Irritable heart syndrome in Anglo-American medical thought at the end of the nineteenth century*

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Abstract

This paper examines the characteristics and the conditions for the emergence of the nosological category known as irritable heart syndrome to be found in Anglo-American medical literature in the second half of the nineteenth century. In the context of the American Civil War, it looks at some of the socio-historical elements, which comprised the medical care given to certain cardiac symptoms shown by soldiers. It emphasizes the moral values influencing the medical attitudes of military physicians towards symptoms of fear experienced by combatants, as well as the British and American etiological theories, which contributed to the nosological characterization of the suffering of soldiers afflicted with palpitations. Finally, it offers a brief analysis of the specific nature of the medical category known as irritable heart syndrome in the light of the categories of fear described by current psychiatric nosology.

Keywords: irritable heart syndrome; palpitations; fear; medical literature; nineteenth century.

> We have met with a few instances which we consider to have been decided examples of hysteria occurring in males. The subject of one was a gentleman who had devoted himself with too great intensity to his studies, being designed for holy orders. After leading a life of great retirement at Oxford, and, in opposition to his temperament, of strict chastity, his mind became irritable, and he could not obtain refreshing sleep. On several occasions he was suddenly seized with violent sobbing, gasping, and anhelation, attended with a fear of immediate death by suffocation. During these attacks his face was flushed, the carotids pulsated strongly, and the heart was much disturbed. We were also acquainted, some years ago, with two gentlemen who where singularly intemperate in drinking, and in both of whom excess sometimes induced fits of sobbing and crying, with palpitation, a weak pulse, a loss of muscular power, great dyspnea, painful constriction of the chest, and feat of impending death.
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> Conolly (1833, p.565).

Medical history is full of clinical conditions such as the one described by John Conolly. A little earlier, in 1829, Peter Mere Latham (1789-1875) had investigated the problem. His concern was to discover whether such nervous disturbances or spiritual crises could be responsible for heart ailments (Latham, 1829). What was in question at this time was not yet the psychogenesis of illnesses, an idea which only arose decades later. At that time the emphasis was on the ethical/moral aspect of the effort. Thus, heart problems were seen as the consequence of transgressions against the Victorian moral code. Both for Latham and for Conolly, medical investigation should answer the following question: could the passions and so-called immoral actions produce chest pains?

Three decades later, a condition appeared which apparently displayed the same symptoms, but whose meaning was very different from the problems in the time of Latham. The heart ailment started to be known as irritable heart syndrome and was linked to other questions, such as those described in the following anecdotal case.

After enlisting as a volunteer in the Union Army on 27 August 1862, William C., a young man of 21 years of age, suffered from diarrhea for three months. During a march along the railroad line linking the towns of Harper and Fredericksburg, he started to complain of palpitations and chest pains, as well as breathlessness during the nights. William C. remained in service until 24 December of that year, when he lost his voice as a result of the very cold weather. As the crises of palpitations persisted, he was withdrawn from the front. In June 1863, after moving from one hospital to another following his discharge, William C. finally arrived at Turner's Lane Hospital, in Philadelphia. There the famous physician Jacob Mendez Da Costa (1883-1900) treated him with a series of drugs, which, however, had little effect (Da Costa, 1871, p.20).

At this stage, Da Costa had treated 260 men at the Turner's Lane Hospital, where he was one of the directors, and, precisely because he had been charged with the study of cases of "cardiac exhaustion," he had already built up a consistent picture with regard to the heart condition which was ravaging the troops involved in the civil war, as pointed out by Wooley (2002).

One year after the beginning of the palpitations and breathlessness, on 16 November 1863, William C. presented the following clinical picture. His pulse rate was recorded at 98 beats per minute and the palpitations persisted. The condition stopped him from sleeping, principally at night. In May 1864 he still suffered from some "heart pain and occasionally palpitations. These, however, scarcely occurred excepting on strong exertion" (Da Costa, 1871, p.20).

It would be incorrect to classify the clinical descriptions of Latham and Da Costa as belonging to the medical discipline which would later become known as cardiology, because this, as Lawrence (1985) points out, only came into existence as we know it today as a result of a long process occurring during the twentieth century. Thus, even though we can find in historiographical literature titles such as those of Wooley (2002), in which the term "cardiology" refers to a field of medical studies and practice at the end of the nineteenth century, namely the scope of this article, it is important to stress that, strictly speaking, this field as a specific medical discipline was still in its infancy during this period.

The work of Lawrence shows that the consolidation of this specialist field only achieved a clearer outline during the twentieth century, with the gradual process of creating different medical specialties. One passage which corroborates this is from the English physician John Parkinson (1885-1976): "I remember well the time when medicine was indivisible … the word cardiologist was not in use or it was used unkindly" (quoted in Lawrence, 1985, p.8).

On the other hand, it is important to note that, at this point in the century, although cardiology did not constitute an institutionalized profession, there were already traces of the structure which would be built up later. This can be seen through the already existing mutual recognition among medical practitioners – in a European and American context – with regard to a specific body of knowledge, as well as through the agreements and disputes in debates which were considered important by the members, as well explained in the detailed history by Wooley (2002). Some important names stand out, both for clinical medicine in general and for irritable heart syndrome in particular, whether in the field of military medicine, such as William Campbell Maclean (1811-1898), Arthur Myers (1838-1921) and James Mackenzie (1853-1925), or in the case studies of this syndrome found in the civilian population, such as Austin Flint (1812-1886), Clifford Allbutt (1836-1925), William Osler (1849-1919) and Da Costa himself. It is important to note the constant dialogue between these eminent physicians, as well as the fact that they did not restrict themselves to the field of military medicine, even though, for obvious reasons, a large part of the literature on irritable heart conditions originates in case studies arising out of war situations.

Other examples of the interchange between Britain and America is the common terminology (which includes publications of books and specialist journals), as well as the use of emerging technologies, such as the stethoscope, which started to affect American medical practice from the 1850s onwards (Reiser, 1978; cf. details below). These factors, taken as a whole, justify us in approaching this field of medical practice as "Anglo-American medicine," despite any possible local peculiarities.

At the same time as this process, social, political and cultural changes were taking place on both sides of the Atlantic. The establishment of modern factories and the marked transformation in the methods of exploiting the labor force produced not only new types

of social organization, but modes of suffering not previously encountered. In an urban environment, the long hours of work, in the language of the time, exhausted the nerves to the extreme and suppressed the natural arrangement of the muscles.[1] The machine – which came into being for the purpose of liberating the worker from hard physical effort – gradually transformed him into an automated component of the great machinery of the end of the nineteenth century.

Thus, it was not uncommon for tiredness to be a matter of interest of workers and soldiers. Fatigue was everywhere. So it was that, in the last third of the nineteenth century, the exhaustion of body and spirit became an object of concern in various fields. Rabinbach (1990) writes that discussions on the problems arising from physical labor played an increasing part in literary, journalistic, academic and medical works. In the analysis by Sturdy (2003), the development of factories and new methods for the exploitation of man by man was the catalyst for a growing interest in the bodies of the workers themselves. Industrial and medical points of view were linked together, according to this author, because an understanding of the way this body functioned would lead to more effective management, and consequently greater productivity.

It is worth noting that, in medical analyses of workers in particular, the symptoms were described as "weakness" or "nervous exhaustion." There was no mention of working conditions, and the causes were frequently confused with the symptoms displayed by workers. This is clear from a speech by Clifford Allbutt, a physician who treated many workers in Lancashire, an area of Britain which was the cradle of the industrial revolution. At the Clinical Society of London, in 1873, Allbutt devoted himself to stressing the fundamental questions raised in his book, *Overwork and strain of the great vessels* (1871).

What drew Allbutt's attention was the irritability of the heart which, according to him, was the result of work carried out "without love." According to this physician, "in spite of fatigue, of diminished health, and imperfect feeding," the most important factor of all was that "work done *con amore* was less exhausting than the drearier kinds of toil" (Hewett, 1873, p.299; emphasis in the original). No consideration was given to inhuman living and working conditions. Analyses like that of Allbutt, in which no importance was assigned to the extremely adverse factors arising from the state of the factories, had their equivalent version in writings based on military cases. In English medical-military literature, produced on the basis of case studies of British soldiers who fought in the Crimean War, dealt with below, there are descriptions, for example, of the "disordered heart action" of the soldiers, without mentioning the war environment in which they had lived.

