES OF BATTLE STRESS**

**War in Classical Times**

Study of warfare in classical times yields some important lessons. First, the ancient world recognized the power of combat to alter behavior by means other than direct killing. Part of the Greek phalanx’s power was its psychological effect on the enemy: Its sound and appearance could so frighten opponents that they would flee. Second, they recognized that the effects of combat could transcend the battle itself and affect people long after the fight. Third, the dependence of members of the unit on each other was nowhere more prevalent than
in the Greek phalanx, where a break in any part of the line could spell disaster for all. Thus, sanctions for withdrawing were draconian.

**French Revolution and the Rise of Citizen Soldier**

From classical times through the middle ages, the aristocracy generally provided the officers, and the ranks were filled with full-time soldiers, who were generally divorced from a society that was not much interested in their fate. Most of these soldiers died, either in battle or from disease (a wound was usually a death sentence). If a soldier managed to survive, he simply served to an old age. With the French Revolution and subsequently the Napoleonic armies came conscription and the citizen soldier, whose fate was of interest to society because he was of society. The types of stresses these soldiers faced—danger of combat, separation from family, privation, and hardship—mirrored those of the men who formed the phalanx. They also drew support in the same way that the Greeks did, by depending on the other members of the group. A second important source of support was the leader. The best leaders combined tactical skill with concern for the troops.

**Modern War**

The Civil War is generally viewed as the first modern war. Since then, the effects of war on soldiers have been viewed from medical and cultural perspectives that defined a set of causes for these effects. The culture of the 1860s left little room for explaining why men behaved as they did in battle: They were either heroes or cowards. As is eloquently depicted in Stephen Crane’s *The Red Badge of Courage*, soldiers ran away from battle because they were cowards. It was a character flaw that could, in some cases, be overcome by “hardening,” an adaptive process by which soldiers anesthetize themselves to the horror and hardship of prolonged combat. The values and expectations of the time were closer to those of ancient Greece than today. Only two feasible routes of exit existed: desertion (which was rife) and an incapacitating wound, itself a problematic path given what medicine knew about infection.

Accounts of the time make it clear that stress-induced disorders did exist, although given the medical and cultural biases of the time no ready taxonomy for diagnosing them was at hand. These symptoms, which included prolonged elevated heart rate, became known as “soldier’s heart.” Soldier’s suffering from it experienced overwhelming fatigue and were incapable of sustained effort. Postwar effects from that time are difficult to discern today, in large part because of the culturally induced predilection of veterans to retreat into themselves and remain silent about war experiences. One study on veterans in Indiana catalogues symptoms consistent with posttraumatic stress disorder.
19th and Early 20th Century Conceptual and Theoretical Developments. Concepts developed in the late 19th and early 20th centuries shaped the way doctors treated stress-related injuries in World War I and World War II. In medicine, new categories of diagnostic thought emerged and helped define subsequent approaches and analytic tools. The conditions of hysteria, thought to afflict only females, and hypochondria, the male analog of hysteria, were re-defined as mental disorders. “Neurasthenia” was developed as a category of mental illness, the symptoms of which included weakness, sleeplessness, mental problems, and irrational fears. The translation of hysteria into a gender-free symptom began with the medical study of an extended series of railway accidents, many victims of which displayed symptoms, often well after the accident, but no detectable physical injury.

Two other developments were significant. One was the growth of psychoanalysis as a method of psychotherapy, which attributed problems to a patient’s early developmental history. The second was the concept of suggestibility, which holds that the patient produces the symptoms that the doctor “expects” him to produce. These symptoms could be ameliorated by countersuggestion. The three concepts—neurasthenia, suggestibility, and psychotherapy—subsequently shaped how causes of psychological consequences of combat were attributed.

World War I. World War I is particularly interesting because it provides the first clear example of complex interacting variables that produce both symptoms and causes. Once the war of maneuver ended and that of the trench became dominant, significant numbers of soldiers began to suffer from “shell shock.” In the past, the problems associated with this syndrome would have been characterized simply as cowardice or malingering. The initial response was to attribute symptoms to a single cause, massive artillery attacks, whose shock waves caused physical injuries. The injuries resulted in functional conversion disorders, such as blindness, paralyses, and amnesia, with no physical basis. However, because no physiological basis could be found for these symptoms and because they appeared in some patients who had suffered no physical trauma, doctors began to regard them as psychological disorders. Treatments varied but all were rooted in preexisting concepts. A form of electric shock that applied high voltage but low amperage was popular and reportedly effective. Other approaches employed what were called “disciplinary therapies.” Treatment differed between enlisted and officers particularly in the British Army, with the officers seldom being subject to the more radical therapies. Typical treatment for an officer was rest, encouragement, and, generally, removal from the combat theater for rehabilitation. Group cohesion was also employed as a way to motivate soldiers to recover. Strong bonding occurred at the platoon and company levels because these groups became each soldier’s
source of survival. Thus, treatment was carried out as close to the front lines as possible. The soldier expected—and was expected—to return to his unit.