Observations on the medical treatises from the American Civil War

In America, the medical "style" was similar, even during the terrible events that afflicted the USA in the 1861-1865 period. The civil war was marked by levels of atrocity never before witnessed. More than a million men died on American soil during this short period. However, even the brutal and frightening reality was not enough for the physicians to change the tone of their analyses, as we shall see.

This conflict was the first to be affected by the advances of the industrial era, because the development of the railroads was steaming ahead and modern rifles were the latest novelty. Paradoxically, the transport of troops was not by train or by horse. Worse still, the soldiers marched barefoot. The distances were alarming: between ten and twenty miles covered daily. In cases of urgency, when a rapid arrival at the combat front was essential, the soldiers were obliged to cover even greater distances by way of forced marches. For example, the 11th infantry division of Indiana marched a total of 9,318 miles, while the 44th Regiment covered 725 miles (Terrel, 1865).[2]

Adding to the discomforts of the soldiers were the heavy backpacks laden with uniforms, blankets, rations for several days, weapons and ammunition. The extensive research by Dean (1997, p.47) offers a perspective (based on records, principally letters written in the first person) of the daily life of the soldiers. For example, one soldier, recalling the hardships of the marches, had to stop and vomit several times; his head ached. He vomited between eight and ten times until he vomited blood. Another soldier, in a letter to his mother: "I am not very well at this time. … I am so near marched to death that I cannot write with any degree of intelligence." Another, to his wife: "I am well … except for a bad cold and march most to death … my dear wife [,] I want you to pray for me … I will see you again..."

The civil war was a kind of "biological war," not in the contemporary sense, along the lines of the recent Gulf War, for example, but in the sense used by Steiner (1968, p.10-11), according to whom, during the Civil War, thousands of men died from infectious/contagious diseases. Although there are no precise figures for the total number of fathers and sons who died from these diseases, it is estimated, according to the same author, that 164,000 confederates and 250,000 unionists died from such illnesses, which included cholera, typhoid, malaria, smallpox, measles, mumps and tuberculosis, as well as a broad variety of so-called "trench fevers."

These infectious/contagious diseases, represented by an arsenal of viruses and bacteria, constituted a whole series of afflictions for the troops and defied contemporary medical knowledge. In addition, other strange syndromes made their appearance. In February 1863, the surgeon James Theodore Calhoun (1864) observed a growing number of casualties caused by an illness for which there was no plausible explanation. Traditional methods were not successful in identifying the nature of the illness from which the volunteers of the 120th Regiment of New York were suffering. They all received the same treatment, but while some recovered, the majority succumbed. What, then, were these men suffering from? Calhoun speculates: "the cause cannot be in the camp or its surroundings." He says: "[the soldiers] drank the same water, ate the same food as the other regiments; were much better hutted, and had an excellent commander and the best of medical officers" (p.130). These men were suffering from an illness he called "nostalgia"; a technical term for what was popularly known as homesickness. In his opinion, these combatants were victims of their remembered experiences, a morbid memory which brought back to life family scenes and the home left behind.

Another military man who was very concerned with the question was General William Hammond (1828-1900), a great name in surgery at the time of the civil war. For Hammond, nostalgia was an "emotional monomania," in which "nothing diverts the thoughts from

home and its remembrances" (Hammond, 1863, p.127). Assistant-surgeon Witt C. Peters (1863, p.75) describes melancholy, characterized by being "a type of insanity caused by disappointment and by the continued distance of home."

According to Roberts Bartholow (1863, p.16), a specialist in simulated illnesses, these "obscure" mental states should be carefully observed by the physician. According to him, accurate knowledge already existed with regard to "acute mania," "monomania" and "melancholy." It was already known that idiocy, cretinism, imbecility and dementia disqualified a man from military service. But there were various other conditions in which it was not possible to place any trust. It was not known to what extent the soldiers were shamming. The most common "simulated" illnesses at the time were, according to Dean (1997, p.115), "insanity," "nostalgia," "sunstroke" and irritable heart syndrome. All of them had in common the fact that their symptoms did not have a clear organic basis. Besides these classifications, according to the same author, there were many other more colloquial expressions referring to the different states of spiritual perturbation: "the blues," "lonesome," "played out," "used up," "demoralized," "nervous," "dispirited," "sad." Other terms made direct reference to the heart: "disheartened" and "downhearted."

Different kinds of fear

Investigations into the nosological problems of this period divide themselves, broadly speaking, into two groups. The first emphasizes an ongoing approach, in which the diagnoses of the second half of the nineteenth century should be related to the same phenomena described by current medical nosology, especially psychiatric nosology. The second group approaches the possible tracking of conditions with the "initial" purpose of comparing them, but with the principal aim of discovering discontinuities, that is to say, the historical and cultural particularity of each period, emphasizing the differences in meaning between the different syndromes described.

Studies like that of John Talbott (1996), professor of history at the University of California, fall within the first group, because they try to trace an uninterrupted line between irritable heart syndrome and current nosological categories, taking as their common denominator the biological specificity present in all of them. In his 1996 article, in other terms, he poses the question: Shell-shocked – why was this term already a reality on the battlefields of Virginia one hundred and fifty years ago? (p.41).

It is important to note the message implicit in this question, concerning a supposed continuity between "shell-shock," a classification created in the First World War, irritable heart syndrome, and the so-called post-traumatic stress syndrome, a contemporary category which, according to the central thesis of the article, is essentially the same phenomenon as described in the other two categories (irritable heart and shell-shock).

There are other works in the same investigative line, either in the field of war histories, such as those of Dean (1991, 1997), or in the strictly clinical field. Among recent writings, there are various articles and manuals (Hendin, Haas, 1984; Engel, 2004; Noyes, Hoehn-Saric, 1998; Saigh, Bremmer, 1999) which adopt a clearly ongoing and biologistic approach to these illnesses.

These studies all ask the following question: is it the case that the combatants diagnosed with irritable heart syndrome were given another name for what is now known as "post-traumatic stress syndrome"? Or, following Barlow (2002) and Katsching (1999): is cardiac irritability the equivalent of panic attacks?

Answers to these questions are not easy to find. When we look at the primary literature on irritable heart syndrome, what we see in the combatants, it should be emphasized, are not traces of trauma or of fear (as in the case of panic syndrome). At least in the vocabulary of the physicians of the time, the words "fear" and "trauma" are not even present. "Psychological factors" do not appear in the list of causes of these heart diseases (because we are dealing with irritable heart syndrome). It was not a psychological or psychiatric illness. It was a case of heart disease. It was not a spiritual ailment, still less was it provoked by adverse social conditions. It was a disorder of the muscular machinery of the heart. Thus, those who suffered from its symptoms (sudden palpitations, crises of breathlessness, intermittent dizziness and tiredness) did not "remember" anything, were not "traumatized" and did not suffer from "homesickness" (like those assailed by nostalgia). They were afraid of developing an organic cardiac problem. The problem was irregularity, excitability, irritation and heart weakness.

For what reason, therefore, did the modern authors cited here make a connection between post-traumatic stress, panic attacks and irritable heart syndrome? These contemporary writers address "irritable heart syndrome" from a neuro-chemical angle, and, despite the specific characteristics stressed by each of them, all agree with the idea that it was the advance of science which made possible a better understanding of the nature of the phenomenon. Medicine, therefore, showed an unequivocal progression from ignorance to a true understanding of such human conditions.

Certainly, science in general and the disciplines which deal with mental problems in particular, have advanced. With regard to this problem, however, we cannot say in what respects science has advanced. The problem in question is closely related to the observations of Hacking (1999). He asks: taking a given subject "x" – in our case, "irritable heart syndrome" – does it make sense to say whether "x" is constructed or real? The solution, according to him, is not to identify either the first or the second option, "exclusively." Irritable heart syndrome was at the same time both constructed and real. It was both a construct – its "discovery-construct" only occurred under specific socio-historical conditions – and a very real phenomenon for those who suffered from it and those who treated it. So Hacking says that the argument ("construct versus real") is inadequate.

The question to be answered with regard to the subject must, therefore, derive from the practical use which the "analyzer" makes in relation to the phenomenon; that is to say, it will depend on the context in which the subject is being referred to (historical, first person narrative, third person narrative, biological, literary, etc.). In another book, we find Hacking (1998) claiming that the arguments over the "reality" or "socio-historical construct" of "transitory mental illnesses," as he calls them – among which we can include the syndromes examined here – are little short of being banal.[3]

In harmony with such ideas are the arguments of Howell (1985), an author who is specifically concerned with the historiography of cardiology, and according to whom it is not only difficult but well-nigh impossible to know what irritable heart syndrome really

was. Instead of answering this question, Howell shows in what way the diagnosis of "soldier's heart," coined during the First World War, was related to broader social trends and how the actual structure of medical research created during these years made it possible to take a new view of the conditions of those assailed by fear and heart ailments. In particular, Howell argues that, owing to the fact that soldier's heart was the third biggest cause of dismissal among British soldiers, a heated and politicized debate ensued. As a result, the actual status of the illness was affected, leading to changes in pension policies, forms of treatment, and even the possibility of a soldier facing a firing squad.

Following the same line as Howell, therefore, it is less important for us to discover the intrinsic reality of the syndrome (if indeed it really exists), than the way in which certain socio-cultural vectors were mobilized so as to make its emergence possible, both in American and European contexts in the second half of the nineteenth century.

Even though we cannot discover the nature of the pathologies referred to, the claim that irritable heart syndrome was "another name" for post-traumatic stress is difficult to maintain in the light of an examination of the conditions pertaining in the 1860s. As a preliminary point, we should stress two characteristics of this period. The first refers to the fact that there was no reference to "trauma" during the Civil War. The word started to be used with greater frequency from the 1870s onwards, owing to the publication of the book by John Eric Erichsen (1818-1896) in 1866.[4] Despite the suffering which may have existed in the mind of the soldier who was experiencing palpitations, there was no reference at all to what we know today as "trauma."

The other aspect to be stressed follows from the actual meaning of trauma. What is involved in trauma is, necessarily, a sequel experienced "subsequently" to the horror which a person has lived through. Thus, we can put the problem in the following way: how can we discover whether the soldiers who developed palpitations and all the wealth of symptomatology which accompanied them suffered a prior shock as combatants?

According to Sheffer (2009), the historiography of mental illnesses produced during periods of war seems to start off from the a priori assumption that there existed in every conflict what is today known as "post-traumatic stress disorder." Disagreeing with this idea, she draws attention to the fact that, in the case of the American Civil War, there are no convincing arguments or documents to prove that irritable heart syndrome and post-traumatic stress are the same thing. Indeed, the physicians of the time did not leave records of anything which could be said to be even vaguely similar to post-traumatic stress (p.4). Sheffer argues that this absence of documents opens up the field for another plausible hypothesis: that, in fact, post-traumatic illness did not even exist between the years 1861 and 1865.

Sheffer does not disagree with the general idea that all conflict in war is "essentially" terrible; the reality is brutal for all those who take part in it, and physical and mental injury has been part of war in all epochs. However, she expounds the theory that American soldiers in the Civil War lived at a rather peculiar time as regards beliefs concerning, firstly, honor and, secondly, death. Thus, it was precisely because of this "culture of honor," in the terms used by the author, that there would have been an absence, or at least a reasonable reduction, in the number of medical cases in which the psychological symptoms would have arisen as a consequence of the terrible experiences of combat.

Although this theory emphasizes the importance of cultural factors in the causation of illness, certain distinctions with regard to what is argued here must be borne in mind. We consider it a reasonable hypothesis that soldiers did not develop post-traumatic psychological symptoms because they lived in a culturally distinct environment from the present and because values such as honor, patriotism and a positive attitude towards death were rooted in their consciousness of themselves. This argument is consistent with the view we have taken, because it considers the "historicity" of the pathologies developed by soldiers in the American Civil War. We disagree, however, with the idea that the soldiers did not exhibit "battle neurosis" or "post-traumatic syndrome" simply because they approached death in a positive manner or because they were more patriotic than, say, the combatants involved in the First World War.

It is certainly possible that such values prevented American soldiers – in much the same way as with the Germans, on the one hand, and the Soviets, on the other, during the 1940s – from suffering psychological injury, bearing in mind their strong ideological motivation during the war. However, if we were to accept the thesis that "patriotism" was a kind of antidote, we would simply have to view those soldiers who became medical case histories through their symptoms of palpitations, breathlessness and feelings of imminent death as in fact suffering from a psychiatric illness; in other words, as suffering from "post-traumatic stress disorder."

Where we differ from the approach of Sheffer is in our view that what makes a person, whether or not he is a combatant, suffer from this or that illness is the experience of being ill, so that this experience is the result of the simultaneous emergence of a number of factors. These certainly include biological factors (wounds, coagulation of the blood, throbbing, heartbeat, physical and psychological traumas etc.), but cannot be reduced to them alone. The experience emerges from a network of values which are intertwined and make it possible to be suffering from one illness and not another. The fact that "post-traumatic stress syndrome" did not exist at the time of the American Civil War is certainly a consequence of "cultural factors," but subject to the idea that what made its existence impossible was the simultaneous emergence of the multiple factors referred to. In order to understand this complex network and show that the "syndrome" developed by the soldiers in the war of the 1860s is not synonymous with the "post-traumatic stress disorder" of modern times, it is essential to highlight and examine some of its complexities.

The task of contrasting the "fear" felt in the Civil War with that experienced in other contexts becomes relevant. In an important study of the "traumatic neuroses" of the First World War, Moran (1967, p.61), claims that "almost all the men felt fear" during this period. For Dollard (1943), who analyzed the experiences of fear of three hundred members of the Abraham Lincoln communist brigade during the Spanish Civil War (1936-1939),3/4 of the veterans felt afraid "while" they were going into combat for the first time. After their first exposure to action, 36% confessed that they felt afraid "always" (before, during and after the battle), and 55% felt afraid on only some occasions. Even more significant was the fact that eight in every ten thought it was better to admit their fear publicly and to discuss it with their comrades than to keep it to themselves. This attitude was viewed as the first step towards the individual and collective control of fear. "Courage is not fearlessness," writes Dollard, but "it is being able to do the job even when afraid" (p.9).

The "fearlessness" of the 1860s

The circumstances of the American Civil War are quite distinct. In his seminal study, Linderman (1987) analyzed the first person narratives of soldiers and military physicians in the forces of the South and the North. According to him, in the Civil War there was no room for fear, only for heroic action, courage and "fearlessness." In fact, "lack of fear" was not the only factor at the time, because there were two main groups of first person narratives: one in which fear is not present (only courage), and the other in which it is explicit.

One aspect of this picture which caught our attention is the enormous concern to hide fear, which is quite different from the wars that followed, as we shall see. While writings by soldiers can be subdivided into two groups (those which are explicit about fear and those which try to hide it), "third person" narratives, i.e. those compiled by military physicians, are characterized "exclusively" by an absence of any references to fear. It is in this sense, therefore, that we can talk about "fearlessness" in the American Civil War.

This absence of fear can be seen in an article by Henry Hartshorne (1823-1897), published in a medical journal on 3 June 1863. After the fearsome battle of Antietam, Hartshorne writes a clinical article about his patients. Although the battle was said to be the bloodiest day in American history – more than 23,000 dead (McPherson, 1988) – Hartshorne informs the medical community about "muscular exhaustion of the heart" among his soldiers. In addition, he specifies the consequences of prolonged physical effort on cardiac functioning among combatants: pericarditis, dilation or hypertrophy of the heart, damage to the cardiac valves. Disturbance of this kind was not associated with inflammations.

Hartshorne (1863) does not refer to the horror through which the soldiers had passed. The word "nervousness" appears without emphasis. So, what was the problem? The answer is clear: weakness of the heart, not associated with "functional disturbances of cardiac action" or with tobacco abuse or masturbation (p.89). The symptoms included a rapid pulse rate while the patient was resting, as well as an abnormal increase of the heartbeat rate, even when a more subtle effort was made. The soldier did not appear healthy, although the pulse, heartbeat and the use of the stethoscope confirmed that these men were not suffering from organic changes to the heart. Hartshorne did not think that the illness was "nervous or sympathetic palpitations." The causes were "prolonged effort" and "lack of rest."

The narratives of those who attended the patients and those who were treated were not in agreement. But why, on the one hand, did the art of healing come close to the art of war itself, while, on the other hand, there were the frightened voices of those who witnessed the barbarism of the battlefield? In the next section, we shall look more closely at the ideals and values related to this attitude of the physicians towards the illnesses of their patients.