Psychiatrists were impressed by the speed with which cures could be effected. It was thought that symptoms resulted from the inherent human penchant for suggestibility and could be cured by psychotherapy. The approach apparently succeeded in curing many cases, some long-standing. In addition, underpinning the approach, which employed reassurance and education, was an implicit trust between the doctor and patient. When the United States entered the war, the American Army’s medical corps adopted the practices of the British and French, and the influences of these practices carried on after the war.

However, wartime techniques did not transition to the postwar period. The symptoms classified as hysteria were said to result from individual tendencies, both constitutional and developed as part of an aberrant psychological history. Many still viewed hysteria as cowardice or a manipulative attempt to get out of harm’s way. For example, in the United States, it was a cultural bias to believe that some ethnic groups were predisposed to developing these symptoms.

World War I established some important themes that affected the interpretation of psychological problems in later wars. First, common symptoms were physical, and, second, the most common treatments were both physical and psychological. Third, there seemed to be a correlation between culture and symptoms. While the medical profession came to agree that most “shell shock” cases were primarily of a psychological or physiopsychological nature, popular culture still clung to the notion of heroes and cowards. During the war, the physical component of the illness and the expression of physical symptoms were important—in some cases exhibition of only psychological symptoms could lead to execution, and postwar analysis of the 346 British soldiers executed for cowardice indicates that a substantial portion was suffering from shell shock. Thus, World War I shows war experiences interact with the beliefs of popular culture and beliefs of the medical profession.

**The Interwar Years.** The interwar years saw an explosion of concepts and assumptions about psychology and psychoanalysis, which contributed to explanations about why people broke down in combat and what caused their symptoms. The division of the world into the weak and the strong had a new wrinkle: Weakness stemmed from biological inferiority. This concept combined with theories of eugenics to create the notion that the population could be screened to weed out those most likely to break under the stress of combat—those with “weak” nervous systems. Freudian and other theories of psychoanalysis contributed to this theory. Some members of the groups thought to be vulnerable were so because of early life experiences. However, some of these theories also established the foundation that psychological and behavioral symptoms were
the result of mental insult, so that almost anyone could break down in combat. Some preliminary work was done toward understanding how the brain could take external signals and translate them into physical symptoms that in turn became feedback to further alter the psychological state. These efforts mark the first break of the mind-body dichotomy that had underpinned the Western view of human status and behavior.

**World War II.** This war began with a major emphasis on screening, both as a way of getting the most effective soldiers and of avoiding the high cost of neuropsychiatric casualties. Initially, 1.6 million men were rejected from the draft for emotional, mental, or educational disorders. Between 1942 and 1945, an additional 500,000 were separated from the Army on psychiatric or behavioral grounds.

As a means of avoiding psychological casualties, screening failed abysmally. The United States suffered one diagnosed psychiatric casualty for every four wounded. The first major engagements—Guadalcanal and the Kasserine Pass in Africa—made it clear that the United States could expect many psychiatric casualties. Forty percent of the casualties evacuated from Guadalcanal suffered from disabling mental problems. Psychiatric casualties from the battle at the Kasserine Pass almost equaled the killed and wounded.

In the face of such numbers, faith in the effectiveness of screening evaporated, and the lessons of World War I were restudied. The criticality of the group in maintaining a soldier’s mental health, buffering him from both the stress of the battlefield and from the home front, was rediscovered. It had even more import in World War II because the decisions of a small group of people—in particular, sergeants, lieutenants, and captains—had more influence over a soldier’s fate than at any time in the past.

World War II marked a sea change in how the relationship between combat stress and the individual was viewed. The belief in vulnerability based on constitutional and inherited factors moved to one based primarily on environmental determinants. True, some men carried psychic wounds from their pasts that made them particularly vulnerable. However, most men were seen as about equally capable of bearing the stresses of war, and, in kind, each was at risk of being stressed to the point of breakdown.