Medical hypotheses: masculinity, courage, shamming and illness

The picture we wish to paint is complex. For the medical establishment, the wide range of reactions that the combatants exhibited in the face of war was the subject of analyses in which there were either no references to the conditions of the conflict or the suffering of the soldiers was trivialized. This culture was marked by an erosion of ethical ideals and by racial stereotyping. Let us look at some examples.

Before examining the third person references – the perspective of the physicians – let us take a brief look at the experiences of the soldiers themselves. According to Blight (1992), an author who carried out such research, the ethical ideals of the period were important for the way in which the experiences of the soldiers were formed. The variety of ways in which they experienced the war is worth noting, because fighting in it could be a motive for pride, self-pity, commiseration, religious sentiment or patriotic devotion.

Courage is important in this context. For Linderman (1987), fear was often to be found opposed to this ideal, being deeply embedded in the consciousness of the American soldier. Along with courage, there was a complex of interlinked ideals, such as masculinity, patriotism and honor. Thus, exhibiting symptoms of illness meant displaying signs not only of bodily weakness, but of spiritual weakness as well. For this reason, a truly courageous soldier could not fall and could not become ill.

The soldier Carlton McCarthy (1888, p.208), for example, wrote in his letters of the difficult tests which every soldier had to pass through. He says: "The soldier is tested in ten thousand ways … all his qualities are challenged … his courage can never fail." Later he adds: "He must be masculine and independent". "Courage" and "masculinity" were interchangeable and formed a moral code which forced a man not to lose his self-control. For the soldiers, combat itself was faced as a "test of masculinity," because "a lack of courage in war was a lack of masculinity" (Linderman, 1987, p.8).

The specific historical and cultural nature of these comments is not self-evident. One may contrast it, for example, with how the idea of courage was approached in other circumstances. In the Korean War (1950-1953), a display of exaggerated courage could denote madness or loss of the instinct for self-preservation, according to O'Brien (1973). The same was true of the Vietnam War, when fleeing was not synonymous with cowardice.

Soldiers who expressed fear or panic, or tried to avoid doing their duty, were spurned. They were considered feminine and contemptible. In a Southern newspaper, we read: "The young men of the South must bear with a manly fortitude the evils that have resulted from an unsuccessful revolution. They must be brave and cheerful, energetic and hopeful. They bore themselves during the unequal contest with a manliness and courage, which have excited the admiration of friends and foes" (quoted in Dean, 1997, p.203). Later, it is recommended: "No self reliant, virtuous young man was ever known to fail … let them on to the great battle of life. They must be cheerful in poverty, hopeful in adversity, patient under defeat, and firm and self-reliant in all cirumstances." (p.203).

In another Southern newspaper, we find the following: "But the commiseration felt for these unfortunate individuals is modified by the fact that they are men – men with strong hands, high hearts and hardened nerves – men, consequently, who will know how to battle successfully with the difficulties of their lot" (quoted in Dean, 1997, p.203).

Depression was also considered to be something feminine: "It is he only who meets what fate has in store for him, with manly fortitude, who is truly great (quoted in Dean, 1997, p.203). In another newspaper, this time from the North, the need is urged to maintain virility, firmness and constancy. It goes on to say: "To win [the battle of life] without a struggle is, perhaps, to win it without honor. If there were no difficulties, there would be no success; if there were nothing to struggle for, there would be nothing to achieve. Difficulties may

intimidate the weak, but they act only as a stimulus to a man of pluck and resolution … stand up manfully against misfortune" (p.203).

Religious faith was another key element at the battlefront. It was a kind of source of courage. Courage and faith, therefore, are also interlinked. Stiles (quoted in Linderman, 1987, p.8) claimed that the more ardent the spirituality of the soldier, the more intense his spirit of struggle. The more he believed in God and in his protection, the greater was his courage during battle. According to Linderman (p.9), it was common to find a large number of men trying to receive strength and courage through prayer immediately before a battle.

Courage bore the same relationship to religiosity as cowardice bore to faithlessness. As the chaplain to the 14th Regiment of Louisiana averred, no-one was more cowardly than those who did not renew their faith and confess their sins before a battle. For a protestant soldier from Illinois, the Bible increased courage: "The standard of masculinity for the soldier is high and he finds it in the Good Book." The soldier George Eggleston wrote that cowardice should be considered as "the one sin which may not be pardoned either in this world or the next" (Linderman, 1987, p.10).

For the physicians, factors such as strength, courage and masculinity were also determined by heredity. The qualities of strength and constancy were neither physical nor psychological attributes, but hybrids of a physical and moral order. Edward S. Dunster (1834-1888), a military physician during the Civil War, wrote that the relatively higher rate of death through illness among blacks was due to the fact that they were more "psychological" than "physical" and brought up without heart, hope or mental activity. If they were exposed to a more moral culture, Dunster (1867, p.184) claimed, their defects would be diminished.

A notice was issued by the American army proposing that all soldiers who asked to be discharged on the basis of subjective reports should be ignored (Dean, 1997, p.120). There must be the guarantee of an objective description of the illness. Physicians could only discharge a man or send him to a government asylum on the basis of a diagnosis of insanity, and account should be taken of whether or not the soldier had something to gain from being declared insane. Moreover, the insane behavior of a soldier should be considered total and complete, in order to exclude any possibility of shamming.

In this context, the figure of the malingerer (someone who shams or provokes illness with the aim of gaining a personal advantage) appears constantly in reports and articles). This obsession with proper proof of illness can be found in the writings of the surgeon Roberts Bartholow (1831-1904) and of Dunster (already cited), who were the co-authors of *Sanitary memoirs of the war of the rebellion*. Silas Weir Mitchell, an eminent physician in Philadelphia during the War, also contributed to this report. Mitchell had his doubts. In an upbeat tone, in 1864, he remembered: "if we be not mistaken, the attempts to malinger are now much more frequent, and far more clever" (Mitchell, Morehouse, Keen, 1864b, p.367).

In the same year, Mitchell wrote *Gunshot wounds and other injuries of nerves* (Mitchell, Morehouse, Keen, 1864a), a book which discusses "tonic" treatments, supplementary diets and the administration of vigorous "electric shocks." He starts to suggest here not only a type of treatment which became widespread decades later, the well-known "rest cure," but also another treatment, considered very important from here onwards owing to its effectiveness: "electric tortures." In this book, Mitchell developed the central elements of what would later

become known as the "rest cure." The pillars of this treatment (massages, electric shocks, special diet and bed rest) were developed with the soldiers sent to Turner's Lane Hospital, in Philadelphia, organized by General William Hammond to receive cases of irritable heart, among other complex conditions, such as those of the combatants who still continued to "feel" amputated limbs.

One of the main points in the procedures developed by Mitchell was the need to distinguish the "real" patients from those who simulated illness. It is important to realize, as Mitchell himself stresses in his book, that the combatants were suffering from illnesses which had never been recorded in medical history, "foreign to the observation even of those surgeons whose experience was the most extensive and complete" (Mitchell, Morehouse, Keen, 1864a, p.10). He writes: "Never before in medical history has there been collected for study and treatment so remarkable a series of nerve injuries" (p.9-10). It became increasingly difficult to describe, using known terminology, exactly what the patients were feeling, in as much as the available etiological vocabulary simply could not make sense of those things which seemed disconnected both to the physician and to the patient. The only option left, therefore, was to invent terms.

The pains of the injured soldiers were not the same as those encountered in civilian practice, writes Mitchell. They were as much felt as resisted. Starting from the assumption that morbid states, human pains and afflictions are subjective, there is no possibility of knowing "what" the soldiers were feeling at that time. But if we follow the view of Morris (1991) that pains are always interpreted within formal and informal systems of thought, that is to say, they are always endowed with a significance which is appropriate to the time, it is possible to say that Mitchell and his patients invented a manner of suffering and a plausible explanation for it. This being so, if the feelings of suffering of the soldiers had not yet received a "precise" or "definite" scientific classification, it was part of the task of the physicians during the Civil War to create a system of meanings through which the physicians and the patients could interpret their illnesses and their respective roles in treating them.