**Post–World War II Conceptual Developments.** The post–World War II period saw several important developments. One was the development and use of psychotropic medications to treat psychiatric disorders. But the disease-based

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1Defined here as the period between the end of World War II and the early 1960s. From the point of view of conceptual development, the Korean War is largely an extension of World War II and is not treated here separately.
model on which the use of these medications rested (define symptom, identify pathogen, prescribe medication) was found not to work well when multiple causes were involved. The focus shifted to the interactions between the individual and the environment, a synthesis that led to the concept of stress as we understand it today. This concept in turn caused a break with psychoanalytically based medicine, which saw many symptoms as psychosomatic, developed in early childhood as a result of intra-familial relationships. According to psychoanalytic theory, diseases such as asthma, dermatitis, and hypertension were classified as psychosomatic and correlated with a specific emotional conflict. However, if symptoms really stem from a complex interaction between an individual and the environment, the concept of specific cause does not hold.

But if psychosomatic illnesses did not cause a patient’s symptoms, what did? Exploring potential answers to that question cleared the path to contemporary concepts of stress. It had become apparent that the symptoms that brought veterans into hospitals during and after World War II were not simply in their minds. Investigators began to examine the relationship between stress and disease. One path of this investigative effort explored the dichotomy between a soldier’s reactions to combat and what he thought that reaction should be. When they differed widely, the struggle to reconcile the two could damage the individual. Another path led to the realm of psychoendocrinology.

Other concepts emerged. B. F. Skinner developed the theory of operant conditioning. While this theory never enjoyed wide acceptance in the medical community, it did reinforce many of the constructs developed during World War II. Individual response was a matter of the kinds of reinforcements received, not complex interactions between the brain, nervous system, and environment (as we now believe). Epidemiological studies fusing psychiatry, medical sociology and anthropology examined the role of culture and other issues in producing symptoms. Another theory held that social support was the primary buffer against stress. Yet another examined the role of events in life as a way of predisposing people to physical and mental illness.

The Vietnam Conflict. An understanding of Vietnam is essential to analysis of the Gulf War. The Vietnam conflict illuminated the power of cultural influences, military organizational behavior, and values and beliefs. It also initiated the idea that wars can provide unique causes for mental illnesses.

Vietnam was an unusual war. First, it had distinct phases, ranging from an insurgency alone in its early years, to an insurgency and a conventional war in its mid-period, to conventional war at its end. Thus, the nature of the war an individual experienced depended on when he or she was there. Second, soldiers did not fight for the duration, as they did in World War II. The tour was limited to one year at a time, and soldiers knew exactly when they were going home. Nor
was the combat continuous while they were there. It was characterized by relatively short operations that could involve intense combat followed by a return to a sanctuary in the form of a base camp.

There are two puzzling aspects of the war with respect to the number of stress casualties. Few of them presented during the war. Even when combat was intense, as it was in the Ia Drang valley and at Khe Sanh, reported casualties were low in comparison with those of World War II and Korea. The bulk appeared after the war. Perhaps even more puzzling, there appeared to be no connection between the level of combat and the number of casualties reported. Combat stress casualties were the lowest for the years with the most intense combat, and the greatest increase in psychiatric and stress problems occurred when involvement in combat became less intense. In fact, the greatest increase took place among returned veterans who served during the period of the least combat.

If the trauma of combat did not cause the problems, then what did? A variety of causes have been considered. Some suggest that the rotation system shattered the normal bonds of small unit cohesion, depriving soldiers of the support needed for good mental health. Others cite the abbreviated command tours of battalion and company commanders. Units commanded by inexperienced commanders suffered greater casualties, and soldiers saw as many as three commanders in a year, each new arrival creating yet another stress-filled transition. The one-year tour may also have been a source of problems, possibly creating a “short-timer” mentality toward the end of the tour, which had also been noted in the Korean War. Some cite widespread drug use as a contributor to stress.

Another possible explanation is the nature of the homecoming the veterans received. Instead of returning home with their units and victorious in a noble cause, the veterans came home singly to a divided and often critical nation. Would-be employers were often suspicious, and fellow students were often hostile. Unquestionably, many veterans found their homecoming an unpleasant and stressful surprise.

The two causes most generally cited are posttraumatic stress disorder (PTSD) and herbicides, particularly Agent Orange. A widely circulated number for PTSD casualties is one million of the 2.5 million who served there, and about 15 percent of the total serving in combat roles. At least one PTSD model assumes that Vietnam was a holocaust-like experience with soldiers engaging in dehumanizing behavior fueled by racism and suffering the psychic consequences after their return home. From an epidemiological perspective, the argument is suspect since much of the evidence is drawn from a self-selected group of antiwar veterans. Furthermore, focusing on trauma to the exclusion of other stressful
influences is a problem. The high proportion of Vietnam veterans reporting the syndrome (about one-third) might make sense if the level of combat for all involved had been parallel to that of the heavy fighting of World War II. But it was not, and many of those reporting PTSD symptoms were support personnel who were far removed from the fighting.