Even though he was disposed to accept the sufferings of his patients as legitimate, Mitchell could not get rid of the idea that it was necessary to "investigate" when and in what way the symptoms of pain were being exaggerated, a condition to which he gave the name of "hysteria."[5] It is in this sense that one can say, as Dean (1997, p.120) asserts, that the physician during the Civil War was a detective and his function was to detect the ingenious frauds of the "malingerers."

General Joseph K. Barnes, for example, wrote that, before the beginning of a march on the way to battle, the surgeon was called to carry out careful and thorough examinations. The announcement that there was to be a battle was enough for the soldiers to start simulating illnesses. He writes: "The terrifying effect of a prospective battle will cause men to limp who never limped before, and many hitherto good soldiers will make an effort to escape it [from the careful examinations" (US Government, 1870, p.911).

In the same spirit as Barnes, the surgeon-physician Roberts Bartholow (1863) – who had been serving in the American army since 1855 – devoted himself in *A manual of instructions for enlisting and discharging soldiers* to the factors which contributed towards the resistance

of men to illnesses. "With special reference to the medical examination of recruits, and the detection of disqualifying and feigned diseases" is added as the subtitle of the work.

In 1867, he wrote *Sanitary memoirs of the War of the Rebellion,* in which he claimed that factors such as aptitude and resistance to illnesses were made up of moral, mental and physical strands. He cites four groups of principal factors: (1) the influences acquired prior to enlistment; (2) the causes affecting the production of histamine (after enlistment); (3) the causes which affect histamine during active service; and, finally, (4) moral causes, such as feigning, desertion, nostalgia etc. in operation during the whole period.

He starts the chapter by differentiating the races which make up the American troops: Americans, Celts, Teutons, Negros and Hispanic-Americans from New Mexico, organized hierarchically (Bartholow, 1867, p.4). The term "American" is applied to the races which inhabit the continent, without including the aboriginal peoples.

The mental characteristics required in Americans for military service consisted in a spirit of enterprise and in intellectual firmness, which rendered them superior to fatigue. In addition to these attributes, national vanity and a love of popularity, according to Bartholow (1867, p.4), had much to do with the formation of these military qualities. Their physical qualities were not so much the result of their muscular aspect or their height but, Bartholow stresses, the firmness of their muscular fiber and the mobility of their interstitial fat. It was these that gave them their indispensable activity and movement. On active service, the American soldier generally suffered more from defects in his digestive system than from the lack of power due to his imperfect physical development.

The Celtic races possessed similar qualities, although they had less tenacity of purpose and mental toughness. Because they suffered principally from moral defects, many soldiers were mercenaries and did not show the same zeal, energy and powers of resistance, claimed Bartholow. In addition, they submitted with less patience to the requirements of military discipline than the Americans. They were frequently insubordinate in the face of difficulties and given to complaining about rations and arduous tasks. Finally, Bartholow says that Irish laborers were particularly notorious due to their contempt for the more fatiguing types of work.

The physical capacity of the Germans could not be compared to the physical capacity of the Americans or the Celts. There were certain structural defects, to be found to a greater or lesser extent in all Germans, which caused problems for their powers of resistance. They possessed, principally, a phlegmatic temperament and a rather uncommon weakness of the abdominal organs, flatness of the feet and a tendency to develop varicose veins in the lower extremities.

The Negro possessed "physical qualities pertaining to the highest type of the soldier" even though he was "unquestionably, less enduring than the white soldier; less active; vigilant, and enterprising, and more given to malingering" (Bartholow, 1867, p.5). Bartholow distinguished him from the mulatto, and he had an opinion about the latter as well: he is "feebler than the negro" (p.5). There was also a relationship between weight and height, a deep thorax and considerable powers of resistance. His principal physical defects are less, although he has bad feet and a propensity to ailments of the pulmonary organs. As they have a highly developed faculty for imitation, Negros quickly adapt to mechanical military training.

Finally, there were the Hispanic Americans from New Mexico. This group was characterized by weak constitutions, syphilitic cachexia, impaired sight, deformities in the hands and feet, and diseases of the urinary organs. As a result of a highly mercurial temperament, says Bartholow (1867, p.5), they were also cowards, of uncertain behavior and difficult to control.

Bartholow (1867) admitted that it was not easy to determine physical condition, temperament, strength of will, moral qualities or powers of resistance. It is probable, he says, that those with fair hair and blue eyes are more susceptible to malaria, diseases of the spleen and albuminoidal degeneration of the organs. Negros were more prone to liver disease, dysentery and pneumonia. He believed that conditions of a moral nature, such as cowardice, weakness of willpower, nostalgia and shamming of illness affected the production of histamine in the soldier. Thus, cowardice expressed itself in shamming, in weakness of willpower, and in nostalgia, but the immediate relationship was not demonstrable.

Conditions for technical and theoretical possibilities for studying irritable heart syndrome

What led the physician to guess that there was no "real" motive for the patients' complaints? The epistemic climate surrounding the American medical community was certainly an important factor. One of the lenses through which medical science carried out its analyses at the time – apart from the relics of the humoral tradition and the ethical/moral values typical of the nineteenth century – was anatomical pathology, which had been growing in importance in European centers of autopsy since the beginning of the century. At the same time in which the ideas of anatomical pathology mixed with nineteenth century moral values made possible the existence of physicians such as Roberts Bartholow, conditions were also slowly making it possible for another kind of medical view to emerge, more oriented towards "science" than towards morals, such as we see in Jacob Da Costa.

There were two aspects to this "lens": (1) the aim of the anatomist was to reveal the inherent nature of the illness; (2) pathological anatomy was the basis of medical thought in the nineteenth century. It was on this basis, therefore, that physical examination became the foundation stone of clinical diagnosis and transformed the physician-patient relationship.

Lawrence (1985) stresses the important role played by the concept of lesion in the process of forming medical views on heart diseases, because it became the common factor on which rested the dominant medical theories of the time. Although they were subdivided into organic diseases and functional diseases, it is important to note the constant preoccupation with lesion, confirmed in medical articles of the time.

In his analysis of the epistemic change that occurred in the early years of the twentieth century, with the emergence of the "new cardiology" (made possible by the new discoveries in experimental physiology), Lawrence makes clear what was the question in the medical treatises on irritable heart syndrome, namely the idea that every disease has its seat, and this seat is an internal lesion. Thus, while the new cardiology laid emphasis on cardiac function per se, in the cardiology of the nineteenth century it only made sense to think of the function in terms of "lesion," shown at the tissue level over a short or long period. The backdrop, obviously, was the Morgagnian paradigm.

This example, which was dominant among physicians during the Civil War, ensured that some technologies became indispensable to a physician's daily practice, for example the stethoscope. The stethoscope could not be more suitable, because the desire to find the lesion underlying the disease suddenly became realizable. It was the technology which made it possible to access the seat of the disease while the patient was alive, that is to say, the internal lesion.

Reiser (1978, p.29) states that auscultation by stethoscope was widely practiced in clinics between 1820 and 1850, a period in which there were intense debates in English and American medical societies. It was not by chance that the stethoscope came to occupy a central position in the physical examination of patients, because there was a relationship between the sounds emanating from the heart and the lesions which became visible at the autopsy. As Forbes wrote (1821, p.xiv, quoted in Reiser, 1978, p.30), "there is a window in the breast through which we can see the precise state of things within."

From then on, the symptoms had to be interpreted as anatomical and physiological dysfunctions (Reiser, 1978, p.38). It was not without reason that René Théophile Hyacinthe Lannec (1781-1826) himself had already extolled the value of diagnosis by means of his invention, because it could show *in vivo* – through the sounds made by the heart – the anatomical lesions observed in the cadaver (p.29).

The importance of pathological anatomy applied to diseases of the heart is shown in 1871, when Edward Clarke (1820-1877), writing about the rules by which American medicine should be guided, stressed the use of the stethoscope. According to him, this instrument had the merit of having led to a veritable revolution in the study and treatment of chest ailments (Clarke, 1871, p.33). It represented, in fact, everything that was modern in terms of medical technology. The importance of this instrument lay also in the fact that it made possible a more accurate diagnosis of the syndrome which had provoked consternation among the soldiers of the war between 1861 and 1865 and in the civilian population, and in which the cause of the symptoms, he said, lay in "prolonged and violent effort": irritable heart syndrome (p.34).

Although the main hypotheses with regard to irritable heart syndrome had largely emerged after the first few months of the American Civil War, it is important to note that, decades earlier, eminent physicians had already dealt with the subject. Although the emphasis here is on the 1860s, we believe that, in order to understand the "tone" of the studies on irritable heart syndrome, we should look briefly at what earlier studies of chest affections had to say on the subject.

Jean Nicolas-Corvisart (1755-1821), a French physician and one of the teachers of René Laënnec, had already made major contributions to the subject, and had become an important reference in the field. Observing patients with palpitations "coming from nowhere" and crises involving a sensation of imminent death, Corvisart turned his attention to the patient's heart, in the same way as the physicians of the 1860s. It was not by chance that one of the great contributions of Corvisart was to have stressed the importance of the percussion technique developed primarily by Joseph Leopold Auenbrugger (1722-1809) in his *Inventum novum*, at the end of the eighteenth century. The *Inventum novum* was written in the same year as the classic work by Morgagni on the importance of finding an organic lesion for each disease. Auenbrugger was inspired by the same idea, and in his book he described his technique

known as immediate percussion. The technique consisted in placing the ear directly on the chest of the patient with the aim of listening to the sounds made by the heart.

The originality of Corvisart lay not so much in his emphasis on immediate auscultation but in the distinctions he made between lung and heart disturbances, and he also defined the differences between functional and organic cardiac diseases. His work *Essai sur les maladies et les lésions organiques du coeur et des gros vaisseaux*, of 1806, lays great stress on the percussion technique and discusses palpitations, distinguishing the symptoms of cardiac diseases from other kinds. He emphasizes the "sympathetic" influence of one organ on another, although he believed that the "theory of sympathies" was inappropriately used instead of precise knowledge.

It is no exaggeration to say that Corvisart was among an ever increasing group of physicians who included anatomical thinking in their practice. At the beginning of the book, he asked why physicians did not give more attention to the lessons of pathology in the treatment of disease, and he did not leave any doubt as to how much he, in the early nineteenth century, had been influenced by Morgagni. The problem lay in the lack of knowledge of anatomy. "Refraining from carefully looking in the dead body for the errors which their ignorance of anatomy made them commit,"[6] wrote Corvisart (1806, p.15), the physicians made wrong diagnoses of their patients, treated them as if they had different diseases, and prescribed useless or dangerous therapies

He writes on the various kinds of palpitations, differentiating those caused by moral deficiencies or by violent exercise, or even those which were the result of certain obstructions to the circulation. Besides these, there were the convulsive, tumultuous heartbeats, with noise, coming from a heart attacked by an active aneurism (hypertrophy), and those produced by the tremor of a heart deprived of blood following continuous and profuse hemorrhages (Corvisart, 1806, p.329).

Even though Corvisart was imbued with the ideas of Morgagni, this must be qualified, because he recognized that even a precise knowledge of anatomy could not prevent the most serious errors in treatment. The physician still found himself faced with the problem of understanding the symptoms he noted at the patient's bedside. This was the great difficulty: "the movements that are produced within the viscera and which are, consequently, out of the reach of our feelings" mean that physicians cannot examine "the 'secret' causes of organic diseases" (Corvisart, 1806, p.284; emphasis in the original).

It was Laënnec (1819), exactly ten years after this essay, who would make it possible to access the "essence" of diseases. Laënnec was also influenced by the idea that one organ may irritate another. In his classic treatise *De l'auscultation mediate*, published in Paris in 1819, he writes of the stethoscope and the use of auscultation in diagnosing lung diseases and, to a lesser extent, heart diseases. In 1819, he states that palpitations were "every heartbeat which causes an unpleasant sensation in the individual and is, at the same time, more frequent than normal" (p.361). Thus, irregularities in the action of the heart may occur without palpitations. He believed that a mere examination of the pulse was not enough to inform the physician of the true state of the circulation, so he proposed the use of the stethoscope to compare the force or energy of the contraction of the left ventricle with the force of the pulse.

Over the course of time, Laënnec's revolution spread to other continents, so that, in 1862, Alfred Stillé (1813-1900), a physician at the Philadelphia Hospital, famous for his contribution during the War, published a paper on the importance of auscultation and the new technologies of nineteenth century medicine. Stillé was uncomfortable with the backwardness of medical practice in Philadelphia, because it had remained indifferent to the advances made in experimental and clinical research at a time when "physics have been applied to medicine, and since auscultation, percussion, and their kindred methods of investigation, microscopical, chemical, and physiological, have laid the phenomena of life and of disease open to the senses" (Stillé, 1863, p.11).

According to him, the soldiers attributed their symptoms to the equipment they carried on their backs, "either directly by its contusive blows upon the back in marching, or indirectly by its producing a free perspiration of the part, which afterwards became chilled on the removal of the knapsack when the wind was blowing, or else by getting the back we with rain or in wading streams" (Stillé, 1863, p.18). But they were wrong, Stillé would say. Following Stillé, we can conclude that the condition of these soldiers was not organic, because it was not associated either with heart murmurs or with hypertrophy. It was a state of extreme exhaustion, caused by muscular weakness of the heart.

The articles which started to appear in the medical journals suggested that it always followed the same course: at the beginning, fever or diarrhea, and then the palpitation crisis began. The cardiac crisis could start suddenly, without a sign of any previous symptom. On the other side of the ocean, the theory was put forward that the cause of this cardiac perturbation was the soldiers' heavy equipment.

Although the soldiers generally attributed their own conditions to factors other than equipment, such as the long marches, the general weakness caused by constant diarrhea, the severe cold, the inadequate food, the lack of sleep and the difficulties of combat, physicians, such as the British military surgeon Arthur B.R. Myers (1870, p.87), considered that obstructions to the circulation of the blood, caused by tight clothes and equipment, to be the principal cause of these cardiac afflictions.

The legitimate burden: backpacks as etiological factors in British irritable heart cases

In 1864, the British government became concerned by the "heart ailment" which afflicted the troops stationed overseas, and a commission was set up to investigate the cause. General William Campbell Maclean, in *The Army Medical Report* (1864), conceived the notion of a disordered heart action; the cause was of a functional nature, and any organic cause was excluded. We stress once again that, in the scientific thinking of the time, there was no notion of psychogenesis. Aligning himself with those who argued for a functional cause, Maclean could not mention the fear felt by the troops involved in the various wars of the British Empire. This was because the main causal factor identified was the weight. Maclean referred to the "tackle" that the soldiers were obliged to carry on their backs during the long marches: time piece, greatcoat, water bottle, ammunition, cap, backpack, bayonet, rifle, three days food and blanket.

In 1867, analyzing 5,500 cases of soldiers discharged during the period 1863-1866, Maclean (1867) revealed some raw data in the British Medical Journal. Seven per cent of the illnesses (492 cases) were cardiac, being responsible for 463 discharges.[7] Maclean did not find in the medico-military records a picture which was consistent with the idea of a functional cause. So, although the weight of the material did not cause any visible damage to the heart valves, Maclean classified the cases treated by him as "cases of valvular disease." But why, bearing in mind that "valvular disease" is included in the category of organic disorders? The answer was simple. Maclean wrote that the nomenclature used by the army did not have a name to describe the cardiac symptoms typically found in cases of irritable heart syndrome, hence the choice of valvular disease.

Another British physician, Arthur B.R. Myers (1870), followed the "line of research" initiated by Maclean. In 1870, Myers published his extensive research on cardiac syndromes (with organic causes) at the Netley Military Hospital in Hampshire, classifying them as: (1) valvular disease; (2) hypertrophic cardiac disease; (3) aneurisms. Working on the same hypothesis, namely a disorder in the action of the heart, Myers took the same view as Maclean and pronounced himself opposed to the existence of an organic cause. Myers argued that the condition was brought on by a combination of the uniform and the equipment, aggravated by the environment, which obstructed the circulation owing to the pressure on the thorax. He summed up by saying that there is an initial increase in the pressure on the heart, causing its action to become violent and disordered, thereby in turn making it impossible for the soldier to carry out his tasks. And he argued that, in a stronger man, the pressure would operate over a longer period, resulting in hypertrophy of the left ventricle (Myers, 1870).

There were two terms used to describe the action of the heart: "irritability" and "excitability." The sphygmomanometer which, according to Wooley (2002), was the first application of technology in the arguments regarding functional heart syndromes, was, for Myers, an indispensable tool in detecting the disease (Myers, 1870). The recurring themes in the works of both Maclean and Myers were similar: materials, weight, the design and durability of the uniform, tight equipment, the effects of exercise, posture and standing at attention whilst carrying a backpack, marching, the effects of heat and cold, dehydration. All these factors contributed to the emergence of a heart problem.