Considerable research has occurred since the decade following the Vietnam conflict, with nearly 3,000 articles having been published on the topic. Following World War II, the main concern of military psychiatrists was for those soldiers whose symptoms became fixed in a chronic state of anxiety and who were assumed to be reacting to fear, danger, and cataclysmic events. What received less attention from subsequent generations was the finding that those who developed symptoms had strong biases to do so as a result of preexisting psychological problems.

It is not surprising, then, that the initial focus of concern following Vietnam fell on external causes. The dominant focus was on a set of sociopolitical perceptions about the nature of the war, and this focus reflected in the characteristics of PTSD as listed in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM III—American Psychiatric Association, 1980). Its distinguishing characteristic was exposure to an event defined as being outside normal human experience. Symptoms included recurrent intrusive memories of the event, recurrent dreams or flashbacks, numbed responsiveness to the external world, exaggerated startle response, sleep disturbance, memory loss, and difficulty concentrating.

However, as time passed, it became clear that not all those exposed to traumatic events developed PTSD or responded in the same way. Thus, researchers began to break with what might be called “universalistic” thinking, which tied PTSD symptoms solely to combat exposure. Further research led to the development of additional assessment instruments, such as the Impact of Events scale, which was widely used in epidemiological studies attempting to assess the prevalence of PTSD in populations. Further, patients with PTSD were noted to display an array of physiological symptoms, such as higher reactivity and hormonal changes. Also, some began to question whether exposure to a traumatic event was sufficient by itself to cause PTSD.

This later work influenced the revision of the diagnostic criteria for the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM IV—American Psychiatric Association, 1994). The changes included moving away from viewing a traumatic event as a cause to viewing an interaction among classes of events and individual responses to them as causes. Thus, DSM IV moves toward a more selective diagnosis of PTSD, albeit one still based on many criteria that are subjective. However, the research has evolved in an in-
tensive and rigorous fashion, with researchers focusing on neurobiology. Some current research appears to indicate that neurobiological differences best explain the differences between those who suffer from PTSD and those who do not. These neurobiological differences also raise the possibility of predisposition for an abnormal response to a traumatic event.

The second cause most generally cited for the symptoms of these soldiers is exposure to herbicides, particularly Agent Orange. Vietnam veterans report significantly more health problems than do nonveterans, and the problems increase with the perceived exposure to Agent Orange. However, it is unlikely that one chemical (dioxin) could cause the wide range of symptoms reported, and the symptoms cannot be epidemiologically verified as having a unique cause. Physical examination of exposed and control groups revealed no differences.

The absence of a clear causal link for the problems experienced by some of the veterans of Vietnam raises the possibility of postcombat “belief, expectation, explanation, and attribution.” Participation in Vietnam caused veterans to see themselves and to be seen as a population subjected to environmental stresses and suffering from a host of psychological and psychophysiological symptoms. The public view of and responses to them increased their stress, exacerbating whatever problems may have already existed.

**The Gulf War.** Like the Vietnam conflict, the Gulf War presents a conundrum. The war was short and casualties light. Few stress-related cases were diagnosed *during* the war. Yet, following the conflict, thousands of soldiers reported a range of problems, many of which included symptoms typical of stress-induced injuries. The nature of the combat led many to conclude that participants did not experience much stress. However, a number of influences stressed Gulf War participants (see Marshall, Davis, and Sherbourne, 1999).

Veterans experienced stress before combat operations began and during them. The sources of precombat stress were many; some of the most significant included the deployment itself, the indeterminate length of the conflict, the isolated yet crowded living conditions, and the anticipation of combat.

Deployment occurred quickly and in anticipation of major conflict. So families were separated on short notice and with the expectation that the military members were gearing up to fight major battles. It was unknown how long the deployment would last. Not knowing was more stressful than a long commitment with a specific end. As in previous wars, the stress of deployment was exacerbated by concerns about the families left behind and their ability to cope with both the normal problems of everyday life and those created by the separation. These influences were greater for members of the Reserve Components who had the additional concern of interrupted jobs and careers and potential loss of employment as a result of military service. The troops deployed into desolate
parts of Saudi Arabia, where they were isolated from the population that they had come to defend. Living quarters were crowded, offering no chance for privacy. Furthermore, troops believed they were facing a formidable enemy, equipped with weapons the technological equal of their own and “battle hardened” by an extended conflict with Iran.