In his book, *On the etiology and prevalence of diseases of the heart among soldiers*, Myers (1870) showed that there were etiological differences between cardiac problems in soldiers and in the civilian population. In the first group, the incidence was much more associated with known causes, such as rheumatism, Bright's disease and "violent" manual labor. With the soldiers, the reasoning of Myers is the same as that of Maclean: the principal causes were the uniform, the backpack and the equipment.

The preoccupation with distinguishing between functional and organic disorders continued. Functional disorders were more prevalent among troops who had been in India, and this fact was largely attributed to the fierce heat of that country. He noted that the soldiers felt perfectly well before leaving England, and had no feelings of discomfort in the chest. But when the soldier put on his uniform and other equipment and started marching, the symptoms started to occur with greater or lesser violence, always accompanied

by a sensation of tightness in the chest, breathing difficulties, dizziness and buzzing in the ears (Myers, 1870, p.29).

Jacob Mendez Da Costa and the legitimacy of irritable heart syndrome

The respected Philadelphia physician Jacob Da Costa gave his opinion on the exaggerated complaints of his patients with regard to the weight of their equipment. In 1871, he let fly: "Modern armies … [are] not like ancient armies. It is no longer, as with the the Romans, a boast of the overwhelming loads they carry." (Da Costa, 1871, p.38). The theories of Da Costa, therefore, can be distinguished from British theories, not only because they took a different view of the importance of heavy backpacks, but also because his research was conducted in a different environment from the one in which other physicians found themselves.

There was therefore a difference, well described in the study by Wooley (2002), between the formulations of Da Costa and those previously presented. As Wooley points out, one of the possible reasons for this difference lay in Da Costa's skill as a clinician. Even though he made his first observations in a preliminary report to the War Department in 1862, he waited until 1871 before publishing his definitive work, "On irritable heart". He intended by this to furnish a consistent contribution, by studying cases over a number of years following his first examination, and so to come up with ideas which took into account contemporary thinking on the nature of the illness from which the combatants who arrived at the hospital were suffering.

The biographical details of Da Costa, principally those relating to his training as a physician, accord with the argument of Wooley. The skill of Da Costa was due basically to his classical education, received in Europe, and to his training, while he was a pathologist and intern, in Paris, Prague and Vienna. In the 1850s he had been a student of such eminent names in medicine as Claude Bernard (1813-1878), Paul Broca (1824-1880), Armand Trousseau (1801-1867) and Aristide Verneuil (1823-1895).

It is important, however, to go beyond the differences. In fact, there were various aspects in common between British and American military medicine (represented here by Da Costa). Da Costa, like Maclean or Myers, figures among those physicians who, as Long (2004, p.35) points out, were responsible for creating what would be viewed as a socially acceptable illness in the wars of the second half of the nineteenth century (the Crimean War and the American Civil War). Thus, as illnesses which were still "without form" were being discovered during this period, the writings of these physicians helped to transform an "obscure" symptomatology, which was liable to be judged on a moral basis, into something which was comprehensible and treatable, acceptable as a pathology, and capable of being experienced as such by the patients themselves.

In the same way as the British military physicians attempted to legitimize the suffering of the soldiers through their theory regarding the weight of the backpacks, Da Costa – reverting to other medical theories of the nineteenth century – sought to legitimize the symptoms shown by his patients. In his work on "soldier's heart," Lawrence (1985, p.7) quotes Allbutt on the subject: "Our fathers … provided with a collection of the blunter facts of morbid anatomy took the matter more easily … when … they were introduced to diseases of the

valves of the organ, and to coarse lesions of its substance, their difficulties were almost solved. The patient is dead, here is the lesion which caused his death, what more does one want?".

We emphasize, therefore, not the differences between American and British military medicine, but the common denominator between the two, namely the fact that both theoretical constructs sought to legitimize the suffering of the soldiers by searching for clinical signs of a corporeal nature. It must be stressed that, however much such signs were classed as being of a functional nature, pathological processes of an organic type were implicit, in as much as they predicted structural alterations over the long term at the organic and tissue level. Given the moralistic conditions of the time, which reduced the suffering of the soldiers to mere cowardice, the creation of the new classification by Da Costa, even though marked by a reduction of the problem to a mere cardiac dysfunction (functional disorder), represented an advance when compared with hypotheses such as those of Roberts Bartholow and Edward Dunster (referred to above).

Wooley (2002) also stresses that the writings of Da Costa are important because they constitute a coherent body of work, comprising the best of the descriptive, deductive and analytical disciplines in an era of physical diagnoses. He mentions in particular his article "On irritable heart" (1871), considered a benchmark in the study of cardiovascular diseases and an important attempt to illuminate the obscure subject of functional disorders. Jarcho (1959) pointed out the importance of this same article from a historical point of view, emphasizing that it is a good example of the way in which clinical research was conducted in the nineteenth century, when it was largely guided by the simple method of physical examination and by the history of the patient, without recourse to laboratory analysis.

Irritable heart was mentioned for the first time in the book *Medical diagnosis*, published in 1864 (Da Costa, 1864). The first edition was divided into sections dealing with the signs and symptoms manifested in each particular section. Cardiac symptoms were divided into two categories: general and local. General symptoms were generalized edemas, being the results of a disordered circulation. Local symptoms were those directly related to the heart (pain and palpitations).

For Da Costa, organic diseases of the heart were classified on an additional structural basis besides their pathological signs – for example, a lesion affecting the walls of the heart, and resulting in an inflammation of the cardiac membranes, the valves or the pericardium. On the other hand, if it was not possible to find any structural changes underlying the symptoms, such an illness would be classified as cardiac functional syndrome. In other words, palpitations which were not associated with a lesion were associated with a somatic functional mechanism of the heart.

In 1867, Da Costa extended his conclusions to the civilian population and later (1878) stated that the disease had taken on unprecedented proportions. Those subject to such cardiac disturbances experienced periodic attacks, which came on suddenly and could last hours. The attacks were "most readily excited by exertion, and might be then so violent, that the patient would fall to the ground insensible," wrote Da Costa (1871, p.22). The characteristics were palpitations of varying degree and frequency, pains in the chest region, high rate of heartbeat (between 100 and 140 beats per minute), shortage of air, oppressive feeling when

making any effort, headaches, dizziness, sleep and rest disturbance, and nightmares. Such symptoms did not constitute a moral illness (Da Costa, 1867, 1871, 1878). The concern of Da Costa was restricted to the questions of how the illness started from a basis of exhaustion and how it could produce organic changes in the heart, if it was not treated.

Other factors featured among the causes of the syndrome, such as "irregularity or excess in eating or in drinking, sexual disorders, long matrimonial engagements, the abuse of tea, of coffee, of tobacco" (Da Costa, 1878, p.9). Any source of nervous irritability could produce irritable heart syndrome. It was not a question of the will or the intellect, nor was it an illness of a mental kind. What was in issue was a sensitive and tender muscle which, endowed with a pumping mechanism, maintained the circulation of the blood and could be overtaxed, like any machine of the nineteenth century.

Of the three hundred young soldiers that Da Costa examined at Turner's Lane Hospital, two hundred had irritable heart syndrome. It is worth remembering the comment made by Jarcho (1959), to the effect that the policy of the American War Department in massively concentrating soldiers with the same symptoms of palpitations in this hospital made it possible for Da Costa to reach a rapid synthesis with regard to the general picture.

Most of the cases had chronic diarrhea and had come from long marches. The term "irritable" followed a tradition of explaining illnesses as a consequence of the irritation of the nerves. In the case of the heart syndrome, there was a hyperesthesia of the sense nerve fibers (Da Costa, 1878), constituting, therefore, a cardiac neurosis. He explains: "It appears most probable that the special nerve centers near the base of the heart which preside over the normal rhythmical movements of the organ are stimulated, and in considering the close connection of these ganglia with the sympathetic, we have the explanation of how their function may have been stimulated, or kept so, by irritation reflected on to them from the abdominal ganglia or elsewhere" (Da Costa, 1871, p.40).