The beginning of the air war added yet more sources of stress. Scud missiles, potentially loaded with chemical agents, were an omnipresent threat. One survey indicated that almost two-thirds of the respondents saw chemical weapons as a source of quite a bit or extreme stress. Interestingly enough, a main source of perceived stress was the taking of “untried, experimental drugs,” by which was meant vaccines and pyridostigmine bromide (PB). The latter was administered to help counter the effects of a nerve agent it was believed the Iraqis had. Of course, actual combat produced its own source of stress, with concern over losing friends and being subject to ground and artillery attacks.

**Return from the Gulf and Its Consequences.** For most, the return from the Gulf was a relief, and their stress declined. However, this was not true for everyone. Soldiers who reported high levels of symptoms before combat tended to report high levels after as well. That is, the more intense the response to the chronic stress generated by deployment and attendant conditions, the more intense the response to the combat and postcombat periods. And soldiers who had been exposed to high levels of combat appeared to have increased risk of various symptoms.

In addition, returning from the Gulf generated its own set of stresses. Gulf War veterans did not experience the rejection and hostility that Vietnam veterans did, but returning was still accompanied by the stress normally found when reintegrating families. Furthermore, unit workload was high, because of or due to accomplishing deferred maintenance and carrying out new training. In addition, the Army had entered a period of substantial reduction, creating concerns over careers and employment.

It is noteworthy that the portion of soldiers who were dissatisfied with the support provided to their families did not change much from the prewar to the postwar period. A lack of trust in the Army’s ability to care for families was a cause for concern for many soldiers, and that same concern existed at their return.

Thus, it is clear that a variety of sources were affecting soldiers, not just the deployment and combat. An analysis of surveys of soldiers from U.S. VII Corps both six and nine months after the war showed that five stress factors accounted for about 40 percent of the variance in mean scores of indexes designed to measure stress. In descending order of significance, these are
• unit/workplace climate
• Operation Desert Storm–related issues
• reassignment and movement
• downsizing issues
• family issues.

Analysis of the data generated by a series of surveys administered after the war indicates that about 10 percent of the Gulf War veteran population regarded itself as subject to significant stress and as having difficulty coping with it. This stress was compounded by their experiences in the Gulf and since their return. Follow-up surveys show that 10–15 percent of the populations surveyed believe they carry negative life consequences as a result of their participation in the Gulf War.

These data provide no indication of veterans’ physical symptoms. However, limited but indicative studies conducted three years after the war show that Gulf veterans, active and reserve, report about twice as many symptoms as those who did not deploy, went to Germany, or served in the continental United States.

CONCLUSIONS

This report argues that the stress of combat or simple deployment can have immediate and long-term physical and psychological consequences. These consequences are similar throughout the history of warfare even though the nature of warfare has changed dramatically. Stress is likely to affect\(^2\) and be affected\(^3\) by many factors synergistically, implicitly leading to the conclusion that it is unlikely that a single independent cause exists for the undiagnosed symptoms of some Gulf War veterans.

But our society and culture produce powerful inducements to identify a single cause for the range of symptoms that remain undiagnosed in some Gulf War veterans. A “good” person should have good health, society admonishes, and if that person’s health is bad, the cause must be external. Additionally, if medical science can identify a cause, it can find a cure. Thus simply identifying a problem’s source can eliminate it.

\(^2\)For instance, some studies find that stress enables PB to pass through the blood-brain barrier.

\(^3\)Use of, or even fear of use of, chemical weapons may greatly increase stress among troops.
However, this report argues that the search for a single cause of undiagnosed illness is simplistic and, ultimately, doomed to fail. Regarding stress-related illness, a series of complex and interacting factors are the most likely source of symptoms. The presentation of psychological pain in the form of physical symptoms is a common event, far more widespread than many realize. Moreover, the undiagnosed illnesses suffered by Gulf War veterans may have been influenced by society and culture, which in turn may have shaped veterans’ interpretation of their symptoms. Other factors of influence include the media, the Internet, friends, various authorities, and support groups.

This is not to argue that the symptoms are not real and do not require treatment. No illness is “all in the mind”—external events can generate a wide array of physical responses. Humans are open systems. External events evoke responses in the brain and the endocrine and immune systems that affect body physiology and alter it, producing changes and symptoms. While it would oversimplify to assert that stress has caused Gulf War illnesses, stress is clearly a contributing factor in many psychological and somatic symptoms. For example, it could have rendered soldiers more vulnerable to environmental pathogens.

Therefore, the undiagnosed symptoms of some Gulf War veterans could represent a complex intertwining of the many factors discussed here and others that could be adduced. Some of the reported illnesses share the same causes that have affected soldiers throughout the history of warfare. To provide veterans suffering from these symptoms with the most help possible, the issue of complexity must be addressed and not simply abandoned searching for a single cause.