Final considerations

The hypotheses with regard to irritable heart syndrome take their place in a context in which the physicians were discussing the pathologies from the point of view of pathological anatomy. Thus, it is right to interpret the statement of Da Costa (1871, p.18) that "accurate knowledge of diseases of the heart is the knowledge of our times," not only in the light of his knowledge as a physician, but also by virtue of his "proclivities" (Fleck, 1979) while an intern trained in the traditions of nineteenth century medical thinking. In its turn, this environment included not only the physical approach of pathological anatomy, but also, as Kugelmann (2009) points out, ideas regarding hereditary predisposition to illness, morals and masculinity, which placed irritable heart syndrome on the frontier between medical and moralist thinking.

In other words, heart problems were sometimes defined by medical theories (with their search for evidence of the disease, that is to say, the anatomical substructure), sometimes by nineteenth century moral values, which led to the emergence of an illness whose central characteristic cannot be reduced to objective clinical descriptions, because it constantly oscillated between carnal considerations, courage and cowardice.

As a result of the work of Da Costa and other physicians, however, the soldier suffering from irritable heart syndrome could escape from the roll of effeminates or malingerers. Irritable heart syndrome, like other illnesses at the end of the century condemned by the moralist attitudes of the time, gained greater scientific respectability when it was labeled as being of a functional nature. This process of speculative somatization, in the phrase of Rosenberg (2006), made it possible for combatants to free themselves from the charge of cowardice, in as much as what was at stake was no longer the personal qualities of the soldier or a supposed lack of patriotism, but the elastic resistances of the heart, which was, in effect, an irritated pump.

We should also note another factor, also analyzed by Rosenberg (2002), and included in this broad medical context, namely the transformation of a more fluid conception of the particularity of the individual into a more general conception, provided by pathological anatomy and by other developments (such as the invention of the stethoscope), which made it increasingly possible to objectivize the subjective experience of illness.

Thus, irritable heart syndrome comes in a period of change from a more dynamic conception of diagnosis to an ontological conception, a period which preceded the emergence of the "new cardiology," which only occurred in the first decade of the twentieth century. Before the appearance of this "new cardiology," cardiac diseases in the nineteenth century were viewed in accordance with the prescriptions of pathological anatomy, as we see in Lawrence (1985, p.12): "From the old cardiological perspective, a physician approached a patient who had a "disease"…The physician's skill lay in diagnosing the "diasease", and showing how the signs approximated to an ideal natural history." Later, referring to the change introduced by the "new cardiology," he goes on: "there was thus a shift from a pathological anatomy to pathophysiology and from an ontological to a physiological concept of disease" (p.12).

Staying with Rosenberg, it is important to note that in so far as illness is considered as an abstract entity – which exists apart from the individual concerned – and that diagnosis is increasingly concerned with a specific physical phenomenon, the conception of illness is endowed with a more ontological dimension. In turn, one of the most immediate consequences of this process is that, if illness can be considered as an entity apart from the individual concerned, it is increasingly important to get close to this etiological mechanism, this causal agent, in which we can attribute a relationship between it and the symptoms exhibited.

In this reductionist, determinist and mechanistic spirit of approaching illness, it is possible, as Rosenberg points out (2006, p.415), to argue "a rough filiation among neurasthenia, spinal concussion, soldier's heart, and shell-shock, in a clinical tradition that linked particular clusters of emotional and behavioral symptoms with a parallel dependence on a legitimating (if in retrospect, hypothetical) physical mechanism." In this list of categories, we should certainly include not only the syndrome analyzed here (irritable heart), but also some encountered in the contemporary medical environment, such as panic syndrome and post-traumatic stress, whose similarity to irritable heart syndrome was challenged at the beginning of this article.

If it is true that today there are greater possibilities for accessing the interior of the body, it is also true that arguments as to the legitimacy of certain diseases have not finished, despite technical advances. The question "What is illness?" thus becomes very relevant to the current

debate. This is because once we look on diagnosis as a social construct, or the product of a particular socio-cultural environment, it means that it has a defined function in society, and that it is necessary to follow the various actors in this society to discover its function.

In this light, can we equate the syndromes described by current psychiatric nosology with irritable heart syndrome, a diagnosis constructed in the second half of the nineteenth century? This essay has given some indication of the conceptual difficulties involved in such comparisons, at least while work with the specific purpose of investigating the functions of these diagnoses in contemporary society has not been carried out.[8] It is, therefore, the culture which is the decisive factor in defining illness, as well explained by Shorter (1992), in so far as the "legitimate" symptoms of illnesses in every epoch are those for which an underlying organic basis can be found.

If today we have the brain, which legitimizes the right to be ill through fear and to be classified as having "panic syndrome," in the second half of the nineteenth century there was the heart. Each organ, at different times, has assumed an important role in medical thinking and in the way in which patients experience the state of being "ill through" fear. In both contexts there was an assumption of a given somatic fact which legitimized, within each set of circumstances, the experience of those who suffered from "palpitations."

NOTES

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[1] The world of the nineteenth century was highly interconnected. With the new means of transport afforded by railroads and shipping, it was possible to cross the Atlantic Ocean in weeks, rather than months, as in the preceding century. In addition to transport, it was possible to send information around the world in a matter of hours by means of the electric telegraph. It is important to note that the construction of the railroad network was one of the most important signs of a change in subjectivity during this period. Schivelbusch (1980) points out that the possibility of travelling by train was the catalyst for dramatic changes in the way of life of industrialized societies, profoundly altering perceptions as regards notions of space and time, as well as being decisive for the way in which people started to suffer from particular pathologies. On this subject, see note 4 below.

[2] One mile equals approximately 1.61km. 9,318 miles equals approximately 14,000km; 725 miles equals approximately 1,160km.

[3] The question "What is illness?" was, and continues to be, at the center of vigorous debate, not only in medical and biological theory, but also in philosophical and social discussion. The philosophical debate is characterized by attitudes which are not always tolerant of each other. On the one hand, there are those who argue that illness should be understood scientifically (as a scientific fact), through an explanation of its nature. On the other side are those who believe that this "entity" cannot be discovered "outside" the experience of the sufferer, and that it is affected by contingent factors, which are not ahistorical; empiricists against rationalists, on one plane of argument; materialists against idealists, on another. The complexity of this debate is shown by Hofmann (2001), who gives, by way of example, various combinations in this type of confrontation: "ideal concepts of illness vs. practical concepts of illness"; "naturalist vs. normative"; "non-normative vs. normative"; "scientific, without value judgments vs. evaluative"; "biological vs. social"; "objectivist vs. normative"; "ontological vs. holistic"; "structuralist vs. functionalist"; "essentialist/static vs. dynamic"; "taxonomic realism vs. skepticism"; "denotative taxonomic vs, attributive"; "physical vs. psychosomatic vs. psychological"; "physiological vs. psychological vs. social"; "disease (biological) vs. illness (phenomenological) vs. sickness (behavioral)."

[4] Although there was no talk of trauma during the American Civil War, after the publication of the book by Erichsen (Erichsen, 1866), the idea of "shock" to the nervous system became very popular. Railroad spine,

a syndrome described by Erichsen, was caused by "spinal concussion or movement", occurring principally in railroad accidents. It should be noted that it was only from the 1870s that his ideas were popularized in Europe and the United States. On this subject, see Harrington (2001).

[5] Mitchell makes no reference to the significance which the nosological category of "hysteria" would later assume, for example, in works written after 1880, such as those of Jean Martin Charcot.

[6] In this and other citations from French, a free translation has been provided.

[7] The organization of hospitals to receive sick and wounded combatants was fundamental, both during the Civil War in the United States and in Great Britain. In the same way as Jacob Da Costa benefited from the concentration of sufferers from palpitations at Turner's Lane Hospital, William Maclean and Arthur Myers were helped by a similar concentration at the Royal Victoria Hospital, in Netley. See Wooley (2002).

[8] In this context, it is also valid to point out that the symptomatological manifestations of fear can be extremely rich, depending not only on the time but also on factors such as class and gender, and may be expressed not only in cardiac symptoms but also in other parts of the body, as in the case of *koro*, which was described at the end of the 1960s. Men, particularly those of Chinese ethnicity, showed an intense fear that their sexual organs had been retracted into the abdominal cavity. These individuals believed that, when the organs had been totally retracted, this would lead to death. *Koro* also manifested itself in women, where the symptoms were related to a fear of retraction of the breasts, nipples and labia. See Gwee (1969).

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